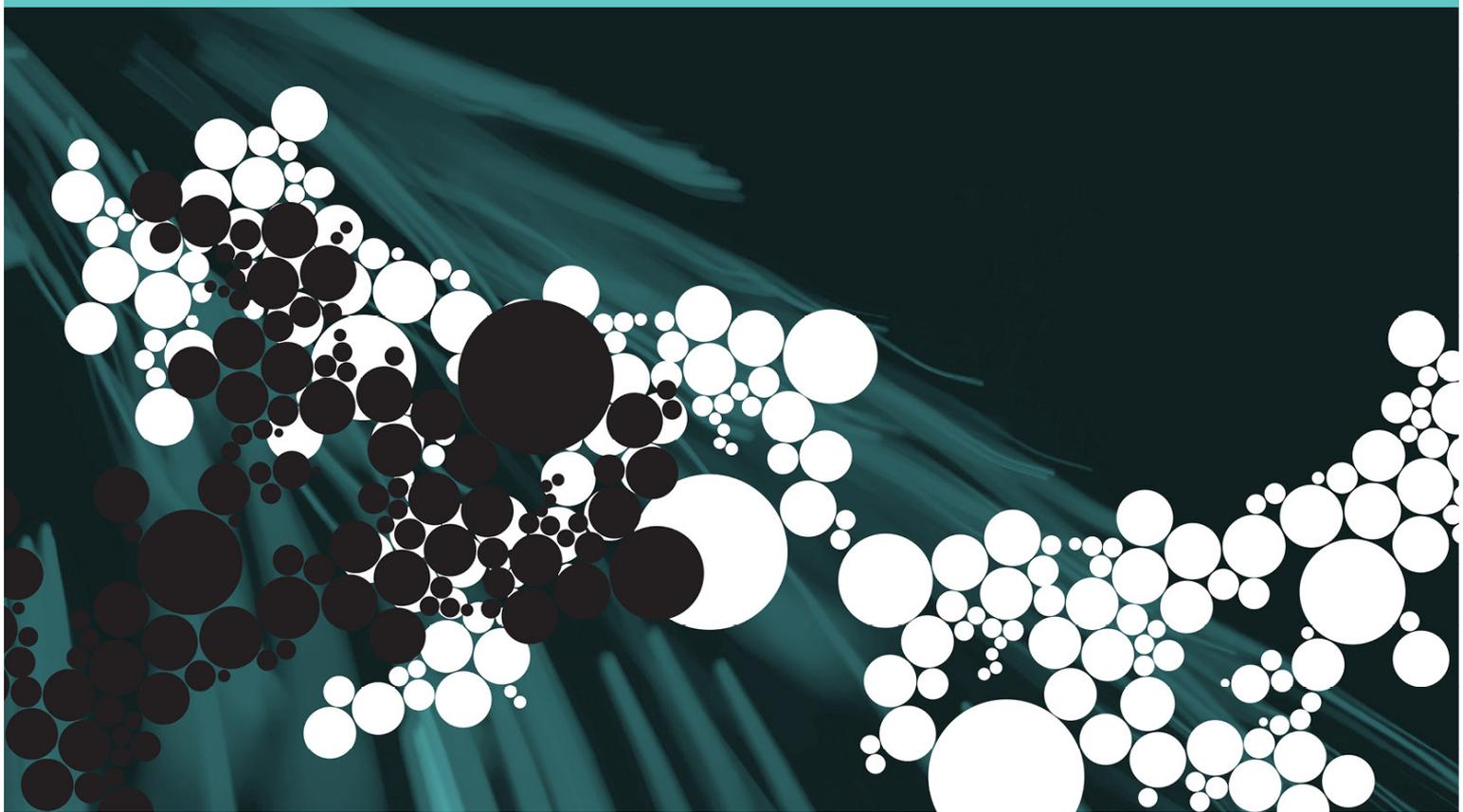




Australian Government
**Department of Industry,
Innovation and Science**



National Survey of Research Commercialisation (NSRC)

Supplementary Data Summary 2014

www.industry.gov.au/nsrc

Introduction

This document presents key findings from the supplementary data component of the 2014 National Survey of Research Commercialisation (NSRC) collection. Supplementary questions were introduced to the NSRC for the 2014 and future surveys so that data is collected on key policy and survey issues without loading up the main survey instrument. Some 2014 supplementary questions will be featured again in future surveys at given intervals to establish trend lines while others will not be featured again.

The 2014 supplementary section targeted industry engagement and knowledge transfer questions including:

- knowledge transfer channels
- structured systems for industry engagement
- data on professional development
- networking/events
- researcher incentives
- intellectual property rewards
- industry representation in governance
- products, processes or services with greatest impact
- patents filed by industry partners

The following information focuses on the quantitative data generated from the survey results. Reporting of other qualitative data captured through the supplementary component of the survey will be released separately.

A total of 63 institutions participated in the 2014 NSRC data collection including seven publicly funded research agencies; 37 higher education institutions and 19 medical research institutes. We thank all participating research organisations for their time and effort in providing data for this important national survey.

1. Knowledge Transfer Channels

There are a wide variety of channels through which knowledge is transferred from public research organisations to end users including industry, government and the wider public. This question sought to determine how organisations prioritise their knowledge transfer activities.

Respondents were asked to rank in order of priority (1 being the highest and 7 being the lowest) the following knowledge transfer channels¹:

- networking/events;
- professional development;
- consultancy;
- contract research;
- research collaboration;
- licensing; and
- company creation.

When analysed according to order of priority, survey results indicated that:

- On average, research collaboration received the highest average priority ranking (6.52), followed by contract research (5.63) and licensing (3.98). Company creation was ranked as the lowest priority at 2.33.

¹ Appendix A provides definitions of knowledge transfer channels and notes on how ranking averages are calculated.

- This trend is consistent with the results of the main survey data in 2014 which revealed increasing effort in industry research collaborations and contract research and a reduction in start-up companies over time.

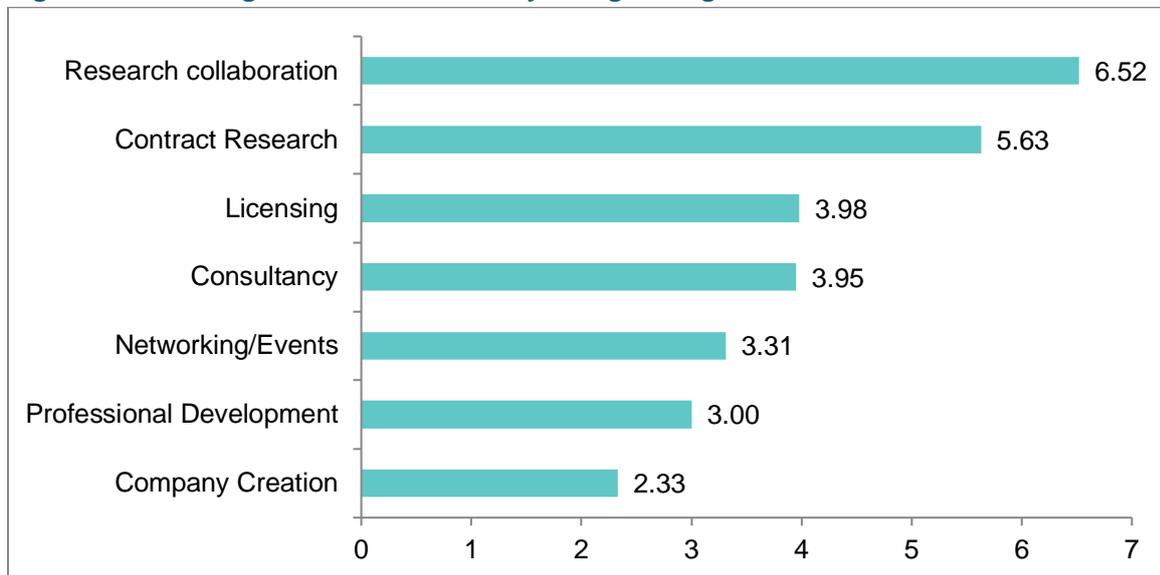
Respondents were also asked to identify other knowledge transfer activities. Publications and journals along with conference presentations and seminars were noted by many research organisations as important avenues for knowledge transfer.

Table 1: Knowledge transfer channels

S1: Rank the knowledge transfer channels by order of priority (1 being the highest and 7 being the lowest)

Answer Options	Ranking Average	Rank
Research collaboration	6.52	1
Contract Research	5.63	2
Licensing	3.98	3
Consultancy	3.95	4
Networking/Events	3.31	5
Professional Development	3.00	6
Company Creation	2.33	7
	<i>answered question</i>	62
	<i>skipped question</i>	1

Figure 1: Knowledge transfer channels by rating average



2. Structured Systems for Industry Engagement

Research organisations were asked to identify which of the following structured systems are used to support engagement with industry partners²:

- A single enquiry point for industry;
- Business development personnel;
- Information and/or communication material that promote and foster research industry engagement;
- A strategic plan;
- Regular networking events that connect researchers with industry partners; and
- Dedicated administrative systems that support research industry engagement.

Survey results show that:

- A large majority of respondents (82%) use promotional information and/or communication materials to support engagement with industry partners, followed closely by business development personnel (79%) and a strategic plan (76%). Regular networking events were also popular (58%).
- Less common systems included a single enquiry point for industry (44%) and dedicated administrative systems (47%).

Respondents could nominate other structured systems they use to engage with industry. A number noted industry internships and dedicated websites as examples.

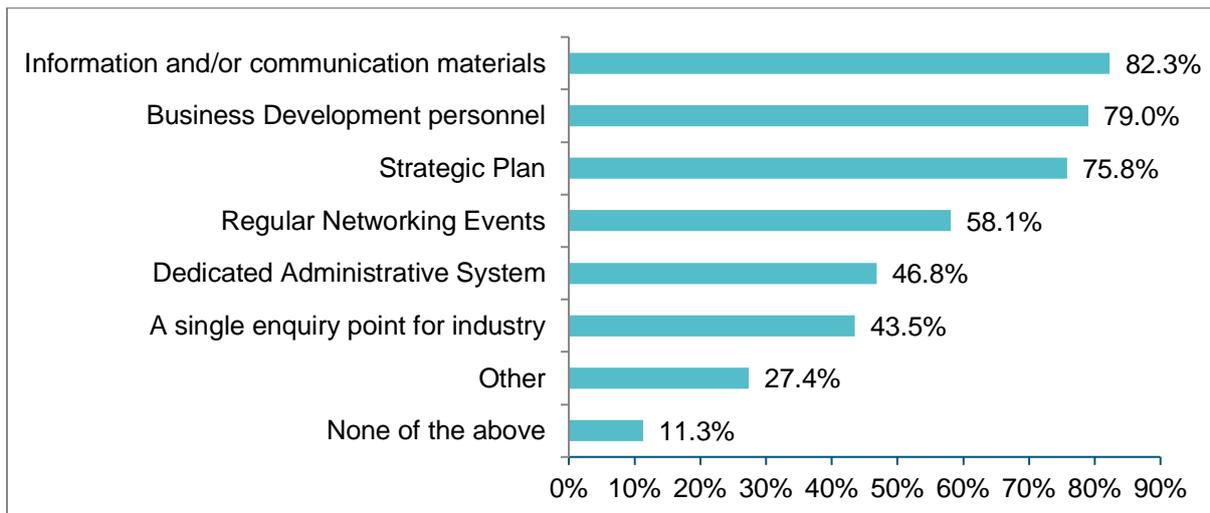
² Appendix A provides descriptions of these structured systems.

Table 2: Structured Systems for Industry Engagement

S2: Does your research organisation have the following structured systems to support engagement with industry partners? Please tick one or more boxes. Question S2 Help.

Answer Options	Response Percent	Response Count
Information and/or communication materials	82.3%	51
Business Development personnel	79.0%	49
Strategic Plan	75.8%	47
Regular Networking Events	58.1%	36
Dedicated Administrative System	46.8%	29
A single enquiry point for industry	43.5%	27
Other	27.4%	17
None of the above	11.3%	7
	<i>answered question</i>	62
	<i>skipped question</i>	1

Figure 2: Structured systems for industry partners (%)



3. Data on professional development

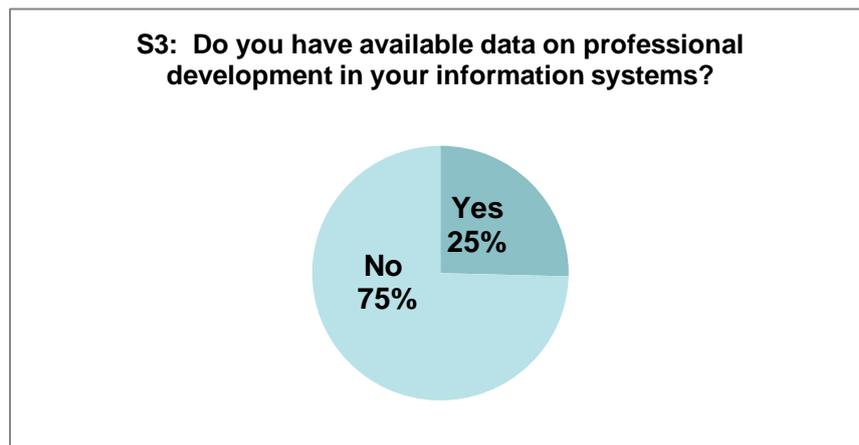
Research organisations were asked about the availability of data in their information system on professional development activities for industry. This information was collected for survey development purposes. Survey results show:

- Almost a quarter of respondents (25%) reported that this data was available.
- A significant majority of participants (75%) reported that data on professional development is not available in their information systems.

Table 3 Availability of professional development data

S3: Do you have available data on professional development in your information systems?		
Answer Options	Response Percent	Response Count
Yes	25.4%	16
No	74.6%	47
<i>answered question</i>		63
<i>skipped question</i>		0

Figure 3: Availability of professional development data



4. Networking/Events

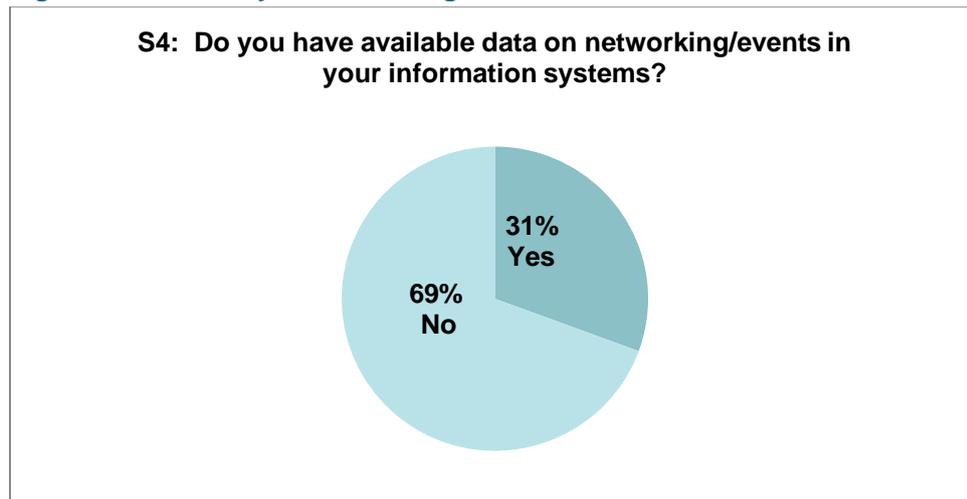
Research organisations were asked about availability of data in their information systems on industry networking/events activities. This information was collected for survey development purposes. Survey results show:

- Just under a third of respondents (31%) confirmed that they have available data on networking/events in their information systems. This includes workshop, conference and collaborative forum activities for industry.
- A large proportion of the survey participants (69%) do not have available data on networking/events in their information systems.

Table 4: Availability of networking/events data

S4: Do you have available data on networking/events in your information systems?		
Answer Options	Response Percent	Response Count
Yes	30.6%	19
No	69.4%	43
<i>answered question</i>		62
<i>skipped question</i>		1

Figure 4: Availability of Networking/events



5. Researcher Incentives

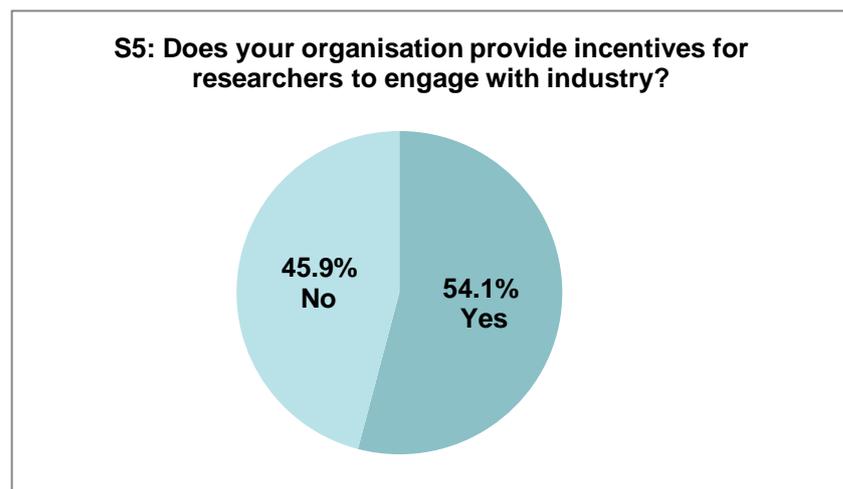
Research organisations were asked if they offered incentives for researchers to engage with industry. Survey results show:

- Just over half of respondents (54%) offer incentives for researchers to engage with industry.
- In contrast, just under half of respondents (46%) indicated that incentives were not available to encourage researchers to engage with industry partners.
- Examples of incentives reported include work promotions, financial rewards, performance recognition such as awards, access to scholarships and industry-university collaboration funding.

Table 5: Researcher incentives

S5: Does your organisation provide incentives for researchers to engage with industry?		
Answer Options	Response Percent	Response Count
Yes	54.1%	33
No	45.9%	28
	<i>answered question</i>	61
	<i>skipped question</i>	2

Figure 5: Researcher incentives



6. Intellectual Property Rewards

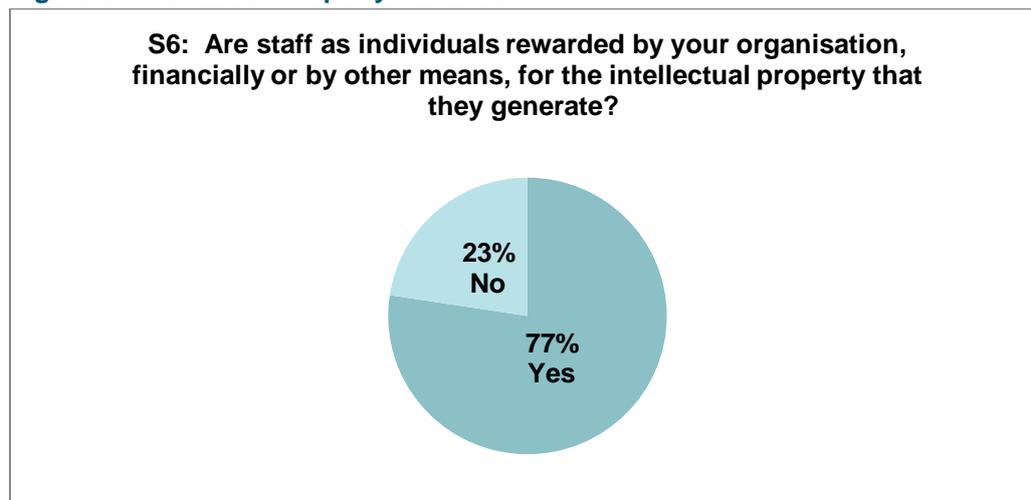
Research organisations were asked whether staff members as individuals are rewarded financially or by other means for the intellectual property (IP) that they generate. Survey results show:

- A large majority of respondents (77%) indicated that staff members as individuals were rewarded financially or by other means for intellectual property that they generate for the institution. These rewards are governed by policies on the sharing of commercial income generated from selling or licensing of IP.
- Apart from commercial income sharing, other types of rewards provided by institutions include promotions, awards and medals and monetary prizes.
- A minority of respondents (23%) indicated that staff members as individuals were not rewarded by the organisation for the IP they generate.

Table 6 Intellectual Property Rewards

S6: Are staff as individuals rewarded by your organisation, financially or by other means, for the intellectual property that they generate?		
Answer Options	Response Percent	Response Count
Yes	77.4%	48
No	22.6%	14
<i>answered question</i>		62
<i>skipped question</i>		1

Figure 6: Intellectual Property Rewards



7. Industry representation in governance

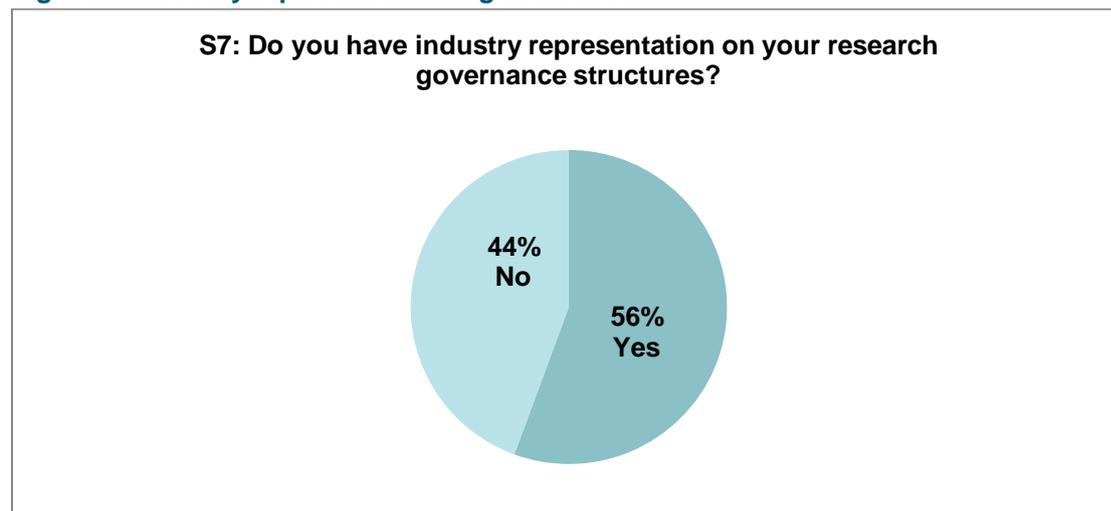
Research organisations were asked whether industry representation is included in research governance structures. Survey results show:

- Over half of respondents (56%) have industry representation as part of their research governance structures and just under half of respondents (44%) do not.
- In the case of higher education institutions, some noted that industry representation may not form part of whole-of-university research governance but industry representatives are included in research school/college advisory boards and panels.

Table 7: Industry representation in governance

S7: Do you have industry representation on your research governance structures?		
Answer Options	Response Percent	Response Count
Yes	55.6%	35
No	44.4%	28
<i>answered question</i>		63
<i>skipped question</i>		0

Figure 7: Industry representation in governance



8. List of products, processes or services with greatest impact

Out of the 63 survey participants, 55 research organisations listed products, processes or services generated by their research organisation in the last five years that had significant impact on society. Examples of high impact research were noted across a range of research fields in Science, Technology, Engineering and Mathematics (STEM) and Humanities, Arts and Social Sciences (HASS) disciplines.

Please see Appendix B for the list of reported products, process and services.

9. Patents filed by industry partners

Research organisations were asked about the number of patents filed solely in the name of industry partner but which included a researcher from their organisation as contributor to that patent. This information was collected primarily for survey development purposes. Survey results show that most respondents struggled to answer this question:

- Out of 63 survey participants, 12 respondents (19%) provided data. Collectively, these research organisations reported a total of 89 patents that were filed solely in the name of an industry partner included a researcher from their organisation.
- The large majority of respondents (81%) reported a “0”, noted data was unavailable and/or skipped the question.

Definitions of Knowledge Transfer Channels

Definitions of knowledge transfer channels terms:

- **Networking/events** refers to organised opportunities and occasions between research and industry individuals and/or organisations that support professional relationships that include exchanging and sharing values, visions, ideas, knowledge, technology or resources.
- **Professional development** is defined as the means by which industry employees maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives, usually through a range of short and long training programmes, some of which have an option of accreditation. This includes award and non-award courses.
- **Consultancy** is the provision of expert advice to clients external to your organisation based on your institution's existing research knowledge, skills and capabilities.
- **Research collaboration** is a structured research project that involves researchers from your organisation and one or more industry partners where all parties work together toward a common goal by sharing resources, knowledge, learning and building consensus.
- **Research contract** is an agreement to undertake research on behalf of clients external to your organisation.
- **Licensing** includes activities and agreements that allow the transfer of technology between two parties, where the owner of the technology (licensor) permits the other party (licensee) to share the rights to use the technology, without fear of a claim of intellectual property infringement brought by the licensor. This includes activities that on patenting and other forms of formal IP.
- **Company creation** is the creation of spin-off and start-up companies. Spin-offs are defined as companies set up to exploit IP that has originated from within the research organisation. Start-ups are defined as newly-formed companies that are in a phase of development and research for markets.

Ranking of Knowledge Transfer Channels

Table 1: Ranking of Knowledge Transfer Channels

Table 1 shows how survey participants ranked all the knowledge transfer channels by order of priority:

S1: Rank the following knowledge transfer channels by order of priority (1 being the highest and 7 being the lowest) for your organisation.

Answer Choice	1	2	3	4	5	6	7	N/A	Ranking Average	Response Count
Networking/ Events	2	2	11	14	10	13	9	1	3.31	62
Professional Development	2	4	5	6	17	16	10	2	3.00	62
Consultancy	0	6	18	13	11	5	4	5	3.95	62
Contract Research	10	31	9	7	3	0	0	2	5.63	62
Research collaboration	43	11	3	4	0	0	0	1	6.52	62
Licensing	3	6	12	12	7	12	1	9	3.98	62
Company Creation	1	1	3	4	9	7	20	17	2.33	62
									<i>answered question</i>	62
									<i>skipped question</i>	1

Calculation of ranking average

The ranking average for each answer choice was calculated to determine preference. The answer choice with the largest ranking average is the most preferred choice.

The ranking average is calculated as follows:

$$\frac{x_1w_1 + x_2w_2 + x_3w_3 \dots x_nw_n}{\text{Total of responses}}$$

where: w = weight of ranked position and x = response count for answer choice

Weights are applied in reverse where the respondent's most preferred choice (which participants ranked as number one or first priority) has the largest weight, and their least preferred choice (which they ranked as the seventh or last priority) has a weight of 1. For example, if a ranking question has 7 answer choices, weights are then assigned as follows:

- The number 1 choice has a weight of 7
- The number 2 choice has a weight of 6
- The number 3 choice has a weight of 5
- The number 4 choice has a weight of 4
- The number 5 choice has a weight of 3
- The number 6 choice has a weight of 2
- The number 7 choice has a weight of 1

The N/A responses are not factored into the ranking average.

Description of structured systems supporting engagement with industry partners

Systems that support engagement with industry partners include:

- **A single enquiry point for industry.** This may include dedicated phone, email, web portal or personnel.
- **Business development personnel.** This refers to staff dedicated to building relationships and developing/ managing research projects with industry.
- **Information and/or communication material** that promote, inform and foster research industry engagement.
- **A strategic plan.** This should only include public documents that set priorities and goals and guides how an institution's research function engages with industry.
- **Regular networking events** that connect researchers with industry partners.
- **Dedicated administrative systems** that support research industry engagement. This may include dedicated contracting, finance and reporting systems.

List of products, processes and services with greatest impact

S8: List up to five products, processes or services originating in your organisation that have had the greatest impact on society, however you measure that impact	
Australian Astronomical Observatory (AAO)	Research in Astronomy
	Research and Development in telescope instrumentation
	Design and construction of telescope instrumentation
	Telescope infrastructure
Australian Institute of Marine Science (AIMS)	Environmental Knowledge
	Online marine research data
	Online data from weather stations
	Historical weather data from coral cores
	Research for sustainable development
Brien Holden Vision Institute	Development of Silicone Hydrogel Contact Lens
Cancer Council Victoria	Public health campaigns and advertising
	Epidemiological and Behavioural research
	Awarding research grants
	Support services
Charles Darwin University	Research leading to change in global antimalarial treatment practices
	Development of evidence-based parenting program for Indigenous children
	Developed clinical guidelines for priority health issues facing Indigenous and northern Australian based populations
	Developed land management practices and new fire regimes that reduce emissions have widespread potential benefits – socially, environmentally and economically
	Change in weed policy and management in Northern Australia and comprehensive research analyses of the impacts of invasive grasses anywhere in the world

<p>Charles Sturt University</p>	<p>The Intelligibility in Context Scale (ICS) (McLeod, Harrison & McCormack, 2012a, 2012b; McLeod, Crowe, & Shahaeian, 2015) is a new parent-report screening tool designed to identify young children with speech difficulties. The ICS provides an easy-to-use, cost effective method of early identification of children at risk of future communication and literacy difficulties. It is suited for use in educational, health and disability contexts, providing professionals (teachers, speech-language pathologists) with information about children's intelligibility (how well they are understood by different communication partners, including parents, family members, friends, teachers, and strangers). Early screening for speech sound disorders and childhood apraxia of speech enables families and children to access appropriate early intervention to ameliorate future risks. The translations of the ICS have been made available for free, enabling professionals around the world to screen children's speech. A key innovation offered is that the child is assessed in the language spoken by their families etc. The wide and rapid uptake of the ICS provides strong evidence of its value. http://www.csu.edu.au/research/multilingual-speech/ics</p>
	<p>Collaboration Case study Evergraze - End users sheep and beef farmers in high rainfall zones in Southern Australia. A national research, development and extension partnership to undertake R&D to increase the profitability of livestock enterprises while achieving reductions in groundwater recharge and soil loss by water and wind. Based on a 2014 analysis an estimated 4400 producers made changes to their farm, impacting on more than 960,000 ha as a result of what they learnt through evergraze. www.evergraze.com.au</p>
	<p>Irrigation Water Demand Forecasting. Coleambally Irrigation Co-operative Limited. A decision support system that collects data from heterogeneous sources, pre-processes the collected data and applies data mining algorithms on the processed data set in order to learn water usage patterns for individual farms which can then be used to predict water demand of a farm for the next seven days. Impact will accurately assist farmers in obtaining water allocations. http://www.csu.edu.au/faculty/business/cm3/cm3-projects/irrigation</p>
<p>Commonwealth Scientific and Industrial Research Organisation (CSIRO)</p>	<p>CSIRO Total Wellbeing Diet - Health and Wellbeing (people helped)</p>
	<p>WLAN - Technology (people helped, users)</p>
	<p>New cotton variety - Agriculture (sales)</p>
	<p>The New barley - Food & Agriculture (people helped, sales)</p>
<p>CQUniversity</p>	<p>Near Infrared Spectroscopy in Fruit Quality Assessment</p>
	<p>The Impact of Electronic Gambling Machine Jackpots on Gambling Behaviour</p>
	<p>10,000 Steps to Better Health</p>
	<p>Smart Brakes</p>
	<p>A Biomathematical Model of Human Fatigue as a Risk Management Tool in Industries that Employ Shiftworkers</p>

Curtin University of Technology	End to end seismic hard rock exploration services - saves time and money, gives fast track discovery and improve life of mine planning. http://www.hiseis.com.au/
	Tinnitus treatments - improve patient quality of life using a simple listening device. http://neuromonics.com/
	MillMapper - mill liner condition monitoring for rock crushing mining equipment - extend liner life cycles, optimise liner design, prevent liner failures, optimise throughput and improve the performance of your mill http://www.outotec.com/en/Products--services/Process-equipment/Grinding-mills/Liner-condition-monitoring/MillMapper/
	GULP chemical modelling software http://accelrys.com/products/datasheets/gulp.pdf
	iMotionFocus - intelligent CCTV video surveillance software that enables operators to focus only on the 1% of events requiring attention http://www.icetana.com/
Deakin University	Toby Playpad http://www.deakin.edu.au/research/stories/2013/11/12/toby-playpad-engaged
	Ozbot http://www.deakin.edu.au/research/stories/2012/05/23/ozbot-turns-siege-breaker
	Investigative Interviewing http://www.deakin.edu.au/research/stories/2014/11/11/centre-for-investigative-interviewing-launched
	Development Health Literacy Questionnaire (HLQ) http://www.deakin.edu.au/health/research/phi/health-literacy.php
DST Group	JDAM-ER
	DVG
Edith Cowan University	Indigenous Health InfoNet
	Friendly Schools program
	SiMPLE tool
	Exercise programs in cancer
	Trailblazer
Federation University of Australia	Carbon Storage Analytical Laboratory - Resources Sector. Environmental improvement. - http://www.co2crc.com.au
	FootyFirst, Injury Prevention training fir AFL. Has been adopted as official training guideline by the AFL - http://www.aflcommunityclub.com.au/index.php?id=1905
	Visualising Victoria's Groundwater - WEB-GIS designed to identify Groundwater presence, usage and management. Utilize by Government, environmental authorities and researchers. Has provided a repository to establish 2D and 3D location of Victoria's Groundwater - http://www.vvg.org.au/

Flinders University	Clevertar
	Re-Timer
	Flinders Creations
	The BizPlaybook
	FlinCare
Garvan Institute of Medical Research	Aquaria - scientific software with >14,000 users
	Dubbo osteoporosis study – impacting osteoporosis management and use of bisphosphonates
	Katherine Samaras: Changes to guidelines for diabetes patients in hospital
	Raised awareness of breast cancer through “Love Your Sister”
	Garvan fracture risk calculator
Griffith University	Parents Under Pressure Program
	Gold Coast Shoreline Management Plan
	Health Economics Consultancy & Commercial Research Services
	Intravenous Vascular Access Teaching and Research
	Model for Assessing a Pilots Performance (MAPP) Pilot Education Program
Hudson Institute of Medical Research	Invitro Fertilisation (IVF) processes
	Down Syndrome Diagnostic Test (inhibin A)
Institute for Breathing and Sleep	Victorian Respiratory Support Services
	Clinical Trials
	Research Projects conducted
James Cook University	Gravid Aedes Trap (GAT) - JCU with collaborators in Brazil have developed and commercialised a unique mosquito trap that selectively traps female Aedes species mosquitos. The greatest impact of the GAT has been in the number of users. Many have been deployed in the Eliminate Dengue Program. More GATs have been sold worldwide through our licensee, Biogents which is a German pest control company.
	Desmanthus legume varieties - Agrimix and James Cook University have formed a strong alliance, promoting 20 years work on Desmanthus to enhance pasture productive and profitability. Together, Agrimix and JCU are conducting ongoing agronomic and animal production trials across Queensland, demonstrating Progardes contributes to the sustainability of grasslands on clay soils and enhances livestock productivity.
	Process of Copper Electrowinning - technology licensed to XStrata Tech. Apart from the economic benefits of successfully commercialising this technology, the lower energy costs have also reduced CO2 emissions in the order of 10,000 tonnes per year.
	Cyclone Testing station services have contributed significantly to the development of effective methods of building cyclone-tolerant buildings. The key impact has been the marked improvement in building and construction practices particularly in the tropics.

Kolling Institute of Medical Research	eASY electronic antibiotic software system
	Diabetes support products
	Mental health patient support and handover electronic board
	PAPP-A Commercialisation Various Medical and Patient Support Apps.
Latrobe University	Crossing Roads Technology
Macfarlane Burnet Institute for Medical Research and Public Health Ltd	Healthy Mothers Health Babies Program; Work
	Breast Feeding Policy: In a landmark study,
	Water Quality Study: Study assessing drinking
	Tap Study: Seeing if treating high risk IDU
	Centre for Research Excellence into IDU
Macquarie University	Wi-Fi: Dr David Skellern, at the time Professor of Electronics and head of Macquarie's Department of Electronics started to consider wireless communication in the early 19902 and teamed up with researchers with similar ideas from CSIRO to develop the technology. There are now over five billion devices in the world incorporating wi-fi technology.
	Climate impact: Since the 1980s, Macquarie has made significant contributions to public policy and academic research both in Australia and internationally.
	MultiLit: Making Up Lost Time in Literacy has transformed the lives of thousands of children since it was established in 1996. MultiLit builds phonemic awareness, proficiency in phonics, word recognition skills and expands children's vocabulary through programs in schools, literacy centres and community-based literacy projects across Australia, New Zealand and Asia.
	Big History: Professor of Russian History, David Christian was fascinated by the history of humanity as a whole and introduced the first 'Big History' subject to undergraduates at Macquarie in 1989. The course crossed disciplinary boundaries and attempted to answer "What is my lace in the cosmos?" David was approached by Bill Gates in 2008 who announced he wished to support him. Big History is now taught in over 300 schools in Australia and the United States with pilot schools in Korea, the Netherlands and Scotland as well as a free online course.
	Yellow laser: Macquarie has developed a continuous wave laser that emits yellow light with significant outcomes for ophthalmology. Laser treatment of retinal diseases is now commonplace and yellow light require less power and target haemoglobin more selectively reducing pain and side effects.
Monash University	IVF
	Relenza
	Axiron
	FODMAP diet and app
	Eliminate Dengue Program

Murdoch Childrens Research Institute	VCGS - clinical genetics service
	Raising Children Network
	Melbourne Childrens Trials Centre
	Non - invasive prenatal testing
	Head Check
Murdoch University	Meat Grading system - Agriculture - Meat Standards Australia http://media.murdoch.edu.au/an-oscar-for-australian-meat-science
National Measurement Institute (NMI) ³	Maintenance and dissemination of Australia's primary measurement standards for the Australian Legal Units of Measurement (based on the System International measurement units which underpin the metric system).
	Scientific services reliant on NMI's research and development outputs, for example nanometrology and biometrology http://www.measurement.gov.au/ScienceTechnology/Pages/default.aspx
	Pattern approval of measuring instruments used for trade, as part of NMI's legal metrology regulatory activities (estimated to support about \$400 billion of Australian trade transactions annually).
	Analytical measurement services. For example, NMI provides sports drug testing services to the Australian Sports Anti-Doping Authority (ASADA), forensic drug analysis to the Australian Federal Police; dioxin testing to Environmental Protection Agencies; for the Department of Agriculture and Water, NMI tests imported foods for safety and quality, and exports for chemical residues; and also supports the Department of Health's Food Standards Australia New Zealand and the Therapeutic Goods Administration.
	Training in measurement science for Australian researchers and industry; and technology transfer services for innovators (especially regarding new measurement technologies; including for industrial and regulatory purposes)

³ The National Measurement Institute (NMI) implements the Commonwealth's responsibilities under section 51 of the Constitution to provide for "weights and measures". NMI provides measurement standards and expertise to support Australia's industries, enable Australia's participation in global supply chains, and facilitate international and domestic trade. NMI underpins the effective use of the metric system in Australia in the context of a globally connected, minimally regulated economy.

Neuroscience Research Australia	FallScreen© is a falls risk calculator and has two forms: a short form and a long form. The short form is designed as a screening instrument suitable for General Practice surgeries, acute hospitals, and long-term care institutions. It takes only 15 minutes to administer and contains five items: a single assessment of vision, peripheral sensation, lower limb strength, reaction time and body sway. The long form is designed as a comprehensive instrument suitable for Rehabilitation and Physical Therapy and Occupational Therapy settings and for dedicated Falls Clinics. It takes 45 minutes to administer and contains 15 items: three assessments of vision (high and low contrast visual acuity and edge contrast sensitivity), three assessments of peripheral sensation (tactile sensitivity, vibration sense and proprioception), assessments of three lower limb muscle groups (knee extensors, knee flexors and ankle dorsiflexors), assessments of both hand and foot reaction time and four assessments of body sway (sway on floor and foam with eyes open and closed). Prof Stephen Lord's Physiological Profile Assessment (PPA) has been marketed through Neuroscience Research Australia (formerly the Prince of Wales Medical Research Institute) as POWMRI FallScreen©. These tools are now used in over 150 research and clinical settings within Australia and across the world, Belgium, Canada, China, Denmark, Finland, Korea, Malta, New Zealand, Norway, Poland, Singapore, Sweden, Switzerland, Taiwan, USA and UK.
NICTA	Intelligent fleet logistics technology is being rolled out to the transport industry and has demonstrated savings of 10-15% of transport company costs.
	Smart pipes technology is estimated to have capacity to reduce water pipeline maintenance costs by close to \$100m per year.
	NICTA's Operating System micro-kernel is used in over 3 billion smart phones globally, and the secure version is the core of future secure operating systems through major international collaborative research projects.
	LIXI business blueprints and ready to use toolsets have reduced loan approval times from 14 days to 15 minutes and enabled potential cost reductions of over \$30m per year in the NSW mortgage industry.
	Governments and geothermal companies can now predict their chances of successfully drilling at locations selected as possible sources of geothermal energy, thus increasing the returns from what are substantial investments when drilling a well.
QIMR Berghofer Medical Research Institute	Quanteferon CMV diagnostic
Queensland University of Technology	PEACH
	PEPA
	Yumi Deadly
RMIT University	http://www.rmit.edu.au/news/publications/making-connections
Southern Cross University	Regional engagement
	Coal seam gas monitoring
	Acid sulphate soils
	Pre breeding plant crop development
	Crustacean lobster aging

<p>Swinburne University of technology</p>	<p>Hidden Universe, an IMAX Film production; Seen by 1.5 million people to date; hitting distribution level at 31 theatres around the world; in conjunction to financial returns impact noted via utilisation of data originally supported via ARC grants and effective mechanism in the promotion of science and technology to the next generation.</p>
	<p>MiniFAB Pty Ltd, a spin out established in 2002 involving a collaborative arrangement, is a contract engineering firm that develops and manufactures disposable micro-engineered products; Company has grown from 5 to 60 people in this time; The organisation has completed more than 900 projects and now has offices in Europe and the US; involved a high number of research students and researchers within commercial projects where a significant number are now employees of the company; impact measure is that the success of this company has had both a social an economic impact within our community</p>
	<p>Youthworx Productions is a social enterprise company where trainees produce professional videos under the mentorship of media and production specialists. The company emerged out of a partnership between the Swinburne Institute for Social Research and the Salvation Army, within the ARC Centre of Excellence for Creative Industries and Innovation.</p>
	<p>The Wellbeing Clinic for Older Adults is a result of an industry-university collaboration; Villa Maria is a not-for-profit organisation providing residential and community services to older people, children and adults with disability, their families and carers; Problem identified that staff overwhelmed by the emotional needs of new residents and their families; Impact outcomes include fact that 66% of participants showed improved quality of life indicators (QOL-AD), reduction in participants' depression post-treatment, offered staff an alternative treatment to drugs, clinic has been rolled out to five further aged care residences and offspring programs include: Psychology Volunteer Program, Life Story Programs.</p>
	<p>Swinburne established Doors into projects in Millingimbi and Ramingining communities in the Northern Territory in 2014. The projects build a skilled workforce of community members to conduct repairs and maintenance at municipal and homelands properties through Dinybulu Regional Services; Arnhem Land Progress Aboriginal Corporation (ALPA) is the lead partner, supported by the Department of Business (NT) and the Services Industry Training Advisory Council (SIAC); Swinburne delivers the Certificate III in Remote Area Building Repairs and Maintenance to participants. We also offer support to build skills in language, literacy, numeracy, basic IT and real industry experience such as small jobs and repairs; Impact is that participants now have a direct pathway to employment as Community Housing Maintenance Officers or other roles in building and construction.</p>

<p>Telethon Kids Institute</p>	<p>[Service]: Contract research contributing to the mandatory folate fortification of foods</p> <p>[Partners]: Food Manufacturing industry, Food Standards Australia New Zealand, WA Department of Health.</p> <p>[What it does]: Contract research contributing to the fortification of food with folate to reduce neural tube defects in newborns.</p> <p>[Impact]: Telethon Kids Institute research identified reasons to support mandatory folate fortification and this research made a major contribution to the decision of Food Ministers, in June 2007, to introduce mandatory fortification in Australia by September 2009. Fortification results in an estimated reduction of between 14-49 out of 300-350 pregnancies in Australia and 4-14 out of 70-75 pregnancies in New Zealand affected by an neural tube defects each year. Estimates come from modelling analyses by Telethon Kids Institute researchers (commissioned by FSANZ to undertake this research; in FSANZ Final Assessment report and also published). http://www.foodstandards.gov.au/consumer/nutrition/folicmandatory/Pages/default.asp</p>
	<p>[Product]: House dust mite allergens for commercial diagnostic tests.</p> <p>[Partner]: Biotechnology and pharmaceutical companies.</p> <p>[What it does]: The Telethon Kids Institute pioneered the use of recombinant allergens for scientific investigation and the development of better therapies and diagnostics. Through licencing agreements and assigned patents to Allergopharma, house dust mite allergens are being used in ImmunoCAP diagnostic tests (Phadia Thermofisher) for more accurate measures and for cat the detection of subjects with cross-reactive mammalian allergy. Patented and unpatented knowledge generated for house dust mite allergy has been used in new therapies in clinical trial having completed phase IIb (HDM-Spire, Circassia).</p> <p>[Impact]: Allergen test results with high clinical value are key for clinical decisions and diagnostic success. ImmunoCAP Lab tests give reliable results that support primary care physicians as well as specialists in providing optimal patient management. By using tests for single allergenic components as a complement to more traditional IgE antibody tests, further clinically relevant information can be gained. ImmunoCAP Allergen components are useful tools when investigating and explaining allergic reactions more in detail and to determine if they are caused by cross-reacting IgE antibodies to different allergens. http://www.phadia.com/Products/Allergy-testing-products/ImmunoCAP-Lab-Tests/</p>

<p>Telethon Kids Institute</p>	<p>[Service]: Evaluation of combined Haemophilus influenzae B / Meningococcal C vaccine (Menitorix).</p> <p>[Partner]: GlaxoSmithKline.</p> <p>[What it does]: Menitorix combines the two separate antigens that are scheduled to be given to infants as separate vaccine. Prior to July 2013, Australian children received 3 separate vaccines at one time, MMR (Measles Mumps and Rubella vaccine), HiB vaccine (Hiberix), Meningococcal C vaccine (NeisVaxC). The Vaccine Trials Group, along with 3 other Australian sites and the sponsor company, GSK, Menitorix could replace both Hiberix and NeisVaxC vaccine, and could be administered at the same time as the MMR vaccine.</p> <p>[Impact]: Immunisation coverage reports from 2009, showed that over 28% of children did not receive the Meningococcal C vaccine when it was due. It is anticipated that by reducing the actual number of injections administered to 1 year olds, that both the immunisation provider and the parents would be happier to complete the correct schedule at this timepoint. The study results showed that Menitorix was well tolerated in infants with the number of adverse reactions reported being actually lower than those reported when the vaccines were given separately. Due to these study results this combination vaccine was registered in Australia and placed on the Australia Immunisation Schedule in July 2013. Infant's now receive two vaccines at this 12 month time point Instead of the 3 vaccines, as per the old schedule. http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/national-immunisation-program-schedule</p>
	<p>[Service]: Provides strategic advice and support to the Australian Government Department of Education and Training and to State and Territory Governments for the The Australian Early Development Census programme.</p> <p>[Partners]: Department of Education and Training, State and Territory Government Departments implementing the AEDC, Centre for Community Child Health</p> <p>[What it does]: Provide support to Commonwealth funded State and Territory Coordinators to assist them in supporting stakeholders in the jurisdictions to engage with the AEDC. This includes the development of support materials such as fact sheets, instruction manuals, reports, presentations to increase engagement with the AEDC</p> <p>[Impact]: Governments at all levels and community organisations use AEDC data to inform early childhood development policy and practice since the first national collection in 2009. Improving early childhood development underpins a range of Australian Government initiatives, strategies and programmes. This includes existing programmes across the health, mental health, education and early childhood, planning, community and family services, disability, Indigenous and housing sectors. The AEDC provides strong data evidence that helps inform, support and evaluate national priorities and policies on improving early childhood development. http://www.aedc.gov.au/</p>

Telethon Kids Institute	<p>[Service]: Contract reports for The Longitudinal Study of Australian Children.</p> <p>[Partners]: Department of Social Services, Department of Education and Training, Department of Health.</p> <p>[What it does]: The Longitudinal Study of Australian Children (LSAC) is a major study following the development of 10,000 children and families from all parts of Australia. Contracted reports were produced for waves 5 and 6 of the Longitudinal Study of Australian Children and reports for wave 6 of the Longitudinal Survey of Indigenous Children.</p> <p>[Impact]: The study and reports were commissioned to identify policy opportunities for improving support for children and their families, including early intervention and prevention strategies, in policy areas concerning children specifically parenting, family relationships and functioning, early childhood education and schooling, child care, and health. [</p> <p>http://www.growingupinaustralia.gov.au/index.html</p>
The Australian National University	MoodGym - 800,000 registered users globally
The University of Adelaide	Mosaic fertiliser, Agriculture, boosting food production
	Malting barley wheat varieties, agriculture, delivering several new varieties and increasing market share and improving productivity of Asian brewers
	EmbryoGen, Reproductive Health, a fertility culture medium for growing embryos that can improve implantation by up to 40%
	Joanna Briggs Institute (JBI) - journal publishing, Health Science, evidence based best clinical practice
	TelAri, Engineering, mobile network dimensioning tool
The University of Melbourne	Occurx Ltd - treatment of ophthalmic disorders
	Olifex Ltd - treatment of Otis Media with Effusion
	Straxcorp Ltd - Medical Imaging
	Halchtech Ltd - Head lice treatment
	Fibrotech Ltd - Kidney fibrosis therapy

<p>The University of New England</p>	<p>BREEDPLAN offers all beef cattle breeders the potential to accelerate genetic progress in their herds and to provide objective information on stock they sell. It uses an advanced, modern genetic evaluation system (based on Best Linear Unbiased Prediction (BLUP) technology incorporating multi-trait analysis procedures) to produce estimates of breeding values (EBVs or EPDs) for recorded cattle across a range of important production traits. BREEDPLAN technology can be used at a number of levels, such as within-herd analyses for individual breeders, across herd analyses for members of a breed association (or breeding group) or international genetic evaluation, where breed associations from a number of countries pool their data for analysis. The rationale for this product is simple - the larger the population of cattle being evaluated the higher the chance of finding elite genetic material. This material can then be rapidly disseminated using modern artificial breeding techniques. The BREEDPLAN software was developed by the Animal Genetics and Breeding Unit (AGBU), which is a joint venture between UNE and the NSW Department of Primary Industries, with support from Meat and Livestock Australia. The BREEDPLAN technology is marketed by the Agricultural Business Research Institute (ABRI), which is a University controlled entity. This solution is now used in many of the world's prominent beef producing countries and has been implemented as the national beef recording scheme in Australia, New Zealand, Namibia, Thailand and the Philippines. Uptake is also increasing internationally, in countries such as the United States, Canada, United Kingdom, Hungary, South America and South Africa.</p>
	<p>Meat Standards Australia (MSA), is a globally unique beef and sheep meat eating quality program designed to consistently deliver meat products that guarantee consumer palatability requirements. MSA was developed under the leadership of UNE researchers and involves all sectors of the supply chain from paddock to plate. Based on the number of beef cattle graded through MSA, the cumulative retail-level economic benefit of MSA to 2010/11 was estimated to be around \$523 million, with a current annual benefit of about \$77 million. Since then, both cattle and sheep numbers graded through MSA have continued to increase exponentially, with 3.1 million cattle and 6.6 million lambs being MSA-graded in 2013/14, thereby significantly increasing the 2011 estimates of the impact of MSA. Overall, this research has delivered a highly successful quality framework for the livestock industry and consumers more broadly.</p>
	<p>QuickSMART is a theory-based educational intervention program aimed at reversing the trend of ongoing poor academic performance for students who have been struggling at school and who are caught in a cycle of continued failure. These targeted students experience significant and sustained difficulties in basic mathematics and/or literacy, and have a profile of low progress despite attempts to overcome their learning problems. Many such students have not drawn lasting benefits from other in-class and withdrawal instructional activities. The QuickSmart program delivers individually designed intervention programs that target students' problematic skill areas, including letter naming, word naming, comprehension, recall of number facts, and basic computation. The program is developed through the National Centre of Science, Information and Communication Technology and Mathematics Education for Rural and Regional Australia (SiMERR), at UNE. In 2014, 235 schools and 3728 students participated in the numeracy component of the program, and 53 schools and 747 students participated in the literacy component. The program is also currently being made available to Australian correctional facilities.</p>

The University of Notre Dame Australia	Falls prevention education program aimed at older patients in rehabilitation hospital units, in collaboration with a number of hospitals (Health Sector). Impact - prevention of an estimated 320 falls in the research sites, saving an estimated \$750,000.
	Kimberley Caring for Country Plan; prepared in collaboration with the Kimberley Language Resource Centre, Kimberley Aboriginal Law and Culture Centre, Kimberly Land Council, and Kimberley Aboriginal Pastoralists Incorporated; plan to guide Cultural and Natural Resource Management on Country, in light of Aboriginal values and principles, includes goals, objectives, protocols, tools; Impact: The Plan has been used to generate significant resources and underpin CNRM in the region, as one of a handful of significant Regional Indigenous Caring for Country Strategies developed nationally. http://www.nd.edu.au/downloads/research/kimberley_aboriginal_caring_for_country_plan.pdf
The University of Queensland	Gardasil
	Spinifex pharmaceuticals
	Nexgen Plants
	MRI Image correction technology
	Positive parenting program
The University of Sydney	RESMED offers a full range of effective treatment options, from CPAP, APAP and Bilevel machines to masks, humidifiers and much more.
	NuFlora International, which was formed as a cooperative enterprise that included the University of Sydney, specialises in developing and commercialising ornamental plant cultivars for domestic and international markets through a combination of traditional breeding techniques and advanced plant breeding technologies, to become one of the world's most respected providers of innovative floriculture across a diverse range of crops.
	Wheat rust management program "Rust Bust"
	Nutritional Varietal Testing Program- NVT Online provides access to independent results on the performance of recently released grain and field crop varieties - See more at: http://www.grdc.com.au/Research-and-Development/National-Variety-Trials#sthash.j5tkZehe.dpuf

The University of Western Australia	FerriScan® – MRI Measurement of Liver Iron Concentration; Medical Diagnostics; Resonance Health Pty Ltd; replace liver biopsies with a MRI measurement; www.resonancehealth.com
	Orthocell tendon regeneration, Medical therapeutic; Orthocell Pty Ltd; treatment of torn or damaged tendons common in shoulder, knee, ankle and elbow injuries, www.orthocell.com.au
	Hepascore - Predictor of liver fibrosis; Medical diagnostics; licensed to Quest Diagnostics, ~100,000 tests are performed per annum in the USA. http://www.questdiagnostics.com/testcenter/BUOrderInfo.action?tc=19647&labCode=SJC
	iCeutica – developed at UWA, the SoluMatrix™ technology is a scaleable manufacturing process that can produce submicron-sized drug particles that are 10 to 200 times smaller than conventional drug particles. This technology is being put to use by iCeutica Inc., who are developing a range of therapeutic products. http://iceutica.com/
	Sensear headsets & earplugs; Hearing protection; Sensear Pty Ltd; Smart digital headsets that enable communication in noisy environments thus protect hearing; www.sensear.com
The Walter and Eliza Hall Institute of Medical Research	Influenza vaccine production
	Treatment of autoimmune diseases
	Cytokines
	HPV diagnostic test
	LIF (research tools)
University of Newcastle (Newcastle Innovation)	The Jamison cell- sales
	The reflux classifier - sales
	Portable infusion device - health care service
	Imaging software
	Stuart & Sons piano makers - Piano's
University of New South Wales (NewSouth Innovations)	Silicon Hydrogel Contact Lenses
	L4 Microkernel
	Strategic Management of Antiretroviral Therapy
	Supporting the foster care of orphans in rural China
	Kakadu Software
University of Southern Queensland	Improved irrigation practices in cotton farmers - savings of 4-8 billion litres of water each year http://www.usq.edu.au/research/research-at-usq/institutes-centres/ncea/our-projects/about-irrigation
	ecoBiz - a business sustainability program that has connected with over 3000 businesses in Queensland. They have conducted over 50 workshops for over 500 attendees and held over 400 coaching sessions, have convened over 20 webinars (with 220 registrations) and developed 21 studies across a range of business interests - https://www.usq.edu.au/research/research-at-usq/institutes-centres/irr/regional-business-enterprise/USQ-Working-with-Industry
	WAMS - Workload allocation management system. Currently in use in three different organisations and being trialled by several more -

	https://tau.usq.edu.au/wams3/pub/index.html
	Monitoring of exotic bee pest incursions - http://www.rirdc.gov.au/news/2013/06/04/smartphone-apps-to-protect-our-honeybees
	Alternative energy sources for the cotton industry - http://www.usq.edu.au/research/research-at-usq/institutes-centres/iage/project-update

University of Tasmania	UTAS identified the link between babies' sleeping position and sudden infant death syndrome (SIDS).
	The world's first Massive Open Online Course (MOOC) in Understanding Dementia.
	UTAS developed the variety of the Russet Burbank potato with improved scab resistance, which can grow Australia's global market share of potato sales.
	UTAS (in collaboration with Botanical resources Australia) diagnosed the cause as the fungus <i>Phoma ligulicola</i> which ravaged the State's pyrethrum market. UTAS went on to develop a management strategy for disease control, saving millions of dollars per year.
	An analytical method developed by researchers at UTAS assisted in detecting Heparin contamination that was responsible for >200 deaths and underpinned new testing regimes to prevent additional mortalities.
University of Technology Sydney	Austlii - case law and legislation service
	Maternal and Child Health Initiative Papua New Guinea - a collaboration with the World Health Organisation
	Bridge Diagnostic program
	Investigation of the real dollar impact of water prices - a collaboration with Sydney Water
	WASH (Water, Sanitation and Hygiene) program - run by the UTS Institute for Sustainable Futures (ISF) in South East Asia
University of the Sunshine Coast	The UPLOADS Project; http://uploadsproject.org/
	ID Care; http://www.idcare.org/key-personnel/
University of Western Sydney	Reviews of health systems in Southwest Sydney
	Catheters global prevalence study outcomes
	BabyLab - Infant research centre for pure and applied infant research on speech perception and language acquisition
	Teaching, learning and social effects of children's uses of technology
	Risks to trees from falling groundwater tables

University of Wollongong	Collaborative Recovery Model, assist people living with enduring mental illness, 5000+ patients, http://www.neaminational.org.au/our-approach/mental-health-recovery/collaborative-recovery-model
	FTIR, Trace gas & Isotope analyser Designed for the precise measurement of trace gases and isotopes in ambient air including the full range of greenhouse gases, Used by The Intergovernmental Panel on Climate Change founded by World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP). http://ecotech-research.com/spectronus-ftir/
	iAccelerate is an initiative designed to support students, staff and the greater Illawarra Community to build an innovation ecosystem through a unique set of programs built around entrepreneurship and innovation, including a start-up incubator. <ul style="list-style-type: none"> • 90 + startup jobs created (conservative estimate) • 47 staff & co-founders working full time • Over 34 companies have been supported • 47% Startups have a female co-founder http://www.iaccelerate.com.au/
	Bulk Material Handling, Australia's Centre for Bulk Solids and Particulate Technologies (CBSPT) is a world leader in applied and fundamental bulk solids handling research, http://eis.uow.edu.au/manufacturing/bmh/index.html
	ANFF, The ANFF Materials Node brings together specific strengths in the fabrication of both hard and soft materials, particularly nano-organic and inorganic electronic materials, https://ipri.uow.edu.au/anff/index.html
Victoria University	Magnetic particle technology cleaning oiled wildlife
	Economic modelling informing public policy
	Prevention of radicalisation
	Membrane distillation technology
	Contribution to elite sport performance and sport participation policies
Women's & Children's Health Research Institute Inc	Research Publications
	Representation on Industry Advisory Boards
Woolcock Institute of Medical Research ⁴	Sleep studies - ~2,250 in 2014
	Paediatric sleep studies - ~360 in 2014

⁴ We help the individual people who use our clinical services as well as providing resources which lead to reduced waiting times for people using these services in NSW.