Securing Australia's Future - Project 9 Translating research for economic and social benefit: country comparisons

Chile

A Study of Measures to Encourage the Translation of Public Sector Research for Economic and Social Benefit in Chile

Camila Chávez

IGI Ltda, Santiago, Chile

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ABREVIATIONS

CNIC	Consejo Nacional para la Innovación y Competitividad
CONICYT	Comisión Nacional de Investigación Científica y Tecnológica de Chile
CORFO	Corporación de Fomento de la producción
DIPRES	Dirección de Presupuestos
INAPI	Instituto Nacional de Propiedad Industrial
IP	Intellectual Property
OECD	Organization for Economic co-operation and Development
OTL	Office of Technology Licensing
PCT	Patent Cooperation Treaty
R&D	Research and Development
R&D&I	Research, Development and Innovation
TTO	Technology Transfer Offices

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1. Introduction

The transformation from basic products and raw materials to added value products is part of the country vision to obtain stronger markets that diverge from commodities and their market-price variations, aiding to reach a higher economic security and development. To achieve this, technology advances must rise from applied R&D, which takes into account the national and international markets demands.

Since 2008 the country has developed and followed an innovation strategy that covers several strategic guidelines. The Ministry of Economy is in charge of implementing this strategy, and appoints Corfo for the execution of the strategic guidelines.

Corfo, the main innovation and entrepreneurship agency in Chile, following the guidelines given by the Ministry of Economy, is advocated to eliminate the information failures and appropriability failures in the markets. The system's inefficiencies were shown through a diagnosis made in 2009 of the national technology transfer system [1]. The diagnosis also emphasized 7 areas were important gaps must be closed; (i) enhance human capital competencies, (ii) foment the universities' third mission, (iii) development of strategic partners for oriented R&D application, (iv) promote technology extension services, (v) strengthen the extension services' demand, (vi) promote a technology-based entrepreneurial culture, and (vii) accelerate the new technologies' start-ups creation rate.

The innovation strategy's objectives aim at improving the technology transfer between research, industry, and government. More specifically it targets at the development of new markets within the country and the penetration of national R&D products' in the global markets. The present work is intended to present a report on the Chilean measures developed as part of these guidelines.

2. Overview

In 2008, a study performed by the World Bank and the National council for innovation and competitiveness (CNIC acronym in Spanish) addresses the innovation system deficiencies, and proposes improvements to tackle these deficiencies. The government has emphasised the importance of promoting the innovation ecosystem in Chile by addressing these deficiencies through a series of concrete actions and measures.

Technology transfer consists of the transformation process of knowledge into innovation, and it is therefore based on the results obtained from R&D, and from new technologies application.

The government's support for technology transfer is through key elements of the innovation system, like universities and R&D centres, as well as firms engaged in R&D or applying new technologies to generate new products and services, or carry out processes, marketing, and management improvements.

Governmental support has been focused on universities where over than 38% of the national R&D is executed. Although firms are also agents in technology transfer, they have not been supported in a significant way, mainly due to the low level of R&D execution. In an indirect way, there are some firms that create agreements with universities to become partners in knowledge generation, and through those agreements can share the governmental support given to their partner universities.

The current instruments in the national context correspond to (i) Technology Licensing Offices 2.0, (ii) Strengthening of human capital for technology transfer, and (iii) Go to market.

The instrument for Technology and Licensing Offices (TLO or TLOs from now on) 1.0 started in 2011 with the first version and 18 projects were supported, counting with a total of 21 participating institutions. In the second version of the measure, TLO 2.0, 15 institutions were benefited. Strengthening of human capital for technology transfer has, since 2011 up to now, supported over 200 people. Finally, Go to Market has supported up to 16 technology-based companies.

The instruments have not been evaluated in the last 4 years, which impedes a deeper and more intense analysis. The government is working on gathering the experiences in order to document the

technology transfer experience in Chile. Even with the lack of documented experience, the authorities of the innovation system have recognized that the technology transfer's results are insufficient, and that the system should have generated more results than the ones obtained so far.

It is believed that the current measures and instruments are in the right path to advance in the innovation system, but improvements must be implemented in order to expand their impact, which would translate into creating more technology-based products and services, and connecting the technology-based innovation with the global markets.

The next step to improve the innovation system is the creation of a technology transfer hub that unites several entities in an attempt to generate critical mass of R&D as input to be transferred to the markets. It is expected that the participating entities will conduct R&D, and that they transfer technology to the global markets instead of the domestic markets, as is currently happening through the OTL instrument. The hubs program is in line with the goal to achieve a more efficient and effective innovation system, and it has been created due to the government's awareness that previous efforts are not leading to substantial improvements in the innovation system.

3. Diagnostic

Previous reports made from 2007 show empirical evidence of "Chile´s underperformance in innovation inputs such as R&D expenditures, and of the inefficiencies of innovation resources used in the innovation system"[1].

The government has set up to increase the percentage of Gross domestic expenditure on research and development to 0.8%, however has not managed to surpass 0.5%. Even though the technology transfer development trajectory has in general shown positive signs, it has not been able to surpass the initial diagnoses made in 2009 [1]. Some input indicators of technology transfer such as patent applications have increased specially in the last two years (2013 and 2014), which shows that the system is changing even though higher degrees of results reflecting a higher development degree have not been achieved yet, like the development of technology based and R&D initiatives.

The following presents the diagnosis of the 7 areas in the national context that require attention and a brief description of the measures and instruments that have been applied so far in the innovation ecosystem.

3.1. Intellectual property management

United States is the most advanced market for research-based innovations and is used as an international reference. Chilean innovation results patented (issued patents) in the United States are in overall almost non-existent if compared to other OECD countries. An econometric analysis based on data from 1963 through 2000, and covering a wide range of OECD and non-OECD countries, also confirmed that the relative efficiency of transforming Chilean R&D investments into commercial patents stands below the OECD average. However, when compared to itself there has been a slight increases in the last decade [2]. This increase is evident when comparing the number of patents issued by the united states (Patent and Trademark Office) to Chilean residents between 1994 and 2005, equivalent to 143 [3]–[5], and the same value between 2004 and 2013 corresponds to 294 [6]–[8].

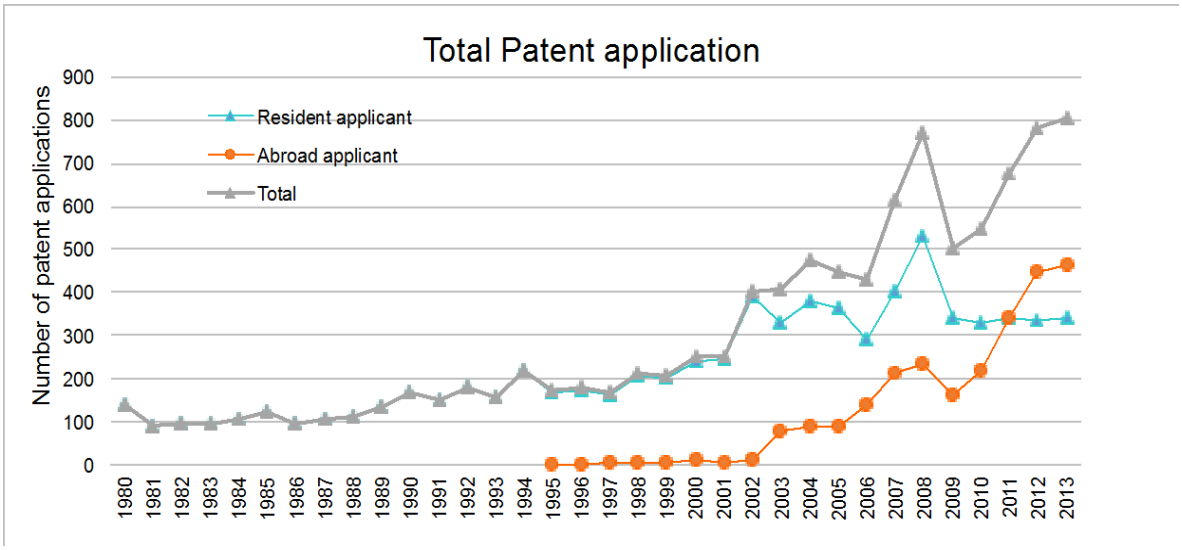

Figure 1: Annual result of Intellectual Property from Chile reported by WIPO between 1980 and 2013 [2].

In 2009, Chile started to operate the patent cooperation treaty (PCT) with a temporarily negative effect in the number of patents due to the automatic delay that the national processing involves. It means an increase of the time required by the PCT, from 20 to 30 month, to register the applications. Before the treaty there was an increasing tendency on the number of patents, and right after the treaty the amount of abroad applicants increased notoriously and the country resident's applicants decrease and remained in a relatively constant value. All in all, the number of patents increased in the last decade (Figure 1).

Chilean firms are more likely to develop new technologies and capture benefits from them when their innovations can be licensed. Intellectual property (IP) is the base of licensing, and all forms of IP can be licensed; patents, copyrights, designs, trademarks, and plant breeders' rights. Without IP, commercialisation and appropriation of the innovation is limited, leading to decreased rates of innovation effort. IP management is complex and in the case of Chile the incentives and competences are not aligned with best practices from more knowledgeable economies. In order to obtain a thriving IP a strong institutional, regulatory, and incentive frameworks are required.

The institutional system has devoted itself to generate awareness and increase the demand for IP services by supporting the public institutions directly involved in the approval, registration, and enforcement of IP. Efforts aim to improve these institutions' efficiency, enforcing the IP rights, and enforcing the signature of critical IP international agreements. Universities, R&D centres, and companies have been given facilities and IP licensing has been advertised among them. Concrete actions embody the creation in 2009 of the National Instituted of Industrial property, and at the same time the enforcement of the Patent Cooperation Treaty.

INAPI has taken actions to promote the IP application assets such as reducing the payment rate for patent application, establishment of several patenting awards, a public data base of patents has become available free of charge for the public, and the same data base has been transformed into International search authority which searches that all patent applications of the region enter through Chile.

Closing the existing gap in the national IP system requires promoting the development a strong network of technology transfer offices (TTO) at universities and private intermediates, and nurturing a new culture within them, as it is discussed further on. To achieve this, the TTOs have been created at universities or other entities where R&D is performed and the results are transferred to the society.

3.2. Strategic partnerships

In 2009 it was stated that a strategic partnership was required between the business community and knowledge centres that pursue a medium and long-term research agenda attractive for priority economic clusters. The World Bank indicated that the development of such strategic partnerships was necessary.

It was proposed that the first large stage in the development of the partnerships was financed through public funding. Public-private consortia' strategic alliances were financed and are now leading to the creation of new technology centres oriented to the cluster's specific areas. During the elapsed 2015 Corfo has diffused 7 key areas or clusters that require support: solar energy, mining, health-care technology and services, intelligent industries, sustainable fishery, food and sustainable construction.

In 2010 the program for International Excellency centres was initiated, and it was expected to generate valuable experiences and lessons from the strategic partnerships between Chile and the international centres, which must be incorporated in the design of the next version of the public funding program. Until 2015, 15 International Excellency centres have been initiated with different countries such as France (INRIA), United States (Pfizer), Australia (CSIRO), Spain (Leitat), Netherlands (Wageningen), and Germany (Fraunhofer). Special efforts have been devoted to link the objectives of the partnership with the needs of the productive sector, to foster the creation of a critical mass of researchers and thus securing the program's impact, to change the culture from project oriented to a sustained long-term effort, and inviting international peer reviewers to the selection process.

The association with the productive sector benefits the public technical institutes. These institutes can be classified in those whose primary mission is to contribute to technology transfer, and those whose primary public mission is to generate knowledge on topics of national strategic interest and develop standards for both industry and consumers. The performance and impact of all the previously mentioned institutions can be improved through collaboration with the productive sector, because of the insight that the relation can bring to the technology institutes. This interaction results in an improved identification of the sectoral priorities by the technology institutes, giving them more significance and enhancing the impact of their technology transfer.

3.3. Formation rate of new technology firms

Chile is committed to advance as a knowledge economy, and to achieve this one of the most relevant pillars is the creation of new firms that base their business on findings from R&D work, paying special attention to the initial search and gathering of venture funds, since it is in this stage where the largest financing gaps can be found.

Corfo has supported early stages for technology ventures through a public-private technology venture fund that was set to create a demonstrative effect. Also, the "Go to Market", further describe in this report, represents a clear example of an instrument created to support technology ventures in the business strategy definition and later connection with potential venture capital.

Regarding the work of incubators, the World Bank report [1] indicates that it is critical to improve the incubators services and to promote a more active deal flow from the research-based business. Corfo has strengthened the system by improving the operation speed so it can be faster, and follow the entrepreneurship rhythm. There is little information regarding technology-based entrepreneurship, due to lack of analysis from the TLO experience and from incubators working with those TLO. However, the government has shown signs that lead to believe a higher rate of technology-based entrepreneurship has been achieved: the announcement of a change in the technology transfer system to a hub system that it is expected to be more efficient.

3.4. Necessary skills and competences

In order to expand and improve the three previously mentioned areas (sections 3.1 to 3.3) the skills and competences on technology management and brokering must be deepened, as well as having more patent law specialists. The development of such critical skills can be accelerated by two different ways, a short-term solution that aims to fill the most immediate competence gaps, and then a more long-term or strategic approach. The first approach is more pragmatic and includes attracting skilled communities and hiring international specialists, creating alliances with equivalent organizations or intermediaries from abroad, and offering internships in those organizations for Chilean staff.

In the long-term approach there is a need to create a group of specialists or technology managers that are qualified and capable of leading and training the skilled professionals. This implies on one hand the presence of specialists in universities that can coach the new professionals, and on the other hand associations of professionals to ensure the continuous development and to organize accreditation. InnovaChile can foster the development of these initiatives.

To fulfil these objectives the Strengthening of human capital for technology transfer program was implemented, and is further discussed in section 7 of this report.

3.5. Universities contribution to economic growth (Third mission)

It has been previously stated that a change in the culture and practices within universities is necessary to support the development of Chile's innovation strategy. Today, Chilean universities are becoming engaged with their third mission, which means that they participate in activities related to the society, and in particular that they participate in activities related to the productive sector.

Internationally recognized research universities (like from United Kingdom and Finland) have achieved progress through a change of culture, suggesting that this is possible and that the public sector can assist in the process and make the transition easier and faster.

The TLOs are one of the stakeholders the public sector can use to help catalyse this by assisting their development, and is presented in section 6 of this report. Recently Engineering 2030 has been initiated at several universities, which also answers to this guideline, and whose strategic fundaments to be developed in the next three years are: curricular change, human capital and change management, governance, applied R&D and links with the industry, technology commercialisation, and national and international mobility.

Both TLOs and Engineering 2030 are awarded to universities under the modality of open competition where they compete against other entities over the budget.

3.6. Firms demand for technology and innovation

The effectiveness of the innovation system depends on the supply side, on its linkage to the demand side or firms, and on stimulating the firms' demand of technology transfer and commercialisation. The main target in Chile is to increase the use of knowledge as main competitive strategy within firms.

The business sector finances 34% of the national R&D, and executes 36% of it. Therefore, most of the R&D stays within the firms for its use, avoiding the commercialisation of the knowledge, which could be done by searching potential buyers (other firms) or creating new markets. Only a small portion of the R&D is executed along with partners such as universities. In order to enhance the creation of this partnerships there is an instrument that supports applied R&D projects by assisting the leading university in the inclusion of local firms within the R&D project. The instrument corresponds to Fondef[1], which is administratively attached to Conicyt[2].

3.7. Innovative and entrepreneurial culture

Generating an entrepreneurial culture within a country translate into higher efficiency of initiatives that seek to stimulate technology transfer and commercialisation. "There are individuals in all societies that present a natural tendency towards becoming entrepreneurs, however the amount of students that decide to become entrepreneurs and follow this as a career can be increased by exposing them and teaching them about entrepreneurship and entrepreneurial skills. Introducing an entrepreneurial culture can be done starting from primary and secondary levels on by teaching entrepreneurial attitudes and then nurture those attitudes during post-secondary education, according to international experts on entrepreneurial education. This results in remarkable improvements in the skills for entrepreneurship" [1].

In the same report an entrepreneurship education plan is proposed, but has not yet been implemented, that starts with a focus on universities and technical institutes or tertiary education level, and expands to the lower educational levels in time. This cascade effect can be achieved "as long as efforts are devoted to enhance the science education in primary levels" [1] and would translate in time into "improved entrepreneurial skills". Various disciplines taught at Chilean universities, and not only those from business schools, can adopt entrepreneurship courses within their course work. Regarding the efforts necessary for primary and secondary education levels, Conicyt has implemented an educational program called Explora that supports the STEM development.

[1] Fondef: Fondo de desarrollo al desarrollo científico y tecnológico

[2] Conicyt: Comisión Nacional de Ciencia y Tecnología

So far this sphere of action has not been specially approached. Some TLOs have developed dissemination projects and at the same time the IP and Spin off regulations contemplate the inclusion of students, especially when they are part of the research team. For undergraduate level there has been no promotion of entrepreneurship so far. The Engineering 2030 program that has been initiated during 2014 in 10 engineering faculties from all over the country incorporates universities' third mission as one of its 6 pillars.

4. Management and administration

The management structure is allocated in Corfo, the main support agency for innovation of the Chile government, that is the organization responsible for the measure and acts as program manager through its Department of Technology Transfer, that belongs to the Division of Technology Capabilities, which reports to its steering committee and to Corfo's InnovaChile Council.

The Division of Technology Capabilities appoints the steering committee[3] that is composed of governmental authorities from Corfo, Conicyt, Ministry of Education, and Ministry of Economy. This Committee is responsible for the selection of the awarded projects among all applicants, and monitors their technical and financial progress.

The Transferring Technology department of Corfo receives and evaluates the projects. The team from Corfo also performs administrative, diffusion, monitoring activities, and financial activities.

The measures presented in this report correspond to "Go to Market", "Technology and Licensing Offices (TLO) 2.0", and "Strengthening of human capital for technology transfer".

The measures' operation cycle is related to the calendar year and the financial year. The following year budget is prepared during June of the previous year, and Corfo is entitled to define the financial requirements and priorities for the next year, agreed with the Ministry of Economy. The requirements are then communicated to Ministry of Finance through Corfo and the Ministry of Economy, specifically to the Budget Directorate (DIPRES) within the Ministry of Finance.

5. Go to Market

Key words: valorisation, competitiveness, technology transfer, technology marketing

The measure's general target is to support the insertion of nationally developed R&D in global markets.

In specific, the measure aims to:

- Support technologies commercialisation from R&D projects that were financed with public or private funding.
- Create capabilities in transfer and marketing of R&D results like patents and technologies. It is expected to impact a significant number of entrepreneurs and professionals from Chilean universities and technology-based companies. Link R&D project developers with international technology brokers and their global networks.
- To achieve positioning in global markets of technologies developed in Chile, and generating demonstrative effect between researchers and business entrepreneurs.

5.1. The rationale

The total public resources invested in the National system for Science, Technology and Innovation, has steadily grown in the last decade. The total funding for R&D in universities adds up to USD 2,000 million in the last 12 years. This has reflected in an increase of the scientific activity, reaching more than 21,000 ISI publications between 2001 and 2012.

[3] The steering committee is called " Sub comité"

The next logical step in Chilean country development is to produce patents and technology supported by a strong scientific and technological baseline, thus increasing competitiveness, expanding markets, and transforming the industrial base of the country.

To reach these goals, Chile must create networks and alliances that allow access to the experience from developed countries on technology transfer and commercialisation. The technology market is highly complex and globalized, and requires capabilities in technology valorisation and commercialisation, as well as networking with the global technology markets.

During 2011 and 2012, Corfo developed two measures “From the idea to the market – Go to market” and “Go to market”, respectively. Both aimed at identifying projects from universities, technology centres, and Chilean companies that have generated viable technologies with global market potential. The experience has been encouraging and relevant lessons remain from it, all of which helped designing the new version of the measure “Go to market”.

These instruments are part of the “learn by doing” process that will allow installing capabilities to identify developed technologies, with global market potential, improving their own business development.

The international experience demonstrates that the success of R&D projects relies in two pillar stages. First supporting the early stages of the business plan development, and second supporting the transfer of technology by strengthening the R&D team capacities in knowledge transfer. “Go to Market” aim is to impact most of the R&D teams in the national context.

5.2. The expected outcomes of the measure

The first expected outcome is an increase of the human capital with practical training in technology transfer and commercialisation. These professionals come from universities, technology centres, and/or technology-based companies from the national context. The experience is gained through a learn-by-doing process acquired from collaboration with a knowledge intelligence unit, corresponding to the facilitating organization.

Secondly, increase of the communication between the national entities (universities, technical centres, and companies) and international networks of intellectual property and technology commercialisation.

Thirdly, apply and expand the acquired experience from international facilitating organizations by commercialising the technologies developed in Chile through the beneficiaries in the global markets. Through massive diffusion of the acquired international experience in technology commercialisation, an expanding effect is expected in the national context. This creates successful examples between researchers and companies and enhances their collaboration.

5.3. Targeted sectors

The support of the measure is not limited to any specific industrial sectors. Among the possible sectors supported by the measure, but not restricted to them, are the following:

- Agriculture
- Forestry
- Fishing
- Manufacturing (food, textiles, wood, paper, chemicals, fuels)
- Mining

5.4. Targeted research and technology fields

The measure is not limited to any research and technology fields or socio-economic objective fields. Among the possible fields, but not restricted to them, are the following:

- Applied electrochemistry
- Biotechnology
- Energy industrial production
- Environmental sciences (climate change included)

- Food, agriculture and fisheries
- Nano sciences and nanotechnologies
- Materials
- Pulp and paper

5.5. Implementation Structure

The measure implementation includes a general overview, the stakeholders or participants engaged, the eligibility and selection criteria, the mode of operation, and the administrative bidding.

5.5.1. Implementation overview

Each year Corfo announces a public call to the potential beneficiaries through their web page (www.corfo.cl), the announcement includes the conditions for the present year call.

In order to assist in the fulfilment of the measure requirements, InnovaChile delivers to the potential beneficiary entities information regarding facilitating entities that present cooperation agreements, these agreements aim at creating and offering programs that focus on international commercialisation of Chilean technology, competence creation and technology transfer.

The beneficiary entity must complete an application form in English available in the governmental Project management electronic system. The form includes information regarding the beneficiary organization, the beneficiary, and the facilitating organization. The selection process leads to a first stage where at least 15 teams are selected to participate in the theoretical training stage. From those teams at least 3 are selected to initiate the technology commercialisation in foreign countries.

5.5.2. Participants

The participating entities are Corfo, the beneficiary entity, the beneficiary professional, and the facilitating organization.

The **beneficiary** corresponds to the natural person that will be trained within the present instrument. The beneficiaries must be introduced in the project by the beneficiary entity, and for each beneficiary the following information must be provided:

- Job or position description
- Technical, management and marketing capabilities
- English proficiency certificate, or for the language used in the training program

The **beneficiary entity** corresponds to the legal entity responsible before Corfo for the project execution, and could be national research centres, national technology-based companies, and national universities and technical institutions.

- National technology centres are those for-profit or non-profit entities that own, or can acquire, both infrastructure and capacities for developing R&D.
- Technology-based Company is any for-profit entity that owns, or can acquire, both infrastructure and capacities for developing R&D.
- National Universities and technical institutions are those so recognized as such by the state of Chile.

The **facilitating entity** is an international establishment with ascertainable experience in technology and R&D products commercialisation.

The **Steering committee** plays an active role in the adjudication of the projects and later on by setting one or more critical milestones that will serve in the project evaluation.

5.5.3. Target groups

The measure applies only to legal entities constituted in Chile or Chilean Universities and Technology centres recognized by the Chilean government; natural persons that have valid contracts with them, and, students and researchers that participate of research activities with the previous.

5.5.4. Geographic coverage

The measure concerns the whole national territory.

5.5.5. Training program

As previously stated, the present measure seeks to transfer technology from R&D to global markets. Along the process of the project execution the beneficiary should acquire and/or strengthen its competences in these matters through a “learning by doing” process. The learning process is supported by the involvement of the beneficiary with an international facilitating entity, that is to be hired by the beneficiary entity itself previous approval from Corfo.

The selected international facilitating entity must have demonstrable experience in technology commercialisation, and instruct courses or develop training programs for the beneficiary in technology transfer and commercialisation topics. The courses and/or program must have a focus on enhancing the capabilities for technology transfer and R&D commercialisation, and deliver theoretical and practical training on the subject.

In order to assist in the fulfilment of the present measure requirement, Corfo will deliver to the potential beneficiary entities information regarding facilitating entities that present cooperation agreements with Corfo, these agreements assist on creating and offering programs that focus on international commercialisation of Chilean technology, competence creation and technology transfer. The information is uploaded in the Corfo webpage and in the Project management electronic system.

If in the application the beneficiary entity presents a facilitating entity from the pool presented by Corfo, as stated in the previous paragraph, no further proof of compliance is required.

Regarding the facilitating entity

The Facilitating entity corresponds to an international institution with experience in technologies and R&D results commercialisation that delivers training programs and/or imparts courses that teach to strengthen the technology transfer and R&D commercialisation.

The selected international institution must be proven to have international leadership in technology transfer and R&D commercialisation by presenting metrics like number of patents, licences, and spinoffs (birthed or managed), among others.

As stated before in this section, if the selected facilitating entity has a cooperation agreement with Corfo only the programs or courses on technology transfer and R&D commercialisation that will be provided to the Beneficiary must be described.

On the other hand, if the selected facilitating entity does not present a cooperation agreement with Corfo, the international leadership of the facilitating entity must be certified along with the rapporteurs´ and lecturers’ curriculum, and proven experience in technology transfer and R&D commercialisation.

Regarding the training content

The training program and/or courses, that are provided or developed by the facilitating entity, must establish an effective language and necessary knowledge, to support the beneficiaries to conceptualize and plan, topics related with technology transfer and generating technology-based business models. To achieve such requirements the facilitating entity must present a study methodology and programs or courses in these subjects.

The programs and/or courses must include at least the following activities:

a) Innovation workshop(s), where the beneficiaries must learn to analyse and apply innovation and value creation concepts. The main output is that the assistants acquire competitive advantage those topics, so they can later contribute to their respective organizations and economies growth.
b) At least one final presentation of the project results, in front of an international panel of experts in technology transfer and commercialisation.
c) Practical training program in R&D products commercialisation, and financial resources acquisition from investors and venture capital, with practical activities that contain (but are not restricted to):
    a. Basic concepts workshop on how to present a business plan to venture capitalists.
    b. Tutor sessions one-on-one with entrepreneurs and international experts of high level, that have practical experience in technology commercialisation, this aims at acquiring specific information and orientation to perfect the business plan of each beneficiary.

    These activities must be focused on the targeted international market.

5.5.6. Evaluation criteria

The projects are evaluated in terms of the following criteria and weightings presented in the following list. Each criterion is evaluated with a score between 1 and 5, where 1 is the minimum (insufficient) and 5 is the maximum (excellent)

- Target market (40%)
- Innovative product or technology (30%)
- Work team (30%)

Target market: Corresponds to the target market description where the development or solution will be traded. The market description must include the size or potential size, also the product's comparative advantages over other competitors within the market. Finally an analysis of the coherence between the target market and the facilitating entity, and the main market associated to the technology.

Innovative product or technology: The new product or technology must be described in terms of the novelty or technological differentiation degree. Also it must present the key milestones required to achieve the final product or technology.

Work team: The proposed working team must be described in terms of each member's business experience and competences, and technical experience and capabilities. It must be shown a balance between technical and business competences within the team. Proof of language proficiency must be included, regarding the language used in the program or courses that the team will attend.

The division of Technology Capabilities at Corfo is in charge of deciding the projects designated to go abroad to generate or join international networks and obtain international funds for scaling the projects or companies.

5.5.7. Form of funding

The measure contemplates co-financing where Corfo covers for 90% of the projects with a maximum cost of AU$ 112,245[4].

The beneficiary entity covers for the remaining 10% through pecuniary contributions.

[4] Considering an exchange rate of 1 AUD = 490 CLP [10]

5.5.8. Eligible costs

The project can consider the following as fundable activities:

- Facilitating entity hiring, and beneficiaries' registration to courses and/or training programs.
- Expenses related to the attendance of the beneficiaries to the courses and/or training programs such as
    - Transportation fees
    - Travel insurance
    - Offices or rooms rent, general services required for the training execution
    - Study material associated to the courses and/or training programs, including technology samples and/or resulting products for commercialisation planning purposes.
    - Lodging and feeding, during the training period
    - Transport in the training place
- Issuance and renewal of guarantees

5.5.9. Cost

The annual average cost that Corfo has invested in the present measure is around AU$ 1,000

Administrative Bidding

The administrative aspects must be satisfied at all stages of the process: Application, contract, and execution. Bidding Instructions for the measure, indicate that the following rules must be fulfilled:

- The present measure is to be available for the interested in a periodic mode.
- The present instrument does not cover for budget account, investment expenses, administrative expenses, and Overhead.
- The present instrument only covers Operational Costs.
- A maximum of 3% of the total subsidy amount can be used to finance guarantees financial costs, within the "Operational costs" account.
- The projects are presented according to the application forms as indicated by Corfo that are available from the website www.corfo.cl.

5.6. Indicators, measures of success and/or evaluations

No information available.

5.7. Applicability to the Australian context

At present there is not the same measure implemented in the Australian context. Although Universities accounts with a strong support for transferring technologies that probably includes items like "Go to Market" (for example, TTO at Universities).

A distinguishing element, in Australia related to Chile, is the support of the universities´ technology transfer as part of the triple helix university-industry-government.

The Chilean measure is more oriented to the system´s individual failures than to impulse the university system as a whole to collaborate with the industry.

Thus, this measure could be applied in the Australian context since it aims at supporting the resources gap that entrepreneurs require to commercialise their products or technologies, by combining the knowledge of international specialists of the specific markets where the new technology-based product or service can be directed, through contacts in those markets were funding can be accessed, and were the necessary elements of funding and mentoring can be found to realise or scale up the business.

6. Technology Licensing Offices (TLO) 2.0

Key words: Offices, technology, licensing, diffusion, TLO, positioning

The measure targets to support the Technology Licensing Offices in their positioning as a relevant actor in the national technology transfer system, thus achieving knowledge transfer, and business creation from R&D outcomes or results.

In specific the measure aims to:

- Consolidate the TLOs, by progressing in the strategic plans and institutional policies implementation. This includes incentives for researchers in applied R&D.
- Position the TLO within its institution in order to increase the portfolio of initiatives with marketable potential, leading to a significative increase of the performed disclosures.
- Strengthen the TLO positioning as a relevant actor in the innovation environment, positively impacting the number of R&D contracts, licences, consultancies, and collaborative research with companies and other R&D&I entities, both national and international.
- Increase the amount of spin-offs for applied R&D results' marketing, increasing the private funding for commercial scale up.
- Improve the market potential of the technologic assets portfolio generated by the R&D&I projects, focusing in global markets.
- Analyse international best practices and design collaborative models between national and international entities, to increase the projects critical mass, and create a tendency to specialization that allows access to international specialist's networks, companies and risk capital.

6.1. The rationale

In the past few years, the National science and technology system have recognized and highlighted the relevance of innovation as driving force for economic growth. In light of the previous statement, the development of a series of strategic actions has been raised, that seeks to promote a culture of innovation in Chile.

In order to advance in those strategic actions, it is imperative to decrease the detected gaps in technology transfer, which originate from internal and external factors. Internal factors account for lack of specialized personnel, financial capital for technology transfer, and social capital of the institutions. External factors are the conditions that affect demand, the directly related and support industries, as well as the context for business strategy and competition.

In favour of bridging the gaps related to advanced human capital, and social capital of research institutions, and the factors related to the direct and support industries, during 2011 the first call was made for the measure "Strengthening the offices of technology licensing". The measure targeted national universities and technology centres, and it was supported a total of 21 institutions. As a result, all TLOs developed new policies, procedures and intellectual property regulations, information systems, and they increased their networks. Also they were given tools to generate capabilities and developed a clear roadmap with defined targets, and a benchmarking study was performed with their international peers. Also, the TLO directors constituted the "Technology managers network – Chile", an initiative that answers to the necessity to coordinate the professionals from universities and technology centres working on technology transfer-related topics. The Technology managers network's mission is to impulse the synergy between universities, promote best practices, and contribute to the creation of an innovative ecosystem and technology transfer among the member institutions.

The measure aims at supporting the Offices of technology licensing (TLO) positioning themselves as relevant actors in the national technology transfer system, and achieve knowledge transfer and business development from the R&D activity results.

Studies support the fact that national universities have weak technology transfer from their R&D. Chilean TLO's licensing annual average in 2011 was 0.2, a value considerably lower than the 19.2 licensing average from European counterparts[5]. The low result is attributed, among other elements, to the lack of proper incentives from universities for researchers to encourage doing applied R&D that has focus on the industry problems.

In consequence, to move forward in the knowledge transfer and commercialisation process of the technology assets generated from the increasing financial resources destined to science and technology in the past years, the TLOs positioning as relevant actors in the national technology transfer system must be strengthened. This last statement applies internally, as for their institutions as for external agents. Also strengthening the TLO´s capabilities and international collaboration networks which facilitate their insertion in the global markets.

6.2. The outcome(s) of the measure

The expected outcomes of the measure are an increase in the number of R&D commercialisation activities and the TLOs positioning. The first comes hand with hand with an increase in the number of researchers that work on applied research activities, and technology development. The positioning of OTL within their home institutions as well as in the various economic sectors and society is also an expected outcome, as well as obtaining a strategic plan for those TLO. All of the previous would reflect as well in an increase in the number of R&D contracts, licences, and collaborative research with companies from a national and international context.

It is also expected that each project have impacts as:

- Increase the diffusion of the technology portfolio in the market
- Increase the diffusion of the technology portfolio within the institution

6.3. Targeted sectors

The support of the measure is not limited to one or more specific sectors

6.4. Targeted research and technology fields

The measure is not limited to any research and technology fields or socio-economic objective fields. Among the possible fields, but not restricted to, are the following:

- Applied electrochemistry
- Biotechnology
- Energy industrial production
- Environmental sciences (climate change included)
- Food, agriculture and fisheries
- Nano sciences and nanotechnologies
- Materials
- Pulp and paper

6.5. Implementation Structure

6.5.1. Implementation overview

Corfo makes available the measure information through its site www.corfo.cl that includes the guidelines for the application, dates, application forms, and a frequently asked questions document. The guidelines include information of the measure regarding participants or stakeholders, targeted groups, geographic coverage (if applies), type of projects and the main elements that it must contain. The guidelines also inform the evaluation criteria, form of funding and eligible costs.

[5] ProTon Europe survey, 2011

6.5.2. Participants

The measure considers the beneficiaries as the main participants. The beneficiary corresponds to the legal entity accountable to Corfo for the project execution. It will be passive and active entity in all rights and duties established in the subsidy arrangement, including a detailed report of expenses and activities made.

The beneficiary must contribute to the project´s co-financing as presented later in section 6.5.8.

The beneficiary corresponds to the legal entity constituted in Chile that belong to the following categories:

- Universities and Technical institutes
- National technology centres

The application must include records that evidence the permanent technical capabilities and infrastructure required for the R&D activities.

6.5.3. Target groups

The measure applies only to researchers, professionals, technicians, and students from Chilean universities or Chilean technology centres.

6.5.4. Geographic coverage

The measure concerns the whole national territory.

6.5.5. Project categories

The beneficiaries can apply individually or jointly.

Individual project: The project contemplates only one beneficiary entity

Joint project: The project contemplates more than one beneficiary entity. In this case the legal relation with Corfo should lie with only one beneficiary that becomes the trustee beneficiary.

Each beneficiary may participate in only one project, independent whether the mode is individual or joint project.

6.5.6. Main project elements

The project account for at least the following items:

Methodology and work plan

Description, expected results, and scheduling of the main activities that allow fulfilling the project targets. The proposal includes the completion of a collaborative-work plan design that considers national and world-class international entities. The collaborative-work supports achieving an efficient applied R&D scale that enhances technology transfer and commercialisation.

Budget elaboration aligned with the work plan including: Human resources, Operation expenses, and Administration expenses.

Institutional commitments

The beneficiary must ensure the participation and adhesion of the higher authorities of its institution. The institutional records or certificates that account for the existence of a unit or office dedicated to R&D results transfer and commercialisation must be attached to the application.

TLO team

Each project must to have a team structure, with all the functions and dedication needed for the technologies transfer. Each professional, working in the TLO, must be knowledgeable in and count with technical competences, management competences, and experience. The beneficiary can hire consultancy to complement the internal competences.

Each work team works with an organizational chart, identifying the technical capabilities in technology management, transfer, and commercialisation, including the result's transfer and commercialisation activities.

In case of a joint project there are many management interactions between entities. The collaborative project must establish mechanisms for coordination and conflict settlement between participating entities.

6.5.7. Evaluation criteria

The projects are evaluated in terms of the following criteria and weightings presented in the following list. Each criterion is evaluated with a score between 1 and 5, where 1 is the minimum (insufficient) and 5 is the maximum (excellent)

- Methodology (25%)
- Commitment (25%)
- Work team (20%)
- Capabilities (30%)

Methodology: Corresponds to the methodology and work plan leading to achieve the targets. Here it must be depicted the methodology to design a collaborative working model that considers national and international world-class entities. The model aims to reach an efficient rate of applied R&D endeavours that enhances the technology transfer and commercialisation.

Commitment: This item refers to the institution's commitment to deliver the pecuniary contributions over the minimum (stated in section 6.5.8), as well as the TLO's human resources engaged. It is expected that the commitment originate from the beneficiary's highest authorities of R&D&I, and technology transfer.

Work team: The team has to present the competences for the proposed work, for the projected activities, and for the achievement of the goals. These technical competences are from the highest one-person authority to the most operative level.

Capabilities: Each project is oriented to strengthen the capabilities that facilitate and allow the accomplishment of the stated goals and results. This results includes number of ISI publications, licences, disclosures, projects applications to Corfo or Fondef[6], granted projects by Corfo or Fondef, created companies, R&D contracts' value, and total number of R&D projects. Additionally the increase on capabilities of the last two years will be evaluated.

6.5.8. Form of funding

The measure contemplates a co-financing of the project. The subsidy given by Corfo is non-refundable and covers up to 70% of the total project cost, with a maximum value of AUD 285,714[7].

The beneficiary must co-finance at least 30% of the total project cost, and a 10% of the total project cost must be pecuniary contribution. Pecuniary contributions consist of disbursement of resources due to the projects execution, and do not include the use of facilities, infrastructure, human resources, and others, existing in the contributor.

[6] Fondef: is a fund for applied R&D. This fund is managed by Conicyt, the main agency for sciences in Chile
[7] Considering an exchange rate of 1 AUD = 490 CLP [10]

Up to 50% of the subsidy can be destined to finance remuneration and/or honorariums of pre-existing personnel of the beneficiary (or beneficiaries) that are directly linked to the development of the project's activities.

6.5.9. Eligible costs

The necessary and pertinent activities to achieve the general and specific targets may be financed, as well as for the expected outcomes. Some of the project´s financeable activities and expenses are the following:

- Implementation and execution activities of strategic plans for TLOs development
- Travelling expenses, studies and/or consultancies activities for technology commercialisation
- Activities to help designing a collaborative model of TLO with national and international entities, that allows reaching an efficient size of applied R&D activity for the technology transfer and commercialisation. These activities include international best practices analysis and prospecting partners.
- Diffusion activities of policies and technology transfer related topics for the beneficiary´s personnel.
- Activities meant to generate and strengthen the technology transfer and R&D commercialisation capabilities for products or technologies developed by the beneficiary.
- Outreach activities with the private sector
- Follow up and control activities of R&D project´s information, statements of invention, patents, licensing, new companies, and R&D contracts.
- Participation in national and international TLO networks
- Staff recruitment for strengthening the TLO`s capabilities. The recruitment must be oriented to help overcome weaknesses identified in the diagnosis.
- Activities to improve the market potential of the technological assets portfolio generated from R&D&I projects, with special emphasis in reaching international markets.
- Marketing activities that aim at substantially increase the R&D contracts, licensing, consultancies, and collaborative research with companies and other R&D&I stakeholders, in a national and international level.
- Other activities relevant and pertinent for achieving the project targets, according to Corfo's criteria.

6.5.10.Costs

The annual average cost that Corfo has invested in the present measure is around AU$ 4.3 millions

6.6. Administrative Bidding

The administrative aspects included are application, contract, and execution. Bidding Instructions for the measure, indicate that the following rules must be fulfilled:

- The present measure is to be available for the interested in a periodic mode.
- The present instrument does not cover for investment costs and overhead.
- A maximum of 3% of the total subsidy amount can be used to finance guarantees financial costs, within the "Operational costs" account.
- The projects are presented according to the application forms as indicated by Corfo that are available from the website www.corfo.cl.

6.7. Indicators, measures of success and/or evaluations

Capabilities (Technology transfer)

The projects funded by Corfo include an initial diagnosis of the unit or office that performs the R&D result's transfer and commercialisation activities. The diagnosis delivers precedents that allow establishing a base case in terms of elements such as:

- Number of ISI publications, patents, granted licences and disclosures.
- Number of projects applied for public funds, projects awarded and the respective amounts.
- Number of created companies
- R&D contracts amounts executed jointly with companies, incomes related to licensing, royalties or other items for concept of technology transfer.

To monitor each project, a base case is made that accounts for a series of variables, including the total accumulated data from the 2003-2010, and the last three individual years (2011, 2012, and 2013) for each element in the previous list in detail.

The monitoring set of metrics that Corfo makes to each project are related to the expected goals, set for each one, for the period 2014-2018.

Results and measures of success

The contest made in 2011 resulted in 15 individual projects and 3 associative projects (more than one university) approved. The following table shows a list of all the universities, the region where they are located, and those that were awarded in 2014 too.

Table 1: List of institutions awarded in 2011 during the measure's first call and those awarded on 2014 - Offices of Technology Licensing (TLO)

No.	Institution	Geographic region	Awarded in 2014
1	Universidad Católica del Norte	Antofagasta	
2	Pontificia Universidad Católica de Valparaíso	Valparaíso	✓
3	Universidad de Valparaíso	Valparaíso	
4	Universidad Técnica Federico Santa María	Valparaíso	✓
5	Universidad de Santiago de Chile	Metropolitana	✓
6	Instituto de Investigaciones Agropecuarias	Metropolitana	✓
7	Universidad Adolfo Ibáñez	Metropolitana	✓
8	Universidad Nacional Andrés Bello	Metropolitana	
9	Pontificia Universidad Católica de Chile	Metropolitana	✓
10	Universidad de Chile	Metropolitana	✓
11	Universidad de Talca	Maule	✓
12	Universidad Católica de la Santísima Concepción	Bío Bío	✓
13	Universidad de Concepción	Bío Bío	✓
14	Universidad de la Frontera	Araucanía	✓
15	Universidad Austral de Chile	Los Ríos	
16	Universidad de los Andes Universidad Mayor	Metropolitana	✓ Only Universidad de los Andes
17	Universidad del Bío Bío Universidad Católica de Temuco	Bío Bío - Araucanía	✓ Only Universidad del Bío Bío
18	Universidad de Antofagasta Universidad Católica del Maule	Antofagasta - Maule	✓ Only Universidad Católica del Maule
		Metropolitana	Universidad del Desarrollo

In the last version initiated by Corfo in 2014, 14 universities and one technical centre were awarded; these institutions correspond to a subgroup of the one listed in Table 1. These universities have already established Intellectual Property rules of procedure, inventions statement form, and in a low proportion regulations to avoid conflict of interests between the academic functions and the entrepreneurship functions (or others). Besides the private universities have modified the academic

career incentives by incorporating number of patents as new item for academic and monetarily assessment.

An evaluation, or general revision process, was made during the execution of the measure´s first call (Technopolis 2013), in which it is pointed out that the licensing average of TLOs per year corresponds to 0.2. This number is far lower than the 19.2 obtained by the European counterparts (ProTon Europe Survey, 2011). It is expected that the average has improved greatly, given that the largest portion of the 15 TLOs supported by Corfo publish in their home page the disclosure format that must be used by their researchers.

The measure revision also contains the results of a survey made to the authorities and researchers from the granted universities in the first call, and it highlights that the TLOs at universities still present limitations and difficulties.

The conclusion from the evaluation (Technopolis 2013) was that there is an emergent ecosystem as a result of the implemented measures, however relevant challenges still remain, and they are mainly related to the connection between universities and the industry. In order to close this gap it is necessary to enhance the knowledge transfer, capabilities, and intellectual property of both universities and firms.

The latest available data from 2012 shows that the patenting activity, of the three more active universities, reached 34 patent applications per year [9]. The 2015 award to patenting indicates that the number of applications from universities was doubled with reference to 2014. This could be a signal that the activity promoted by the TLOs is now bearing fruits.

6.8. Applicability to the Australian context

The Australian system at universities includes Technology Transfer Offices (TTO) that work with technology transfer and, the larger ones, are involved in big businesses based on technologies and research. In this sense the experience from Chile does not add value to the present system. A possible important difference between both countries is the source of funds: in Chile the government delivers the funds; it seems that in Australia universities fund their own TTO.

7. Strengthening of human capital for technology transfer

Key words: Human capital, training, and management.

The measure aims to increase the human capital capabilities in terms of technology transfer and commercialisation of R&D management. The target groups are universities and technologic centres.

In specific the measure aims at training researchers, professionals, and technicians that are involved in the technology transfer within universities and technology centres, in technology transfer and R&D results commercialisation (R&D contracts, licensing, spin-offs, entrepreneurship, among others).

7.1. The rationale

Developing sciences and technologies is necessary for the evolvement of technological innovation. Also, technology transfer and diffusion are necessary to transform the knowledge and ideas from research and development (R&D) into economic value. This implies that there must be a fluid communication and information exchange between the knowledge production centres and the local and global productive sectors. In this sense Chile presents a large gap between the companies' technologic requirements and the national innovation ecosystem's capabilities to provide technologic solutions to the country requirements.

In fact, increasing the technology transfer and commercialisation requires strong and steady efforts that tackle different areas of the National Science, Technology and Innovation system.

According to the previously stated, a study developed by the CNIC[8] regarding "Institutional improvement, regulation and practices for an Intellectual and industrial property management system" suggests the following key points:

- Increase the capabilities of institutions responsible of delivering, registering, and protecting intellectual and industrial property.
- Accelerate and stimulate the valuation, and the strategic relevance of the intellectual property by demand
- Encourage brokers involvement
- Create or strengthen the technology commercialisation units from universities and technology centres.
- Encourage the intellectual property law enforcement systems

Also, the international experience proves that supporting early stages of the business plan and strengthening technology transfer capabilities within R&D teams are fundamental for the successful development of a project[9].

Likewise, the main national research entities should enhance:

- R&D associated with the industry
- Technology transfer and intellectual property rights
- Entrepreneurship development

Different studies indicate that Chilean universities have, in average, a low level in the institutional development of R&D associative strategy with the industry. In this context, Corfo has implemented a measure for international level training, oriented to R&D technologic results' transfer and commercialisation from universities and technology centres.

7.2. The outcome of the measure

It is expected that the measure strengthens the technology transfer and R&D commercialisation capabilities of professionals and technicians, in universities and R&D centres, at a central level (TLO), as well as for faculties, departments, units or centres. Also to meaningfully train researchers and their research teams in technology transfer and R&D commercialisation, in order to promote an innovation and entrepreneurship culture.

Implementing this measure will impact positively the number of disclosures based on R&D, patents, and technology licensing. It will also increase the number of start-ups from technologies developed in universities and technology centres, the amount of professionals and researchers trained in technology transfer and commercialisation, the researchers' entrepreneurship capabilities, and start-ups that successfully gather funds such as seed-capital and others similar within a year of implementation. Finally it is expects that the market potential of the technologic assets portfolio generated by R&D&I improve in terms of international markets' access.

7.3. Targeted sectors

The support of the measure is not limited to one or more specific sectors

[8] CNIC: Acronym in Spanish for the National council for innovation and competitiveness. Study: Establishment of Centers for Innovation Technology Transfer and Entrepreneurship (CITE) in Chile. Interlink Biotechnologies LLC and Cornell University.
[9] Business Model Generation, Osterwalder, A, and Pigneur, Y., 2010.

7.4. Targeted research and technology fields

The measure is not limited to any research and technology fields or socio-economic objective fields.

7.5. Implementation Structure

7.5.1. Implementation overview

InnovaChile will make available the measure information through its site www.corfo.cl that includes the guidelines for the application, dates, application forms, and a frequently asked questions document. The guidelines include information of the measure regarding participants or stakeholders, targeted groups, geographic coverage (if applies), type of projects and the main elements that it must contain. The guidelines also inform the evaluation criteria, form of funding, deadlines for project execution, and eligible costs. The beneficiary must fill an online application along with an application form, both available from the Corfo home page.

7.5.2. Participants

The measure contemplates the participation of a beneficiary that corresponds to an individual or natural person with Chilean nationality that can be classified in one of the following categories:

1) Researchers, professionals or technicians dependent of Chilean universities or Chilean technology centres.
2) Graduate students that can certify their status as regular students in their universities.
3) Researcher that, although are not dependent of a university or technology centre, have jointly performed research and applied development projects with one or more individuals that fulfil number 1) and/or 2) of this categories list.

Each project must present only one beneficiary.

For purposes of the measure it is understood as “dependent” the natural person that has a valid working contract, according to the Work code, staff officers or on contract or honorariums, valid by the time of the application.

As well, it is understood as technology centre the legal person, public or private, for-profit or non-profit, constituted in Chile, that possesses or provides with permanent technical capabilities and infrastructure for the R&D activities fulfilment.

7.5.3. Target groups

The measure applies only to researchers, professionals, technicians, and students from Chilean universities or Chilean technology centres.

7.5.4. Geographic coverage

The measure concerns the whole national territory.

7.5.5. Training program description

The present measure searches for generating human capital capabilities, in technology transfer and R&D commercialisation management. To reach these targets the beneficiary must hire a training institution for the project execution, with international character and proved excellence. The training institution provides educational courses, or develops programs or training courses that enhance the technology transfer and R&D results commercialisation, delivering theoretical and practical training in that matter.

Each project may hire only one training institution, and the following must be proved regarding the training institution and the training program:

Training institution nature

The training institution corresponds to such international institution of excellence that provides programs and/or training programs, aimed at enhance the technology transfer and R&D results' commercialisation. The mentioned institution must count with recognized and creditable capabilities in the technology transfer and R&D results' commercialisation areas.

Training program and/or courses content

The programs and/or courses delivered by the previously described training institution must aim at enhancing the technology transfer and R&D results' commercialisation. The programs topics must be:

- Technology valorisation
- Licensing contracts
- R&D portfolio management
- New business and spin-offs generation
- Value proposition and business plans aiming at pick up private investment capital or venture capital
- Other programs categories that aim to enhance the technology transfer and R&D results' commercialisation

The programs can be on-line or on-campus.

7.5.6. Evaluation criteria

The project is evaluated in terms of the criteria and weightings presented in the following list. Each criterion will be evaluated with a score among 1 to 5, where 1 is the minimum (insufficient) and 5 is the maximum (excellent)

- Beneficiary (50%)
- Training institution
    - Institution relevance (20%)
    - Study program (30%)

Beneficiary: This item evaluates the beneficiary in terms of her or his experience on R&D activities implementation in scientific and technologic areas. The knowledge that will be acquired by the beneficiary by attending the training program is also indicated here, along with the potential application of the mentioned knowledge.

Training entity

Institution relevance: This item refers to the institution's experience in technology transfer and commercialisation implementation.

Study program: The study program coherence will be evaluated, and the alignment with the measure's targets.

7.5.7. Form of funding

The measure works in a co-financing mode, were Corfo covers for 80% of the total project with a maximum limit of AUD 9,796[10]. The beneficiary must cover for the remaining 20% through pecuniary contributions.

7.5.8. Eligible costs

The following activities are considered costs subject to funding:

[10] Exchange rate at 1 AUD = 490 CLP

Spent of Training institution hiring and beneficiary registration in the programs or courses in matters of technology transfer and R&D results' commercialisation.

Expenditure related to the beneficiary assistance to the training program or courses such as

- Travelling expenses
- Travelling insurance
- Study material or services associated to the program or courses
- Lodging expenses during the training period
- Transport within the training location

Guarantees emission and renewal.

Corfo only funds the training programs and courses where the beneficiary has accordingly fulfilled the assistance or approval requirements. By the end of the project the beneficiary must present documented proof from the training institution that he or she has fulfilled all the requirements stated at the beginning of the training program. Otherwise, the subsidy expenses are rejected.

Programs or courses that result in a degree completion are not eligible for funding.

7.5.9. Costs

The annual average cost that Corfo has invested in the present measure is around AU$ 500 thousand.

7.6. Administrative Bidding

The administrative aspects included are: application, contract, and execution. Bidding Instructions for the measure, indicate that the following rules must be fulfilled:

- The present measure is to be available for the interested in a periodic mode.
- The present instrument does not cover for investment costs, administrative costs, and overhead.
- A maximum of 3% of the total subsidy amount can be used to finance guarantees financial costs, within the "Operational costs" account.
- Graduate programs leading to academic degrees are not eligible for funding.

7.7. Indicators, measures of success and/or evaluations

The measure doesn´t have any indicators of following and it does not have any available evaluation.

7.8. Applicability to the Australian context

Australia has implemented a measure with a similar objective, to support the business with advanced human capital for technology transfer, named "Researchers in business scheme". Although it is more applied to industry needs, it doesn't engage the focus on the training for researcher or entrepreneurial people for transferring technologies. Besides, the Chilean measure applies to all economic sectors.

8. References

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