Science for Communities

1 June 2018

'R&D Tax Incentive Team'
Ministry of Business, Innovation & Employment
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Dear Sir/Madam

Submission: Research and Development Discussion Paper

The Institute of Environmental Science and Research ("ESR") welcomes the opportunity to submit to the Research and Development ("R&D") Tax Incentive Team. We look forward to engaging with the R&D Team further on issues raised in our submission. If you wish to discuss any aspect of this submission please contact myself on s 9(2)(a) [redacted]

Executive Summary

ESR can contribute to the Government's vision of increasing R&D expenditure to 2% of GDP. Our contribution will be greatly enhanced if that vision is backed by supportive Government policy.

ESR supports the introduction of a well-designed R&D tax incentive. The main change required to the proposals in the Discussion Paper is to allow Crown Research Institutes ("CRIs") to access the R&D tax incentive where the CRI is funding R&D on an "at risk" basis. New Zealand's leading innovators should not be excluded from an incentive aimed at increasing innovation. ESR operates commercially in competition with the private sector. We do not rely solely on Government funding for our R&D activity and have not sought any equity injection from the Crown for research purposes.

While the R&D tax incentive proposal will have a positive effect on increasing investment in R&D and innovation in NZ, the inclusion of CRIs and CRI subsidiaries would have a significant impact in accelerating this goal.

In the event that CRIs are excluded from the R&D tax incentive, as a second best alternative submission, CRI subsidiaries or joint ventures should not be excluded.

Clarifications and improvements necessary before the incentive is introduced include:

- Guidance on how the "at risk" rule applies when a portion of investment in an R&D project is co-funded by the Crown or a commercial partner. The general principle should be that any given item of R&D expenditure within a project should receive only one form of Government support but that rules should be designed in such a way as to not discourage collaboration;

- We recommend the "dual purpose activities" exclusion be removed. This exclusion does not align with business reality. Taxpayers who are in business may incur R&D in order to

innovate as a primary purpose but will usually have a secondary purpose of commercialisation or consumerisation. Excluding activities that are carried out for a dual purpose will preclude a significant amount of R&D expenditure. A test along the lines of activity which would not have been carried out "but for" its R&D element could be more workable; and

- The "research in social science" exclusion should be reconsidered, given the importance of social science to R&D relating to people and communities (our core business).

ESR has contributed to the Science New Zealand submission on the Discussion Paper and endorses Science New Zealand's views.

Background: ESR delivers science for communities

ESR is New Zealand's CRI that specialises in science relating to people and communities. It's our science that helps safeguard people's health, protect food-based economies, improve the safety of freshwater and groundwater resources and contributes expert forensic science to justice systems. Our world class knowledge, research and laboratory services help our partners and clients solve complex problems and protect people in New Zealand and around the world. R&D performed by ESR is not only important for our business but also has a significant benefit for the New Zealand public.

ESR's duties under the Crown Research Institutes Act 1992 include:[1]

- Carrying out research for the benefit of New Zealand;
- Promoting the application of the results of research and technological developments; and
- Maintaining financial viability by operating in a financially responsible manner.

In carrying out these duties, the Government requires ESR to operate as a business in a commercial manner. ESR is more akin to a State-Owned Enterprise than a District Health Board or Tertiary Education Organisation. Our current letter of expectation, from the Minister of Research, Science and Innovation (Hon Dr Megan Woods) sets expectations around profitability, funding capital programmes, and commercialisation.

ESR delivers high-end professional scientific and clinical services to a range of clients in the areas of human and environmental health and forensic science. We undertake innovative research to help solve the challenges facing New Zealand today. We then commercialise our new products and services and take them to market. This market-orientated approach is becoming central to our business.

ESR employs over 400 people of which 60% are science and research employees. ESR promotes and retains skilled science professionals which is crucial to creating a productive and sustainable New Zealand.

ESR has a proportionately smaller Strategic Science Investment Fund ("SSIF") allocation when compared with other CRIs. Lower access to other sources for R&D funding is a limitation to staying ahead of the curve in developing responses to new opportunities or to replace superseded methods. As a proportion of ESR's revenue only 11% is from the SSIF, with that funding being available for investment in agreed platforms. ESR relies on internally generated capital to fund R&D investment.

[1] http://www.mbie.govt.nz/info-services/science-innovation/research-organisations/crown-research-institutes/cri-toolkit/section-1/#Relevant-legislation

For Financial Year (FY) 2017, ESR invested s 9(2)(b)(ii) in research projects. We acknowledge that a portion of this research is funded by the SSIF. However, in FY19 ESR is investing s 9(2)(b)(ii) of its own capital in R&D, which is the subject of this submission. ESR is at commercial risk on its own account for this investment. Further, ESR envisages that due to revolutionary advances in digital technology and high throughput instrumentation that an increasing amount of future spending will be based on R&D.

Many of ESR's competitors will access R&D tax credits to develop their businesses. For example, but not as an exhaustive list, privately owned high throughput laboratories, engineering firms, and economic consultancies. There is also the possibility of international competitors particularly in the technology space, many of which will have access to R&D incentives.

Other submission points

ESR has commented on number of the questions posed by the Discussion Paper in the Annex to this submission.

Our other submission points, detailed in Annex 1, relate primarily to the following matters:

- CRIs are, collectively, the largest dedicated providers of science research in New Zealand. CRIs undertake basic and applied science, and technology R&D, in many instances from the idea through to the commercial outcome. CRI professionals are critical for New Zealand's intellectual advancement bringing back home the insights, knowledge and connections that deliver real results for New Zealand businesses and communities.

- The current preclusion of controlled subsidiaries is unduly restrictive. CRIs have been encouraged to take a greater role in commercialising our own research through the establishment of subsidiaries and joint ventures. In order to be competitive commercially, CRI subsidiaries must be offered the same playing field as other market participants i.e., eligibility to the tax incentive.

- The R&D definition should be expanded beyond "scientific method". The current definition will exclude genuine R&D which should be incentivised (e.g., data and software type R&D activities). A "systematic approach" type test may be more suitable.

- Eligible expenditure should be based on a broader range of direct and indirect costs. ESR's endorsement of the apportionment of overhead costs would be dependent on the set percentage for direct labour costs. A set percentage could alternatively operate as a "safe harbour".

- We endorse the principal that any given expenditure on an R&D project should only receive one form of government support. R&D collaboration is common and in some circumstances, payments will be made during the course of R&D e.g., jointly or partially funded by an "early adopting" customer. The proposed "at risk" rule may discourage jointly funded R&D in certain situations and we suggest the mechanism by which R&D support is not provided twice for the same items should be reconsidered.

- We support the approved research provider concept and definition.

We would be keen to discuss our submission with the R&D Tax Incentive Team in person, particularly with regard to our business model and competitive market position. The CRI model is unique in New Zealand and ESR is unusual among the CRIs in the extent to which we rely on internally funded R&D to generate commercial returns.

Yours sincerely

s 9(2)(a) [redacted]

s 9(2)(a) [redacted]

Annex: Response to selected questions posed

Question	Submission	Analysis
1. *(a) If SOEs, Crown Research Institutes, District Health Boards and Tertiary Institutions are excluded from the tax incentive what will the likely impact be on business R&D in New Zealand?*	► CRIs should **not** be excluded from the tax incentive. ► The exclusion of CRIs from the tax incentive regime will result in a reduced level of R&D. ► ESR currently invests around $6m per annum on its own "at risk" R&D activities. This amount is materially significant for ESR and is fiscally insignificant for the Government. ► If ESR is excluded from the tax incentive, we will be undermined by our competitors. ► ESR's "at risk" investment and subsequent spill-overs contributes towards issues identified in Treasury's Living Standards Framework ("LSF"). For example, a spill-over from the eligibility of CRIs will be the creation and retention of more jobs for high-skilled professionals. ► Any tax benefit from eligibility would be re-invested into furthering ESR's R&D activities (i.e., science). ► ESR has a greater need to innovate than ever before due to uncertain disruptive change in technology and advances in science.	Exclusion of New Zealand's leading innovators from an incentive aimed at increasing innovation does not suggest coherent, joined-up Government policy. The exclusion of CRIs from the tax incentive regime will result in a reduced level of R&D. CRIs are, collectively, the largest dedicated providers of science research in New Zealand. They are also some of New Zealand's most significant commercial users of science and technology, and often the largest integrated providers in their sectors in the world.[2] CRIs employ more than 3,600 people across seven research companies, dedicated to research providing benefit to New Zealand. CRIs work with the world's leading researchers managing global teams, doing the research and providing the underpinning for global policy debates and science-based solutions. CRI professionals are critical for New Zealand's intellectual advancement bringing back home the insights, knowledge and connections that deliver real results for New Zealand businesses and communities. CRIs play a unique and important role supporting their sectors to innovate and grow. They strive to address New Zealand's most pressing issues and achieve economic growth by improving productivity across the economy and improving the sustainable use of natural resources.[3] CRIs are organised around providing solutions to New Zealand's critical issues for the economy, environment and our society. For example, ESR's science helps safeguard people's health, protect food-based economies, improve the safety of freshwater and groundwater resources and contributes expert forensic science to justice systems.[4] The R&D we perform is not only important for our business but also has significant spill-over effects for the New Zealand public. CRIs are Crown-owned companies whose principal objective is to carry out

[2] https://careers.sciencenewzealand.org/crown-research-institutes
[3] http://www.mbie.govt.nz/info-services/science-innovation/research-organisations/crown-research-institutes
[4] http://www.mbie.govt.nz/info-services/science-innovation/research-organisations/crown-research-institutes/esr

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		scientific research for the benefit of New Zealand. Unlike SOEs, the Crown does not expect CRIs to maximise profit, but does expect them to cover their cost of capital.[5] However, recently CRIs have been encouraged to take a greater role in commercialising our own research through the establishment of subsidiaries and joint ventures. We are ultimately encouraged to be more like SOEs. CRIs are not fully commercial but need to ensure appropriate commercial disciplines are applied while our scientific purposes are fulfilled.[6] To compete in commercial markets, CRIs need to be offered the same benefits available to other commercial competitors. ESR's purpose is to deliver world class knowledge, research and laboratory services to help New Zealand get the most out of its investment in science and innovation. From our internationally acclaimed STRmix™ forensic software which resolves mixed DNA profiles, to our MBiT[7] genotyping technique, offering the world's fastest, cheapest typing system for Campylobacter, our science innovations are helping us deliver better outcomes and commercial value to ESR and New Zealand. In order to continue to achieve our purpose, our business depends on ESR constantly innovating. ESR has a greater need to innovate than ever before due to uncertain disruptive change in technology and advances in science. Comparatively, ESR has a proportionately smaller SSIF allocation compared to other CRIs and lower access to other funding sources (as a proportion of ESR's revenue only 11% is from the Strategic Science Investment Fund). R&D funding is a limitation to staying ahead of the curve in developing responses to new opportunities or to replace superseded tests. We are therefore heavily reliant on our own R&D investment in order to achieve our objectives. ESR currently invests up to 6-8% of its total revenue in its own "at risk" R&D activities. In ESR's four year rolling review report, one of the panel's observations was that ESR had a lack of public funding through the science system for a number of areas included in its purpose which has

[5] https://treasury.govt.nz/information-and-services/commercial-portfolio-and-advice/commercial-portfolio/types-commercial-crown-entities
[6] https://treasury.govt.nz/information-and-services/commercial-portfolio-and-advice/commercial-portfolio/types-commercial-crown-entities
[7] Multiplex Ligation-dependant Probe Amplification-based Binary Typing

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		impacted on its ability to deliver on the research elements of its core purpose.[8] The negative effects from the lack of public funding will only be accentuated if ESR is not eligible for the R&D incentive. If ESR was determined to be eligible, any tax benefit would be re-invested into furthering ESR's R&D activities (i.e., science). ESR generates commercial revenue using its science to solve customer problems. Our services are underpinned by the R&D undertaken and substantially funded by ESR. ESR invests on its own account around $6m per annum in R&D under the proposed definition set out in the Discussion Paper. That's not a large amount for New Zealand but it does lead to a high payoff and the resulting tax incentive of around $750,000 is materially significant for ESR. The expenditure at stake is "at risk" for ESR and is not funded by the Government. The Government has stated its commitment to make the Treasury's Living Standards Framework ("LSF") central to future Budgets. The LSF draws on OECD analysis of wider indicators of wellbeing. Applying the LSF to the R&D tax incentive, focusses identified include human capital and natural capital (specifically in relation to fresh water). In terms of human capital, one issue is that New Zealand's human capital advantage is decreasing, as our younger workers are less skilled than their international equivalent, and our highly skilled older workers start to leave the labour market.[9] ESR promotes and retains skilled science professionals which helps to mitigate the current issue outlined in the LSF. A spill-over from the eligibility of CRIs will be the creation and retention of more jobs for high-skilled professionals. One example is ESR's groundwater research team is recognised as being at the forefront of its field, both internationally and nationally. Our team addresses issues associated with land-use intensification and its effects on groundwater quality. In order to increase possible investment in this area, a tax credit for "at risk" R&D will be material in trying to achieve the LSF objectives. If ESR is excluded from the tax incentive, we will be undermined by our competitors that are able to claim R&D credits. Our competitors will be able

[8] http://www.mbie.govt.nz/info-services/science-innovation/research-organisations/pdf-document-library/esr-report.pdf
[9] https://treasury.govt.nz/sites/default/files/2017-12/lsf-pres-13dec17.pdf

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		to produce new or improved goods, services and processes at a cheaper cost. We will be at a competitive disadvantage. It will also mean that some areas of ESRs business (e.g., health) will not be able to develop as fast as they could to the detriment of New Zealand. CRIs will ultimately be disincentivised to perform R&D as there will be less benefit in increasing innovation as they will be less competitive in the market. As Crown-owned companies, the Crown has a significant investment in the performance of CRIs. Based on the Government's 30 June 2017 financial statements, CRIs account for $614 million of net assets, making a net profit of $28 million. From a financial perspective, CRIs therefore play an important part in the Government's financial position and performance. The impact on the financial performance of CRIs should be considered if excluded as this will subsequently affect the Government's overall financial position. In effect, including the CRIs within the incentive will be less costly to the Government in fiscal terms over the medium term. ESR's financial turnaround in recent years has put the organisation in a strong position to increase its investment in new areas of science and technology. With a stronger balance sheet and facing a period of uncertain disruptive change, ESR is now in a position to make larger deliberate investments in capability, research, and equipment that will better secure a prosperous future. Globally, science is going through a period of significant change due to factors including revolutionary advances in digital technology and high throughput instrumentation. ESR envisages that a considerable amount of future spending will be based on R&D following its report on future disruptive trends. Incentive exclusion would deprive CRIs the opportunity of accelerating the development of emerging science. In addition, it would effectively limit the CRI from competing in an increasingly commercial and international environment. Some of the scientific research produced by our organisation is innovative, ground-breaking work that could generate initiatives to benefit New Zealand, and revenue in the future. For example, STRmix™ is breakthrough forensic software developed by ESR and Forensic Science South Australia that can resolve previously unresolvable mixed DNA profiles using a fully continuous approach for DNA profile interpretation. It has been used to interpret DNA

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		evidence in thousands of cases worldwide since 2012. As shown by STRmix™, these opportunities need to be developed and taken opportunistically. Unfortunately, these opportunities may not be able to be pursued by ESR in the future if the tax incentive is not available to CRIs. The Government has stated that it is committed to increasing expenditure to 2% of GDP over ten years. Based on Stats New Zealand's 2016 R&D survey, Government entities account for 0.26% of R&D expenditure as a proportion of GDP.[10] In order to achieve the Government's goal and continue to promote R&D spending in New Zealand, government entities (e.g., CRIs) should be considered eligible for the incentive.
1. *(b)If Crown entity subsidiaries are excluded from the tax incentive what will the likely impact be on business R&D in New Zealand?*	► Subsidiaries under CRI control should not be excluded from the tax incentive. ► Collaboration with a higher education or public research institutions (e.g., ESR) constitutes an important source of knowledge transfer for entities. ► Domestically there is a limited pool of R&D sectorial specialists and science infrastructure e.g., laboratories. In order to produce internationally competitive R&D results, collaboration should be encouraged. ► If controlled subsidiaries were excluded there is an incentive to drive government shareholding down to 49% in order to qualify. If CRIs divest their interest and do not have majority control, there is a risk they may also lose control over the direction of the R&D.	It is currently proposed that CRIs and their subsidiaries should be excluded from the tax incentive. This would exclude all entities where a CRI has a shareholding of 50% or more. Businesses specialise in order to be more competitive and collaboration enables them to make use of a broader pool of resources and knowledge while sharing risks. Patterns of collaboration are influenced by business characteristics and their innovation objectives. For example, R&D based forms of innovation may call for different types of partners. Collaboration with a higher education or public research institutions (e.g., ESR) constitutes an important source of knowledge transfer for entities.[11] In New Zealand, there is a limited pool of R&D sectorial specialists and science infrastructure e.g., laboratories. Therefore, in order to produce internationally competitive R&D results, collaboration should be encouraged. R&D activities require capital investment as well as a diverse range of thought leadership and academic experience. New technologies, new solutions, time-critical work with people who understand the need to deliver results and work in partnership. Structurally, mixed ownership entities are the perfect investment vehicles for achieving the aforementioned characteristics. They will build the teams needed to get to the answers. For example, the combination of scientific knowledge and infrastructure from CRIs and the

[10] https://www.stats.govt.nz/information-releases/research-and-development-survey-2016
[11] https://read.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-industry-scoreboard-2017_9789264268821-en#page136

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		commercial ingenuity from the private sector, creates a broader pool of resources and knowledge while sharing risks. ESR continues to explore collaboration opportunities, often by way of an agreed contribution to funding and by sub-contracting specialist activities. Making the joint venture approach less attractive would reduce future collaboration activity. In order to be competitive commercially, CRI subsidiaries must be offered the same playing field as other market participants i.e., eligibility to the tax incentive.
4. *Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples?*	► The current definition of R&D is not wide enough to include some genuine R&D activities (e.g., software activities). ► A "systematic approach" may be a better alternative.	"Scientific method" has not been defined in the Discussion Paper, however we understand this to broadly mean "hypothesis, experiment, observation and evaluation". We acknowledge that the majority of ESR R&D activities are likely to meet this definition. The current definition of R&D however, is not wide enough to include certain other genuine R&D activities (e.g., software activities). For example, two of the most widely used internet data sources (Google and Twitter) have shown promise in monitoring population behaviours relevant to public health. ESR is looking retrospectively at these data sources in relation to the Havelock North Campylobacter outbreak in 2016 to determine how effectively they can support early warning of possible health events in advance of our traditional surveillance systems. Utilisation of this sort of data may also augment routine surveillance systems to provide a more complete picture of the occurrence of diseases in our community. Investigation of the systems and platforms required to integrate real-time internet data into our surveillance is also a focus for ESR. Arguably, R&D in regard to social media data would not satisfy a "scientific method" as the R&D is not centred on proving a hypothesis but rather formulating an idea and trying to develop that idea organically. Part of the Government's policy behind the incentive is to enable the incentive to be accessed by a wider and more diverse range of firms. With this view in mind, the definition should be expanded beyond "scientific method".

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		A second example concerns developments in genomics, big data, data science and the miniaturisation of technology that evolve developments that have the potential to significantly disrupt the way ESR provides services to its clients. These present both opportunities and threats, and can be used to help shape ESRs business and inform key investment decisions. Within 1-5 years, ESR will need to implement robust data science capabilities. This incorporates governance, learning and development, and management of source code and data. ESR plan to invest in R&D in order to provide the infrastructure and systems to process the data and distribute it. Again, it is unlikely that the example above would satisfy the proposed "scientific method" R&D definition. As in the first example, the R&D activities are not undertaken to prove a hypothesis but conversely to solve a problem. The definition therefore does not seem conducive to software type activities. Based on the above examples, under the current definition, genuine R&D expenditure will be excluded. A "systematic approach" may be a better alternative. We understand this to mean that if a "systematic approach" is followed in order to solve a scientific or technological uncertainty, the activities would be considered R&D. Under the "systematic approach" test, we consider that the above examples would satisfy the R&D definition.
8. *Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?*	► Social science research that investigates and develops frameworks and methodologies is a core part of business R&D in New Zealand that should be considered eligible.	Social science research that investigates and develops frameworks and methodologies would be specifically excluded from the definition. These frameworks and methodologies could then be used to develop economic benefit. By excluding these aspects of R&D, there is a risk that these effective techniques will not be developed. In considering this example, it is recommended that careful consideration is given to the difference between this type of social science research and the qualitative techniques that could be used to inform market research and/or consumer behaviour. For example, ESR has previously undertaken a systems analysis of current responses to family violence in New Zealand and offered a research based framework to critique and improve an integrated response to family violence, and to select evidence-based interventions. By excluding social science

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		research there is a risk that these effective techniques, which have a significant public benefit, will not be developed. In a more general sense, our social systems methods provide ways to identify leverage points in complex social systems that would not otherwise be available. This type of R&D should be distinguished from market research. We are creating new knowledge about how social systems work, not just polling opinions and tastes. We do however issue caution not to fall into the error of thinking that the important distinction is between quantitative and qualitative. Either quantitative or qualitative can be valid research to create new knowledge. The distinction is, rather, between simply applying a standard method or tool (like market research) or using expertise to design and carry out an investigation that expands human knowledge and practice.
9. *What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?*	► The "dual purpose activities" exclusion does not align with business reality and should be removed. ► Taxpayers who are in business may incur R&D in order to innovate as a primary purpose but will usually have a secondary purpose of commercialisation or consumerisation. ► A significant amount of genuine R&D activities would be excluded if a "dual purpose" test was retained.	By excluding activities that are carried out for a R&D purpose and a non-R&D purpose, a significant amount of R&D expenditure would be excluded. Unless you are an R&D provider, very rarely (if ever) are activities conducted solely for R&D. Taxpayers who are in business may choose to incur R&D in order to innovate as a primary purpose but will consequently have a secondary purpose of commercialisation or consumerisation. If there is not a commercial element to undertaking the activities, the business is unlikely to be carrying out activities in order to make a profit (which is a requirement of eligibility of the tax incentive scheme i.e., to satisfy the tax test of being in business). STRmix™ is expert forensic software that can resolve previously unresolvable mixed DNA profiles. With ESR as the global leader in the field, it uses a fully continuous approach for DNA profile interpretation, resolving complex DNA mixtures worldwide[12]. A number of R&D activities undertaken in regard to STRmix™ are undertaken with a primary purpose to create a new or improved product or process. However, there is a secondary purpose that is focussed on the commercialisation and consumerisation of the product

[12] https://strmix.esr.cri.nz/

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		or service. The activities undertaken by ESR in relation to STRmix™ are genuine R&D activities that have a dual purpose. Unfortunately, under the proposed exclusions, R&D activities in relation to STRmix™ would be excluded. Some of the scientific research produced by ESR is innovative, ground-breaking work that could generate initiatives to benefit New Zealand, and revenue in the future. As shown by STRmix™, the opportunities need to be developed and taken opportunistically. It seems completely unintelligible to disincentivise R&D where an initiative has a secondary commercial purpose. The Government should be encouraging innovation like STRmix™ and creating opportunities for entities to produce global goods and services. From 2012 to 2017 ESR led the Southern Hemisphere Influenza and Vaccine Effectiveness Research and Surveillance (SHIVERS) funded mainly by the United States Centres for Disease Control and Prevention. The SHIVERS research was undertaken to improve the understanding of influenza and its spread. While this research was undertaken on a commercial basis, the study developed better surveillance systems for influenza - supporting seasonal influenza control and pandemic preparedness both in New Zealand and internationally. ESR has obtained subsequent research contracts with GSK and St Jude Children's Research Hospital in the US on the back of this work.
11. *What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs? What would the appropriate percentage be?*	► Eligible expenditure should be based on a broader range of direct and indirect costs as opposed to solely on direct R&D labour costs. ► Restricting eligible expenditure to solely direct labour R&D costs would create an unjust outcome for capital intensive entities ► For simplicity, we support a default safe harbour for overhead cost apportionment. However, in order to reduce bias against capital intensive industries, entities should have the opportunity to prove a higher rate	We submit that of the two possible approaches for determining eligible expenditure stated in the Discussion Paper, eligible expenditure should be based on a broader range of direct and indirect costs as opposed to solely on direct R&D labour costs. During 2017, ESR made significant capital investment on enhancements to STRmix™ software, next generation sequencing for health, environment and forensic applications, bioinformatics infrastructure, forensic robotics and a scientific equipment for food science applications. ESR has a significant platform in which it must keep modernising in order to carry out its purpose in delivering world class knowledge, research and laboratory services to help New Zealand get the most out of its investment in science and innovation.

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	where applicable.	Restricting eligible expenditure to solely direct labour R&D costs would create an unjust outcome for capital intensive entities. For example, keeping a contained laboratory is core to ESR's R&D, but is expensive and makes up a large part of overhead costs. Some projects would not be viable if an approximation of real overhead costs is not included as eligible expenditure. In terms of the treatment of overhead cost allocation, calculating overhead costs as a set percentage of direct labour costs will appeal to many businesses. We endorse the simplicity of this approach which will reduce the administration costs in preparing R&D claims. However, this approach is entirely dependent on what the set percentage is. Due to the diverse range of industries that undertake R&D, a set percentage cost for a software company that works out of a building will be much lower than for ESR working out of laboratories. Having a set percentage that was too low would adversely affect capital intensive R&D activities. With this in mind, we suggest that if a set percentage rate was considered the best approach, the claimant should have the opportunity to claim a higher percentage if the set percentage was unrealistic for that entity. We consider that apportioning overhead costs may provide a more realistic cost treatment. We do not consider that apportioning overhead costs would be overly burdensome.
12. *Are there any reasons why expenditure related to R&D activities for which commercial consideration is received should be eligible for a tax incentive? Please describe.*	► The "at risk" rule is unduly restrictive. ► During the R&D process, collaboration is frequent with suppliers and customers. Collaboration enables entities to make use of a broader pool of resources and knowledge while sharing risks. From a policy perspective, this should be encouraged. ► Entities should be able to claim the net amount between cost and receipt (as opposed to deeming the whole project as ineligible). ► A claw-back mechanism could be considered	The Discussion Paper states that ineligible expenditure includes: *"Expenditure that relates to R&D activities for which the entity conducting the activity, had received or could reasonably be expected to receive consideration for the activity (see discussion below on commercial consideration)".* The threshold concerning the ineligibility of expenditure that could "reasonably be expected" to receive consideration for the activity is unduly restrictive. Imposing a "reasonable test" allows too much discretion when tax law should be certain. The test should in essence state that qualifying R&D is reduced by any actual commercial consideration specifically linked to the R&D undertaken.

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	to re-claim the "not at risk" portion.	In most cases, businesses will undertake R&D activities in order to ultimately realise a commercial gain through its innovation. We consider that situations where innovation does not have an expectation to receive consideration for the activity would be rare. For example, STRmix™ is a vital part of our international marketing mix and growth strategy. We are now developing additional, complementary products that will make STRmix™ faster and even more effective. ESR envisages that some of the R&D activities involved in the development of STRmix™ could reasonably be expected to receive consideration for the activity. However, ESR does not have a definitive contractual income stream for these activities and commercialisation of the activity may or may not eventuate. On the basis that consideration "could reasonably be expected" from the R&D activities, the expenditure will be ineligible. During the R&D process, collaboration is frequent with suppliers and customers. Businesses specialise in order to be more competitive and collaboration enables them to make use of a broader pool of resources and knowledge while sharing risks. For example, ESR has established science facilities that through collaboration, can enable private sector entities to undertake R&D when they are unable to purchase the required capital. The consideration received is unlikely to cover the cost associated and therefore ESR should be able to claim the balance of expenses between cost and receipt.
15. *Is the minimum threshold set at the right level? If 'no', please provide further details.*	► We endorse the Approved Research Provider concept and definition.	Based on the proposed requirements in the Discussion Paper, ESR will meet the ARP definition and approve of the publication of listed research providers. We also support of the notion that the $100,000 minimum threshold will not apply to R&D activities outsourced to an Approved Research Provider.

R&D Tax Incentive Submission

s 9(2)(a) , The Icehouse

Thank you for the opportunity to provide input into the proposed R&D tax incentives. In the appendix to this letter, I have provided some commentary on three key segments of the market that we observe in New Zealand as a contextual lens that we keep in mind as we consider how to enable, empower and support more of our Kiwi firms to grow successfully.

Over 17 years, we have focused on the entrepreneurial economy of start-ups and established SMEs with some level of engagement with large firms. We have learnt about the road-blocks to growth, we have learnt about the mindset challenges of our leaders and we have learnt about the lack of resources available to support the firms as they grow, arguably because of the lack of success, not otherwise. Our customers have enabled over 1,000 new jobs per annum over that time, they are the ones that are succeeding, growing and advancing. It is challenging work, it is a right of passage and we need to find ways in New Zealand to continually support and encourage their work.

If there was one thing that would enable more success in business in New Zealand it would be growth. However, to most owners or leaders of firms in NZ they are suspicious of this and/or they are concerned about growing in the context of a very small market while the risk is significant to take their products or services into global markets. The R&D incentive could be seen in this context – we need to encourage and enable.

We have a mathematical challenge that is very hard to overcome with our market position in New Zealand. We lack scale, but in our domestic markets we have significant aggregation of market power by a small number of large firms which are at scale and arguably not as competitive as you will experience in global markets.

In all of this context, the role of R&D could be a significant opportunity if it can be utilised effectively to support the drive to value in the New Zealand market. Our current return from R&D is poor and we don't have enough of our firms and people who want to R&D – we don't have enough R&Dg and the failure rate is too high from those that are doing it. So we are currently making decisions on what to back in a unproductive and wasted manner and second, we are not encouraging enough of our firms to make the investment into R&D.

What can we do about this? I appreciate some of the measures are wider than the R&D tax incentive, they still however go to the point of the wider policy environment required in New Zealand.

Overall, while I applaud the move to a more transparent system with respect to R&D a 'one size fits all regime' could be seen to be idealistic and unproductive. We have to use segmentation to our advantage and create a staged system that is open, diverse and supportive of firms and people who want to invest their time, resources and funding to do R&D.

First, we need to create an environment where more of our firms want to be more productive, find value and grow – there is a role for R&D for these firms, but first we need to find ways to encourage more growth, from growth comes the interest and capacity to consider R&D. In this case, I am talking about the scaled market of SME in NZ and how we can enable a shift from this group. Think Future Products Group and Furnware from Napier, think Pics Peanut Butter, think Prolife Foods from Hamilton – arguably all of these firms would not fall within the criteria of the R&D Tax Incentive as proposed? Is that what we want? Even more so when they started their journeys as the definitions suggested by the discussion document would not have complied?

In the start-up segment, we are currently using the funds being spent and invested into capability development that could lead to economic benefit. If my belief is right that less than 0.25% of all New Zealand start-ups achieve product market fit in the first three years of their life, then the only return we are truly getting is developing our people. When you really consider the returns that come from our R&D investment in the form of start-ups, we are currently talking about 5 to 10 start-ups per annum that matter! We could do more, but we must accept that we are wasting our funds right now and unless we stop funding projects that will never get commercial funding and focus these resources we will continue to get failure. There is a massive opportunity of focus required in our R&D funding that is happening in our CRIs and Universities which must be a part of the wider review.

In the large enterprise segment, we have a systemic and significant issue which I have no viable solution for. I certainly appreciate how officials thinking might lead us to making a statement like this:

"Growing or attracting large R&D performing firms is essential to the New Zealand economy."

There is no doubt, New Zealand would be better off if our medium sized firms became large, and the large larger – and even more so if they could increase the international spread of their business operations. New Zealand would win significantly. However, what is the case and rationale for attracting large firms to come to New Zealand to undertake R&D? In some cases this may make sense because of our competitive advantages which are world-leading – say in 2 or 3 industries but we must be very careful about who we attempt to attract as these pools of R&D need to be focused on areas where we have or could have this competitive advantage. In New Zealand, we need to focus our energy in growing our scale and growing our international reach. Surely if we are internationally competitive then market forces should cause the resources to come to New Zealand e.g. Rocket Lab

I have responded to the questions in the below tables that the discussion document asks. My main points however for the review group would be:

- We want to grow R&D in New Zealand
  - That means, we need to have a segmentation approach for smaller and new entrants
  - We need to encourage and enable starting firms to keep going – that means, cash backs and offsets must be available
- A system that is transparent and fair for all New Zealanders makes sense
  - Empowering firms to do the R&D, make the claim and receive the incentive should be an important part of the policy – self/empowerment and transparent policies are critical

Turning to the questions posed in the discussion paper, I will only address the questions I have comments to make.

Question No.	Question	Response
1.	If SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions, and their subsidiaries are excluded from the tax incentive, what will the likely impact be on business R&D in New Zealand?	Do we want to create a limit on R&D given we don't do enough? Would they do the R&D anyway?
2.	How well does this definition apply to business R&D carried out in New Zealand?	The definition of R&D is an issue if we are going to become more competitive, together with what is eligible expenditure in that regard. If we are academic about this, and less market focused we will miss the opportunity. Surely R&D's purpose is to find a new, innovative, value focused use case that creates value – so the more market orientated we are with the definition of R&D the more opportunity we have to create success? We believe the definition is too restrictive.
3.	Does this definition exclude R&D that you think should be eligible, please illustrate with examples?	We have to be careful about using 'best practice' from international, when we are not competitive with most of these markets. We need to get ahead, and be better to even catch-up, so that argues for a broader definition of R&D.
4.	Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples?	Yes, the scientific method restricts the opportunity for a broader view of what is R&D.
5.	What would the impact be on business R&D in New Zealand if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science or technology?	The whole point of this policy is to get more firms, people doing R&D so why would we restrict it. This is counter intuitive with the policy objective.
6.	How well does this definition apply to business R&D carried out in New Zealand?	Support activities are potentially a fundamental driver of supporting and enabling success to more effective R&D and should be included. Market research, market validation are all factors that should be used by firms and people when undertaking work to understand where they should target their R&D so I would argue for a broad definition here. We want to grow the market, not constrain it. We also want to encourage firms to do it right to be more successful.
7.	Are there any reasons why the exclusions should not apply to support as well as core activities? Please describe.	Yes, the exclusions should not apply to support activities. We want to grow the market of R&D not constrain it or reduce the likelihood of success.

8.	Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?	No comment, albeit the same comment we want to encourage as many NZ firms to be more productive and find value in the market, so why do we care where the R&D comes from or is focused, it is value that we care about. An example is a start-up we have invested in at the Flux Accelerator at The Icehouse. It is called Think Ladder and it aspires to become the 'therapist in your pocket' focused on cognitive based therapies and concepts. It is taking the field of CBT and trying to enable the same or better outcome for its users through an app and online, as compared to sitting on the couch with your therapist. This is social sciences at its best. This will potentially be of great value in the market if they can prove they can do it. This is extraordinarily challenging and difficult to do successfully with massive technical challenge. Would this work be eligible under the R&D Tax Incentive regime?
9.	What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?	The dual-purpose regime will have the impact of constraining R&D when we don't want that.
10.	What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?	There are no advantages to doing this – make it broader to encourage more to do R&D.
11.	What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs? What would the appropriate percentage be?	The advantage of this approach will be that it makes it clearer and simpler to manage, it does however take no account of the stage, scale of the firms who are applying.
12.	Are there any reasons why expenditure related to R&D activities for which commercial consideration is received should be eligible for a tax incentive? Please describe.	It depends I suppose on the use case – in some firms they might do both R&D for themselves and also services for firms? What are we trying to do, grow the R&D base, so why limit?
13.	What variations or extensions to the definition of core activities are required to ensure it adequately captures R&D software activities?	We should be broader in definition and allow this to change over time through an addition to the list of eligible spend by Callaghan Innovation.
14.	Are there reasons why continuity rules should not apply to tax credits? Please describe.	I can understand how the designers might consider that continuity rules should apply to tax credits. This would not hurt SME or large firms but would significantly disadvantage start-ups who are raising capital to fuel their growth market entry. It goes completely against what we are trying to do which is encourage R&D, not limit it.

15.	Is the minimum threshold set at the right level? If 'no', please provide further details.	The minimum threshold 'applied universally' would be an unfair and counter-productive lever that would ultimately work against the objectives of the policy. I would recommend consideration of establishing segmentation measures that enable smaller and new to R&D firms to have a lower threshold or even no threshold. Even though there may be initiatives to support smaller and newer firms to get going on R&D the 'self-empowerment' of the incentive is something I would want to see encouraged. Large firms would however have a higher threshold as you have recommended.
16.	How important is a cap or a mechanism to go beyond the cap? Please provide further details.	Given the very small number of firms that are going to or potentially over the cap, I would recommend there is the ability for Government to negotiate an exclusion on a case by case basis, which could be formulated into policy additions over time. We want to encourage firms to do R&D.
17.	What features of a Ministerial discretion or pre-registration would make them most effective?	I would not recommend Ministerial discretion however, it should be left to officials to make these decisions.
18.	What are your views on the proposed mechanisms to promote transparency and enhance evaluation?	The more transparent and visible the mechanisms are for firms who have received incentives the better – for public interest I would have no restriction on the release of the list to the public.
19.	Are there any other risks that need to be managed? Please describe.	No
20.	What are the risks with making external advisors liable in this way?	No, that is a good recommendation.
21.	What is the right level of information required to support a claim?	Making it clear, simple and efficient to claim would be great.
22.	What opportunities are there for customers to submit R&D Tax Incentive claims via third party software?	I am sure if the market sees an opportunity, we should encourage and enable that – if it makes it easier for firms, then that is something we should support.
23.	What integrity measures do you think Inland Revenue should use?	Not sure, other than regular and occasional audits which could be outsourced to the private sector.

Our view on three key segments in the market

We are startup crazy just like the rest of the world …

- 1,500 start-ups are looking for capital each year in NZ
- 120-150 start-ups successfully raise capital, mostly from angel investors, 40% of these are first time funded start-ups
- NZ lacks venture capital unlike Sydney, Singapore, Israel & places like San Francisco
- 5-10 start-ups seem to matter each year, of which 50% are funded by offshore VCs
- 0.25% achieve product market fit inside first 3 years – that is in the context of a small market and probably 5-8x less than other markets
- The business model is challenging for ecosystem providers in NZ to become sustainable over time i.e. the money does not go around unless you have scale like UniServices

Our large firms are challenged ….

- 2,325 firms employ > 100 FTEs
- Average employment is 430 and they represent 48% of all employees
- 50% of these firms are NZ market focused only
- Comparatively, these large firms are significantly smaller and less geographically diversified that other large firms from similar countries
- We have regulatory issues in NZ for large firms
- There is a lack of compulsion to invest for scale, unless you are being disrupted or exposed to competitive forces
- What is the one thing you would do to get our big bigger?

SMEs are the cornerstone … and a prize if we can …

- There are thousands upon thousands …. probably 120,000 matter
- Most stay SME because they lack the confidence, belief and skills … it is hard to be a SME
- Many offer to help SME and give up; offering money is not the answer and many services providers fail too at scale …
- The service economy love SME because they make lots of money from them – banks, telcos, energy etc
- SMEs stay 'local' – they don't leave the region, unlike start-ups
- If there is one thing you could change, what would it be – growth

If you could get a 5% shift of SME to ME what would that look like?

Why don't we invest more in R&D in NZ? Is it attitudinal, is it market state?

'R&D tax incentive team'
Ministry of Business, Innovation & Employment
PO Box 1473
Wellington 6140
New Zealand

By email to RDincentive@MBIE.govt.nz

24 April 2018

Submission re proposed R&D Tax Incentive scheme

I am commenting on the proposed scheme as an individual, but drawing on my current roles as:
s 9(2)(a) [redacted]

At the outset I would like to note my support for any initiatives that are intended to lift the quantum, and quality, of business R&D conducted in New Zealand. On that very matter, however, the stated vision of the incentive only seeks to lift the quantum of R&D; while more is important, I'd like to see us also lift the quality of that R&D, with a vision of "More ***effective*** research and development powered by business…". One of our challenges with past efforts has been that – in general – we have directed too much support to immediate-term problem-solving by businesses that are too busy to improve. What I hope this incentive scheme will deliver is suitable support for businesses with sufficient vision and scale to undertake *genuine R&D* to serve their growth and productivity ambitions.

The remainder of this submission addresses a subset of the questions posed in the discussion document. In some instances, groups of questions are addressed together.

Q1. Re the exclusion of government entities, including TEOs.

The distinction between public and private R&D is convenient but it is also somewhat artificial, at least as far as some public R&D is concerned. Certain 'public' R&D schemes in fact suggest, encourage or expect corresponding 'private' investment in R&D – applications to the Endeavour Fund's Research Programmes scheme, for instance, are strengthened by private contributions, some in-kind, others in direct cash. A similar structure might be considered here; the scheme could require or even incentivise businesses to partner with public R&D providers to form the best teams. This would mean TEOs and other government entities would not be excluded as such from the scheme, because they could be included via partnerships. An indirect benefit of such an approach would be the increased capacity of businesses and government entities, and the individuals involved in each, to engage with one another, enhancing the flow of personnel across structural boundaries. In turn this could help us to retain top R&D talent in New Zealand – a major challenge in some sectors.

Q2-Q4. Re the definition of R&D and the scientific method requirement.

There is a mismatch here between the language used to describe the intent of the scheme and then the design proposed to deliver on that intent. It is entirely appropriate, for instance, to talk broadly across "research, science and innovation" and to suggest that any R&D should seek to: "advance science or technology through the resolution of scientific or technological uncertainty". However, the design then defaults to a science-centric approach to R&D; and more than that, a positivist, experimental science approach. This is too narrow, especially given the rhetoric around "acquiring new knowledge ***or*** creating new ***or*** improved materials, products, devices, ***processes, or services***" [***Emphasis added***].

It would be far more appropriate to emphasise the need to use systematic, evidence-based methods that are fit-for-purpose within business sectors. In some engineering fields, cycles of development, testing and refinement follow a systematic approach but not one *necessarily* centred on experimentation involving the formal testing of hypotheses. As such, valid methods from design science and social science should be accommodated in the scheme's design. Design science emphasises the use of research objectives and achievement criteria considered across multiple cycles, over the natural sciences' emphasis on the use of research hypotheses and statistical significance considered in a single experimental run. Both are valid approaches to R&D.

In this general regard it is surprising to me that the very Frascati manual that is referenced in this document takes a different definitional approach to that suggested here (p.44): "Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge." This seems to be a much more fitting definition.

Q5. Re materiality tests of the problem and the intended advancement.

Seeking to ensure "…that the credit is only available for solving problems that have not already been solved and which will expand the existing knowledge base" would be challenging, and beyond the current capabilities of at least some software businesses. Moreover, some would rather quickly read a blog or engage a consultant than seek evidence-based support through long-term partnerships – illustrated by the following quote: "The company is going through a lot of change right now and we will be (probably) enlisting some expert consultants to come in and steer us in the right direction with some decisions we need to make. We will need to move at pace, which does not usually work well with study associated with study and research.
We have recently complete[d] the Built for speed programme from Callaghan innovation which covered some of the same material. https://www.callaghaninnovation.govt.nz/innovation-skills/build-speed."

As I noted above, I would applaud a more stringent test of what businesses have been claiming as R&D, delivered via short-term and near-sighted engagements of consultants. In some cases this can lack independence, becomes boilerplate in nature, and can emphasise best (or even worse, common) practice BAU rather than being truly innovative: this is not "genuine R&D" as desired in the Ministers' Foreword. (Hence I also support the exclusion of dual purpose activities (Q9).)

What is unknown is the extent to which such tests would simply stop businesses even applying – or alternatively the extent to which they would now be encouraged to undertake genuine R&D.

Q8. Re social science research in business R&D.

Software development is a complex, creative and cognitive endeavour. As such, innovation in software can arise in the form of new (applications of) processes, products and services. In software-intensive businesses social science research can lead to significant innovations: studies of team composition, self-organisation, onboarding, motivation and leadership can and have generated new insights and new processes that result in substantive improvements in productivity and time-to-market; and these are more complex than 'efficiency surveys' that are more suited to manual processes. A/B testing of products and services across focus groups or user cohorts, assessed using social science methods, can similarly inform more rapid product and service innovation.

Q11. Re overheads as a percentage.

This is indeed a simple approach, and that is a major design advantage. In R&D contexts that rely primarily on human capital (e.g., software R&D) this would be appropriate, and desirable.

Q13. Re software R&D.

As noted above many smaller software-intensive businesses have (very) short horizons; start-ups in particular need capital and business mentoring, and are too highly geared to embrace R&D. (I am not saying that this is a good or bad thing; but it seems to be the current reality.) Such companies tend to not be receptive to opportunities for genuine R&D, being neither prepared to invest, nor to wait. In such circumstances short-term mentoring, investment and problem solving via consultancy (and likely focused on efficiency) seem more appropriate. This should not be called R&D, however, nor should it be supported as such. Software R&D should extend well beyond a single release cycle and/or a single team.

(As an aside I am surprised at the reported scale of software R&D as "accounting for approximately 40-50 percent of the value of grants in last three years". An independent analysis of these grants with respect to materiality tests of the problem and the advance in science/technology, and with respect to horizon, could be useful in further informing the design of this scheme. It is also not made clear who are the "other key stakeholders" that officials are talking with – as far as I know there has been no contact with s 9(2)(a), for instance.)

Q16. Re a cap on the amount that can be claimed.

Is there any intention to increase the incentive rate for higher levels of investment, up to a second cap, and/or higher rates to reward a sustained record of investment? Perhaps that is partly what is meant by "targeted support for R&D performers" in the Ministers' Foreword?

I would be happy to clarify any of my comments or to contribute to further discussions.

Yours sincerely,

s 9(2)(a)

s 9(2)(a)

From: Alan Peacock
To: RD Incentive
Subject: R&D and Export Incentives
Date: Friday, 27 April 2018 1:43:50 p.m.

Dear Committee Members,

I run a small firm in Rolleston, that prides itself in the design and manufacture of innovative products for the export aviation industry.

I have looked at what sort of assistance we could get previously to assist us, but found the exercise pointless. Who wants to be paid a percentage of the design cost for someone else to design the very products we can design in house? As a result, the products we build have been designed, manufactured and successfully marketed without any R & D assistance from the government.

That said, I believe our high taxation rates and the often negative work practices we have in New Zealand stifle the creativity of our nation and the sustainability of the catalyst SME's. As an example of that, one of our products is our Wheel Dolly (see www.flightgse.com)(attached above). This has potential to be used by all airlines globally, yet when we were invited to Auckland to present on this to a major New Zealand Airline, the very first contract paper handed to me, which I was told to sign, gifted them the I.P. on the product. Respectfully I asked them, what planet did they think I was from? They can get stuffed! That though, is one of the negative types of behaviour small companies in New Zealand can face from bigger New Zealand companies, and is exactly why we pitch our products to overseas. Another key factor affecting cash flow is that bigger firms are among the worst offenders for not paying on time.

Instead of R & D Tax credits then, I would put it to you that an alternative that could appeal to a wider catchment of companies, might be to have a two tier company taxation system with a lower rate of company tax on profits earned on exports. I believe such a system could provide a better incentive to create and develop new products for export markets, with less paperwork to go through, and every export sale benefiting the country.

We need to think smarter and reduce the compliance and time costs that count against effective use of our time. That's one of the key reasons I think a two tier taxation system could work. It would also spur on manufacturing, assist the farming sector and create more job vacancies. And best, as it only applies to firms actually exporting from New Zealand we aren't going to see millions spent on grants and incentives for a hand picked few Kiwi firms who then take it off shore - as has happened too regularly with Kiwi brands. - every one is treated the same under such a two tier system and all have the potential to benefit, if they decide to export.

I hope this will be received and considered in a positive light.

Kind regards

Alan Peacock
Director - Flight GSE Ltd

Beautiful accounting software

R&D tax incentive team
Ministry of Business, Innovation & Employment
PO Box 1473
Wellington 6140

By email: RDincentive@MBIE.govt.nz

1 June 2018

Dear Sir / Madam

Submission on Discussion Paper - Fuelling Innovation to Transform Our Economy

We are writing to submit on the discussion paper issued by the Government entitled *Fuelling Innovation to Transform our Economy: A discussion paper on a Research and Development Tax Incentive for New Zealand* ("the discussion paper"), along with the supplementary material issued entitled *Managing the Transition from Growth Grants to the R&D Tax Incentive.*

Xero is supportive of a tax R&D incentive scheme with broad application and we appreciate the opportunity to comment on the design of such a scheme. In our submission we provide comment on how these proposals impact Xero, as an organisation that invests heavily in software R&D. We have also sought to highlight issues that our customers (small and medium sized businesses, and the high growth start-up community in New Zealand) and other businesses we work with as part of our ecosystem would face.

About Xero

Founded in 2006 in New Zealand, Xero is one of the fastest growing software as a service companies globally, with over 1.38m subscribers worldwide. We lead the New Zealand, Australian, and United Kingdom cloud accounting markets, employing a team of more than 2,000 people in 20 offices around the world.

Our cloud-based accounting software connects people with the right numbers anytime, anywhere, on any device. We're proud to be helping over 1 million subscribers worldwide transform the way they do business.

Forbes identified Xero as the World's Most Innovative Growth Company in 2014 and 2015. Among other recent awards, Xero won Product of the Year at the British Accountancy Awards 2017 in the UK, and was rated by Canstar Blue as Australia's best accounting software three consecutive years from 2015-2017.

General comments

Xero believes that support for research and development (R&D) activity across all stages of company growth is important to help our economy flourish and to contribute to the wellbeing of all New Zealanders.

An OECD paper published by the Productivity Commission in 2014 estimated that up to 40% of New Zealand's productivity gap compared with the OECD average is the result of weak investment in knowledge-based assets such as innovation.[1] Further, New Zealand has one of the lowest spends on R&D as a percentage of GDP in the OECD (1.3% of GDP). It is clear that New Zealand needs to increase investment and spending in innovative R&D to grow a prosperous economy for all New Zealanders.

Innovative companies are employing and training the innovators, scientists and engineers of tomorrow, and they are vital to addressing challenges New Zealand faces such as growing GDP to support an aging population, environmental challenges and the future of work. Given the broader economic benefits of R&D spending beyond the owners of an innovative business and overall impacts to societal well-being, it is appropriate and necessary to depart from New Zealand's broad base, low rate approach to tax policy design to incentivise R&D activity.

In our view grant funding is the best way to incentivise and support R&D activity. This is primarily because grant funding provides businesses with a greater degree of certainty in terms of the Government funding they will receive. It is agreed up-front that the project or R&D activity qualifies for the relevant grant. Certainty is paramount in incentivizing and giving businesses the confidence to invest in R&D activity. In addition, the business gets up-front cash funding in a grant scheme. In the context of the Callaghan Growth Grants, amounts are paid quarterly based on the prior three months R&D spend. This is a lot timelier than an R&D tax credit which may not be finalised until up to 12 months after the relevant year end.

Under a tax credit scheme, benefits can only be realised by those in a tax paying position, and only in real time if they are able to confidently reduce provisional tax payments without risk of use of money interest costs. Providing less support for loss-making start-ups contradicts the broader policy goal of increasing the level of private sector R&D spend in New Zealand and will not support the growth of the knowledge economy. This could also impact employment in New Zealand, with the world bank predicting much of the future growth in employment will come from start-ups and small businesses.

That said, if the Government has settled on an R&D tax incentive with broad application (over a grant funding scheme) we believe this is still valuable to supporting R&D activity in New Zealand if the scheme is designed correctly. In terms of designing a successful R&D tax incentive scheme, from Xero's perspective it is of critical importance that the:

- definition of R&D is appropriately flexible to capture software development activity;
- credit is refundable to those businesses who are in losses if it is to properly support and incentivise R&D activity. If the credit is not refundable, businesses in a tax loss position will miss out on real-time cash funding that is critical to fund their ongoing R&D activities and keep New Zealanders employed and will be in a worse position than under the current Callaghan funding;
- impact of the proposals on small businesses is adequately considered in the design of the scheme. In this regard it is important that:
    - the scheme is designed with the flexibility and sustainability to support and encourage more R&D in the age of fast technological growth, particularly for high growth start-ups
    - the tax credit, in conjunction with other existing R&D programs in New Zealand (e.g. Callaghan innovation grants and the R&D loss cash out regime), will at least maintain the current level of support to businesses and ideally enhance this, across all stages of growth

[1] de Serres, Yashiro & Boulhol (2014), "An international perspective on New Zealand's productivity paradox", NZPC Working Paper 2014/01.

- there is an appropriate balance between compliance and application costs, and the level of the claim made, recognising the resource limitations of small and start-up businesses.

We expand on these issues further in our submission, as well as addressing some of the specific questions raised in the discussion paper. Xero would like to meet with Officials to discuss our comments.

Definition of R&D

The definition of R&D in the discussion document is too narrow and it is likely that it will only apply to a limited set of R&D activities, compared to those captured by the definition of R&D for Callaghan grant purposes. This is not consistent with the policy intent of the R&D tax credit incentive, which is to help businesses undertake a greater amount of R&D.

The discussion document anticipates that there may need to be variations or expansions to the definition of R&D (and specifically core activities) to adequately capture R&D software activities.

We believe that software has a vital role to play in the transformation of the New Zealand economy and the way businesses in New Zealand are run, which will ultimately lead to greater productivity and improved wellbeing outcomes for New Zealanders. Software development is key for New Zealand's growth, accounting for approximately 40-50% of the value of Callaghan grants in the last three years. Supporting a 'weightless economy' in New Zealand is key to our growth as a nation, and our ability to keep up to speed with global technological changes, and maintain our status as a digital leader.

In 2006 Xero hired its first employee. Xero now employees over 1,000 people in New Zealand.[2] Xero also has an ecosystem of over 600 app partners that integrate with our software platform. In the 2018 financial year, Xero's operating revenue was $406m. Xero is just one example of the significant contribution software development can make to the New Zealand economy and the lives of New Zealanders. Ensuring software development is included in the R&D definition will be paramount.

A refundable credit - an imperative for a successful R&D credit regime

Xero submits that it is absolutely critical that the R&D tax credit is refundable.

Access to cash funding for start-up and growth businesses to perform R&D activities is critical to the success and growth of the New Zealand economy. For high growth, innovative businesses, cash flow is a significant issue. Particularly in the startup context where access to funding may be limited. Compared with other countries, New Zealand has a very limited venture capital funding ecosystem to pick up funding of high tech growth start-ups.

Without a refundable credit, businesses that are R&D intensive but not yet profit generating will not be able to benefit from the tax credit in the immediate term. This will limit the ability for loss making companies to undertake R&D and directly affects how many people these organisations are able to employ and the speed at which they are able to grow and innovate.

In our view, this reduces the effectiveness of the R&D incentive scheme and will ultimately impact the Government's goal of increasing R&D spending to 2% of New Zealand's GDP. Tax credit schemes are generally unappealing to early stage innovators as it can take years to generate a profit and as such will not provide the necessary incentivisation of R&D activity. This also leads to economic distortions. Under a tax credit scheme large, profitable organisations, are most able to undertake R&D activity but

[2] Total employee numbers are over 2000 globally

they may not be the best to do so from a capability and economic efficiency perspective. This is detrimental to small businesses, which make up over 97% of business in New Zealand.

Xero has benefited from cash funding for its R&D activities through Callaghan Growth Grants and believes that real-time cash funding of R&D activities is critical to the success of start-up businesses, which is beneficial for the New Zealand economy. Xero wants to see other New Zealand businesses supported to follow in its footsteps through real-time funding and expertise and support from Callaghan innovation. This is critical for New Zealand to support and grow the knowledge economy and ensure that New Zealand remains competitive on the world stage.

We understand there is some concern that a refundable scheme presents a risk to the tax base. However, there are safeguards that can be embedded into the scheme to manage this risk. Suggestions include:

1. **Registration:** Requiring pre-registration of R&D claims for those businesses seeking a refundable R&D credit (similar to the process required for existing Callaghan grant applications). The benefit of such an approach is that it may offer some certainty to businesses about the eligibility of their expenditure / R&D projects. In addition, options should be considered to pay refunds arising from the tax credits more frequently than once a year after the income tax return is lodged. Callaghan grant funding is paid on a quarterly basis, in arrears. This regular inflow of cash helps businesses ensure that they have sufficient cash to fund their ongoing R&D activities.

2. **Tiered system:** Operating a tiered system similar to Australia's R&D tax concession - in Australia, claims made by businesses with a turnover of below a certain threshold are eligible for a refundable R&D offset. The benefit of this approach it is puts cash back into innovative start-up businesses. Larger, more established businesses may have achieved profitability (such that a refundable credit is not required) or may have greater access to funding channels. While this is an option that should be considered, we note that this will not be an ideal solution for all businesses, as there are larger organisations (like Xero) that incur tax losses due to high growth strategies, and have cash flow pressures.

Question 14 - Shareholder continuity

Question 14 of the discussion paper asks whether there are reasons why continuity rules should not apply to R&D tax credits. While a refundable regime is strongly preferred (and is in our view necessary), if the R&D incentive is not refundable it is imperative that R&D tax credits are not subject to traditional shareholder continuity requirements. If a shareholder continuity requirement is imposed the scheme will fail to provide an incentive to loss making start-ups to undertake further R&D activity. Many may not even make an R&D claim given the associated compliance costs. This is not sound policy.

New Zealand's existing shareholder continuity requirements for the carry-forward of losses and imputation credits are far from ideal and create economic distortions. The natural lifecycle of an innovative start up is well known. It starts with an idea. The creators pour all of their resources into developing this idea, incurring tax losses (sometimes significant) throughout this time. Rapid expansion can often exacerbate the creation of tax losses and cash flow strain. Usually, the start-up will need outside capital (and sometimes a broader skill set driving the business) to continue to develop and commercialise the idea. However, this puts at risk those accumulated tax losses. Additional capital will generally need to be equity funded because debt funding will not be available for a loss making business. Business owners must therefore choose between raising much needed capital to continue to fund growth and innovation and maintaining tax losses, which are often of significant value to the business. This disincentives entrepreneurial risk taking and innovation as businesses are not able to realise the value of tax losses.

These same issues will be present if a shareholder continuity requirement is imposed on the carry forward of excess R&D tax credits. If the credits are at risk of forfeiture it will not incentivise R&D spending. This weakens the effectiveness of the regime.

If a continuity test is considered necessary (which Xero believes it is not), this must have a same business test concession (noting this is a way that other countries have mitigated the issues that arise with traditional shareholder continuity tests). That said, any same business test would need to be appropriately flexible to allow for that fact that R&D businesses, particularly those in the technology space, will often evolve over time as they respond to developments in the industry, new knowledge / skills and customer demands.

Impact on small business

With small businesses making up 97% of business in New Zealand, consideration must be given to whether sufficient support for R&D activities is being provided for these types of businesses, noting they many will be high growth companies, in losses, focusing on R&D. Small businesses are the losers under the proposed R&D tax credit regime.

Xero interacts with over 300,000 businesses in New Zealand and we are keen to see them supported to invest in R&D and thrive, for the benefit of the NZ economy. We want to see them presented with the same opportunities that Xero has benefitted from. In particular, we would like to see:

1. Existing funding for Callaghan's operational activities to be maintained. While the grants provide much needed cash funding, the expertise that businesses can access via Callaghan is extremely valuable. Callaghan provides a comprehensive level of support for those who receive a Project or Growth Grant. This support is much needed for businesses in New Zealand and is invaluable to supporting innovation in the New Zealand economy and should be accessible to businesses irrespective of whether they access funding via Callaghan or the R&D tax credit regime.

2. Access to the remaining Callaghan grant schemes[3] simplified. The application process and ongoing compliance requirements can be a significant barrier to accessing these grants for a small business. While the Government does need to have comfort its money is being spent appropriately, the application process should be as simple as possible so our small businesses can get on with the business of innovating.

3. Consideration of how start-up businesses can be further supported in their R&D activities. Xero supports the retention of the Callaghan innovation grants that support earlier stage high growth start-ups. We also submit that further work should be done in the R&D space so that smaller businesses are supported on their R&D journey from inception. In particular, an assessment is required as to whether the $100,000 threshold is appropriate in a New Zealand context where we have a limited venture capital funding to fund R&D activities separately to Government. This is discussed further in our submission below.

Eligibility criteria

We think the Government's proposed eligibility criteria for the regime (as set out on page 14 of the discussion document) are broadly appropriate. Specifically, we agree that the regime should only apply to R&D carried out in New Zealand, noting that the 10% rule for overseas activities provides a degree of flexibility where it is not practical for all of the R&D for a particular project to be conducted in New Zealand.

[3] The Getting Started, Project and Student grants

Given taxpayers are partially funding this R&D activity, it is important that economic and social benefits to New Zealand are maximised through job creation, more productive and efficient businesses and an overall increase in the wellbeing of New Zealanders.

However, we submit that the requirement for the company claiming the R&D credit to "effectively own the results of the R&D" should be reconsidered. While not a concern for Xero specifically, if this criterion remains in place, global businesses headquartered overseas will not consider New Zealand for their R&D functions when compared to other potential jurisdictions. This may limit the effectiveness of the regime and in particular job creation as it will not attract foreign investment to New Zealand. R&D jobs are skilled and well paying. New Zealand needs to foster an environment that attracts such jobs. We note that many other countries' R&D regimes (such as Australia, the United Kingdom and Canada) do not require the local company to retain ownership of the results to qualify for the incentive. Our regime will not be competitive if this limitation remains.

Materiality test

Question 5 of the discussion paper asks what would the impact be if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science and technology. We submit that it is unnecessary to require the "problem" the R&D is seeking to resolve to be material and that this creates unnecessary uncertainty, which could result in less investment in R&D.

It should be assumed that businesses are economically rational actors. Businesses will not unduly fund projects with limited potential value. Capital is scarce and as such, businesses need to make trade-offs and will only fund those projects of most significance. While an R&D regime could create some distortion for investment decisions, by making potential R&D projects more attractive than they may otherwise be, this is the very purpose of the scheme. It is intended to incentivise additional R&D spending which might not otherwise occur.

A focus on the materiality of the problem also downplays potential flow on effects from new learning. To expand, knowledge gained from R&D activity trying to solve problem A, may ultimately be leveraged to solve problems B and C. If this was not known when the R&D project was first considered, this may be lost if we were to only focus on the materiality of problem A.

The concept of materiality is inherently uncertain; how do you determine what a material problem is? Is it a problem that must impact a certain percentage of the population or is it sufficient that a limited segment of the population as severely impacted? As acknowledged in the discussion paper at page 10: "[t]he scheme's definition of R&D must be clear and robust and as practical as possible. There should be very little ambiguity regarding what R&D activities are eligible." A focus on the materiality of the problem fails these criteria.

Xero submits that if a business has chosen to fund an R&D project, it can be assumed that the problem the business is trying to solve is material.

Dual purpose activities

Question 9 of the discussion paper asks taxpayers to consider the impact if dual purpose activities are excluded from the R&D incentive.

We understand the need to link the purpose of the spending to the R&D activity. However, Xero submits that the preferable approach would be a dominant purpose test like Australia has adopted, rather than require the expenditure to be incurred for the sole purpose of the R&D activity. A sole purpose test leaves no room for flexibility. Just because expenditure happens to be useful elsewhere in a business shouldn't automatically discount that expenditure from falling within the R&D incentive. A dominant

purpose test reflects that businesses will always look to maximise value from spending, while still requiring the expenditure to be sufficiently connected with the R&D activity.

In addition to a dominant purpose test, apportionment of expenditure must be allowable. For example, if a staff member spends 50% of their time on R&D activities, then 50% of their salary costs should be eligible expenditure. If there are particular categories of expenditure that are considered problematic they can be excluded via the proposed list of Ineligible expenditure.

Eligible expenditure

The discussion document notes that the R&D credit will only apply to expenditure that is "deductible or amortisable, under the Income Tax Act. We submit that the R&D credit should apply equally to capitalised R&D expenditure. The incentive regime should not distinguish between successful and unsuccessful R&D projects, or be seen to penalise companies that perform successful R&D such that the costs related to these activities are capitalized.

It is noted in the discussion document that the current Callaghan definition for the R&D is considered unsuitable and the proposed definition has been drawn more narrowly. In this context we believe it is appropriate for the incentive to apply to both capitalised and deductible costs. This is also consistent with the construction of foreign R&D tax incentives, for example in Australia.

Overall what the Government is trying to achieve is an overall increase in spending on the knowledge economy. Whether expenditure is deductible or has been capitalised is irrelevant to this enquiry - all that matters is: was the amount spent on eligible R&D activities.

Question 10 - Direct labour only?
Question 10 of the discussion paper asks what are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour costs.

The advantage of such an approach is that it drives simplicity in the regime. However, the key issue that arises is one of competitiveness. If New Zealand limits eligible expenditure to labour costs only, how does this compare to regimes around the world (noting that, as highlighted above, other countries do not place the same ownership restrictions on the resulting intellectual property or R&D findings and therefore multinationals are not limited when considering where to undertake their R&D activity)?

Many other jurisdictions allow a broader category of costs. If New Zealand is to limit eligible expenditure to labour costs only there should be consideration as to whether the rate of the incentive (at 12.5%) has been set at the right level.

Question 11 - Treatment of overhead costs

Question 11 asks what are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D expenditure.

To the extent that indirect costs are eligible for the R&D incentive, there are two options being considered for allocating overheads, being: (1) an actual apportionment; and (2) an attribution calculation where eligible overheads are calculated as a fixed percentage of direct labour costs.

Xero submits that neither option should be preferred over the other and that taxpayers should be able to choose depending on their particular circumstances. Those taxpayers who wish to take the

compliance cost light route can choose option (2). However, for those taxpayers where option (2) may not be appropriate[4] the option of an actual overhead apportionment calculations should be available.

Question 12 - Commercial consideration

Question 12 asks whether there are any reasons why expenditure related to R&D activities for which commercial consideration is received should be eligible for a tax incentive.

In some instances, this limitation wouldn't cause a concern because while the company receiving consideration will not be able to make an R&D claim, the company paying the consideration for the contract R&D should be able to make the claim instead. The difficulty arises when the payer is non-resident. There is an exception to the "at risk" rule in the Australian regime where contract R&D is undertaken for a foreign affiliate.[5] In these circumstances, an Australian company undertaking R&D for a foreign affiliate would still be entitled to make an R&D claim.

As highlighted earlier in our submission, in the context of multinational organisations who may choose to undertake R&D activities in New Zealand, the requirement for the resulting intellectual property or R&D results to be owned in New Zealand will serve as a significant barrier to those multinationals doing this.

Minimum threshold

While Xero appreciates that there is a policy need to have a minimum threshold on eligible expenditure, we are concerned that the threshold of $100,000 is set too high for the New Zealand environment because we have limited venture capital funding available to fund R&D activities separately to Government.

The proposed threshold of $100,000 may dis-incentivise start-ups and smaller businesses to invest in R&D. The current proposal only supports businesses that are at a later stage, are cash flow positive, or have secured funding from elsewhere.

In the discussion document, the $100,000 threshold is rationalised based on this being the approximate cost of one full time staff member undertaking R&D activity. The nature of small businesses is such that employees often need to serve multiple roles and it may be that a staff member is only spending part of their time on R&D activities and part serving other business functions. For this reason, Xero's view is that the $100,000 threshold is too high and will not support the needs of start-up and small businesses.

Based on a review of Callaghan funding alternatives (specifically the Getting Start Grant), Xero submits that the threshold should be decreased to $40,000 minimum spend on eligible expenditure. The rationale for this threshold is that small business and start-ups can receive up to $5,000 of funding for R&D under the Getting Started Grant. If R&D projects that require funding of more than $5,000 are to be funded by the R&D tax credit, setting the minimum threshold at $40,000 will provide for funding over this, assuming a 12.5% credit.

Consideration should also be given to how the R&D tax credit could interact with the R&D loss cash out regime that is available for small businesses. For example, a portion of the loss cash out (equal to the available R&D tax credit amount) could be carved out of the requirement to be repaid once the business is profitable. We would not support the removal of the loss cash out regime with the introduction of the R&D tax credit.

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[4] As noted in the discussion paper, option (2) may disadvantage those taxpayers who undertake "capital intensive" R&D.

[5] Subsection 355-405 of the Income Tax Assessment Act 1997 states that section 355-405 of the ITAA97 (being the "at risk" rule) does not apply to expenditure incurred on foreign owned R&D activities.

Maximum credit

Xero understands the need to place a limit on the maximum amount a business can claim each year under the ordinary process, given the significant revenue risk to the tax base.

Two options are being considered for those businesses that may spend above the proposed $120m cap, being: (1) have a Ministerial discretion to waive the cap for genuine claims; or (2) require pre-registration for large claims.

For the reasons highlighted in the discussion paper, Xero prefers the re-registration option because this provides taxpayers with the greatest level of certainty while still providing a safeguard for the tax base.

Transition from Growth Grants

For the reasons outlined earlier in our submission, Xero believes that it is critical that any changes to Government funding of R&D in New Zealand will at least maintain the current level of support to businesses and ideally enhance this. For this reason, Xero does not support a complete cessation of the Growth Grant scheme. If the Callaghan Growth Grant scheme does cease, Xero submits that it is critical that it is maintained for a period of time beyond the start of the R&D incentive. Current grant recipients have made investment and R&D programme decisions based on access to the grants and that should not be retrospectively removed. This is particularly important for those businesses in tax losses who rely on the Growth Grant to provide cash to partially fund their R&D activity.

It is our understanding that under the proposals the existing growth grant contracts will continue until 31 March 2020. We submit that all existing grant contracts due to expire prior to 31 March 2020 should be automatically extended to run to this date. This will minimise compliance costs for both businesses and Callaghan Innovation and is desirable from an efficiency perspective. This is because businesses will not need to apply for, and Callaghan will not need to review and process a significant number of new applications, for those looking to secure grant funding through to 31 March 2020.

Question one - impact of transitional arrangements

Question one of the *Managing the Transition from Growth Grants to the R&D Tax Incentive* document asks what impact will the proposed transition arrangement have on your business.

As discussed earlier in our submission, under the current construction of the R&D incentive, Xero will have less cash available to fund R&D activity as a result of the transition to the R&D incentive (Xero is currently a recipient of a Growth Grant), as Xero is currently in a tax loss position in New Zealand. The transition arrangements go some way to mitigate this.

The definition of R&D proposed for the R&D incentive is quite different to that used by Callaghan, which focuses on the application of the New Zealand Equivalent to International Accounting Standard 38 (NZ IAS 38). In terms of internal reporting mechanisms, these will need to change to reflect the new definition of R&D and as part of this there will need to be an internal education as to what will constitute eligible expenditure in the context of the R&D incentive. Again, a transitional period is appropriate in this context.

Next steps

We would be happy to discuss further with Officials ways we believe the Government could support and foster small innovative businesses.

Once again, thank you for the opportunity to make this submission. Xero wants to work with officials on the development of these proposals, particularly with respect the impact on small business, software

companies and companies in losses. If you have any questions regarding the submission, please contact s 9(2)(a) in the first instance.

Yours sincerely,

s 9(2)(a)

s 9(2)(a)

NEW ZEALAND
GAME DEVELOPERS
ASSOCIATION

NZ Game Developers Association Submission on R&D Tax Incentives

1 June 2018

About NZ's Interactive Entertainment Software Industry

The New Zealand Game Developers Association Incorporated is an incorporated not-for-profit industry association founded in 2001. We represent New Zealand creators of interactive entertainment software and promote the business, craft and art of creating interactive content, including educational and serious games as well as those for entertainment.

We are New Zealand's fastest-growing tech industry. The interactive entertainment industry was worth $524m last year, of which $99.9m was export revenue from development of new software products.

Our creative and economic growth is largely due to being early adopters of new technologies, combining them with original content and then taking advantage of digital disruption to sell them digitally to consumers worldwide.

We frequently employ technology in innovative ways, for instance, artificial intelligence for simulations, real-time graphics processing, real-time physic simulations, parallel computing, predictive analytics, big data, low latency real-time networking, virtual economies, procedural content creation, software development tools and adopting new platforms such as virtual reality, augmented reality and mixed reality.

We also develop design-led creative IP, where the designs, creative content and user interfaces enabled by software create value. The rights to this creative content are also a form of IP that can be licensed, earn royalties and scale profitably, just like protected scientific discoveries.

Q2 How well does this definition apply to business R&D carried out in New Zealand?

Overall, we are concerned that the proposed scheme and definition potentially exclude or restrict software R&D, design-led innovation and early-stage companies. These forms of innovation are critical to New Zealand's prosperity in an increasingly digital economy.

The proposed definition is overly restrictive with its focus on "scientific or technological uncertainty" and reliance on "scientific method."

Design-led innovation and design-thinking methodologies are modern best practices for managing innovation, especially in software R&D. They are descendants of scientific method, but adapted and tested for the digital economy. They are a key creator of value in a modern, diversified economy.

While design-thinking methodology is aligned with the scientific method, we recommended it be explicitly addressed in the legislation to avoid confusion. Many people may interpret 'scientific method' to only apply to traditional science domains rather than a methodology that can be applied anywhere.

It is important that the legislation includes at least one example of software development when defining the technical terms.

As the Discussion Document states, 40-50%% of existing Callaghan Innovation grants are for software businesses. Due to the lack of detail in the discussion document about software R&D, we encourage the government to consult further and widely with software firms – especially smaller ones who may also be innovation-rich.

Q3 Does this definition exclude R&D that you think should be eligible, please illustrate with examples.

The "scientific or technical uncertainty" test needs to be applied in the context of industry application and problem being solved. In our case, we sell novel software products to consumers for entertainment. Design-led innovation and originality/novelty is how we create much of this consumer value and this process involve creating hypotheses, testing designs and conducting user research.

With a consumer-market business model, we frequently undertake experimental development work to create new products and services. These are often novel designs that also require technical innovation.

Clearly technical research in our industry can include artificial intelligence for simulations, real-time graphics processing, real-time physic simulations, parallel computing, predictive analytics, big data, low latency real-time networking, virtual economies, procedural content creation, software development tools and adopting new platforms such as virtual reality, augmented reality and mixed reality.

However, design innovation is also a core part of our product, process and service R&D. We believe that fundamental design work, that seeks to create original products, should be considered eligible R&D. In many projects, especially software, the majority of a project's uncertainty comes from fundamental design uncertainty more than technical uncertainty. These activities would have the same, if not greater, economic benefits to NZ as technical uncertainty.

Q6. How well does this definition (of support activities) apply to business R&D carried out in New Zealand?

The definition of support activities is suitable and workable. A valid scientific method test or a design-thinking user test of research is often not possible without these support activities' contribution.

Q7 Are there any reasons why the exclusions should not apply to support as well as core activities? Please describe.

Many of the proposed blanket exclusions for support activities are too prescriptive and out of step with current innovation best practices.

In particular, some of the proposed exclusions seem contrary to modern R&D best practices such as agile development, design thinking, co-design and customer-centred design. These best practices are widely adopted, including by many MBIE-funded research projects and current R&D Growth Grant recipients.

A fundamental principle of these methodologies is that user insights should be incorporated as early in the R&D process as possible. This results in more cost-efficient and more effective research. Early-stage insights are not cosmetic and may change the direction of research and the technology options investigated. These processes are used at the early stages of R&D such as ideation, problem identification and technology identification not just during late-stage product development.

For example, the following activities can be a valid support activity during early-stage R&D processes, especially in software R&D:

- market research, market testing (but not sales promotion)
- quality control (but not routine testing)
- the making of stylistic changes to materials, products, devices, processes or services (but not cosmetic changes)
- creating content that is manipulated by the researched software

(In fact, design-thinking may view these activities as core to innovative value creation and technical research as a support activity.)

With design-led innovation "stylistic changes" such as how information is structured, ordered and presented to users may be the fundamental innovation and core IP. Consider accounting software like Xero, for instance. This is more fundamental than cosmetic changes. The impact on user behaviour and other results can be measured using software data analytics, for example.

Q13 of the Discussion Paper suggests that "special treatment for some activities, such as testing and internal software development, is also being considered". We strongly encourage this. These are core software R&D activities.

Q8 Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?

The 'serious games' sector is one such area. These are software products that intend to have social good outcomes such as education, healthcare or pro-social behaviour.

MBIE has funded several projects of this nature and an increasing number of commercial businesses (especially 'social enterprises') are as well.

For example, the SPARX mental health e-therapy tool developed by University of Auckland Medical School is also being commercialised by UniServices, the University's commercialisation arm. A 2012 study published in leading journal the British Medical Journal found use of SPARX resulted in a 'clinically significant' reduction in depression, anxiety and an improvement in quality of life. A follow-up research project, HABITS, has received MBIE National Science Challenge funding. There are several commercial positive mental health apps in development, such as ThinkLadder which is being commercialised at The Icehouse's accelerator programme.

The US Food and Drug Administration has recently developed guidelines for 'digital medicines'. Following recent positive clinical trials, Boston-based Akili Interactive Labs plans to file the world's first digital medicine for FDA clearance - a novel treatment for children and adolescents with ADHD called AKL-T01.

In these cases, the design-thinking and interaction between humans and software is the key activity that creates commercial, social or wellbeing value.

This is increasingly the case in digital R&D, where even a novel user interface or improved process can create considerable value. In the interactive gaming sector, the most profitable new market segment this year is for 'Battle Royale' 100-person multi-player games. While this was a significant technical achievement, the design innovation of a shrinking play area that gradually concentrates the dispersed action was the element that created value. One of these games Fortnite, currently 'the most popular game in the world', earned USD$296m in April 2018 alone.

Q10 What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?

For software development, the majority of our R&D expenditure is salary and wages of employees and independent contractors. Limiting expenditure to R&D labour costs is indeed simple, easy to administer and aligned with how software and creative industries work.

Other common R&D expenses are for computer hardware and services. However, during the R&D phases these are often not a major expense, and typically only scale once the business does.

Q13 What variations or extensions to the definition of core activities are required to ensure it adequately captures R&D software activities?

Software testing, both technical and user-testing, is a critical part of software R&D. It should be treated specially.

For instance, a valid product test (using the scientific method) may not be possible until technical errors are resolved. User-testing early in the research process informs the technical choices and solutions investigated during the project. For instance, user requirements for real-time or networked usage would require a fundamentally different technical platform.

Design-led innovation during the development phase is also critical. As discussed previously, this is often not cosmetic but is fundamental to the improved process or service.

Usability research should be a core activity, as it happens in tandem with early-stage software development and prototyping.

We encourage the government to consult widely with the software development industry on this point.

Q15 Is the minimum threshold set at the right level? If 'no', please provide further details.

To support 'digital SMEs' early revenue startup companies we believe there should be no minimum threshold.

While we appreciate the government's desire to increase R&D undertaken by larger companies, support for smart small firms can be achieved innovatively and without significant additional cost.

To avoid disproportionate administration costs, reporting on R&D activity or claiming tax credits should not be compulsory. Firms can opt-in to claiming the tax incentive if it is beneficial to them. Q22 of the Discussion Document suggests submitting incentive claims via third-party software such as Xero or MYOB. Doing so is not a significant additional cost for firms who already use such software.

Setting the threshold at $100,000 to filter out claims that are not genuine is biased against innovative smaller or early-stage firms. In a digital economy and with innovative entrepreneurs, size is not a valid measure of R&D capability. This threshold favours larger established firms who are more likely to be improving existing processes rather than creating completely new products or markets.

Commentary on New Zealand's innovation ecosystem has observed a 'valley of death' stage for companies moving from being a pre-revenue startup to becoming a growth company. They may well have over $100,000 of R&D expenditure and less than $100,000 profit. For these firms the R&D incentive on their initial profits can make a significant difference, even if it is only $12,500.

Extending support to R&D-intensive businesses that are in tax loss should also be considered.

Q22 What opportunities are there for customers to submit R&D Tax Incentive claims via third party software?

Many software R&D companies already use third-party software such as Xero and MYOB and this would be a low administration cost way for firms to claim tax incentives.

Submission by

Employers and Manufacturers Association (Northern) Inc (EMA)

On the

Discussion paper on a Research and Development Tax Incentive for New Zealand

Submitted 1st June 2018

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About the EMA

The EMA has a membership of more than 4,000 businesses in the Upper North Island employing around 350,000 New Zealanders.

The EMA advocates on behalf of its members to bring change in areas which can make a difference to their day-to-day operations, such as resource management, infrastructure development, employment law, education for workplace skills and the exporting environment.

We have a solid reputation as a trusted and respected voice of business in New Zealand, and our presence makes a difference.

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Introduction: the value of R&D incentives

The Employers and Manufacturers Association welcomes the opportunity to submit on the Government's discussion paper on a Research and Development Incentive for New Zealand.

Research and Development (R&D) Incentives are a valuable Government incentive created to reward companies trying to achieve a technically challenging product or process.

The goal should be to encourage future R&D spending, benefitting industry and the New Zealand economy.

However, more companies could qualify if they understood the process. For example, they need to know they do not need to be in laboratory coats undertaking cutting-edge research to qualify for the incentive payment.

R&D covers two activities:
(1) Basic research, which is experimental or theoretical work undertaken primarily to acquire new knowledge of the foundation of phenomena and observable facts; and
(2) Applied research, which is undertaken in order to acquire new knowledge and experimental development, which draws on existing knowledge. It is directed at producing new materials, products or devices, or installing new processes and services or improving those already produced.

It is important that incentives are designed in such a way that they support and foster innovation, with an application process that is easy for companies. There are companies that have attempted to claim R&D grants in the past, only to be met with a long, complicated process with limited results. This deters many businesses from trying again.

Manufacturers are the big R&D spenders, according to the 2018 report "Beyond Commodities: Manufacturing into the Future" from the Ministry of Business, Innovation and Employment (MBIE). Manufacturing firms are twice as likely to invest in R&D as the average New Zealand firm is, and spent $671 million on R&D in 2016.

Manufacturing accounted for 42 per cent of New Zealand's business expenditure on research and development in 2016. This spending has increased 5.4 per cent, year on year, since 2008, driven by spending on machinery and equipment.

The manufacturing sub-sectors of Chemicals and Refining, Plastics and Rubber, Food and Beverage and Machinery and Equipment stand out as the areas where firms undertake the highest percentage of both innovation and R&D. Innovation can occur across processes, design and marketing, as well as products per se.

However, the proposed change to tax incentives should encourage other sectors to become involved in R&D.

Beyond manufacturing
One sector that could benefit from R&D incentives is "construction and infrastructure".

Most construction companies would never consider R&D grants. They are put off by the time-consuming nature of applications and the perception that R&D is only involved in other sectors.

Yet tax incentives should be designed to encourage innovation across every sector, not just manufacturing.

Innovation in “construction and infrastructure” can include anything from developing new techniques to enhancing safety processes. As these activities are usually undertaken by a range of company departments as a matter of course, it takes a certain expertise to define them as “R&D” items of expenditure.

The services sector also undertakes R&D activities. In banking and insurance, for example, is the development of risk policy for credit, or developing techniques to investigate consumer behaviour for the purpose of creating new types of bank accounts or insurance cover.

Wider economic considerations
A further consideration is that R&D can be affected by economic conditions. Small to medium enterprises (SMEs) may not be in a position to increase their R&D activity to any great degree during a boom in the economy: they will cut down spending on R&D and increase their production capacity. This will impact the Government goal of businesses spending 2 per cent of GDP on R&D over the next 10 years.

The EMA does not feel there would be a significant increase in expenditure if changes were not made to the tax incentives.

The proposed changes to the R&D system provide New Zealand with the opportunity to attract internationally mobile R&D work. As multinational companies go global with their R&D activities, new opportunities have opened up for New Zealand to attract R&D-intensive foreign investment.

The advantage of this is domestic companies take up R&D when foreign companies locate their R&D activities here. This also enables locally produced components to be incorporated in new products at their design stage.

Issues with the proposals

- The R&D incentive tax rate of 12.5 per cent from April 1, 2019, is too low and not competitive enough with other countries.
- Only the large companies, and a small number of them, were using the existing R&D Growth Grants.
- SMEs must be incentivised to do more: 12.5 per cent is not enough.
- The tax incentive system needs to be kept as simple as possible for business, compared to using grants. There must be a binding determination from IRD to reduce litigation and ambiguity.

Recommendations

The EMA supports the proposed Tax Incentive while maintaining Getting Started Grants, Project Grants and Student Grants with some modifications.

The key to implementing innovation grants and R&D tax incentives together, is careful planning. They are not mutually exclusive systems but their relationship can be complicated.

The advantage of tax incentives is they can help businesses grow without diluting their equity. Grants tend to be up-front funding for which businesses apply; and R&D tax incentives are a retrospective tax rebate that businesses claim after having begun their R&D.

The EMA is concerned the tax incentive is too low at 12.5 per cent and recommends increasing this to align with the amount in the Labour Government's 2008 tax incentives system which was 15% or Growth Grants (20%).

The EMA recommends the Government evaluate the system used in the United Kingdom, to involve more SMEs. The UK model has a different tax rate for large and small companies: allocating 15 per cent to large companies; and 20 per cent for SMEs.

Our specific recommendations follow:

1. **The Tax Incentive system and Inland Revenue need to be accessible and user-friendly.**

User-friendly information on the scheme will need to be provided and also accessible on the Callaghan Innovation website.

However, during the tax incentive or grants application process most companies will also contact someone, which requires an approved list of consultants, institutions and associations that can offer this advice. Accounting services will also play a big part in this role.

Tax incentives would fall into a financial year as determined by Inland Revenue. If this is the case, there should be some flexibility for companies that have different reporting periods.

Loss-making and cash-out provisions are also an issue with start-ups, and need considering in an R&D incentive system.

What role would Callaghan Innovation have in the process of approving R&D projects?

2. **Definition of R&D**

The EMA requires more clarity on the definition of R&D, while supporting the idea of creating new knowledge or creating new or improved materials, products, devices, processes or services and resolving scientific or technological uncertainty.

Transparency is required under the tax incentive scheme to identify who will determine that the R&D work carried out fits into the definition of R&D. The tax incentive is paid after completion of the work for the relevant financial year. In comparison, the grants system approves the project at the start and a company receives assurance that the project meets the R&D criteria.

There is a need for Inland Revenue to have access to expertise to determine what R&D is, under a definition provided in the Discussion Document.

Most countries have their own definitions for providing R&D assistance. For example, German tax law does not provide a specific definition for R&D. However, with reference to German commercial law, the term "research" is determined to be: the original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding.

The UK definition states it is necessary for the activities to meet the definition of R&D within its Department of Business, Innovation & Skills Guidelines derived from the OECD Frascati principle for defining R&D. Broadly, for a project to qualify as R&D, it has to be seeking an advance in

science or technology through resolution of scientific or technological uncertainty. All activities that can contribute to the resolution of scientific or technological uncertainty should be included.

The EMA supports the definition provided in the Discussion Document, which is: for the purpose of creating new knowledge or creating new or improved materials, products, devices, processes or services; and resolving scientific or technological uncertainty.

But it must be stipulated that not all R&D carried out by a company has to be successful, as long as the intent to succeed was there and the company meets the R&D guidelines.

The discussion paper acknowledges the increasing importance of software R&D to the New Zealand economy. There is further work being done on the definition for software.

However, software should be included in the definition in the following areas:

1. Creating new products, processes, software, services or devices.
2. Making appreciable improvements to existing products, processes, software, services or devices.
3. Duplicating an existing product, process, software, service or device that is technically challenging to achieve.

3. Exclusion of SOEs, Crown Research Institutes, DHBs and tertiary education organisations

One of the purposes of tax incentive schemes is to stimulate collaboration between companies and universities.

Academic research can help develop new ideas or enhance existing ones. Business can benefit commercially from relevant research into processes and technologies, while universities and colleges gain new sources of funding and researchers achieve a better understanding of industry needs.

Working in collaboration with universities helps SMEs build relationships with higher education institutions, to develop new products, services and processes.

The EMA has been involved with The University of Auckland schemes where qualified university staff go into an EMA member company to solve problems around products or processes. This has led to companies solving issues on product issues and applying for R&D grants.

The EMA supports business collaboration with tertiary institutions and the latters' inclusion in the tax incentive scheme when they are working in partnerships with companies.

4. Dual-purpose activities

The EMA can understand that in the past business-as-usual expenses have been mistakenly included as activities for R&D, in claims for tax incentives.

R&D incentives may be better targeted if non R&D activity was defined and excluded. However, companies could be required to provide documentary evidence of business-as-usual cost components of R&D activity.

5. R&D overseas

The EMA supports the flexibility to allow companies to carry out some R&D overseas, e.g., medical trials.

Consideration needs to be given to any research that is carried out overseas that may have tax benefits for the country involved. A number of companies need to carry out R&D overseas as part of their project, and provision needs to be made to allow those companies to claim a greater percentage of tax incentive in New Zealand.

6. Limiting R&D costs on expenditure

The discussion paper offers two approaches for determining eligible R&D expenditure: one based solely on direct R&D labour costs; and the other on a broader range of direct and indirect costs.

The EMA agrees that basing costs on labour only, makes the process easier for companies. This is easier to record and verify. Other costs such as consumables and materials, acquisition of plant and machinery and software licences should be compensated through depreciation losses.

7. R&D software

There needs to be established a framework for defining what "R&D software" is. R&D software should always be viewed as experimental and not just an extension of existing, business-as-usual software. Software developed as part of developing a new product or process would be R&D software.

Not all software is developmental.

8. Minimum amount spent on R&D

The EMA believes the proposed minimum spend of $100,000 on R&D to be eligible for a tax incentive is too high for SMEs. The minimum level should be $25,000 for smaller companies, to encourage to develop new products and processes.

9. Regulatory costs and obligations

When exporting, a number of companies as part of their R&D require products to be certified and meet regulatory requirements imposed by different countries. The EMA recommends that when these costs fall into R&D activity they be considered as part of the tax incentive system.

Thank you for your consideration.

s 9(2)(a)

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29 May 2018

R&D Tax Incentive Team
Ministry of Business, Innovation & Employment
P O Box 1473
Wellington 6140

By email: RDincentive@MBIE.govt.nz

R&D Tax Incentive Discussion Paper

The New Zealand Law Society (Law Society) welcomes the opportunity to comment on *Fuelling Innovation to Transform our Economy: A Government Discussion Document on a Research and Development Tax Incentive for New Zealand* (**discussion document**).

The Law Society's Intellectual Property Law Committee has considered the discussion document from the perspective of the practical application of R&D rules. The committee has not responded to a number of questions in the discussion document (Qs 5, 6, 9 – 12, 14 – 17 and 20 – 23, listed in Appendix A) that are outside the committee's remit and expertise. Responses to the remaining questions are set out below.

Question 1: *If SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions, and their subsidiaries are excluded from the tax incentive, what will the likely impact be on business R&D in New Zealand?*

R&D carried out by most of the organisations listed would usually be regarded as government R&D. The only effect on businesses would be if a business was not allowed to include R&D expenditure for R&D outsourced to any of these organisations – which does not appear to be the case.

Question 2: *How well does this definition apply to business R&D carried out in New Zealand?*

The definition of R&D referred to is:

> "(a) Core activities: those conducted using scientific methods that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services; and that are intended to advance science or technology through the resolution of scientific or technological uncertainty."
>
> OR
>
> "(b) Support activities: those that are wholly or mainly for the purpose of, required for, and integral to, the performing of the activities referred to in paragraph (a)."

The above definition covers research activities, but omits a lot of what would be called Development. This seems to be contrary to the ultimate objective of increasing innovation. The

phrase "using scientific methods"[1] could be construed in a narrow way to exclude applied research – the type of research one normally associates with business R&D. The scientific method is more strictly adhered to in conducting fundamental research, but fundamental research is more usually funded by governments through universities or government research agencies.

The discussion document states that "the proposed definition of R&D is based on international best practice, guided by the OECD's Frascati Manual …". The OECD Frascati Manual defines R&D as:

> "… creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humankind, culture and society – and to devise new applications of available knowledge."[2]

The definition proposed in the discussion document is narrower than the Frascati Manual definition because of its requirement of "using scientific methods".

However, we acknowledge that it is important for the government to adopt a definition of R&D that captures the particular work it wants to stimulate (perhaps by defining exclusions that identify non-deductible activities) rather than working back from what is generally considered to constitute "R&D".

Question 3: *Does this definition exclude R&D that you think should be eligible, please illustrate with examples.*

The definition, taken literally, would exclude almost all development work undertaken by businesses. Development work is what is done once the scientific method has established a scientific theory. For example, the scientific method was used to determine that gases were effective in enhancing the storage life of perishable products, such as apples. But it was development that enabled storage facilities that allowed for this theory to be applied at an industrial level. That development would only have been funded by a business after the gas hypothesis had been established. It is the reference to "the scientific method" in the definition that makes it solely "research" and excludes "development". Development is at the core of business-funded research.

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1 The Science Media Centre https://www.sciencemediacentre.co.nz/how-science-works-what-is-the-scientific-method/ defines the scientific method as having the following steps:

- An observation is made about something
- A logical hypothesis is formulated to explain the observation
- This hypothesis is used to make predictions
- These predictions are tested using experiments or more observations
- The hypothesis is adjusted if necessary. These steps are repeated until the hypothesis matches the experiments/observations closely.

Once the hypothesis has stood up to repeated testing, it is considered a scientific theory. A scientific theory explains a phenomenon or a set of phenomena, and can be used to make further hypotheses and predictions.

2 Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development http://www.oecd.org/sti/inno/frascati-manual.htm, at paragraph 2.5.

Question 4: *Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples?*

Yes, as explained in the answer to question 3.

Question 7: *Are there **any** reasons why the exclusions should not apply to support as well as core activities? Please describe.*

There is no reason why the exclusions should not apply to support as well as core activities: the support activities are an integral part of R&D. However, we suggest that the following exclusions should be reconsidered:

- *Research in social sciences, arts or humanities*

  Please refer to the answer to question 8.

- *Commercial, legal or administrative aspects of patenting, licensing or other activities*

  This exclusion should be clarified to ensure that it does not exclude searching of the patent databases to determine whether the intended research has already been done and resulted in an invention, and to identify what gaps there are or further problems to be solved.

- *Activities involved in complying with statutory requirements or standards*

  Such activities fall into the development part of the spectrum, but are an essential part of taking research into the marketplace. There should not be a blanket exclusion of such activities.

- *The reproduction of a commercial product or process by a physical examination of an existing system of from plans, blueprints, detailed specifications or publicly available information*

  Such reproduction is more commonly referred to as reverse engineering. If it is the first step in an R&D programme that results in a new and innovative product or process, it should be considered to be just that and not excluded. Businesses should not be required to start from scratch in every project. If the exclusion is intended to be comprehensive then it should also exclude decompiling of software as a first step in a software development R&D project.

- *Dual purpose activities*

  Please refer to the answer to question 9.

Question 8: *Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?*

While social science research has not traditionally been a part of business R&D in New Zealand, we expect that online businesses and social media develop and use algorithms that apply social science research, and suggest that MBIE seeks comment from those businesses.

Question 13: *What variations or extensions to the definition of core activities are required to ensure it adequately captures R & D software activities?*

The Law Society recommends that the definition of "core activities" should expressly include "software development".

Question 18: *What are your views on the proposed mechanisms to promote transparency and enhance evaluation?*

It would be helpful if the data could be considered in the context of productivity data from Statistics New Zealand to see if any change in productivity coincides with any increase in business R&D expenditure. (Presumably, the assumption behind this policy is that an increase in business R&D expenditure should result in an increase in productivity.) This would assist in ensuring that any future changes in R&D incentives are evidence-based.

In addition, we note that incentivising R&D spending is a proxy for incentivising innovation. Naturally, any review of the effects of a tax incentive policy (if implemented) should assess not only whether R&D spending has increased as a result of the policy, but also whether that increase (if any) results in an increase in innovation.

Question 19: *Are there any other risks that need to be managed? Please describe.*

Schemes of this nature are vulnerable to manipulation and fraud. Audits by IRD inspectors assisted by Callaghan Science trained inspectors would assist to prevent or reduce such practices.

We hope you find these comments helpful. If you have any questions or wish to discuss the comments, please contact me via the s 9(2)(a) .

Yours sincerely

s 9(2)(a)

Appendix A, attached

Appendix A – Discussion document questions not answered in this submission

Question 5: *What would the impact be on business R&D in New Zealand if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science or technology?*

Question 6: *How well does this definition apply to business R&D carried out in New Zealand?*

Question 9: *What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?*

Question 10: *What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?*

Question 11: *What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs? What would the appropriate percentage be?*

Question 12: *Are there any reasons why expenditure related to R&D activities for which commercial consideration is received should be eligible for a tax incentive? Please describe.*

Question 14: *Are there reasons why continuity rules should not apply to tax credits? Please describe.*

Question 15: *Is the minimum threshold set at the right level? If 'no', please provide further details.*

Question 16: *How important is a cap or a mechanism to go beyond the cap? Please provide further details.*

Question 17: *What features of a Ministerial discretion or pre-registration would make them most effective?*

Question 20: *What are the risks with making external advisors liable in this way?*

Question 21: *What is the right level of information required to support a claim?*

Question 22: *What opportunities are there for customers to submit R & D Tax Incentive claims via third party software?*

Question 23: *What integrity measures do you think Inland Revenue should use?*

From: s 9(2)(a)
To: RD Incentive
Subject: Callaghan submission
Date: Tuesday, 29 May 2018 8:49:10 a.m.

To whom it may concern:

We would like to express our feedback on the proposed cuts to innovation funding in New Zealand.

The current scheme at Callaghan, particularly grants aimed at smaller start up business, designed to support their cash flow investment in R&D, have encouraged an incredible technology industry in New Zealand.

The proposed scheme, with only tax credits, only advantages large established companies and does not encourage innovation where this country needs it most.

It is disappointing to see the incredible success of the past years undone and we would encourage the Government to reconsider this plan following industry consultation.

--

s 9(2)(a)
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@Dexibit #musedata

From: s 9(2)
To: RD Incentive
Subject: Tax Credits Do Not Support Early Stage Business R&D
Date: Tuesday, 29 May 2018 8:43:15 a.m.

To Whom It May Concern,

Unless I have mis-understood, a tax credit does not provide any tangible benefit to a business until it becomes profitable and has tax to pay.

During the early stage of a business life cycle significant losses are often incurred while the business invests heavily, in relation to revenues, in its development. In my experience, this is the time when R&D support it most critical and can be the difference between being able to invest to get the business to get it off the ground, or not. By the time a business is profitable, which can take many years, while the need for R&D support remains, in my experience it is less acute.

If there is to be no R&D support for businesses that are not yet profitable, then we will be failing to support many of our most innovative businesses, in favour of those that are either established incumbents or who have chosen a path of lower investment to achieve profit.

I favour a mechanism that allows early stage businesses to access development support. The support should be tiered with the investment made by the business, with very low administrative hurdles to access low levels of support. These early stage businesses do not often have the time, resources or skills to satisfy complex administrative requirements, even though they are exactly the type business or idea targeted by the scheme.

Best regards

s 9(2)(a)
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ALPHA GROUP HOLDINGS LTD
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Date: 25th May, 2018

To: R&D Tax Incentive Review Team
Ministry of Business Innovation and Employment
PO Box 1473, Wellington 6140

Feedbacks on: Proposed transition arrangements

From: Alpha Group Holdings Limited (Gross Grant benefactor)
8 Ha Crescent, Wiri, Auckland.
Contact persons: s 9(2)(a)

Dear R & D Tax Incentive Review team,

We have chosen the followings topics that are relevant to our company and given the feedbacks in red.

1) What impact will the proposed transition arrangements have on your business? For example, your cash-flow or internal reporting mechanisms? Please describe

The biggest impact would be the receiving of the cash incentives. A company such as ours generally wouldn't get their financial reports and tax return completed at least six months after the balance date. The IRD also takes some time to assess the tax return and grant any tax rebate. This means at least, fifteen to sixteen months for the rebates on the R & D spends in the first quarter to be paid. This compares to the current arrangement could create cash-flow issue for the company.

2) What do you believe to be a necessary transitional period? Please explain the reasons why this is necessary for your business?

If the existing gross grant benefactor could be allow to run its scheme to its scheduled termination date would help resolve this cash-flow discrepancy.

3) What impact will the proposed transition arrangements have on your R&D programme over the next few years?

We would certainly carry on and complete the various R & D projects we started but may need to reconsider starting any new one. The rebate difference between the proposed tax incentive and that of the project grant (unchanged) is 27.5%. This is a huge difference for a medium sized company, like ours.

4) Please provide any other comments about the proposed transition arrangements.

The current grant is for 20% of qualified R & D spend and the proposed R & D tax incentive is for 12.5%. The difference of 7.5% plus the delay in getting the rebates after the actual spends are a significant factor for a medium size company to opt out of certain R & D spends. In another word these would deter spending on some marginal R & D projects.

For businesses in tax loss, what impact will the proposed temporary grant have on your business during the transition process? Please describe.

We are not a loss making company.

R&D would be defined as:
(a) Core activities: those conducted using scientific methods that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services; and that are intended to advance science or technology through the resolution of scientific or technological uncertainty.
OR
(b) Support activities: those that are wholly or mainly for the purpose of, required for, and integral to, the performing of the activities referred to in paragraph (a)

The definition recognises a spectrum of R&D activity from basic research, to experimental development work to create new or improved materials, products, devices, processes, or services.

5) How well does this definition apply to business R&D carried out in New Zealand?

Good

6) Does this definition exclude R&D that you think should be eligible, please illustrate with examples.

If some of the animal trials and clinical tests could be conducted by overseas qualified organisations and the costs qualify for R & D expenses would greatly reduce the over-all R & D costs in NZ.

Support activities
Supporting activities (covered by paragraph b of the proposed definition) are activities that are part of the R&D project but are not conducted using a scientific method or do not advance science or technology themselves, for example, literature searches.

7) How well does this definition apply to business R&D carried out in New Zealand?

Quite well! In order not to duplicate R & D works and also to find out what others had done the literature searches are a necessary step prior to committing to any R & D project.

The following activities should be excluded from paragraph (a) of the definition, but could qualify as support activities under paragraph (b):
¡ prospecting, exploring or drilling for minerals, petroleum, natural gas or geothermal reserves
¡ research in social sciences, arts or humanities
¡ market research, market testing, market development or sales promotion (including consumer surveys)
¡ quality control or routine testing of materials, products, devices, processes or services
¡ the making of cosmetic or stylistic changes to materials, products, devices, processes or services
¡ routine collection of information
¡ commercial, legal and administrative aspects of patenting, licensing or other activities
¡ activities involved in complying with statutory requirements or standards

¡ management studies or efficiency surveys
¡ the reproduction of a commercial product or process by a physical examination of an existing system or from plans, blueprints, detailed specifications or publicly available information
¡ pre-production activities, such as demonstration of commercial viability, tooling-up and trial runs
¡ dual purpose activities.

8) Are there any reasons why the exclusions should not apply to support as well as core activities.

No

9) What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive.

Very serious! For example: a lab is setup in the bio-security confined zone. It services the normal product testing as well as for R & D on confined restricted bio-actives species. It would be impractical and costly to set-up two different labs.

10) Up to 10 percent of the eligible expenditure on an R&D project can be for overseas R&D costs if:
¡ the overseas work is part of an R&D project based in New Zealand; and
¡ at least half the R&D expenditure within a project is for activities carried out in New Zealand.

Good! It should include (for new products) cost to investigate and to meet local (export destination) product requirements, including staff and professional costs required to achieve these.

Approved Research Provider – including public and private entities
For a person to become a listed research provider they would have to apply to the Commissioner of Inland Revenue and meet the following requirements:
¡ capability (including appropriate qualifications and certifications) to perform R&D activities on behalf of other persons
¡ has in New Zealand the facilities needed to perform the R&D activities
¡ charges market prices for performing the R&D activities
¡ available to perform R&D activities on behalf of persons not associated with them.
The names of listed research providers would be published so businesses can see who they are.

11) How about a joint R & D set-up with a qualified R & D provider to carry out R & D for the company? Does it need to get pre-approval?

s 9(2)(a)
[redacted]
Alpha Group Holdings Ltd

Submission for Fuelling Innovation to Transform Our Economy

The Engaged Social Science Network | Hui Rangahau Tahi (eSocSci) secretariat has considered the proposed *Fuelling Innovation to Transform Our Economy* tax incentive scheme and submit the following comments and call for further development of the proposal to take more full account of the role of social science and humanities in R&D and the role SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions, and their subsidiaries in the development of R&D.

Question 1: If SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions,(SOEs etc) and their subsidiaries are excluded from the tax incentive, what will the likely impact be on business R&D in New Zealand?

While we recognise there is an urgent need to incentivise R&D in the firms sector in NZ – and that this is long overdue – we don't feel this should be an 'either / or' solution.

The impact on for-profit firms (businesses) is a likely

a) 'jostling' between existing collaborators of where accountability, prestige, kudos, and profit will likely lie. Those excluded from the tax incentive may feel disincentivised to collaborate in some of the ways they already do and reluctant to pursue new options that demonstrably benefit one sector over another.
b) A 'cultural shift' whereby existing communities of practice may feel compromised by a perception of 'unfair' allocation of resource advantage and non-firm partners may be disinclined to continue their collaboration – to the detriment of firms.
c) Job creation targets will not be met unless they are remarkably low, as small to medium firms are not in a strong position to hire staff in the early startup phase. SOEs etc, on the other hand, are already established and with these kinds of tax incentives could hire more research scientists, technicians and support staff. According to the Parliamentary report[1] on small businesses, which seem to be the target demographic for this incentive, an average of 8.5% of small businesses last year were undertaking R&D. Firms that are R&D intensive tend to spend their early years in a tax loss position, so offering an incentive will not actually allow for startups to hire more staff, but rather put them in a position where they will be in less debt.[2]

We believe that making a specific distinction between 'business R&D' and R&D in other (unspecified) circumstances is curious given that many SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions already work in partnership with businesses to implement product design solutions and or produce innovative design ideas that are precursors to the products themselves and without which the products could not exist. It feels a little like offering to incentivise the development of a new truck to carry water carrier without determining the nature and quality of the water to be carried, or indeed, whether there is any demand for water trucks at all. While it is plausible that the assumption is being made that SOEs etc, have access to research funding elsewhere (through various MBIE contestable funds and NSCs in particular) there are many kinds of innovation that can be developed outside these high compliance cost contexts.

[1] (https://www.beehive.govt.nz/sites/default/files/2017-12/Small%20Business%20-%20Annex%203%20Small%20Business%20Factsheet.pdf),
[2] (https://simmondsstewart.com/guides/startup-company-guide/).

It would be useful if research were to be commissioned to determine how and in what ways non-business organisations contribute directly to R&D in the 'product innovation' space as well as to determine the extent to which these non-firm sectors contribute to the development of the 'ideas innovation' space.

Question 2: How well does this definition apply to business R&D carried out in New Zealand?
The definition draws on some standard ambiguities in New Zealand language use and without defining them clearly the scheme runs the risk of not only perpetuating ambiguities but also creating contradictions in the policy intent. In particular, In New Zealand (although not elsewhere in the world except perhaps Australia) we systematically exclude 'social science' from the 'idea of science'; valorise the concept of the 'scientific method' (when it is only one of a number of possible approaches to knowledge-based questions); and tend to see 'products' only as 'things' (or widgets) rather than products also as 'ideas'. So that by these ambiguous and narrow definitions this tax incentive is conceiving of Business R&D as 'engineered' or technical products only.

For example:
The statement "Core activities: those conducted using scientific methods that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services" openly includes social science activities (a core science by any definition) and 'services' (which do not otherwise feature in the more 'widget making' focus of this scheme.

The definition as it stands whitewashes the R&D landscape and denies full space for mātauranga Māori, or any other indigenous knowledges at all, despite the Frascati Manual's definition of experimental development as including the creation and implementation of 'new methodologies'.

Question 3: Does this definition exclude R&D that you think should be eligible, please illustrate with examples.
This definition currently includes the possibility of incentives for the development of, say, an innovative social science model for the organisation of service delivery (the kinds of models currently being developed to visualise systems thinking in organisational change, for example) but such innovation is explicitly excluded under the 'research in social sciences, arts or humanities' exclusion (p17).

By specifying that the tax incentive is not for R&D in the fields of social science or humanities, the current iteration of the incentive excludes any attempt at using indigenous research methods that are being developed, thus failing the Frascati Manual definition of Research and Development 2.2:2.32-2.33 which encourages research bodies to look at "new ways of doing things" as well as creating new things with established methods. As the development of new indigenous methodologies generally falls under the domain of mātauranga Māori or the social sciences, excluding these is problematic.

Question 4: Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples?

Yes, relying only on the so-called Victorian-age 'scientific method' actively excludes researchers, research and innovation that is managed through design thinking, developmental

evaluation approaches, systems science or kaupapa Maori science. Reliance on the 'scientific method' alone is reductionist and outmoded.

Question 5: What would the impact be on business R&D in New Zealand if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science or technology?

If the materiality tests envisaged here are audits on high expenditure, then this could be useful accountability. In the absence of any other evaluative criteria suggested as part of the eligibility criteria this could be one way of ensuring some greater financial transparency. However, it begs the question of whether it is a 'materiality test' or an 'evaluative framework' that should be required. Asking businesses to wrap their proposal in an evaluative framework could ensure that the process from innovation to marketing is more carefully considered.

Question 7: Are there any reasons why the exclusions should not apply to support as well as core activities? Please describe.

By relying on the Frascati model, the tax incentive scheme has opted for a very conservative approach. Our view is that what is required in NZ is an innovative science infrastructure that enables R&D to develop. The infrastructure needs to support 'making stuff' as well as thinking about the kind of stuff that might need to be made and how to bring collaborations together to make both these things happen. This incentive scheme, overall, is antithetical to the infrastructure approach and specifically excluding 'support' services is extremely short-sighted.

Consultation
By specifying that the tax incentive is not for market research there is no room for discussion of whether or not the project in question has, for example, any real benefit for tangata whenua or is even applicable to Māori at all. Whether this clause has been put in place on the assumption that the market research has already been done and been found to be useful is unclear and needs to be defined.

Ethics
Specifying that the incentive excludes humanities research denies the opportunity to explore more ethical ways of performing research as the philosophy of ethics is a property of the Humanities. The spheres of STEM research have demonstrated a consistent gender bias[3] and challenging these kinds of biases requires new ethical orientations.

Question 8: Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?
As economics is a social science, it is difficult to imagine business R&D anywhere without social science. Psychology, sociology, and anthropology also play roles in business R&D as the creation, maintenance, improvement, and expansion of a business is driven by the humans that operate it, and understanding human behaviour is vital to any firm's success. While it is difficult to argue that social science plays a 'core' role (according the definitions employed in

[3] Robnett, R (2016) Gender Bias in STEM Fields https://doi.org/10.1177/0361684315596162

this document) they certainly play a very significant role in understanding what is missing from the 'science infrastructure' in New Zealand. Some specific examples of social science research being useful for business R&D are:

- Entrepreneurship and Maori Cultural Values: Using 'Whanaungatanga' to Understanding Maori Business New Zealand *Journal of Applied Business Research Volume 7 Issue 1 (2009)* (Sociology, anthropology, economics)
- Report on the incorporation of traditional values/tikanga into contemporary Māori business organisation and process. *Landcare Research.* (Sociology, anthropology)
- "Managing diversity" meets Aotearoa/New Zealand. *Personnel Review* (anthropology, sociology, psychology)
- Employment and parental leave around the time of birth: evidence from *Growing Up in New Zealand* (Policy paper)(Sociology)
- I hardly see my baby: challenges and highlights of being a New Zealand working mother of an infant. *Kōtuitui: New Zealand Journal of Social Sciences* (Psychology, anthropology, sociology)
- The U-Curve on trial: a longitudinal study of psychological and sociocultural adjustment during Cross-Cultural transition. *International Journal of Intercultural Relations* (Psychology, sociology)
- Halal Food in New Zealand Restaurants: An Exploratory Study. *Int. Journal of Economics and Management* (Economics, sociology)
- Evaluation of the environmental impacts of apple production using Life Cycle Assessment (LCA): Case study in New Zealand. *Agriculture, Ecosystems & Environment* (Economics

<u>Some further comments:</u>

As an organisation that supports the research work of social scientists, eSocSci, we are interested in the claims made in relation to job creation, mātauranga Māori, inclusivity and ethical considerations as well as the role of the social sciences and humanities in the R&D space more generally and believe these need to be differently thought through in relation to how to use a tax incentive scheme to produce a collaborative innovation infrastructure. In its current form, we believe the incentive scheme is too narrowly focused.

We agree that it is a good idea for New Zealand to have a research and development tax incentive scheme and regard it as rather unusual that we do not have one already. The 2015 DeLoitte Global Study of R&D Incentives[4] lists countries having anything from 40%-300% tax deductions in multiple forms (super, tax credits, social security contributions, and so on.) It has been argued that the proposed New Zealand 12.5 percent with a cap of $15 million cannot be competitive in this space[5] for a range of reasons.

1. 12.5 percent is too small an amount to benefit small start-ups, which along with the larger international firms seem to be the target for this particular venture.
2. New Zealand's relative lack of international economic competitiveness is also a reason that the R&D work that is started here may not stay here. We do not have the well-funded research infrastructure and staff that overseas firms do. International firms buying the IP from the next 'Great Kiwi Startup' will shift the R&D and consequent jobs to their home facilities. While many startups do stay here because New Zealand is a wonderful country to live in and raise a family, this does not improve job-creation levels in the short term.

[4] (https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/tax/deloitte-nl-tax-global-survey-r-and-d-incentives-2015.pdf),

[5] (https://www.nbr.co.nz/article/coalitions-rd-tax-break-unworkable-uncompetitive-ck-p-214882)

3. A social science perspective on job creation in small and medium enterprises is also concerned with migration and the reality that new migrants are seldom incentivised to bring either their R&D capability or their labour into business startups. We propose that the incentive remit be extended to specifically consider ways in which New Zealand can more actively engage the talent and labour of new settlers and migrants. This may include tax incentives for firms that focus on upskilling staff in English and or diversity.

Conclusion

We agree that a tax incentive for research and development in New Zealand industry is desireable, however, in this current proposal, the tax incentive is too narrowly conceived, relies heavily a Frascati view of R&D which we regard as on an outmoded representation of R&D, fails to adequately support mātauranga Māori and is short-sighted in its exclusion of 'support services' and social science and humanities contribution.

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28 May 2018

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Via email: RDincentive@MBIE.govt.nz

SUBMISSION ON RESEARCH AND DEVELOPMENT TAX INCENTIVE

To whom it may concern,

As the largest private sponsor of clinical trial research in New Zealand, Merck Sharp & Dohme (New Zealand) Limited (MSDNZ) is grateful for the opportunity to provide feedback on the draft research and development tax incentive.

We do not have a strong opinion on many of the questions that are framed in the discussion document so focus our feedback only on those questions we perceive to be of greatest relevance to our business, namely questions 2, 7 and 10. We have included at the end of this submission further information about MSD and the research that we conduct in New Zealand that you may find to be a useful reference when reading our submission.

Question 2: Definition of R&D

We believe that the definition as currently worded is satisfactory. The key for any definition wording to help increase investment and jobs in the pharmaceutical research industry is to include the whole range of clinical trials, i.e. phase I, phase II and phase III trials should all be included. There currently remains significant untapped potential to grow the New Zealand clinical research industry. It is important to note that the experience for any one investigator or site typically follows a continuum from phase III to phase I. Without a strong industry in phase III it is very unlikely that an earlier phase industry can be successfully grown we therefore recommend that all phases are included in the scheme.

Question 7: Excluded Activities

Clinical research for pharmaceuticals is a highly regulated industry that has numerous regulatory requirements that are rightly in place for the protection of the human subjects that are invited to participate in the research trials. Therefore there is a significant amount of work that would fit the definition of "support activities" that is proposed in the document and would also be considered to be "activities involved in complying with statutory requirements or standards". Examples include

applications to the Medsafe Standing Committee on Therapeutic Trials (SCOTT) and applications to Ministry of Health Ethics Committees. Since the research cannot occur without approvals from these bodies the activities associated with applications are essentially integral to the research and as such we believe they should be included in the scope.

Question 10: Limiting to direct labour costs.

The decision to hire clinical research staff is based on two main factors: The volume of work and the full costings of the staff. When a company decides to employ clinical research personnel it will include in its decision process the full costs which include not only salary but the associated costs to complete the role such as travel costs, IT costs, stationary etc. In MSDs Group planning for R&D staff the full costs are taken into account in the decision to proceed or not.

Clinical research is conducted on a project basis where each research study consists of one project. Often the conduct of one research study would not have a sufficient work demand to justify a full time staff member. In such cases this work is contracted out to third party contract research organisations (CROs). Although MSD has a number of direct employees engaged in clinical research we also employ contract staff through these CROs. It is very likely that pharmaceutical companies that are not currently undertaking clinical research and who may be attracted back to New Zealand with the contemplated incentive would, at least initially, use a contract work force. Furthermore, much of clinical trial expenditure is associated with the costs that are incurred at the trial sites and charged directly to the sponsor of the research, these costs include substantial labour charges as well for materials, facilities and procedures. We believe that limiting eligible expenditure to direct labour cost only will therefore substantially decrease the attractiveness of the incentive for clinical trials.

If the labour-only cost option is selected we recommend that, for R&D companies such as MSDNZ, the full cost is included both for staff employed directly by MSDNZ and those staff employed by CROs which incorporate salary and role costs. If necessary, an acceptable compromise might be to limit eligible expenditure to direct labour costs and costs incurred by engaging an “Approved Research Provider” as defined on page 23 of the discussion paper.

In summary, MSDNZ is supportive of the introduction of an R&D tax incentive as described in the discussion document. We believe that the definition of R&D as consulted is appropriate for our research industry however the exclusion of activities associated with certain statutory requirements would be inappropriate. We support the use of a broader range of direct and indirect costs as the basis for calculating eligible expenditure.

We thank you for the opportunity to provide feedback to this proposal. We believe that this incentive can help to support growth in the clinical research industry in New Zealand towards achieving the potential five-fold increase that was signalled in the 2011 Health Select Committee report into improving the environment to support innovation through clinical trials in New Zealand. We have appended to this letter an overview of MSD and an overview of clinical trial research however please feel free to contact the undersigned should you have any questions regarding our feedback.

Yours Sincerely,

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MSD in New Zealand.

About MSD

Who We Are - In New Zealand since 1962
The company is a wholly owned subsidiary of Merck & Co. Inc. (United States). In all markets apart from the United States and Canada, we are known as MSD.

MSD began trading in Wellington in 1962 and relocated its Human Health operation to Auckland in 1971.

Today MSD's Auckland site focuses on clinical research and supply of a portfolio of prescription only medicines for a wide range of diseases.

MSD New Zealand supplies pharmaceuticals and vaccines for New Zealand patients across a broad number of therapeutic areas, including; oncology, anaesthesia, immunisations, cardiovascular, musculoskeletal, women's health, fertility, HIV/AIDS, antibacterials and antifungals.

New Zealand research and development
MSD is a leader in New Zealand clinical research and development and invests heavily in New Zealand.

The company has consistently championed local research and has doubled the number of local clinical trial employees over the past few years. Currently 45% of MSDNZ workforce is dedicated to clinical research, 38% to commercial activities and 17% services.

These scientists run dozens of trials at sites across New Zealand, collaborating with many of the country's leading research institutes. A number of the company's regional (Asia-Pacific) staff are based in Auckland enabling the New Zealand team to remain at the forefront of international best practice.

Current New Zealand research programmes include trials in oncology (melanoma, lung, gastric, breast, bladder, renal, gynaecological and blood cancer) diabetes, neuroscience, respiratory, heart failure, vaccines, HIV and Hepatitis C. MSDNZ currently has 42.5 million NZD committed to research in this country. Globally our company invests approximately ten billion US dollars per annum into research and development.

MSD Gives Back
MSD is proud to offer a global employee volunteerism policy which provides each employee with the opportunity to take up to 40 hours of paid leave each year, to engage in a variety of charity volunteer opportunities.

Community
MSD works in partnership with a number of not-for-profit organisations that represent the interests and views of healthcare consumers. These organisations provide support services and information to patients, families and carers.

Not-for-profits MSD has supported include; The Hepatitis Foundation, Melanoma New Zealand, The Lung Foundation of New Zealand, Body Positive, Positive Women and Fertility New Zealand.

Fellowship for Global Human Health
The MSD Fellowship for Global Health is a three-month, field-based pro bono programme designed to leverage the skills and talents of our employees. It pairs the best minds from the company with non-profit partner organisations around the world, to provide meaningful and systematic improvements in health service delivery for people in greatest need.

The programme also provides rich professional development experiences for employees. The Fellowship has grown dramatically since it began in 2012.

History of MSD
MSD and Schering-Plough merged in 2009 to become a wholly owned subsidiary of Merck & Co. Inc. In all markets apart from the United States and Canada, we are known as MSD.

Both MSD and Schering-Plough have a long and rich history of working to improve people's health and well-being.

Through the years, our researchers have helped to find new ways to treat and prevent illness. During the first nine months of WWII, MSD was the only company prepared to supply dried plasma to the armed forces. This development saved thousands of men's lives and was one of the outstanding medical contributions to the war effort.

The company discovered vitamin B1 and began producing penicillin "G" in 1942, as well as the first measles vaccine, the most widely prescribed statins to treat high cholesterol and the first anti-cancer vaccine.

Merck & Co, Inc. scientists were among the first to discover and develop medicines for the treatment of HIV/AIDS. In 1996, MSD introduced a protease inhibitor and one of the first potent antiretroviral drugs. The introduction of a non-nucleoside reverse transcriptase inhibitor (NNRTI), followed in 1999.

Merck & Co, Inc. recently developed a vaccine for Ebola. This vaccine was advanced through clinical trials in record time and the company subsidised all R&D.

About Clinical Trials

A clinical trial is a research study in human volunteers that tests new ways to prevent, detect, diagnose or treat diseases. They help determine whether investigational vaccines, medicines, or new uses for existing medicines are safe and effective.

There are four phases of clinical trials – Phase 1 clinical trials test the medicine or vaccine in a small group of 20 to 100 volunteers who are usually healthy, and determines If the medicine or vaccine is safe, has side effects, how much is needed and how often. Phase 2 clinical trials test the vaccine or medicine in approximately 100 to 500 volunteers. In the case of medicines, people usually have the disease the investigational medicine is designed to treat. The goals of this phase are to begin to determine how well the medicine or vaccine works and develop better information about if it is safe, has side effects and how much is needed. Phase 3 clinical trials test the medicine or vaccine in 1,000 to 5,000 patient volunteers who have the disease the medicine is designed to treat and confirm that the medicine is effective, identifies side effects and compares the medicine to commonly used treatments. Phase 4 clinical trials are conducted after the medicine or vaccine has been approved by the appropriate regulatory agencies and is being marketed. Researchers continue to gather information about the medicine or vaccine and its safety, side effects and effectiveness.

A participant must qualify for a clinical trial. Some research studies seek participants with specific illnesses or conditions to be studied in the clinical trial, while others need healthy participants. All clinical trials have guidelines about who can participate. Using inclusion/exclusion criteria is an important principle of medical research that helps to produce reliable results and keep participants safe. The clinical trial team checks the health of the participant at the beginning of the trial, give specific instructions for participating in the trial, monitor the participant carefully during the trial, and stay in touch after the trial is completed.

There are no centrally collected statistics on the conduct of clinical trials in New Zealand however in 2011 the parliamentary health select committee conducted an inquiry into improving New Zealand's environment to support innovation through clinical trials. The report from this inquiry provides some useful information about the local industry at that time, it found that clinical trials have benefits for patients, the health system, education and professional development and the economy. The inquiry also found that the clinical trials industry provides pivotal support to other New Zealand industry sectors such as medical devices, health IT, functional foods and nutraceuticals. The inquiry also found that New Zealand invested at a relatively low level relative to the OECD average. The report found that there was significant opportunity to grow the industry from an estimated value of $50 million in 2010 to $250 million in 2020.

From: Kawana-Brown, Eve
To: RD Incentive
Subject: R&D Tax Incentive Feedback on Discussion Document
Date: Monday, 28 May 2018 12:21:52 p.m.
Attachments: image001.png

Good morning

I wish to email my feedback on some of the proposals contained within the Discussion Paper on a Research and Development Tax Incentive for New Zealand ("Fuelling Innovation to Transform our Economy" – April 2018).
As a Business Development Manager for Massey University, working in Taranaki closely with Taranaki's Economic Development Agency, and Regional Business Partner, Venture Taranaki, I straddle the world of private sector businesses seeking to innovate and to undertake R&D (and R&D support mechanisms for them) and research institute-led R&D projects.
I have not responded to all questions within the Discussion Document, but note below what I am responding to.

I wish to make the below responses on my own behalf, as part of the public submission process.

Kind regards
Eve

The Discussion Paper feedback process doesn't seem to ask for feedback on whether we support this approach in general terms, or don't.

To respond to this in a more holistic way, I would say:

There would most likely be a lot to lose if this tax credit system were introduced. The tax credit system proposed provides a small amount of *deferred* and *defined* (tax credit) financial benefit when compared with co-funding as per the levels within the Callaghan Innovation R&D Funding system and the process thereof. What's worse is that, for that amount of co-funding, and in that format, and for the amount of work it would take to ensure that the companies' claim can be successful, this would be a drain on companies' time, for little actual gain. Applying in retrospect for a tax credit will undermine the currently powerful ecosystem that *is working* to take companies forward, whereby they apply in advance, and (often) *per project*, and along the way engaging with the support system of Callaghan Innovation and the Regional Business Partners, whose 'founded support' provides them with valuable help with R&D projects (and accountability for the funding thereof) as well as support for the businesses wrapped around those R&D initiatives, which is essential to their being able to achieve commercial success."

Below is my attempt to respond to some of the specific questions in the Discussion Document. Sorry, I found it difficult to respond to some of these succinctly.

Discussion Document ***Fuelling Innovation to Transform our Economy, April 2018***, states
The R&D Tax incentive's stated purpose is to provide "*easily accessible support to a broad range of businesses in a fiscally responsible way, while also maintaining trust and confidence in the tax system*". p12

What qualifies are an R&D Activity?
"*The intention of the scheme is to give incentives for activities which resolve scientific or technological uncertainty*" (p15)
Further defined as:
(a) *"[Core] activities… conducted using scientific methods that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services; and that are intended to advance science or technology through the resolution of scientific or technological uncertainty*".

Q2 How well does this definition apply to business R&D carried out in New Zealand?
Q3 Does this definition exclude R&D that you think should be eligible? Please illustrate with examples.

I would expect that the definition, as it is written, would *definitely* rule out a high proportion of currently co-funded business R&D.
Much is done, within a company's R&D programmes, which needs externally based expertise, which does not advance science or technology as such, but which *does* resolve scientific or technological uncertainty for the company. It may not actually be 'new science' or even 'new technology' but it goes towards resolving the uncertainty *for a given company*, and it is this resolution that is key for companies in order for them to advance towards their desired future, and their future tradeable products and/or services.

Even if the science or technology is extant in the world, it is often not available to a company, it being unavailable to them, as it is IP or 'know-how' belonging to other companies (or related to that IP or 'know-how' - as such being 'usable', but not known to the company embarking on their R&D project or programme).

A corollary to this, and another reason why the definition given would also seem to be fundamentally flawed, is that company-relevant R&D cannot be assumed to, or asked to, be notably *advancing* 'science or technology'. Even *new* science or technology developed in the course of company-specific R&D may remain largely inaccessible (being either patent-protected (in which case it will be visible), hidden as 'know-how' or not even used, but protected by IP agreements between the commercial interests and R&D providers).
And surely the aim of this R&D, given its intention to support NZ businesses is to advance those businesses, not so specifically to advance science and technology (for which there is other funding available).

The below goes to Q2 and Q3, but also to
Q4 Does the scientific method requirement exclude valid R&D in some sectors? Please illustrate with examples.
There is valuable and valid R&D that can be done within a company and/or on behalf of a company which is not entirely reliant on application of the scientific method to produce gains in the creation of new or improved materials, products, devices, processes or services. These gains might rely on the value add and some in-situ experimentation with already known science or technology applications, which would serve as research and development activity for a given company, but which may not need to be embedded within a project characterised as fully deploying the scientific method as such. In fact, to do so might, more often than not, make the piece of R&D work far bigger, and more protracted than it would ever needs be, in order to

achieve the goals of developing new or improved materials, products, devices, processes or services. And if the goal of applying the scientific method is to have a very defensible product or technology or other company deliverable, this could potentially be considerable wasted time and effort, if the IP is going to remain confidential to the company anyway. If this level of robustness (for defensibility purposes for example), is important for the R&D to deliver, this would of course need to be built into the R&D project or programme.

Q5 What would the impact be on business R&D in New Zealand if a materiality test was applied to *both* the problem the R&D seeks to resolve and the intended advancement of science & technology?

See response to Q4 above. Requiring companies, or sectors, to necessarily achieve material advance in science or technology via R&D programme specific to their needs in order to advance their own projects and programmes and commercial growth (or survival) is an 'ask' which is not relevant to the endeavour this funding should be attempting to support. It would be easy to find many, many instances whereby a NZ company is investing in R&D to achieve technologies and/or knowledge which are already achieved and/or known in other parts of NZ sometimes, and certainly in other parts of the world. However, if a NZ company is to launch new products/services and or compete for market share in huge global market, or sub-territories, replicating, or undertaking their own version of, science or new technology development is a *must do*. And to not do so, or be supported to do so, is to ensure that the NZ company will struggle to gain or maintain competitiveness.

Q6 How well does this definition [of support activities, as per paragraph b of the proposed definition) apply to business R&D carried out in NZ?

It is problematic to collectivise 'R&D activities not conducted using scientific method' with other R&D support activities such as patent searches, literature searches if one accepts my arguments above around what should qualify for company-specific R&D.

If the 'supporting activities' list, as per pg 17, is what is being referenced here, I would say that those activities *are* justifiably associated with R&D projects in NZ companies and that some should fall into the category of being as supportable as the 'core R&D activities' as they are a logical corollary to, and support mechanism for, the R&D programme. However, some, such as prospecting/drilling are an exploratory operation of businesses, whose business models, and product pricing, take this part of the operation into account. Maybe less so if a truly novel prospecting/drilling technique were being applied, which would be a product innovation itself.

Q7 Are there any reasons why the exclusions should not apply to support as well as core activities? Please describe.

This question is almost like dealing with a double negative…. And therefore a bit tricky to try and answer.

Hopefully my responses here are applicable in light of the question, as I believe it to be.

I would not agree that a blanket exclusion should be ratified for the 'support activities' as noted in the list on pg 17 and Lit Reviews, etc.

I would support that approval for funding towards 'support activities' as noted in the list on pg 17, and including likes of Lit Reviews, be assessed on the degree to which they are integral to the R&D project and its potential for advancing towards a commercialisable outcome.

Q8 Please provide any examples where social science research is/has been a core part of business R&D in New Zealand.

One example that springs to mind is of a hospital bed and equipment manufacturer whose considerable efforts in research into how hospitals and hospital staff utilise their equipment, and why, could almost fall into the realms of social science research. This understanding of 'how hospitals tick' has underpinned considerable award-winning technical innovation by the company.

I am conscious that a considerable amount of innovation is stymied by the lack of attention to the social context of certain NZ industries or sectors. E.g. sheep milking is a good example of a potential export industry from NZ which traditional farming in NZ struggles to 'lean towards' due to socio-cultural factors (as well as economic and knowledge factors etc.).

Innovation around new products/materials NZ could be making/exporting could be reliant on in-market or external markets' appetite for some product or product features that NZ companies don't know enough about yet. Hence, social science research integrated into innovation and R&D can be of critical value alongside technical R&D.

Q9 What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?

To force companies to attempt to artificially separate activities which are, for very good reasons, intertwined within their business activities (which are attempting to be more and more lean) would be counterproductive in terms of demands on companies' resources. There is good reason to attempt to not co-fund business as usual operations that are interwoven into an R&D activity, but a better approach might be to seek an estimate of business as usual to R&D within a total project and use a figure derived from that process. Companies would often be fairly capably of deciding whether R&D were, say 30%, 50%, or 80% of a total business activity.

Q10 What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?

If labour (expertise) for an R&D project needs to be outsourced, obviously assistance with purchase of this cost, being a major component of R&D, would be helpful for companies who need to purchase this expertise. 12.5%, and as a tax credit, and as a once per annum allocation, for the costs of such externally purchased expertise would not seem to be a very attractive proposition for industry and would be a considerable loss for them when compared with the current programmes available.

It should not be considered that 'labour only' should be the purchasable service from R&D providers, who need to cost out their expertise/research/consultancy in such a fashion as to also cover the costs of their materials, equipment and the overhead that supports their ability to set up and be in the market for R&D or expertise service provision.

When labour costs are mostly in-house already, and as such, could be considered a fixed cost in some circumstances, and part of business as usual, it would seem that these companies (usually bigger companies, maybe with good R&D capability already) would receive a benefit of subsidised labour costs, which would not be available to smaller companies without this resource in-house.

Imagining that this would be an incentive for companies to develop their own in-house R&D capability is to ignore the fact that for many NZ SME's this is not likely to be a viable, or even necessary, option for them.

Q11 What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs?

The bias against capital intensive R&D activities, as stated, is a distinct downside to creating a

'standard overhead allocation' to labour units. The sole operator consultant working from home has one level of overhead structure attached to him/her, which is very different from that which one might, rightly, find associated with a labour unit ensconced within a highly state-of-the-art equipped laboratory for example. Percentage-based overheads, if opted for, would need to be in a 'stepped' model, but I wouldn't recommend this method anyway.

Q12 Are there any reasons why expenditure related to R&D activities for which commercial consideration is received should be eligible for a tax incentive? Please describe.

I am not 100% sure what is being alluded to here, but if the question is whether the government (via tax credit, or 'other') should fund a company's R&D, for which, as an R&D activity, they also expect to receive payment covering costs thereof from another, related?, party, then I would expect that this would not need to be R&D for which companies seek credit, or funding, from government. A bit hard to call, as companies' R&D investments are ultimately paid for by customers, hence they all receive 'commercial consideration'.

Q13 What variations or extensions to the definition of core activities are required to ensure it adequately captures R&D software activities?

I suspect that already funding support for 'R&D software' activities is overly generous, and is likely to be funding companies' manipulation of tools and software features that are already readily available, but in the pursuit of new outcomes. Along the lines of new products made of fabricated metals, when the metals and metal fabricating technologies are already fairly well established, but just being manipulated in different ways for different products/markets. Hence the 'advances to science and technology' which I disagree should be a criteria for 'valid R&D projects' would also not be being made in many instances of R&D software activities. I'd be more inclined to look carefully at what is being funded in respect of 'software R&D' than to seek to open this up even more.

Q15 Is the minimum threshold [of $100,000, unless in cases where a company outsources to an approved research provider?] set at the right level?

This would seem to be an 'arbitrary' rule and not responsive to the continuum of 'answers' companies need to 'R&D questions'. Some solutions lie with in-house expertise, some rely on external expertise, even if there is internal R&D capability. It suggests that a company who can show a spend of $100,001 would qualify for tax credit on an all in-house resourced R&D project, while one who spends $99,000 on in-house will not qualify at all. Luckily, a 'little company' who spends, say $50,000, on externally sourced R&D will qualify, but if they brought 0.5 FTE in for a year in-house and paid that same figure, they would not.

These artificial 'dividing lines' of what counts and what doesn't, what fits and what doesn't, will only serve to have companies strive to make things fit, which may or may not achieve outcomes you are seeking, but will certainly divert energy from the greater purpose, being to craft and deliver R&D that grows and improves NZ companies and exports.

The rationale given for having this minimum threshold (of $100,000) to filter out claims for non-genuine R&D, this being likely enough to fund one FTE salary and related overhead costs seems inherently flawed and denies the reality for many companies that a smaller 'chunk' of R&D per year, and potentially conducted in-house, although usually not, can create, or 'seed', significant new opportunity to pursue. E.g. a shelf life R&D project for a food manufacture that will open up export opportunity for them and considerably grow their market. This type of R&D won't advance science or technology either, but is new knowledge and considerable business enhancement for such a company.

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New Zealand is emerging with a new confidence on a global stage. As a country we have the desire, innovation and creativity to take on the best the world has to offer. Through our students, staff and alumni, Massey is the engine that is making a practical contribution to turning the wheels in this exciting new chapter in New Zealand. www.engine.ac.nz

From:	Baird, Chris
To:	RD Incentive
Subject:	Government Grant Changes
Date:	Monday, 28 May 2018 12:04:18 p.m.
Importance:	High

To whom it may concern,

Garmin / Fusion has been a recipient of the Callaghan Growth Grants for over 5 years and without them we would not be the company we are today. Just under 4 years ago we sold our business due to our tight financial position, to a large overseas business that we believed was a good fit……GARMIN. One of the attractions for them buying us was our Callaghan grants where we were able to demonstrate to them that New Zealand was open to supporting companies like Garmin, who are one of the biggest employers of Engineers in the world. They currently employ over 3,000 engineers in around 20 countries worldwide and they are always looking for 'friendly' and open countries to operate from.

My personal opinion is that tax incentives are only good for larger firms that are making a profit and are actually over the hump of growth. Most SME's that are trying to take on the world with new and exciting products or services, are probably NOT making a profit, so a 'tax incentive' is nearly useless. At Fusion we never made a profit as we were growing so fast and spending everything we made on engineering new products. This direction however is now why we are the Number One Marine Entertainment Company in the world. Garmin does not make a profit in this country as our sales are smaller here than our 'Engineering Costs'. So we now have an overseas company that has committed to this country via a Government Grant and has done everything expected, while doubling the local Engineering staff…..plus adding to the Marketing, Operations and Finance teams !! What incentive is there for firms like Garmin or other multi-nationals where the local market is so small and the government is offering a 'tax incentive' ??

Announcements have already been made and the horse has bolted but if the government thinks a 12 to 15% tax incentive is going to make this country spend what they should on R&D, then I think they are in for a shock. Australia already has a comfortably higher incentive, as do many other countries around the world. We are at the bottom of the world geographically, we are a small country and we **HAVE** to do more, not less than other economies.

Regards,

Chris

P.S Please take this as personal feedback and not officially from Garmin as they rightly need to stay neutral

Chris Baird,
Managing Director,
GARMIN NZ Ltd,
T/A FUSION Entertainment,
Auckland, New Zealand.

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meridian

25 May 2018

R&D tax incentive team
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Research and Development Tax Incentive

Meridian Energy is supportive of the Government's goal to increase research and development expenditure to two per cent of GDP over ten years. We are generally comfortable with the proposed tax incentive and look forward to seeing other initiatives in future that might provide targeted support to innovative software firms.

About Meridian Energy

Meridian is New Zealand's largest 100 percent renewable energy generator and owns and operates seven hydro stations − six within the Waitaki Hydro Scheme − and seven wind farms in New Zealand and Australia. Meridian and its online subsidiary Powershop retail electricity to more than 376,000 connections – homes, farms and businesses throughout New Zealand and Australia.

Research and development tax incentives in the context of other tax initiatives

While Meridian supports a properly formulated research and development tax incentive, it is essential that other complementary tax policy proposals also be progressed in a timely fashion. Meridian's submission to the Tax Working Group noted the importance of progressing the Inland Revenue Department's tax policy work programme. In particular Meridian considers it essential that the disincentive to invest in New Zealand created by the tax treatment of feasibility expenditure (and other black hole expenditure) be addressed immediately. Good progress has been made by IRD officials in consultation with the Corporate Taxpayers Group, and it is vital that this work be brought to conclusion.

The removal of such investment disincentives would be consistent with Government policies to:

- work towards an increase in research and development spending to two per cent of GDP over the next ten years; and
- the research and development tax incentives currently under consideration.

The current position (where feasibility expenditure risks being non-deductible should a project not go ahead) is contrary to the intention of the Government to support sustainable investment in New Zealand's physical capital.

Eligibility

The discussion document states that "all businesses, regardless of legal structure, will be eligible to claim the Tax Incentive". However, the discussion document also appears to question the eligibility of organisations that are in some way linked to the Crown. If officials are considering the eligibility of entities funded by government, caution should be exercised to not adversely affect other Crown linked companies. To be clear – Meridian was listed on the NZX in October 2013 as part of the Government's share offer programme. As with other mixed ownership model companies, the Crown retains 51 percent ownership of Meridian, however, Meridian receives no Crown funding and operates as a listed company with an independent Board of Directors. Crown ownership of shares in a publicly listed company should not, under any circumstances, disqualify a company from research and development tax credits. Such treatment would:

- discriminate against other investors in Meridian and against investors in any other listed company where the Crown holds shares; and
- mean that there would be no incentive to undertake research and development for a significant portion of the economy.

Design of research and development tax incentives

Meridian supports a definition of research and development that is based on international and OECD best practice and includes the three elements of:

1. Scientific method – which should be defined broadly to include any systematic progression of work that proceeds from hypothesis to experiment, observation and evaluation, and leads to logical conclusions.
2. The purpose of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services – which should include the creation of new

software services and solutions that enable the utilisation of existing technology in new ways.

3. The resolution of scientific or technological uncertainty – which is a change from the concept of "novelty" that was part of the 2008 tax credit but which, at face value, achieves the same intent; something that resolves uncertainty is, by definition, novel.

Meridian also supports the submission of our subsidiary Flux, and the suggestions in the discussion document that:

- variations to the standard definition of "research and development" may be needed to ensure it adequately captures research and development software activity; and
- special treatment may be considered for activities such as testing and internal software development.

Please contact me if you have any questions regarding this submission.

Yours sincerely

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25 May 2018

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Dear Sir / Madam

RE: FUELLING INNOVATION TO TRANSFORM OUR ECONOMY: A DISCUSSION PAPER ON A RESEARCH & DEVELOPMENT TAX INCENTIVE FOR NEW ZEALAND

Crown Equipment Limited ("Crown") is writing to provide comment on the discussion paper *Fuelling Innovation to Transform our Economy: A discussion paper on a Research & Development Tax Incentive for New Zealand* ("the discussion paper").

Crown welcomes the opportunity to submit on the proposed R&D tax incentive, in particular commenting on the areas of the proposals relevant to our business. We set out below some background to our company, which we believe highlights the importance and need for an R&D Tax Incentive, before setting out some more detailed submission points on the proposals.

About Crown Equipment Limited

A humble start-up

The genesis of Crown Equipment's New Zealand R&D operations was humble, starting life as an Auckland University student team entry to the 2005 DARPA Grand Challenge (only the second edition of a world-leading competition for driverless vehicles).

In 2005 the team entered the University of Auckland Spark Ideas Challenge, which they won. This led to the founding of INRO Technologies Limited ("INRO") in 2006, which in 2008 was awarded Start-up of the Year at the Gen-I New Zealand Incubator Awards. INRO's engineers also were recognised nationally, with Toby Collett winning Young Engineer of the Year at the NZ Engineering Excellence Awards in 2008 and Andrew Graham winning Young Achiever of the Year at the NZ Hi-Tech Awards.

Acquisition by Crown Equipment

In 2012, Crown, a leading forklift original equipment manufacturer and distributor acquired INRO to strengthen their technology capabilities, creating the Crown Robotics Technology Centre in New Zealand. The acquisition was driven by the quality of research staff at INRO and INRO's technology base, as well as the New Zealand research environment which

provided access to top talent, research assistance for Callaghan Innovation and world class university research groups.

Crown invested further in New Zealand and the team has grown from 20 full time staff to 41 full time staff, with the current team consisting of a mix of applied mathematicians, roboticists, software engineers, mechatronics engineers and designers. Crown gives young research engineers hired from universities the opportunity to work on cutting edge robotics technology, and gives them access to world leading conferences and the chance to travel to Crown Engineering Centres in Ohio and Germany.

A focus on advancing technology

Crown's focus has been to apply robotics technology to driver-assistance features and business intelligence tools for Crown's forklift fleet. While Crown continues to work on developing the capabilities of manual forklifts to make them more intelligent, Crown has recently concentrated on developing autonomous forklift technology and live field tests are currently being run.

Callaghan Innovation assistance

The support that Crown has received from Callaghan Innovation has been a key reason for Crown's continued and significant investment in New Zealand. The Growth Grants, and Callaghan Innovation's support for intern projects, tertiary research programmes and further tertiary education have been an effective source of talent and fundamental research for Crown. Callaghan has also helped us keep connected with the local technology community through meet-ups and other forums.

Our submission

We strongly believe that New Zealand is a country of innovation and number 8 wire and is a world leader in the development of new technologies and novel ideas. In recent years, a large part of this innovation has come from New Zealand's rapidly growing and fast evolving technology sector, and in particular software development.

As a starting point, Crown would prefer that the Callaghan Innovation Growth Grants are retained, as opposed to the introduction of an R&D tax credit regime. Growth Grants have played a significant part in the development of the technology sector and we at Crown have seen tangible benefits from our use of the Growth Grant system. We are grateful for the support Callaghan Innovation have provided us with and are wary of replacing the Growth Grant system when it has been proven to work effectively.

To the extent there is a transition away from Growth Grants, Crown would strongly support these continuing through to (at a minimum) 31 March 2020 for any grant recipients in the regime as at 1 April 2019. Crown also understands that there may be scope for any Growth Grant recipients in the regime at that time to have their grants automatically rolled over to the end of the transition period for the scheme – Crown would also strongly support this approach.

However, if the future of research and development in New Zealand is an R&D tax incentive as opposed to grants, then it is important that the regime is one that captures as much R&D expenditure as possible, doing its best to maximise the positives of R&D for the benefit of New Zealand.

To this end, we set out below detailed comments on the proposals, including our views on how the R&D tax regime can best support New Zealand businesses.

1. Grants system vs Tax incentives

1.1 As noted above, we have a preference for retaining the Growth Grant system (or a similar / equivalent system), as opposed to introducing an R&D tax credit regime. In our view, given that Growth Grants have been proven to work, there is no need to shut down the grant system.

1.2 Growth Grants have enabled Crown to increase our capabilities and also the size and balance of the New Zealand R&D contribution by our organisation. Some of the reasons we would prefer a grant system include:

- Grants are a known quantity for organisations and allow them to plan their R&D activities based on the amount of money that they know they will receive. This allows organisations to commit to their research and development, particularly as the timing of the receipt of grants is defined. It also influences head office approval of projects. Crown receives funding and allocates that across projects based on their relative importance and priority – this will become more difficult under an R&D tax incentive regime where the benefits only become clear after the tax return is filed, well after the expenditure is incurred. The certainty that grants provide is vital to Crown and we would prefer this over a 'spend and hope' approach.

- Grants provide an immediate incentive to do the work, as opposed to being rewarded later for having done the work. We understand that this may seem like two sides of the same coin, but in reality there is a significant difference. The grant system provides Crown with an immediate benefit instead of having to wait for the tax return process and allows certain projects to progress when funding is certain. The alignment of funding and expenditure is essential.

- Crown acknowledges that much of the world has a tax incentive system, but this is not necessarily what is holding New Zealand back in terms of growing R&D expenditure. Our grant system is unique and attracts investment to New Zealand – it provides a point of difference that an R&D tax system will not. A large part of the reason why Crown's New Zealand research centre continues to grow is that New Zealand's grant system is a successful model for promoting R&D activities. It also results in cash in hand – unlike a non-refundable tax credit. While in theory these benefits are equivalent, you will be hard pressed to find an organisation that would prefer a tax credit over cash.

- Crown envisage situations where organisations that currently receive grants will not be able to receive tax credits under the proposed regime (as it currently stands). There will also be 'winners and losers', with some organisations able to effectively receive more under an R&D regime, and others who will receive significantly less under the R&D regime than they have received in the past through the grant system. Crown submits that the fairness and integrity of the tax system will be compromised where there are too many 'losers'. The tax incentive regime should not leave any organisation in a worse position than they currently are.

1.3 While Crown has a preference for a grant system, we are supportive of any R&D regime that is put in place, provided it is workable and will provide benefits to those that it is intended to target. We do note that a grant system and a tax incentive system can co-exist (but as a choice between one regime over the other). The

remainder of our submission sets out our views on the tax settings of the proposed R&D tax credit regime.

2. Transition from Growth Grants

2.1 We also briefly comment on the proposed approach to transition from Growth Grants to an R&D tax incentive regime.

2.2 To the extent there is a transition away from Growth Grants, Crown would strongly support these continuing through to (at a minimum) 31 March 2020 for any grant recipients in the regime as at 1 April 2019. This will provide some stability to these organisations as New Zealand moves towards an R&D regime. If there is any scope for this period to be extended further than 31 March 2020, Crown would also be supportive of this. Crown also submits that any Growth Grant recipients in the regime at 1 April 2019 should have their grants automatically rolled over to the transition scheme (unless they specifically elect out), so that they are afforded the ability to benefit from the regime while any outstanding issues are considered and dealt with.

2.3 It is vital that the transition process provides users of the regime with certainty and predictability of funding, and that any transition is simple and efficient. Organisations will go from a system where they know how much they are getting and when, to a system where any benefits will only be derived following the end of the year, with the filing and assessment of a tax return (the filing of which will be held up for any number of reasons).

2.4 Crown foresees that many organisations (including not only those in loss positions but also those who are reliant on funding to break even), will struggle to maintain the same level of R&D activity with the delay in timing of 'funding' (with many receiving quarterly funding from Callaghan). While there should not be any 'dual inclusion' of expenditure, the transition must be appropriately managed (perhaps by way of interim grants) so that R&D activity continues during this time and organisations are not hindered from undertaking the very activity these proposals are intended to promote.

2.5 We would also like to note that Callaghan Innovation provided benefits to Crown broader than, and just as, important as cash in hand. Our engagement with Callaghan facilitated and enabled relationships with universities and supported intern projects and tertiary degree research programs. These have been an effective source of talent and fundamental research. Further to this, Callaghan has also kept Crown connected with the local technology community through meet-ups and other forums. It is important that this relationship building aspect of the Growth Grant regime is not lost in the move to an R&D tax credit regime.

3. Software R&D should be included in the R&D Tax Incentive regime

3.1 Crown is of the firm belief that software R&D must be included in the R&D tax credit regime. We acknowledge that there has been some difficulty in establishing an appropriate definition for "Research & Development" / "core activities". At Crown our focus in recent years has been to integrate intelligence into warehouses, both into our vehicles and in connecting our vehicle information with the information from other systems operating in the warehouse. Many aspects of the work we undertake have a software component and it is important that this R&D is included in the regime.

3.2 Crown is concerned that in the previous R&D tax credit regime a high threshold was applied for software R&D expenditure and that such an approach will be taken again in

the new regime. R&D in part comes down to a question of what is technically uncertain versus what is not. The Frascati Manual defines R&D as being about systematic work undertaken to increase the stock of knowledge and to devise new applications of available knowledge[1]. This would seemingly incorporate software R&D. We submit:

- The specific wording from the Frascati Manual definition of R&D could be used to draw in software R&D.
- Alternatively, expenditure on software R&D can be brought into the regime using the concept of "novelty" as part of the definition.
- Certain activities in relation to software R&D, such as testing and internal software development, are specifically included as eligible R&D activity.
- To the extent an appropriate definition cannot be determined within the standard definition of R&D, a separate limb should be included in the definition specifically for software R&D.
- It will be important that guidance is produced and published in relation to the R&D tax incentive regime. In particular this guidance should include illustrative examples of eligible software R&D activity given the uncertainty surrounding this area. These examples should be varied and cover a number of different scenarios in order to provide clarity and predictability.

3.3 Crown also submits that software R&D should be included in the tax incentive regime from day one of the regime – it would be inappropriate for this uncertainty to result in any delay. For the tax credit to incentivise behaviour, organisations need to know upfront that they will receive something. Further, as noted in the discussion paper, 40-50% of the value of grants given in the last three years was made up of software R&D. This highlights the significance of software R&D and the importance of including it in the R&D tax credit regime from implementation on 1 April 2019.

4. The ultimate IP / R&D should not have to be owned in New Zealand

Ownership of R&D

4.1 Crown does not support the proposal for requiring the organisation carrying out the R&D activity to own the results of the R&D, nor the requirement to have control over the R&D activities and bear the financial risk.

4.2 The reality is that parents of multinational organisations, with operations in different countries, are the ones who hold the ultimate control and ownership of R&D expenditure and any resulting intellectual property. New Zealand will charge for the R&D work done on a 'cost plus' basis, with the parent bearing the ultimate financial risk. We refer to this in our submission as "contract R&D", where organisations in New Zealand are contracted to carry out R&D activities, but do not necessarily own the results of the R&D.

4.3 Crown's main concern is that by removing eligibility to the extent that organisations carry out this contract R&D, a large proportion of R&D undertaken in New Zealand will be excluded from the regime. The Minister of Science, Research and Innovation, Dr Megan Woods, has noted offshore companies will be eligible for the tax incentive and that the rules should attract international companies to set up and undertake R&D in

[1] OECD Frascati Manual 2015.

New Zealand.[2] However, the rules as currently proposed will mean that the R&D tax incentive will not be an incentive which encourages R&D activity in New Zealand, but will be an active disincentive to organisations (including large multinationals) from coming to New Zealand to undertake R&D.

4.4 Many multinationals undertake contract R&D in New Zealand, and do not 'own' the R&D in New Zealand as this is not their centre of business. When their customers are also overseas it is not intuitive that the R&D is owned here in New Zealand. This is the standard multinational structure and if New Zealand wants to attract the R&D activities of these organisations, then we must ensure that our system is flexible enough for this standard structure to fit. As a small country reliant on foreign direct investment, we cannot require multinationals to fundamentally change their normal processes (and it would be inadvisable to assume that they would do so).

4.5 For example, it is a common scenario for a parent company to have an idea that it wishes to look into and develop, and will ask one of its research units (such as Crown's operations in New Zealand), to deliver this (if possible). Ultimately this R&D is controlled and owned by the parent, however all the R&D activity is undertaken in New Zealand, by New Zealanders. It is an inappropriate outcome for this R&D expenditure to not be included in the tax incentive regime.

4.6 The key issue is that intellectual property from R&D is mobile – physical borders are not a barrier to the results of R&D work being shared and there is no real significant benefit to New Zealand having ownership of the R&D. New Zealand is physically distant from other markets. The greatest benefits come from R&D being physically undertaken in New Zealand, not from ownership of the R&D, and the spill over benefits from R&D being based in New Zealand are too important to be excluded.

4.7 If contract R&D is excluded from the regime, this will discourage multinationals from moving into New Zealand, including in situations where they acquire New Zealand operations as part of their own. This is how Crown's New Zealand R&D operations started out and this is the behaviour we want to be encouraging. Since INRO merged with Crown, Crown has brought along knowledge, skills and international experience to enhance and develop the innovative functions the R&D team undertakes. Crown had access to the resources needed to further develop the thinking initiated under INRO and had a real incentive to do so, given the technology is viewed as core to its future business model. Without this, the real risk is the technology would not have been developed to commercialisation as local funding was drying up and it would have become yet another great Kiwi idea that fell by the wayside, or its development was instead undertaken offshore with no direct benefit flowing back to the New Zealand economy.

4.8 We understand that the eligibility requirements are aimed at ensuring the tax incentive goes to the organisation making the decision to invest in R&D, and that the concern behind these requirements is with the receipt of credits in more than one country. Given many countries will have rules similar to New Zealand which precludes anything more than a minor component of R&D to be conducted outside the country, we don't think this is a real risk, or alternatively it could be easily dealt with by ensuring R&D tax credits can only be received in one location.

R&D activity has spill over benefits

[2] https://www.nbr.co.nz/article/rd-tax-break-rate-other-details-air-ck-p-215838

4.9 R&D activity that is based in New Zealand has benefits far greater than the ownership of the intellectual property. The greatest spill over benefit of R&D activity based in New Zealand is the utilisation of New Zealanders in R&D activities, improving and developing their skills and expertise. At the end of the day it is New Zealanders who are gaining skills and knowledge and it is New Zealanders managing the projects. At Crown, we credit the majority of our success to our people – our staff are world leaders in the industry and can take the experience they have gained from working at Crown with them to other opportunities that may await.

4.10 To take Crown as an example, we have strong ties with universities across New Zealand, including Auckland University, AUT, University of Canterbury and Victoria University of Wellington. These relationships have allowed students from these universities to participate in projects that they would otherwise be unable to be involved with. Our intern programme has been effective in helping us find and develop the top robotics engineers of the future and nearly 20% of our current full-time staff started as interns with us.

4.11 Organisations like Crown are helping to create a bigger pool of talent in New Zealand, the likes of which will attract more and more sizeable R&D projects to New Zealand. This will allow more innovative R&D, as the size and scale of investment increases, and this will come with new business opportunities and greater chances for collaboration. It is important that these projects are based in New Zealand, as it allows New Zealanders to manage these sorts of projects, and enhances both human and physical capital in New Zealand. This will not occur at anywhere near the same level if the R&D is required to be owned in New Zealand.

4.12 For Crown, the success of New Zealand as an R&D hub comes down to the strength of the people that New Zealand has to offer (noting our comments on Growth Grants above). This is part of the reason why INRO was acquired in the first place. The quality of INRO's research staff, INRO's technology and the New Zealand research ecosystem which provide access to top talent, research assistance and world class university research groups all drove the move into New Zealand. The sustained success of our New Zealand R&D operations, and the innovation and productivity that this drives, supports new business opportunities that will not be available if our R&D activity is not included within the regime (as it is not owned in New Zealand).

4.13 Having R&D physically based in New Zealand has many benefits and while we do not like to accept it, our staff, when they leave Crown, will take with them knowledge and experience that will be invaluable to their future R&D endeavours. However, to ensure that this can occur, the R&D tax incentive settings must appropriately include the activity that will provide these benefits to New Zealand.

4.14 As noted in the discussion paper, growing or attracting R&D performing firms is essential to the New Zealand economy. These larger firms have high quality managers and knowledge of capital markets (and large capital budgets), all of which provide benefits that are arguably more valuable to New Zealand than the R&D itself. They also bring their customer base into New Zealand, basing economic behaviour here. There are also connections with global networks and learning / support systems, which can and will be drawn on by activities undertaken in New Zealand. In the best case scenario, this will grow and develop the New Zealand R&D activities of a multinational to become the principal R&D hub of an organisation.

4.15 Crown's acquisition of INRO is proof that contract R&D should be included in the tax incentive regime. When Crown purchased INRO, nothing changed other than ultimate

ownership – all the benefits of the R&D activity being undertaken by INRO still existed in New Zealand and were just as relevant. Then, as time has passed, Crown's acquisition of INRO has actually enhanced and developed the R&D activities being undertaken in New Zealand. Crown is still developing robotics solutions, but now has access to Crown's engineering teams in North America and Germany, access to customer network knowledge and access to Crown's Product and Design culture. New Zealand has benefitted greatly from being a hub for R&D activity in the area of robotics, despite this being contract R&D where the ultimate ownership is overseas.

4.16 The type of R&D work that Crown undertakes sees us connected to a global network of experts and projects. The New Zealand knowledge pool is enhanced through this connectivity, with staff being seconded around the world with Crown and then returning to New Zealand. Access to a broader knowledge base provides significant knowledge spill over benefits to New Zealand. Being part of a large economic entity also ensures greater access to R&D funding and a diverse range of projects, all of which enhance the knowledge and skill base being developed in New Zealand. Access to these benefits would be put at risk if activities such as that which Crown undertakes are excluded from the R&D regime.

Concluding statement

Crown is of the firm belief that New Zealand is a country of innovation and a world leader in the development of new technologies and novel ideas. While we would prefer a grants regime, an R&D tax regime (with appropriate transition from Growth Grants) supported by the appropriate architecture will go a long way to incubating and developing this environment and we look forward to playing our part in growing the New Zealand economy.

Thank you again for the opportunity to comment on these proposals and for taking the time to consider our submission.

Yours sincerely

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[redacted]

HERA
innovation in metals

26 May 2018

R&D tax incentive team
Ministry of Business, Innovation & Employment
PO Box 1473
Wellington 6140
New Zealand

Sent by email

Dear Ministers Woods and Nash,

Re: R&D Tax incentive consultation paper "*Fuelling innovation to transform our economy*"

Thankyou for this opportunity to provide feedback on the above. HERA welcomes the introduction of an R&D Tax Incentive as part of a suite of support programs for business expenditure on R&D. We appreciate the industry-neutrality of an R&D tax incentive and note that our industry finds it difficult to access competitive grant schemes for a range of reasons (*e.g.* being considered "low tech", having high revenue, low margins *etc*).

Being a levy-supported association, HERA also appreciates inclusion in the scheme. However, it is unclear how HERA would benefit from such consideration as it is a not for profit organization. We would welcome consideration of enabling HERA to benefit via a rebate or PAYE deduction (as applied in the Netherlands). We would not support the deduction going straight to the levy payers, as: a) it is not clear that this would then be spent on increasing R&D activity (*i.e.* additionality); and b) this would require engagement with a large number of organisations, some of which are only contributing very small amounts (i.e. average would be around $3000 per organization).

We also appreciate that this is a first step in developing a comprehensive review of the overall innovation support ecosystem and welcome any opportunities to be involved with future consultations in that regard. We look forward to seeing the future directions proposed.

Our overall feedback would be that the scheme does appear to be focused on the more fundamental research aspects of the R&D spectrum, and less on the applied development end. This is of concern to us and our members who are generally solving practical problems for customers vs advancing science or technology. We believe this is precisely the type of research that should be supported as it is likely to lead to practical commercial outcomes and impact so are unclear why the advancing science and technology restriction has been introduced to the definition.

As a result, we find the definition confusing and prefer the simpler definition that Australia uses for core activities.

We also believe that the level of support is low and may not assist New Zealand companies to meet the Government's targeted lift in BERD. We hope that this level will be increased in future as we do not see it as being particularly competitive internationally.

Our specific comments on the consultation paper are as follows.

HERA
innovation in metals

Question 1: If SOEs, Crown Research Institutes, District Health Boards, Tertiary Institutions, and their subsidiaries are excluded from the tax incentive, what will the likely impact be on business R&D in New Zealand?
We believe the impact on BERD would be minimal.

Question 2: How well does this definition apply to business R&D carried out in New Zealand?
The inclusion of the text *"and that are intended to advance science or technology through the resolution of scientific or technological uncertainty"* uses "lofty ideals" language that doesn't particularly support activities at the "development" end of the R&D spectrum. It is important to ensure development is included in the core eligible activities. The definition used by MBIE in its "Beyond Commodities: Manufacturing into the Future" document (page 86) is relevant. That is "*development is defined as the application of research findings or other knowledge to the production of new or substantially improved materials, devices, processes, systems or services*" without the further limitation "*that are intended to advance science or technology through the resolution of scientific or technological uncertainty*". We prefer that definition over the one being proposed here.

Question 3: Does this definition exclude R&D that you think should be eligible, please illustrate with examples. For example, how would research related to modelling of materials or structures to determine performance in a range of environmental conditions (*e.g.* fire, loads, vibrations etc) fare under the definition? It is not clear how the "resolution of scientific or technological uncertainty" would apply here. Presumably, this is meant to be a measure of technical risk but unless this is better articulated, it becomes confusing and my read would be that research activities, such as finite element analysis (a method of solving complex engineering or mathematical problems), for example, would not be eligible as a core activity.

Question 4: Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples? It is hard to comment as the definition of "scientific method" has not been provided. Presumably, it will refer to something akin to "systematic, investigative and experimental" activities. In which case, it would appear to be reasonable.

Question 5: What would the impact be on business R&D in New Zealand if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science or technology?
This language is confusing and not likely to achieve the desired outcome. If the intended outcome, as stated, is to ensure the incentive "*is only available for solving problems that have not already been solved*", it would be better to state this more clearly in terms of originality or novelty. The current language is unnecessarily "lofty" and consequently is confusing and will act as a deterrent.

HERA strongly prefers a modified version of the more easily understood definition used in Australia for core eligible activities:

"Core R&D activities are experimental activities:

- *whose outcome cannot be known or determined in advance on the basis of current knowledge, information or experience, but can only be determined by applying a systematic progression of work that*

- *uses scientific methods~~is based on principles of established science~~; and*
- *proceeds from hypothesis to experiment, observation and evaluation, and leads to logical conclusions*

- *that are conducted for the purpose of generating new knowledge (including about creating new knowledge or improved materials, products, devices, processes or services).”*

Question 6: How well does this definition apply to business R&D carried out in New Zealand?
The proposed definition seems to be more focused on “high brow” research and not on practical development activities or industrial research solving real world problems. It’s use of “lofty ideals’ language implies a very high bar for novelty and advancement, which would probably not be achievable for a range of applied research projects.

Question 7: Are there any reasons why the exclusions should not apply to support as well as core activities? Please describe.
Not that we can determine.

Question 8: Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?
When developing new building systems, it is important to consider how a building is used. For example, buildings systems for managing moisture control in a building have to consider how people will occupy that building and behave in it (*e.g.* opening windows, turning on heaters *etc*). Thus, the two disciplines intersect and if not considered in tandem, new products may be developed that don’t actually achieve their performance requirements because they have been considered in the context of how they will be used in practise.

Question 9: What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?
We support a compromised position. That is, where there is a dual purpose activity, the benefits of BAU are deducted from the total costs before being claimed. For example, where a production line is used to trial a new product. This should be an eligible activity but the benefits of production should be deducted from the claim. If the dual purpose exclusion is applied in total, it would disadvantage continuous production lines where it is difficult to stop a line for specific R&D activities (for example in steel coil coating) and where it is important to sell the resultant product in market to evaluate field performance. In such a case, the sale price and fixed costs should be deducted from the claim. A total exclusion would also not support activities using Lean Startup methodologies, where it is important to make and sell products to develop validated learnings as part of the development process.

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Question 10: What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?
The disadvantage is to companies (*e.g.* manufacturing) who may have large "other" costs (*e.g.* costs of production down time, feedstock) and relatively small R&D labour costs. The advantage is obviously that it is easier to administer the scheme if any activities and claimable costs are limited.

Question 11: What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs? What would the appropriate percentage be?
We have no specific comment.

Question 12: Are there any reasons why expenditure related to R&D activities or which commercial consideration is received should be eligible for a tax incentive? Please describe.
We have no specific comment.

Question 13: What variations or extensions to the definition of core activities are required to ensure it adequately captures R&D software activities?
We believe the "*that are intended to advance science or technology through the resolution of scientific or technological uncertainty*" component of the definition will provide difficult, especially for software developed for internal purposes.

Question 14: Are there reasons why continuity rules should not apply to tax credits? Please describe.
It would arguably not provide an incentive for companies in growth mode and seeking new investment.

Question 15: Is the minimum threshold set at the right level? If 'no', please provide further details.
This threshold is too high to drive structural changes within the innovation ecosystem. For Callaghan growth grants, an investment of 1.5% of revenue being invested in R&D has been required (based on a benchmark of min ideal revenue: R&D investment). Applying that benchmark here, a R&D investment of $100,000 would equate to a $6.6 million revenue company. That is pretty big, and would exclude a large number of start-up businesses.

Question 16: How important is a cap or a mechanism to go beyond the cap? Please provide further details.
We support a cap in order to give greater protection to the longeivity and sustainability of the scheme. In the case of large companies investing so significantly in R&D, we believe the Government is better positioned to assist by providing other incentives- such as setting appropriately regulatory environments, grants and specific financial incentives.

Question 17: What features of a Ministerial discretion or pre-registration would make them most effective?
We have no specific comment.

Question 18: What are your views on the proposed mechanisms to promote transparency and enhance evaluation? We support a transparency requirement and believe that if Ministerial discretion is applied in granting a larger upper thresh-hold, there should be a greater level of transparency.

HERA
innovation in metals

Question 19: Are there any other risks that need to be managed? Please describe.
Yes, as this will be a self assessment scheme, it would be great if MBIE would consider a support mechanism such as that previously provided by AusIndustry in Australia- with "friendly" advisory "audits" conducted to determine appropriateness of self assessment of eligible activities.

Question 20: What are the risks with making external advisors liable in this way?
We have no specific comment.

Question 21: What is the right level of information required to support a claim? We would not support transition to an onerous record keeping requirement and business planning process, such as required in Australia. We would suggest instructions relating to adequate time keeping, salary/overheads costs, consulting contracts, *etc* for the financial aspects and the experimental plan for the activities records.

Question 22: What opportunities are there for customers to submit R&D Tax Incentive claims via third party software?
We have no specific comment.

Question 23: What integrity measures do you think Inland Revenue should use?
We have no specific comment. However, we do support "advisory" audits to assist companies in determining the appropriateness of their determination of eligible activities.

Yours sincerely,

s 9(2)(a)

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Submission on the proposed "Research and development tax incentive"

Invetus NZ is a contract research organisation performing work in the animal health sector for the international market. We are fully owned by Invetus Pty Ltd in Australia. Our customers are primarily veterinary pharmaceutical companies.

We commend the new Government for recognising the poor expenditure on research and development in New Zealand funded from both government sources and private industry.

The figures in the discussion document make it plain that New Zealand is lagging most countries in the OECD in funding for R&D. If New Zealand is serious about growing its economy this can only come from increased spending on R&D. Unfortunately, successive governments appear to have been ignorant of this fact. If New Zealand hopes to have a high wage economy with a high standard of living, we cannot rely on low paying jobs in service industries such as tourism.

The goal of raising R&D expenditure to 2% of GDP over ten years is not ambitious enough. After 10 years New Zealand would still not be at the current OECD average of R&D expenditure. We encourage the government to be more aggressive than this and aim for 2% in 5 years. We believe that science and importantly scientists, follow the money. Scientist are highly mobile individuals and will go where funding is provided to support the work they want to do. This includes going to live in different countries. If NZ wishes to do cutting edge research and grow the economy through R&D, then the incentives must be significant to retain qualified individuals to carry out research.

We also recommend that the minimum threshold be lowered to at least $20,000. As the graph on page 24 shows over 400 businesses spend less than $100,000 each on R&D. Clearly, many small businesses are prepared to spend significant amounts of money on R&D. The suggested $100,000 limit is very high and some of the small businesses we provide contract research for would not be able to take advantage of this proposed tax credit. Furthermore, the bottom limit in Australia for R&D tax credits is only $20,000 which is substantially less than the suggested limit in NZ.

Please consider these suggestions when finalising the R&D Tax incentive policy.

Yours sincerely,

s 9(2)(a)

Invetus New Zealand

flux

24 May 2018

R&D tax incentive team
Ministry of Business, Innovation & Employment
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Research and Development Tax Incentive

Flux Federation is supportive of the Government's goal to increase research and development expenditure to two per cent of GDP over ten years. We are generally comfortable with the proposed tax incentive and look forward to seeing other initiatives in future that might provide targeted support to innovative software firms.

About Flux

Flux is a subsidiary of Meridian Energy that imagines, designs and builds software, brands and experiences for utility companies and their customers, nationally and globally. Flux builds the software powering Powershop and in April 2018 Meridian Energy announced plans to migrate it's entire customer base to the Flux platform.

The platform gives consumers a unique experience in that they can 'shop' for their energy rates in a web or mobile application by choosing from, for example, a variety of time-bound promotions. The Flux platform also provides complete support and operational functions for retailers. The key aspect of the support capability is unique in that it empowers a single individual to perform the full spectrum of support activities for a consumer.

The energy sector has seen successful disruption, both nationally and globally, to challenge the status-quo. Powershop and then Flux have been instrumental in the drive to give consumers more control over their energy consumption and the capability to shop for consistently competitive rates. Meridian has made exemplary progress in the drive for renewable energy generation and is at the forefront of sustainable, renewable energy for the longer term. Flux has enjoyed success, both nationally and globally, and is a great ambassador for New Zealand's software capability with a reliable product, reputation and conduit for further global disruption in the energy sector.

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Design of research and development tax incentives

Software development is increasingly important to the New Zealand economy and we therefore consider it critical that any research and development tax incentive adequately captures software development activities.

Flux supports a definition of research and development that is based on international and OECD best practice and includes the three elements of:

1. Scientific method – which should be defined broadly to include any systematic progression of work that proceeds from hypothesis to experiment, observation and evaluation, and leads to logical conclusions.
2. The purpose of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services – which should include the creation of new software services and solutions that enable the utilisation of existing technology in new ways.
3. The resolution of scientific or technological uncertainty.

The discussion document suggests that there may need to be a variation to the standard definition to ensure it adequately captures research and development software activity. Looking at international examples, they tend to be more explicit about software research and development. For example, in the United States the test broadly aligns with that proposed in New Zealand, however, the United States equivalent of element one above specifically states that the process of experimentation can rely on principles of engineering or computer science (not just the physical sciences). Furthermore the United States equivalent of element two in the test above involves creating a new or improved "business component", which is defined to include computer software. We encourage the consideration of similar explicit references to software in the development of the New Zealand tax incentive.

Currently, Flux faces some limitations to furthering research and development to deliver new and innovative solutions to the sector. These limitations include funding specific research and development activities and access to support in certain global markets, such as the United States. In future, Flux will look to enter new markets with the unique energy retail 'shop' product, with Asia and the United States as the two significant target markets. In addition to entry to new markets, Flux will look to work with the Powershop entities and Meridian Energy to create new products and services and to remove existing impediments

faced by consumers and retailers in the sector. With a definition of research and development that specifically includes software activities, Flux would be more likely to be considered eligible for the proposed tax incentives. Therefore such a proposal may provide an incentive for Flux to invest in research and development activities in the future.

Special treatment for software research and development

In addition to variations to the standard definition to ensure research and development software activity is adequately captured, special treatment is also being considered for activities such as testing and internal software development. Flux would support more specific tax incentives for innovate software companies and looks forward to seeing what further proposals are developed by officials.

Please contact me if you have any questions regarding this submission.

Yours sincerely

s 9(2)(a)

R&D Tax Incentive Team

Research and Development Tax Incentive for New Zealand

Introduction

We have read the 'Fuelling Innovation to Transform our Economy' document (the 'discussion document') released by the Ministry of Business Innovation and Employment (the 'Ministry') and wish to make a submission on the impact it will have on the growing New Zealand ('NZ') software industry.

The stated aim of the proposed policy is to increase the number of businesses undertaking Research and Development activities ('R&D'), and the quantum of R&D taken as a percentage of GDP. Our review of the discussion document indicates that the proposed changes will have exactly the opposite effect for software organisations. As such, we are broadly opposed to the changes which will negatively impact the viability and growth of smaller tech companies which are often leading the creation of new industries and businesses in New Zealand.

We oppose the proposed removal of cash grants to small firms conducting Research and Development activities as it will inhibit the ability of these companies to invest in R&D in their earlier stages to such an extent, that they cannot develop innovative features at a pace sufficient to claim market share. In particular; when competing against better resourced, offshore competitors. This, in turn, will harm the long-term viability of these firms and their ability to hire skilled employees, most of which would be based in New Zealand.

Software as a Service ('SaaS') companies are emerging as a dominant force in the technology sector. Xero, Vend, PushPay are just a few examples of 'tech' transformation occurring in the NZ market. The SaaS business model requires significant investment in R&D and sales and marketing upfront to gain market share, the benefit is acquired in later years when the firms are able to rely on annual recurring revenue without having to incur additional sales costs. These businesses are assured international replicability and scalability once these initial upfront costs are incurred.

Typically, the larger the investment in R&D an organisation can afford upfront, the greater the potential for growth and profits in the future. Such organisations will be in intentional loss-making positions (such as Xero was for many years) and would not see any cash benefit from the proposed tax credit.

The single most important factor in a small firm's initial survival is its cash flows. The current Callaghan Research & Development Growth Fund (the 'Callaghan Grant') and the Research and Development cash back tax credit (the '2008 rules') provide firms the ability to expand much more rapidly due to the cash these schemes award. We see the respective removal and uncertainty around these schemes as damaging to the New Zealand economy.

We also view the proposed definition of R&D as narrowing the scope compared to the 2008 rules to exclude key areas of valuable economic activity. The rules appear predicated on the use of "scientific methods" which limits worthwhile R&D activities or incentivises firms to place an unsustainable burden on the ordinary definition of "scientific methods".

However, we acknowledge the benefits of the proposed tax credit to profit making companies and the ability to grow R&D spend in New Zealand. Notwithstanding, we submit that the proposed rule change should not be made to the detriment of smaller growing firms, firms who provide the ability to transform our economy to one focused on the sustainable export of knowledge and IP whilst paying higher wages.

We propose that as well as introducing the tax credit reforms, the government keep the 2008 rules and the Callaghan Grants eligibility be changed to focus on smaller firms to ensure that R&D can still be effectively be carried out by smaller firms.

Organisation Aims

s 9(2)(a) Cemplicity Limited ('we'), a New Zealand incorporated, fast-growing software as a service ('SAAS') firm. We were incorporated in 2013 and we intend to be profit making firm. I am happy to appear in person to speak further to the submission below.

We are a world leader in patient reporting software. Our platform is used by the world's most experienced and respected health organisations, across primary, secondary, tertiary and community settings. We are in partnership with Governments, providers and sector experts across four international markets and now work with 2,500 health facilities, with over one million patients having participated in our programmes.

We reinvest 60% of our revenue into our technology each year, as a result, our software gets functionally richer and more technologically advanced every year. Our clients therefore benefit from a platform which is future-proofed, always at the pinnacle of best practice, and always at the forefront of new ideas.

s 9(2)(b)(ii)

s 9(2)(b)(ii)

We currently have no intention to move our R&D activities from New Zealand.

Outline

The basis of our submission is in response to the discussion document released by the Ministry. We are speaking from our perspective as a New Zealand software company which has utilised both the Callaghan Grants and the 2008 rules.

This submission is set out in two parts:

Part One outlines the impact that Callaghan Grants and 2008 R&D tax credit rules has had on our ability to grow and employ people as a business. This includes the advantages of the scheme and areas for improvement.

Part Two responds to select questions from the 'Fuelling Innovation to Transform Our Economy' document that we feel qualified to answer.

Part One

1. Relevant background to SAAS businesses

1.1. From the perspective of New Zealand's future exports, SaaS companies are a prime business model for exporting services to the world, they possess: A tiny footprint; entirely sustainable; no bricks and mortar requirement; geographically independent and, most importantly, selling IP – truly an export of the 'knowledge economy'.

1.2. A SAAS business has two primary cost centres; Maintenance and R&D Expenditure. Maintenance expenditure is required to keep our products running. It is the money spent that allows a firm to 'delight' their customers by providing a smooth and operative service that functions 100% of the time. Maintenance expenditure naturally increases with the number of customers a firm acquires. R&D Expenditure is a variable component of the business and is reliant on available monthly cashflows. It tends to be the first thing a firm will stop spending money on when cash is tight.

1.3. During the early years SaaS businesses in New Zealand struggle with the under-developed and unsophisticated capital and debt markets in New Zealand. Software businesses, without 'bricks and mortar' assets, are inherently risky and in a market of our size as such both initial and growth stage financing are difficult to acquire. This has often led to the banking system being 'unable' to fund SaaS products even through basic overdraft facilities (unless the founders offer up their houses to them!).

1.4. The current market factors create a very difficult situation for New Zealand businesses. They must engage in R&D expenditure to grow and yet, at the same time, keep themselves afloat, often by bootstrapping, so that they can expand into international markets.

1.5. To get to the commercialisation stage required to support internal investment in R&D requires actual investment in R&D. In fact, the most viable strategy for a New Zealand based software company to sustainably grow and reach a taxpaying position as quickly as possible is to ensure this global competitiveness and expand internationally. This very problem is a 'Catch 22' for our industry as we have to reach international markets from the outset with a product that is better than the competitions.

1.6. Highly skilled employees are the most vital parts of the SaaS equation. Part of the initial R&D challenge is attracting top quality employees who want to be involved in high quality projects. To secure these resources the employees need to know that the company is financially viable for the foreseeable future.

2. Callaghan Grant's benefits to our business.

2.1. The Callaghan Grant has allowed us to rapidly scale our product so that we can enter international markets with a highly competitive and enterprise grade product offering. It has also allowed us to tackle highly complex technical problems that we would have bypassed in the initial stages of our development (which would have required significant re-investment downstream). The quarterly cash grants have provided us with complete certainty to employ both highly skilled internal resources and knowledgeable experts sooner. In doing so, we have built up key knowledge within the company (we would have outsourced parts of this offshore). They are expensive resources, but having the IP sitting internally is a now great asset for a knowledge based business.

2.2. The people we employ will be vital to long term company success. Thanks to the grants we have received, we have been able to confidently employ. In turn, Cemplicity has built a business based on an impressive product. We still invest 60% of our revenue into R&D, but we now have a real chance of becoming a significant global player in our field.

2.3. In short, the buffer of Callaghan Grants cashflow has undoubtedly led to many hires that we would not have made otherwise given our cash position.

2.4. Moreover, the Callaghan Grant has proved to be a valuable signalling tool to early stage investors and debt issuers that we were a worthwhile investment. We believe that without this vote of confidence we could have struggled to attract additional investment that we have secured.

2.5. In practical terms, the funding has directly allowed us to employ six new full time employees last year and put us in a position to employ an additional seven full time employees for FY19. Over half of these employees will be involved in R&D activities.

2.6. We would not be where we are today without the Callaghan assistance.

3. Consequences if the Callaghan Grant was to be removed.

3.1. Without the cash back component of the Growth Grant we, as a company, would have 6 less FTEs and we would, by any reckoning, be about 2 years behind our current trajectory. In the world of fast moving SaaS business this would sound the death knell of our business.

3.2. Anecdotally, when the proposed changes to Callaghan Grant were explained to our s 9(2) [redacted] he genuinely asked "Ok, which future hires can we do without and will I need to lay anyone off?"

3.3. Similarly, our s 9(2)(b)(ii) [redacted] was equally gloomy and prophesised that a lack of cash back R&D funding would lead to a loss of key employees, leading to a loss of R&D activities and a spiral of self-fulfilling prophecy.

4. Proposed changes

4.1. We believe that the Government should focus the Growth Grant towards smaller firms who's make up requires them to invest significantly in R&D where they are unlikely to have available cashflows to make this possible. Most SaaS businesses are going to fall into this category.

4.2. Corporate R&D should be excluded from the Growth Grant as they should have the cashflows to invest at the outset.

5. **R&D Tax Credit – benefit for a loss-making company and ease of application**

5.1. The 2008 rules alignment with IAS 38 allows for a clear and definitive understanding of what constitutes new knowledge and the requisite processes to acquire it. This makes it simple to apply to a broad range of activities. Additionally, there are no further compliance and record keeping for tracking R&D activities. They already align with current accounting processes.

6. Benefits to loss making companies and new companies

6.1. For a loss-making company the 2008 rules have been more effective in helping grow our R&D spend than a tax credit when profitable. Under these rules, we have been able to take advantage of cash at a time when it would most benefit a growing company. If we had not been able to use the tax credit, we would also have a large reserve of eligible tax losses.

6.2. Given the rules, we have managed to avoid expensive equity and debt options ensuring our company remains New Zealand owned, despite the immature capital market. Additionally, the cash back provides current investors with the ability to utilise the tax losses, rather than risk losing them through shareholder continuity rules in a later equity raising round. This further reinforces the ability to keep New Zealand companies New Zealand owned.

7. Benefit to a start up

7.1. The R&D tax credit has accelerated our commercialisation process, allowing us and other start ups to bring in revenue sooner and move towards a profit position quicker than would have been possible without the funding. It has also helped New Zealand tech firms become market leaders, rather than followers. This translate in the ability to command attention in international markets. From our own experience in the health services, our clients, have never seen anything like our products.

7.2. This ongoing support for R&D activities means we are now looking to accelerate our efforts in s 9(2)(b)(ii) . These are all areas of significant unknowns both domestically and internationally. If we can commercialise our efforts in these areas it could have a pronounced impact on the way that we export software to the world.

7.3. There is no doubt that the cash funding has acted in a similar way to the Callaghan grants in growing our operation.

Part Two

Each section is marked by the question in full and our response.

Question 2

How well does this definition apply to business R&D carried out in New Zealand?

In our view the proposed definition narrows what is considered valid R&D when compared to the 2008 Rules. In particular, the proposed definition for '*conducted using scientific methods*' could exclude many worthwhile approaches to resolving scientific and technological uncertainty.

Software R&D is incremental and iterative in nature, not revolutionary. It involves extensive work to gain new knowledge developed in ways that would not fall under the ordinary definition of 'scientific methods'. This includes meticulous review and documentation of practical experience and existing knowledge to result in the increase of new knowledge. New knowledge in software is also often the result of the sum of many ordinary business activities.

As an industry we are beginning to experiment with development methods that arise from machine learning and artificial intelligence. This is a radically different way of thinking about software development and offers the chance to alter the ways in which research and development is conducted outside the ordinary meaning of scientific methods. To exclude this in drafting would be a mistake.

Question 3 - Does this definition exclude R&D that you think should be eligible, please illustrate with examples.

In the software industry, overhauling existing systems often results in valuable new knowledge which was either unknown or unforeseen at exposition of the overhaul. Additionally systematic reconciliation and testing of practical experience often results in new knowledge. This is a time consuming and costly activity for business which resolves scientific and technological uncertainty, but would not fall under the definition of software development

Question 4 - Does the scientific method requirement exclude valid R&D in some sectors, please illustrate with examples?

Yes, as discussed above in our responses to questions 2 and 3; software development. Software R&D often results from seeking resolutions to issues, rather than more formal hypothesis testing, in particular the overhaul of existing software solutions.

By way of example; 1 in 10 patients worldwide are harmed when using a health care service. Every day we are trying to find solutions, through our software, as to how we can help address this worldwide public health issue. Our exploration of this domain leads us to consistently uncover new ways to do things and, as a corollary of that, spend on R&D.

Question 5 - What would the impact be on business R&D in New Zealand if a materiality test was applied to both the problem the R&D seeks to resolve and the intended advancement of science or technology?

Many problems are unable to be quantified with any measure of accuracy at the time of the undertaking. Particularly in the field of basic research that may have incredibly expansive or limited applications in the future.

What seem like immaterial problems at the beginning can often have major scientific and commercial implications which were otherwise unforeseen at the time of commencement. This is particularly so with software development where a seemingly insignificant surface level problem can uncover a much deeper issue resulting in development in unknown areas. In our opinion, the application of a

materiality threshold approach will harm small firms who cannot afford the research budgets. We submit that any materiality threshold should be kept as low as possible to encourage firms of any size to undertake R&D activities.

Question 8 - Please provide any examples where social science research is/has been a core part of business R&D in New Zealand?

The Frascati Manual has identified that there is valid R&D activity in the social sciences. We are particularly interested in the ability to collect and apply population health data down into the clinical context. We know that if we can use social determinants to understand populations we can dramatically affect the ways that people interact with health services. This is absolutely essential to solve the ever-present problem that health services around the world are in crisis as populations both rise and age. This social science approach, blended with technology is actually at the heart of better patient outcomes.

Question 9 - What is the likely impact on business R&D in New Zealand if dual purpose activities are ineligible for the R&D Tax Incentive?

As discussed above in our response to question 3, for Software development technological and scientific uncertainty may be resolved through the combined sum of dual purpose activities. The removal of these dual purpose activities will narrow the scope of claimable research and development activities and reduce the overall quantum of R&D activities undertaken in New Zealand.

Question 10 - What are the advantages and/or disadvantages of limiting eligible expenditure to R&D labour cost?

One of the key disadvantages will be the removal of support at the policy level of upskilling/training existing employees in R&D activities. By having this support at a policy level, firms are more likely to upskill in house employees than rely on external contractors. This has the flow on effect of raising the salaries/wages of people employed in R&D activities.

Where a required piece of work is of such a specific focus that it would be uneconomical to upskill in house, the loss of the ability to include contractor expenditure in the R&D credit will go against the intended policy outcome of increasing total R&D spend. This is clearly a disadvantage.

Question 11 - What are the advantages and/or disadvantages of setting overhead costs as a percentage of R&D labour costs? What would the appropriate percentage be?

The major advantage will be the ease of its application and the compliance burden on companies in claiming overhead costs. It will prevent lengthy recording activities and submissions to support a claim of R&D overhead.

A major disadvantage will be the increase in material inaccuracies for overheads in some industries. This will be exacerbated in our industry where other R&D costs outside labour are negligible.

We submit that a banded approach for different industries would keep the benefit of compliance simplicity while avoiding material inaccuracies.

Question 13 - What variations or extensions to the definition of core activities are required to ensure it adequately captures R&D software activities?

As discussed above in our response to question 3 and outlined in Frascati manual, R&D activities for software development is largely iterative in nature.

We see the main limit being the requirement for the scientific methods to be used in deriving new knowledge. As such an additional term or phrase added into the main definition to recognise the different processes used in software development.

We would suggest inserting language to recognise 'concentrated iterative activities' or 'systematic approaches' necessary in software development. The new definition should also recognise that valid R&D can arise from the resolution of scientific or technological uncertainty through the sum of ordinary business activities. This could be inserted in the definition of core activities or the proposed definition for scientific methods.

Question 18 - What are your views on the proposed mechanisms to promote transparency and enhance evaluation?

We are opposed to the suggested transparency method as it will negatively affect business behaviour and competition. It will allow competitors access to confidential information that could impair business activities.

Many smaller and privately held businesses can be reliably benchmarked by their expenditure on R&D activities and it will give many competitors and predatory investors the ability to value the firm and assess their competitiveness in a way they were unable to do so without this information.

We acknowledge the proposal for a two year wait period and, releasing the information in bands rather than specific amounts. Nevertheless, businesses can still, with reasonable accuracy, have a growth rate applied to assess the size of the business two years later. A large determinant of international success is the ability to enter the world stage with surprising new products. Anything that takes away that surprise would, in our opinion, be considered detrimental.

Potentially, this transparency would affect the ability for smaller firms to win larger customer contracts/tenders if the clients have pre-existing biases against smaller firms for no other reason than their size.

Question 20 - What is the right level of information required to support a claim?

We submit that there should be no material change to the level of information to support a claim from the 2008 rules.

From:	Peter Maire
To:	RD Incentive
Subject:	Proposed tax incentive scheme to replace Callaghan managed grant system.
Date:	Saturday, 19 May 2018 8:32:21 p.m.

Submission by:
Sir Peter Maire.
Business founder: Navman NZ Ltd, Fusion NZ , Invenco.
Past board member NZ Government Growth and innovation, NZTE, Callaghan Innovation.
Investor and past board member Rakon, Orion Health.
Board member: Auckland University Medical devices. Grow North.

Over the past thirty years I have founded, grown and sold several well known IT companies. They represent an investment of several hundred million dollars of R&D spend. They have generated combined an estimated three billion dollars in export revenue and several thousand jobs. I am a past and current recipient of Callaghan grant money. Invenco (revenue this year $100m+) employs more than two hundred staff in Auckland (forty more globally) primarily involved in a R&D.

I acquired Invenco Ltd and Fusion Ltd in 2008 out of receivership. Both companies were loss making. Both companies required a heavy investment in R&D to return them to profitability. Attracting capital between 2008 and 2012 was extremely difficult. It would not have been possible for me to rescue and rebuild these companies without Callaghan R&D grants.

ANY New Zealand technology company with global aspirations will most likely be operating in a cash burn situation. The grant system has provided critical tipping point support for companies requiring risk capital. Fusion and Invenco are good examples of the success of the grants scheme.

I have absolutely no doubt that a tax based R&D scheme will accelerate the level of REPORTED R&D spend in New Zealand past 2% of GDP within a very short period of time. I began my exporting career in 1978. I have witnessed tax based schemes for forestry, deer farming, kiwi fruit farming, angora goats and race horses. My founding partner in Navman owned the largest injection moulding company in Auckland and in the 80s made a fortune making plastic tooling for air line pilots to take advantage of the then manufacturing export tax incentive plan.

Kiwis are world class at “routing the tax system”. My concern is that within a very short time any and every company will be claiming tax rebates for anything that smells remotely related to development. The number of companies with a reasonable shot at a claim will swamp the IRD inspectors and within a few years the incentive tax level will be reduced and finally he scheme will be eliminated. By this time all the hard work establishing the Callaghan grants program and team will be lost.

Having spent my life involved in R&D I would be considered an expert on arguing what is or is not a valid development activity. Should this crazy scheme replace the current program you will most likely see me establishing a consulting business to assist company owners on how to make a valid R&D tax claim.

Virtually any service company (plumber, electrician, panel beater, boat builder, home builder, farmer) could launch into some form of tax deductible development activity. Every Kiwi small business owner dreams of developing his or her widget but as we know but a positive economic impact will only be realised when products succeed in reaching the market.
However it’s not the small companies the tax department will need to worry about. We have many larger, smarter companies who will quickly work out how to defraud this system. These are the ones I will target as they will gladly pay well for an expert to help them craft them a “deductible R&D program” ..

Of course I am joking about the consultancy!

I am one of a number of Kiwis who have exported a billion dollars resulting from product development. I spend a good part of my time mentoring start ups who I believe will achieve over the next decade a far better result that I have. My fear is that they will suffer under this new proposal.

I am yet to find ONE of my associates who support this proposal. They all share my concern that should this be

implemented how long it will take to repair the damage.

My advise is DONT DO IT.

Very sincerely
Peter Maire.

From: s 9(2)(a)
To: RD Incentive
Subject: RE: Save New Zealand"s knowledge economy [UNCLASSIFIED]
Date: Thursday, 31 May 2018 9:52:24 p.m.

Hello,

Herewith some further details:

1. As a start up or company investing in software products, tax incentives are secondary. Main constraint is cash flow. We need cash to fund the R&D.
2. Tax credits only work for companies that are making a profit. Companies like ours are investing in the future and only will turn profitable after various years and we need the funds to get to such position. We are now in a position that we expect to turn cash flow positive with a profit in about 1 year from now. We would not have gotten to this point without the support of Callaghan growth grants to fund this development.
3. A consideration of cash out tax credits is a thought into the right direction, but question is about the timing. It may be too late for start ups to receive those tax credits.
4. We invested all funds received from Callaghan into employing staff we otherwise could not have afforded. Thus we created growth for New Zealand. And it almost is a tax neutral position for NZ overall via the PAYE we returned accordingly.
5. We noted that the criteria from Callaghan got tougher and tougher for the R&D classification. We suggest to relax the criteria to enable more companies to benefit from the schemes. For the economy I believe we need to invest in growth for NZ which is tech related and not get caught up into too detailed technical R&D discussions. Currently a lot of innovative knowledge based initiatives would be excluded from growth grants and possibly tax credits as they rely too heavily on a narrow R&D definition. A lot of modern innovations are resolving a business problem with innovative technical solutions, and the IP is in the process re-engineering rather than technology used, i.e. modern tech frameworks can be used as the tool to create the innovation. This still requires a lot of R&D work and knowledge transfer for the company to find the right tech stack, investigation on how to use it to solve the business problem. However, with a narrow R&D definition this may not apply for growth grants as not a new technology per se is used. Think of Uber, from a technology point of view there is nothing 'new' in there. It is more the art to choose and combine different technology platforms to create an innovative solution that can transform or disrupt the business model.
6. If we want to become a tech leader in the world we need to be bold and take risks. I would see the government as a catalyst to drive that process and to take some risks. And a different position should be taken as opposed to private investment. Private investors have very high expectations in terms of returns for risky investments. As a government I believe there should be a different approach. Firstly as a large part of the funding would come back directly via PAYE, secondly the private investment area is highly underdeveloped in NZ, thirdly the intention should be to support businesses that could be a contributor to the economy whereby private investors often are greedy and look out for the unicorns but how many are there realistically. From a macro perspective it would be beneficial to help more sustainable businesses even though they may not result in investment multiples of 10x plus…It is about to create a knowledge based economy with skilled people and generating a good return for the economy.

Greetings
s 9(2)
(a)

[redacted]
Website: http://www.torque-its.com
s 9(2)(a)
[redacted]

From: RD Incentive [mailto:RDIncentive@mbie.govt.nz]
Sent: Thursday, 31 May 2018 2:34 a.m.
To: RD Incentive <RDIncentive@mbie.govt.nz>
Subject: RE: Save New Zealand's knowledge economy [UNCLASSIFIED]

Kia ora, and thank you for your recent email to the Hon Megan Woods regarding the R&D tax incentive.

We really value hearing from people in the startup sector, as we want to ensure we get the policy right to support as many businesses as possible to lift their R&D.

We would appreciate your feedback in more detail on our proposals for the R&D tax incentive. It is really important to this process that we have a strong understanding of your concerns, and how different design options could affect your business.

Official submissions close 5pm tomorrow (1 June) on MBIE's website, so we encourage you to get in and make a submission to the questions relevant to you. Or you can respond to this email directly.

If you haven't already, have a read of the Minister's response where she addresses Toby Littin's concerns about startups and loss-making firms.

While the submission period is drawing to a close we're still keen to hear from you throughout process of designing the tax incentive, so feel free to keep in touch with us at this address.

Kind regards,
The R&D Tax Incentive Project Team

www.govt.nz - your guide to finding and using New Zealand government services

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Registration for Scientists Undertaking Tax Incentivised Research

A Swiss physicist, Daniel Spreng, has schematized the interdependence of energy, time, and information as the triangle shown in Fig. 5.9.[54] Any two of the three attributes (energy, E, time, t, and information, I) can be traded in for the other two. Any point in the triangle represents a particular mixture of the three

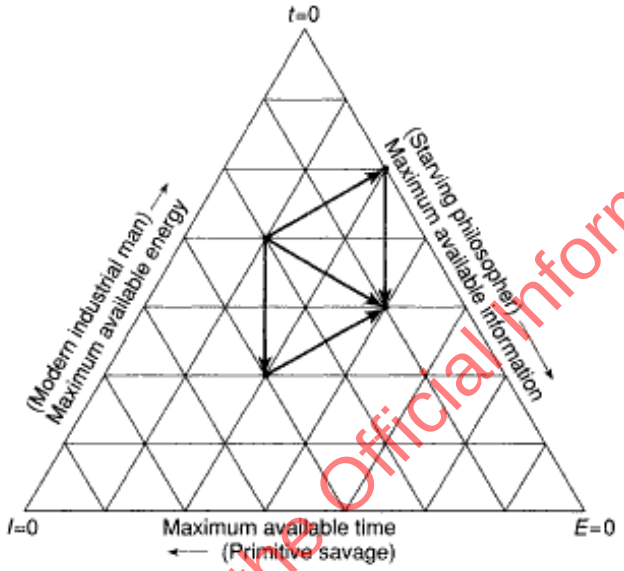

Fig. 5.9 Spreng's triangle, showing the symbiotic relationships of energy, time, and information. Each point in the triangle represents a possible mix of energy, time, and information necessary to complete a task. A change in any one of these three quantities is equivalent to a combination of changes in the other two.

Prepared for: Any one in NZ who is interested
Prepared by: Phillip Smith,

31 May 2018
Proposal number: 1

Figure copied from John Barrow's excellent book "Impossibility: The Limits of Science and the Science of Limits"

Introduction

I returned to New Zealand from Japan in 1996, where I was undergoing post graduate study in molecular biology. I had spent most of the last couple of years in Japan studying evolution using simulations. I had had a long interest in evolution through my association with David Lambert while a doing a Masters in Botany at Auckland University studying Cyto-genetics. On my return to NZ I started a business called Applied Evolution looking for commercial application of Genetic Algorithms. This was unsuccessful for two main reasons. Inability to find problems that were suitable to this approach, The companies I did approach were foreign owned and thus decisions were made overseas by people who did not even know they had an office in NZ. An additional but minor issue was competition with publicly funded researchers using other approaches. I ended up focussing on IT working for various organisations.

One of the companies I did work for was Chong Bureau. They were a Clipping service, that is they cut articles out of newspapers and sent them to companies and organisations around NZ. In the early 2000's they started moving to electronic delivery of clips. This was the beginning of a great period of innovation in the industry. Prior to electronic delivery the greatest innovations had been the introduction of the photocopier and the glue stick. The next big change was going fully digital. Print could be digitised and transmitted to clients as email, this signalled the beginning of a rapid transition of the business from a low wage labour intensive operation, where articles were manually cut from papers and glued onto A4 sheets prior to photocopying and posting, to a sophisticated technology intensive business. The move to digital increased productivity by 30% in six to eight months.

I was IT manager when this and many more changes in technology and services occurred. The game became very competitive when, Media Monitors, a large Australian company came into the NZ market. Despite the big difference in size and in some ways because of it, we were able to out innovate and compete with Media Monitors. Chong Bureau was sold to Gould Holdings Limited and after 3 years they eventually sold out to Media Monitors with 40 of the 51 staff being made redundant. In response to this I decided to form my own service, namely Cliptec.

In summary, I have experienced first hand the process of moving low productivity manual labour company to a highly efficient and competitive company well able to compete with multinational companies. My scientific training was of great use to me in that time, not that any evolutionary theory or cytogenetics were involved. Most important was my training in scientific method, ability to capture the essence of complex problems and produce reports that could be understood by a range people with varying intellectual abilities.

The Spreng triangle on the front page of this document illustrates the relationship between information, time and energy with respect to productivity. If New Zealanders as individuals are to increase their productivity they need an increase in the available energy per person or we need a smarter approach to solving the problems required. Energy increases are beyond the scope of this document but I address the process of increasing productivity. We need to bring the intellectual capital of New Zealand into the work place.

Chong's were lucky, if I had not walked in the door they would have gone out of business many years ago. I see the biggest problem in raising NZ's productivity is that many small medium enterprises are not that lucky. They do not come into contact with scientists and to a lesser degree engineers and mathematicians. The problem can be summed up as, they have problems they don't know can be solved and we have solutions looking for problems. We have the hammer they have the nuts and we are not talking to each other.

Research and development is unaffordable to startups and SME's. They certainly can't afford the time and expense of sponsoring a scientist to hunt around looking for problems to solve, which is an essential part of the process. My advice to anyone going to work for a SME is to keep quiet and listen for the first six months. This is a hard lesson to learn for those used to curiosity based research. However a scientist's skills of observation are handy and there is nothing wrong with sitting and watching.

I am convinced that increased contact between scientist and industry is the only way we can increase productivity in NZ. The lack of science in the average New Zealanders daily diet of information in NZ has implications not just for productivity but long term social and political implementation.

The sequestration of NZ scientists in publicly funded institutions does nothing to help. The lack of a private sector career path raised problems in employment and mobility of employment that must discourage entry into science and, I suspect, contributes to the fearful competition between publicly funded institutions. It is essential that a private sector career path evolves in NZ if we are to capitalise of the intellectual capital available in NZ.

A Radical Suggestion

It is inevitable that some kind of tax incentive that balances the risks and return of science investment with those of property investment and other alternatives. There are undoubtedly many problems with the implementation of such changes. However I have a suggestion that may be of some merit.

There are two components to the proposal. One is that Research and Development is tax deductible. The process must be simple so that SME's and Startups can easily exploit this opportunity. The problem with this is that is easy to fake research and development i.e. cheating is easy.

The more radical part of my suggestion aims to prevent this. I suggest that registration for scientists is introduced. It would not be compulsory but would be required for tax incentives to be accessed. That is, companies could only get access to tax incentives if the research is carried out or supervised or signed off by a registered scientist. The reason registration is necessary is so that cheats can be deregistered. This would help curb cheating in R&D tax deductions.

Initially any one with a MSc perhaps or greater could apply for registration perhaps after some short course on professional practice, later it could be included in BSc or postgrad courses. It would however remain separate from other qualifications as it can be taken away.

This might sound like employment by legislation and to some degree this is true, however this is not without some precedent. I cannot practice law or medicine in NZ and probably many other professions without being qualified and registered by some professional body who can remove that registration.

New Zealand is in a fairly desperate situation and some radical change needs to occur. There are no doubt issues with this proposal. I hope that it is, however, given serious consideration.

I would greatly appreciate any feedback on this document

Regards

Phillip Smith

PSYM Ltd

s 9(2)(a)

31 May 2018

R&D Tax Incentive Team
Ministry of Business, Innovation & Employment
PO Box 1473
Wellington 6140
New Zealand

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Research and Development Tax Incentive

Thank you for the opportunity to make a submission on the research and development tax incentive.

Fonterra is New Zealand's largest company and has had a long history of investing in R&D. Fonterra carries out R&D on a very large number and range of projects, investing significant expenditure in the process.

Fonterra supports the Government's initiative to raise the overall volume of R&D in the New Zealand economy. The primary focus for Fonterra's R&D efforts remain in New Zealand, although through our activities in a wider range of overseas jurisdictions, we have experience of how other countries operate these kinds of plans.

As a result, Fonterra wishes to make submissions on some key features for the New Zealand plan which we believe will help support the Government's goals, and ensure the R&D tax incentive plan is robust, well-targeted and sustainable.

A plan that is sustainable and stable over time

As the experience of the short-lived 2008 R&D tax credit plan demonstrated, the development and ongoing administration of an R&D tax incentive plan can be onerous, time consuming and expensive for both Government and the private sector.

Research and Development also takes place over short timeframes (6-12 months) and much longer timeframes (5-10 years). To ensure stable investment in R&D it is essential that the proposed R&D tax incentive plan is sustainable over a long period of time to ensure that the necessary investment into the system from both the public and private sector is worthwhile and maintained.

Fonterra suggests that in designing the plan, Officials and Government should address the sustainability of the plan from three perspectives:

- **Fiscal sustainability** – which means the design of the plan and appropriate integrity measures ensure that the fiscal costs are affordable over the medium term. This will ensure all parties can make long term investment decisions, without the need for significant unexpected changes in the plan design.
- **Administrative sustainability** – the plan will place obligations on businesses in terms of record keeping, filing and reporting on R&D projects and activities. Similarly, there will be the necessary administration, education and compliance activities on Inland Revenue, MBIE and other Government agencies.

  It will be essential that these processes are designed to interface with and complement existing systems and processes, including digital or other IT interfaces. We suggest Officials become actively engaged with businesses about their data management and IT systems, as designing the reporting requirements in conjunction with understanding business realities will lead to a

much higher-quality interface. This is also consistent with Inland Revenue's learnings through the current Business Transformation process.

- **Political sustainability** – The design of the plan should take into account that Governments can change, and policy extremes in the structure of the R&D tax incentive regime can also change with changes in Government.

  In this regard, an R&D plan is now a mainstream tax policy in many offshore jurisdictions, and it would be instructive to adapt and adopt the key design features from those jurisdictions to ensure stability over time and across different Government administrations.

Refundable Tax Incentive

As presently contemplated, the tax incentive would only result in a refund of other taxes paid. As a consequence, it is only those who are in a tax payable position who will gain a direct benefit from the plan. The plan will not provide any tangible benefits to those who are in a tax loss position, or for industries where for structural reasons, the payment of tax occurs at a different point to where the bulk of the R&D activities reside. Fonterra is one such example – we attach an extract from our 2017 Annual Report which highlights the structural issue.

Moreover, in the case of nascent industries or start-up businesses, a large amount of R&D expenditure is often incurred in the early stages of the business life cycle. These businesses are often non-profitable in early stages and cash flow negative. A cash injection is much more helpful to these companies than a tax incentive that they may not be able to use.

For countries outside New Zealand, refundable tax credits for R&D activities are commonplace, and adopting this approach would bring New Zealand within international norms. Fonterra recognises the importance of the fiscal sustainability of the proposed R&D tax incentive plan. Refundability requires appropriate integrity measures are in place.

Definition of core R&D activities

- **Definition of R&D** – from discussions with officials we understand that the first part of the definition of core R&D activities has changed from "using scientific methods" to "using a systematic approach." Fonterra supports this as better encompassing the development aspect of R&D.

- **Systematic investigations of human behaviour** – The proposal states that research in the social sciences is excluded from the definition of core R&D activities, but could qualify as support activities. Fonterra agrees that consumer research conducted via traditional methods (surveys, questionnaires, focus groups…) should be treated in this manner.

  There is however, an increasing focus in seeking to understand how people process information to make decisions, what makes behaviours sustainable, how consumers trade-off between environmental sustainability and economic factors and other aspects of human behaviour. This coupled with the rise of social media mean these aspects of social science research will be increasingly important to the future and require new to the world approaches that go well beyond traditional surveys and data collection. We request that activities to develop new behavioural research methods and services be eligible as core R&D activities. (For example, creating virtual stores and measuring shopper response in these environments appears to give a high predictive accuracy – about 80% of what occurs with real products in a real store – compared with asking shoppers what they would pay for a new food product and which features are most important through focus groups and surveys).

- **New knowledge** – Core activities are defined as: "those conducted using scientific (or systematic) methods that are performed for the purposes of *acquiring new knowledge*…" and excludes: "the reproduction of a commercial product or process by a physical examination of an existing system or from plans, blueprints, detailed specifications or publicly available information".

  Fonterra supports this approach subject to the clarification that R&D activity to generate knowledge that is not currently accessible to the organisation (for example information held as

trade secrets by others) should be considered as *acquiring new knowledge*. Similarly, R&D activities to develop an alternative to a patented approach for manufacture of a product should also be eligible core expenditure (for example Fonterra's patented mozzarella technology).

- **Scale-up and trials on commercial facilities** – Experimentation on commercial scale equipment is a necessary part of the R&D process to resolve technical uncertainties relating to process scale. It is even more relevant for organisations that do not have access to suitable pilot scale facilities to enable intermediate scale testing. We propose that true scale up and experimentation on manufacturing facilities should be in scope for any project that passes the R&D definition.

  Fonterra appreciates the difficulty is setting a boundary between activities directed at resolving the technical uncertainties of production at scale versus subsequent commercial risk reduction. Exclusion of research that is conducted after the beginning of commercial production requires a clear definition of what constitutes commercial production. Due to the scale and costs of the materials involved Fonterra typically sells products produced as part of commercial scale trials, but we do not consider this to be commercial production.

- **Cap on offshore R&D** - As noted in the proposal certain aspects of R&D will require the use of international resources. This is particularly true of clinical trials of foods or medicinal products where New Zealand lacks the population base necessary to support the trials, or there is a requirement for market specific data to support regulatory processes. Clinical trials represent a very significant expense that occurs late in the life cycle of an R&D project (which typically spans many years), often distorting the ratio of offshore to domestic expenditure if viewed within a single tax year as opposed to over the entire project life.

  A second aspect of offshore expenditure is bringing international experts to NZ to provide a degree of specialist expertise not available locally and transfer knowledge into the NZ R&D system. This expenditure aligns with the goals of raising the capability and expertise of NZ based R&D groups.

  To address the issue of offshore R&D expenditure Fonterra proposes that:

  - International R&D expenditure for which a company has received either in-market funding or a tax incentive should not be eligible as either core or supporting activities.
  - The 10% cap on offshore R&D expenditure be applied at an organisational level (i.e. as a portion of the total claim) rather than project level. This will address the distorting effects of project lifecycle noted above.
  - Expenditure on international experts who are temporarily based in New Zealand – but not NZ tax residents – should be considered as domestic expenditure due to the knowledge transfer benefits.

Administrative Arrangements for Large Scale R&D activities

The plan is focused on identifying and documenting specific R&D activities on a project-by-project basis. This design is appropriate for businesses that have a modest and finite number of R&D projects. However, this construction is not appropriate and is administratively burdensome for a number of large businesses, such as Fonterra, which conduct extensive R&D programs.

Fonterra, for example, carries out R&D on more than 70 projects at any given time in the Fonterra Research and Development centre alone. It would be extremely cumbersome, and cost prohibitive from an administration perspective, if Fonterra were required to identify and document each of these projects in order to access the R&D tax incentive for activities which are demonstrably within the scope and spirit of the design of the R&D tax incentive.

For this reason, Fonterra believes the plan should make provision for R&D Centres where the activities are almost exclusively related to R&D. Fonterra has one such centre in Palmerston North,

and we expect a number of other businesses operate dedicated R&D facilities. To ensure the integrity of the plan, Inland Revenue or MBIE would need to be satisfied that the activities meet a high threshold for relating to R&D activities and are separated from other unrelated business activities. This would also ensure the focus stayed on the activities of the R&D Centre as a whole, and would qualify all projects within the centre.

Naturally, R&D activities not undertaken through the R&D Centre would be examined at the project level as with any other R&D tax incentive claim.

Given one of the design goals of the plan is to encourage businesses to relocate R&D to New Zealand, this is likely to take the form of specialised R&D Centres for many sophisticated multinational enterprises. Having provision within the design of the R&D tax incentive plan for larger scale R&D activities should help make New Zealand a more attractive R&D locale.

General

"We would be happy to discuss our submissions in more detail with you and we look forward to working collaboratively with the Government on this issue as details are confirmed and the programme implemented. Please contact the writer on s 9(2)(a) in this regard."

Yours sincerely

s 9(2)(a)
Fonterra Cooperative Ltd
s 9(2)(a)

25 May 2018

R&D Tax Incentive Team
Ministry of Business, Innovation and Employment
PO Box 1473
Wellington
6140

Ref: Taxpayer submission

Dear Sir/Madam

FUELLING INNOVATION TO TRANSFORM OUR ECONOMY: DISCUSSION PAPER ON A RESEARCH & DEVELOPMENT TAX INCENTIVE FOR NEW ZEALAND

Our history dates to colonial New Zealand where we began as the Ministry of Public Works. In 1988 the Ministry of Works and Development consultancy arm became Works and Development Services Corporation NZ Limited, a state-owned enterprise. In 1996 Works Consultancy Services was sold to Kinta Kellas of Malaysia and rebranded a year later as Opus International Consultants Ltd. Most recently Opus International Consultants was rebranded to WSP Opus following the acquisition by WSP, one of the world's leading engineering professional services consulting firms. Opus, with the combined might of WSP, has more than 500 offices across 40 countries and a workforce of 42,000 people. WSP generated revenue of C$6,943.2 million in 2017, up 8.8% from 2016, and with an EBITD of C$555.2 million.

Research and Development (R&D) has been a vital part of our business extending as far back as the Ministry of Public Works, where we were fronting the challenges of developing infrastructure for New Zealand. While R&D is a fundamental part of the whole business, research is formalised within Opus Research (previously Central Laboratories), our dedicated research facility located in Petone, Lower Hutt.

Opus Research has been delivering R&D for over 60 years, providing services to central government (centralised government research funding), government agencies (internally funded by the agency itself or by a state-owned enterprise), local authority and commercial research and development for corporate and other private clients. Opus Research also performs internally funded projects to develop new products and services for New Zealand and globally. With the WSP acquisition we now have access to a much larger market. Given our history, track record and expertise, the New Zealand business becomes an attractive option for global research and development.

WSP Opus
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PO Box 30 845, Lower Hutt 5040
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www.wsp-opus.co.nz

WSP Opus is also a member of the Independent Research Association of New Zealand. IRANZ organisations are independent and non-government owned, carry out high-quality scientific research, development or technology transfer, have strong linkages with end-users, derive a portion of their research work from government research contracts and collaborate with universities, Crown Research Institutes and research departments of industrial organisations.

WSP Opus is also a member of the Corporate Taxpayers Group, and supports the Group's view that a good tax system requires high certainty, low compliance costs and international competitiveness. We wish to assist with ensuring these features are reflected in the R&D tax regime.

In summary, we are very pleased to see the re-introduction of R&D tax credits, as we believe this will stimulate investment in R&D. Overall, we support the proposal and the extensive range of consultation opportunities that have been offered. Below we comment on particular aspects of the R&D tax credit proposal that we believe are particularly relevant to our business.

Eligibility

Our key area of concern is the implication that we may be ineligible for tax credits as we are a significant part of a multinational organisation, and the parent of the organisation will have the overall control and ownership of R&D expenditure, take the financial risk and ultimately own the intellectual property (IP). While it's not yet clear whether one or all three tests apply for eligibility, it's quite likely that research projects undertaken for our global parent would not meet any of the three tests.

It is important to note that WSP Opus in New Zealand employs over 1800 staff and the R&D work we undertake is of significant benefit to New Zealand. With the rebranding to WSP, this opens the door to further potential major international R&D investment in New Zealand. This offers us greater opportunities to export our innovations to the world. It puts our R&D on the global stage.

Rather than ownership and control of IP, we suggest the test should take account of the economic benefits to New Zealand of attracting, training and retaining specialist skills; the number of jobs created and maintained; and the export potential of products and services.

In this regard we strongly support the submission of the Corporate Taxpayers Group.

Question 8 – Social research

We note that social science research has been excluded from the R&D tax regime. We believe that this should be reviewed, as social science plays a vital part in research and development.

WSP Opus has a core focus on the development of human-centric infrastructure where social science research plays a fundamental part in shaping how infrastructure is developed and how people live and function within it. We have undertaken considerable research and development that has helped shape the rebuild of Christchurch post-earthquake, informed various rebuild activities for Kaikoura earthquake recovery, and is leading the way in disaster resilience. Smart mobility and smart cities concepts are changing the urban landscape and social science input in these areas is vital in shaping human focused cities and places.

Examples include:

1. As part of planning large roading infrastructure projects it is necessary to undertake research of the needs, preferences and behaviours of drivers and other users in order to ensure that the road design satisfies the needs to the users. An example of this type of research could be on driver behaviours and attitudes towards cyclists, particularly when overtaking. This type of research results in the acquisition of new knowledge which can then be incorporated into roading design by all parties involved. This example is based on this real-life example http://www.opus.co.nz/projects/sharing-the-road/.

2. As part of the Christchurch rebuild social scientists developed virtual experiments to test the appetite for a new way of living in Christchurch's Central City confirming for recovery agencies that people would embrace an inner-city lifestyle, but only with the right amenities and qualities.

We support the Corporate Taxpayers Group submission on this point.

Question 9 – Dual purpose activities and Question 12 – Commercial consideration

There is currently some confusion as to the intention of the dual-purpose activities test. We have interpreted this to mean that any R&D activities that have both a research and a commercial purpose (i.e. to enable us to fulfil a contractual obligation to a client) would be excluded from the regime. Further, that R&D activities for which commercial consideration is received would be ineligible.

We understand the necessity to avoid "double-dipping" in circumstances where we are commissioned to deliver a fee-paying service to a client. However, the R&D that is required to resolve a problem is often undertaken at the risk of WSP Opus to enable us to deliver the project to the client in the agreed timeframe and for the agreed price. In these circumstances, we believe we should be eligible for the tax credit for the R&D component of the activities undertaken.

While commercial consideration may be received for the completion of the overall project activity, we are not specifically compensated for the R&D activities undertaken. Further, while activities may commence in response to a project issue, we may then extrapolate the R&D, to address further issues or broaden the application of our R&D activities.

Should there be any concern about double dipping in such circumstances, we submit that a more targeted approach would be appropriate. For example, this issue could simply be resolved by agreement in writing between the parties as to which organisation will claim the tax credit.

We therefore submit that the statement "If an activity was carried out for an R&D purpose and a non-R&D purpose, the entire activity should not qualify as an R&D activity" should be reviewed and amended. We further support the Corporate Taxpayers Group submissions on this point.

Questions 10 and 11 – valuing the R&D claim

We value certainty and consistency in all tax matters, including the calculation of the R&D expenditure that would be eligible for the R&D tax credit.

We support the Corporate Taxpayers Group submissions on calculating the R&D expenditure for the purpose of the R&D claim.

Conclusion

WSP Opus appreciates the opportunity to make a submission on the Research and Development Tax Incentive and we trust that our comments are of use in developing a sustainable and practical regime.

We would be more than happy to discuss further with officials as required.

Kind regards

s 9(2)(a)

11 May 2018

R&D Tax Incentive Team
Ministry of Business, Innovation & Employment
PO Box 1473
WELLINGTON 6140

RDincentive@MBIE.govt.nz

Dear Sir / Madam

FUELLING INNOVATION TO TRANSFORM OUR ECONOMY: A DISCUSSION PAPER ON A RESEARCH & DEVELOPMENT TAX INCENTIVE FOR NEW ZEALAND

Formway Design Studio ("Formway") is writing to provide comment on the discussion paper *Fuelling Innovation to Transform our Economy: A discussion paper on a Research & Development Tax Incentive for New Zealand* ("the discussion paper").

Formway welcomes the opportunity to submit on the proposed R&D tax incentive, and in particular to comment on aspects of the proposals that we believe require clarification and refinement to ensure the transition from Growth Grants is smooth, and compliance costs minimised.

ABOUT FORMWAY

Formway began life as Petone Engineering Limited in 1956. Since that time it has transformed itself into an internationally respected designer of high performance seating and commercial furniture.

Over the past 20 years, Formway has established a strong track record of R&D innovations that we have used to create specialised furniture products. Formway has developed a very successful R&D process to develop its products, which focuses first on identifying key latent user needs not being met by current seating products. Our team then work to create innovative products that meet those needs – not simply filling a gap in the market but creating a step-change in user performance.

Callaghan Innovation and its predecessors have played a material part in Formway's continued growth and investment. The R&D investment that Formway has received from Callaghan has assisted in Formway's growth into a sustainable business following the global financial crisis.

SUBMISSION

Grants System v Tax Incentive

Formway has found Callaghan Innovation Growth Grants to be of immense value. They have played a key role in Formway's transformation into a sustainable business through giving us the confidence to invest in new R&D product design. The grant system has allowed Formway to plan our R&D activities based on the amount of money we know will be received – which in turn allows us to commit to projects.

Naturally, we are therefore wary of the Growth Grant system being replaced when, from our perspective, it has worked effectively and efficiently.

Colouring our view on this is Formway's experience of the R&D tax credit regime during the one year of its application in 2008. The time and investment required to explain our business to Inland Revenue and demonstrate to them that our R&D was legitimate qualifying expenditure was significant. For an SME that is seeking to continue to grow and invest, having a material amount of our time directed towards an IRD review process was frustrating.

In that context, if the R&D tax incentive is to be reintroduced, then it must be efficient for New Zealand business and minimise where possible any uncertainties. SMEs such as Formway do not have the resources of large businesses to devote to prolonged dialogue with Inland Revenue. Uncertainty and arguments with IRD consuming time for SMEs such as Formway will delay R&D investment and the tax credit will not achieve its intended purpose.

Eligibility Criteria

The discussion document lists a number of eligibility criteria, including that the business making the claim "*effectively owns the results of the R&D".*

Formway Design Studio undertakes R&D activities under an arrangement with its shareholder, Formway Furniture Limited. Resulting intellectual property (patents, trademarks and design registrations) is owned by Formway Furniture Ltd, with an exclusive sub-licence arrangement back to Formway Design Studio.

Legislation and commentary should ensure that it is clear that the sub-licence arrangement we have in place is sufficient to enable Formway Design Studio to be considered to "effectively own" the results of the R&D.

Alternatively, the design of the regime should enable the R&D credit to be claimable as long as the IP and R&D expenditure all sit within the same wholly-owned group – therefore allowing flexibility and to align the regime with commercial practice.

Definition of R&D

The discussion document states that R&D would be defined as:

a) *Core activities: those conducted using scientific methods that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes, or services; and that are intended to advance science or technology through the resolution of scientific or technological uncertainty.*

b) *Support activities: those that are wholly or mainly for the purpose of, required for, and integral to, the performing of the activities referred to in paragraph (a).*

We are concerned that Inland Revenue may find it difficult to conceptualise the R&D activity that we undertake as following a "scientific method".

In our view it would be more appropriate to reference "scientific and systematic" methods to reduce uncertainty.

Ultimately it should be without doubt that Formway are seeking to create new and improved products and this involves the resolution of technical uncertainties – but our concern is how this is demonstrated to Inland Revenue, without devoting significant time and resource.

Dual Purpose Activities

The discussion document proposes to exclude "dual purpose" activities. It states "*if an activity was carried out for a R&D purpose and a non-R&D purpose, the entire activity would not qualify as a R&D activity*."

We are concerned with the application of this restriction to Formway, as arguably in a commercial context all R&D that we undertake is with a non-R&D purpose. Ultimately we are seeking to develop a unique product, through R&D and innovation, and to licence that product in order to derive revenue and grow our business.

Again, this is an example of the proposed rules creating an element of uncertainty. We suggest that it should be clear that having the intention of commercially exploiting R&D should not result in a business being ineligible to claim the credit.

If the concern is that "business as usual" expenses are badged inappropriately as R&D, then it should be clear that this is the concern. However it is unclear how such costs that ultimately support a core R&D activity should be treated, as in many instances we would view these as supporting activities. Again, for a business such as Formway, and other New Zealand SMEs that are constrained our budgets and resource, it is crucial that the rules are very clear.

Commercial consideration

The discussion document proposes to exclude expenditure that relates to R&D activities for which the entity conducting the activity has received or could reasonably be expected to receive consideration.

We understand that the intent of this limitation is to ensure that the entity claiming the credit bears the financial risk of the R&D. However as currently worded it could be read far more broadly to restrict what would otherwise be eligible expenditure, where that expenditure is ultimately directed to developing a commercial and income-generating product.

Formway seeks to licence its products, and therefore arguably "*reasonably expects to receive consideration*". It would be very concerning if having such an expectation resulted in the regime not applying.

The final form of the proposals or related commentary should make it very clear what concern is seeking to be addressed by this restriction, if it is considered necessary.

More broadly, we do not believe it should be necessary for the claimant to bear the financial risk of the R&D activity in all circumstances, as there will be commercial situations where this does not occur.

Administration

The discussion document states that the design of the credit administration will have a customer focus to provide certainty for claimants, and that Callaghan Innovation will provide support to Inland Revenue.

Formway strongly supports a role for Callaghan Innovation in assessing claims, particularly where they have existing knowledge of the claimant's R&D activities.

The discussion document also states that Inland Revenue plans to create an environment that supports customers and provides greater certainty on claims prior to submission. Formway strongly endorses any processes put in place that will provide taxpayers with certainty prior to filing claims.

As noted previously, replacing the growth grant environment with an R&D tax credit will create some inherent uncertainty, which could have an unintended flow on impact to R&D investment, particularly for SME's where cash flows can be tight and budgets need to be carefully managed.

Therefore any processes that can be put in place to mitigate uncertainties will be important, not just to the successful administration of the regime, but to the success of the Government's overall goal to grow R&D investment in New Zealand.

Concluding statement

Formway is optimistic that the R&D tax incentive will be instrumental in helping to boost R&D investment in New Zealand. However key to its success or otherwise will be the ability for innovative SME's to access the credit with a low level of compliance and certainty of outcome.

Thank for you the opportunity to comment on the proposals. We hope our submission will assist in shaping the final details of the regime.

Yours sincerely

s 9(2)(a)

Formway Design Studio

s 9(2)(a)

Formway Design Studio

From: s 9(2)
To: RD Incentive
Subject: Feedback for the "R&D Tax Incentive"
Date: Thursday, 31 May 2018 1:59:57 p.m.

Re: http://www.mbie.govt.nz/info-services/science-innovation/funding-info-opportunities/rd-tax-incentive/research-and-development-tax-incentive/growth-grants-transition-faqs.pdf

Hello,

We understand you are preparing for the transition from Growth Grants to the R&D Tax Incentive and you are seeking feedback from the industry.

We prefer the current Growth Grant Scheme over the new R&D Tax Incentive. Here is why: We cannot benefit from this incentive right now or in the near future. Pingar is an IT company that started in Dec 2013. Most organizations in the IT sector run at a loss for a few years. During this time, we accumulate large tax losses that would take many years to offset against future profits. Growth Grants on the other hand, can help Pingar and other companies in our position, with cash flow.

It would be great to see a scheme that helps imminently companies that are at our growth stage too. We plan to submit an application for a Growth Grant over the next few months while you still allow submissions.

Best regards,

s
s 9(2)(a)
Level 3, 55 Anzac Ave, Auckland CBD | PO Box 147406, Ponsonby, Auckland | www.pingar.com

From: s 9(2)(a)
To: RD Incentive
Subject: Re: Save New Zealand"s knowledge economy [UNCLASSIFIED]
Date: Thursday, 31 May 2018 1:28:38 p.m.

"*We know that pre-profit and loss-making businesses cannot benefit fully from the incentive in the short term. We also know startups often run at a loss while performing a disproportionate amount of R&D for their size, but we are utterly committed to a system of R&D supports that will accelerate and grow this critical part of our collective future as a country.*

The policy issues involved in supporting these types of businesses are complex. That's why we've given ourselves an extra year to make sure we get this right. So while they will not be resolved in time for the introduction of the tax incentive in April 2019, we will continue to work on this issue and expect a solution to be introduced by April 2020."

I am afraid that the above quote from the Minister just shows that there is a complete lack of understanding about this whole situation.

She is saying that she understands about loss-making and pre-profit start ups and that she is utterly committed to a system that will grow this sector, but then states that it is complicated and may be fixed in 18 months. Strangely it was not too complicated to put through the requirements to give support to large companies who are able to fund R&D above $100,000.

Does she realise how many people will be forced to give up their ideas/projects that will benefit New Zealand in the long term, or decide to head offshore where they can get the support they need, in the 18 months they wait to see action from the government to help support a very important part of New Zealand's development.

Nobody is looking for a handout, just some help to turn a dream into a reality that can grow internationally, earn export income for New Zealand and employs people. These businesses are not hampered by our remoteness, but they are hampered by our small domestic market, moving the whole operation offshore where help is available and there is a sizeable "local" market has great appeal to someone who currently just needs a hand to stay afloat.

We are in the fortunate position that we have a Callaghan grant that contributes to our R&D costs, but it is still a struggle to cover wages, rent etc, but we are growing and will be operating internationally later this year. It is the very clever young people I meet, many of whom have outstanding ideas that they are struggling to bring to fruition. I am mentoring several of these people and 2 of this group I have introduced to the relevant people in Singapore who will help them. This is New Zealand's loss, as both of these businesses will flourish in their new location, but will be Singaporean companies.

s 9(2)(a)

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