



Performance Assessment of the Industry Growth Centres

Prepared for the Department of Industry, Innovation
and Science

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Introduction

The Industry Growth Centres Initiative (the Initiative) is an industry-led approach driving innovation, productivity and competitiveness by focusing on areas of competitive strength and strategic priority. Under the Initiative, six Industry Growth Centres were established by the Australian Government:

- Advanced Manufacturing (Advanced Manufacturing Growth Centre or AMGC)
- Cyber Security (Australian Cyber Security Growth Network or AustCyber)
- Food and Agribusiness (Food Innovation Australia Limited or FIAL)
- Medical Technologies and Pharmaceuticals (MTPConnect)
- Mining Equipment, Technology and Services (METS Ignited: and
- Oil, Gas and Energy Resources (National Energy Resources Australia or NERA).

The Department of Industry, Innovation and Science (the Department) engaged Nous Group (Nous) to conduct a performance assessment of the six Industry Growth Centres (Growth Centres) to support the Department and the Growth Centre Advisory Committee to make informed recommendations to

the Minister about the future of each of the Growth Centres.

The performance assessment examined the extent to which each Growth Centre is:

- Adding value to its sector and having a positive impact;
- Meeting funding agreement requirements;
- Addressing sector challenges as outlined in its Sector Competitiveness Plans; and
- Collecting appropriate data in accordance with the Initiative's Evaluation Strategy and Data Framework.

The performance assessment considered progress against the Initiative's four key objectives shown in Figure 1 below. The assessment did not assess the overall impact of the Initiative.

Each Growth Centre currently receives operational funding of \$3.5 million per year for four years from its inception. In addition, Growth Centres are to receive funding to undertake collaborative projects (between firms and/or between firms and research organisations) that have sector-wide benefit. To October 2018, the six Growth Centres have been granted around \$46.4 million to fund collaborative projects.

Figure 1 | Overview of the Growth Centre objectives, core outputs and intended outcomes

OBJECTIVES	CORE OUTPUTS	OUTCOMES
Increasing collaboration and commercialisation	Sector Competitiveness Plan	A reduction in the cost of doing business through regulatory reform
Enhancing management and workforce skills	Sector Regulation Reform Agenda	Increased R&D coordination and collaboration leading to improved commercialisation outcomes
Improving international opportunities and market access	Industry Knowledge Priorities	More businesses, including small and medium enterprises, integrated into domestic and global supply chains and markets leading to increased export income
Identifying opportunities for regulatory reform	Project Funds	Improved management and workforce skills of businesses
		Improved employment opportunities and contribution to the creation of high-skilled jobs.

Source: Department of Industry, Innovation and Science (2016, Industry Growth Centres Initiative: Program Guidelines)

The performance assessment drew upon an extensive desktop review, an online survey that was distributed by Growth Centres, and interviews with the Department, Growth Centres and their stakeholders.

Further information about the stakeholder engagement that informed the assessment is provided in Figure 2 below.

The performance assessment was conducted between August and October 2018.

Figure 2 | Engagement with Growth Centre stakeholders

Growth Centre	Survey responses	Respondents invited by GC	Response rate ¹	Distribution rationale	Stakeholders interviewed
AMGC	111	193	57 per cent	Distributed to selected members that AMGC has a high-level of engagement with.	7
AustCyber	132	624	21 per cent	Distributed to 331 stakeholders who actively engage with AustCyber. Ribit also distributed the survey to 238 students and 55 employers who attended joint AustCyber/Ribit events.	6
FIAL	417	~4,000	~10 per cent	Distributed to all contacts in FIAL's Customer Relationship Management System (CRM) who have agreed to receive their mailouts.	8
METS Ignited	216	1,270	17 per cent	Distributed to contacts who have had active engagement with METS Ignited (e.g. attended at least one METS Ignited event).	6
MTPConnect	307	2,323	13 per cent	Distributed to key contact(s) in organisations MTPConnect regularly interact with plus recipients of its monthly newsletter.	7
NERA	302	~4,000	~8 per cent	Distributed to all contacts in NERA's CRM system.	6

¹ The share of stakeholders that were invited by Growth Centres to respond to the survey varied substantially. Some Growth Centres sent the survey to all of their contacts (e.g. FIAL) while others took a highly targeted approach (e.g. AMGC). The latter approach introduces the risk of sample selection bias. Voluntary surveys also have an inherent risk of response bias – which is usually positive, although not always the case.

Overarching findings

Figure 3 | Key findings

- Each of the Growth Centres are at different stages of evolution - but all of them are generally on track to meet the objectives in their Sector Competitiveness Plans and business plans.
- There are substantial differences in the size, maturity and composition of the sectors supported by each Growth Centre. This has had a significant bearing on each Growth Centre's ability to affect sector wide impact.
- It is still too early to make definitive assessments about the extent of additionality or the degree of sector-wide impact achieved by each of the Growth Centres.
- Feedback from the variety of stakeholders that regularly engage with the Growth Centres is generally positive.
- The Growth Centres have helped to enhance the focus and alignment across industry and innovation policy initiatives within their respective sectors.
- More work is required to develop consistent and appropriate approaches to measuring individual sector and initiative wide impact.
- Many of the Growth Centres current data collection and performance measurement practices currently lack the rigour required for consistency and alignment with the Evaluation Strategy and framework for the Initiative.

The performance assessment found that the Growth Centres are generally on track to meet their objectives.

To date, Growth Centres have focused most on the Initiative's objective related to increasing collaboration and commercialisation and least on identifying opportunities for regulatory reform within their sector. These relative priorities reflect where the Growth Centres and sector stakeholders consider maximum impact can be achieved at this point in their maturation. Each Growth Centre has made at least some progress against the objectives and outcomes shown in Figure 1 on page 4

Interview and survey feedback from the stakeholders engaged through this review was generally positive about the performance of the Growth Centres.

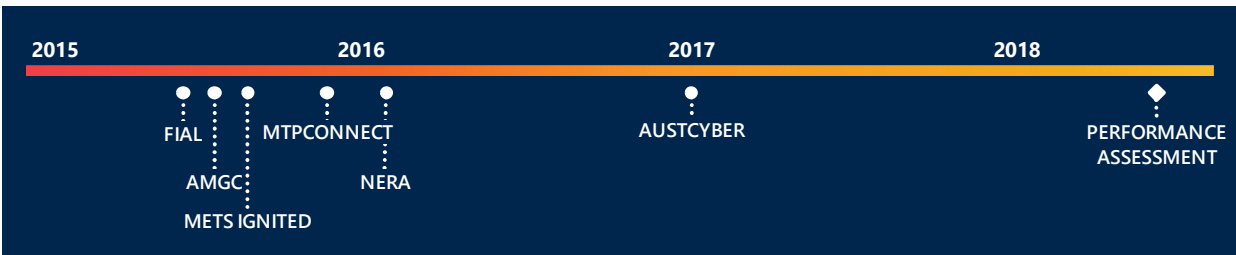
Eighteen months separates the establishment of the newest and the oldest Growth Centre – as shown in Figure 4 below. As a result, each Growth Centre is at a different stage of maturation.

Several Growth Centres have taken longer than expected to mobilise project funding, in part due to different start dates, priorities and funding mechanisms.

The Growth Centre sectors vary substantially in terms of size, and typical business characteristics. For example, the food and agribusiness sector contains approximately 170,000 businesses – many of whom are non-employing, located in rural and regional areas and do not have the willingness or ability to invest in R&D and new ways of working. By contrast, the cyber security sector contains 260 business – most of whom are concentrated in cities, are relatively young and are actively engaged in innovation and market development.

Growth Centres operating in large sectors like FIAL and AMGC have intentionally targeted their engagement towards specific sub-sets of businesses and other stakeholders.

Figure 4 | Timeline of when Growth Centres were established



The Growth Centre sectors vary in the degree to which other organisations, such as industry bodies, are performing similar roles. Some stakeholders in more mature sectors noted an apparent overlap between the Growth Centres and the work of other cross-sectoral entities. Other stakeholders also reported that the duplication that arose when the Growth Centres were first established has since been addressed.

The extent to which stakeholders within each of the sectors are aware of and engage with the Growth Centres differs substantially. These differences typically reflect the size of the sector, with Growth Centres like AustCyber having high levels of engagement within a small and relatively homogenous sector.

It is still too early to definitively assess the levels of additionality or sector-wide impact achieved by each of the Growth Centres.

Most of the Growth Centres are still developing an appropriate conceptual approach and evidence base to measure impact at a sector level. All Growth Centres have developed a range of case studies showcasing emerging or expected outcomes at individual project or business levels.

One challenge in evaluating the longer-term impact of each Growth Centre will be separating out the impact of the projects funded, relative to the coordination and promotion role of the Growth Centre.

Impact at an initiative-wide level will likely be even harder to measure, given the variance in how Growth Centres engage with their sectors, the outcomes they are seeking to achieve (which differ substantially in scope and timeframes) and the inconsistent and incomplete output and outcomes data that they currently collect.

Given the very different stages of maturity and industry structure, the performance assessment highlighted the need to revisit expectations in regard to what success will look like for each Growth Centre. This is because the nature of the market opportunities varies across the Growth Centres. Some Growth Centres operate in highly-managed markets (e.g. MTPConnect), others in very new markets (e.g. AustCyber), and others are focused on the innovative end of large well-established markets (e.g. METS Ignited and AMGC).

The 'market failure' stems from factors such as lack of scale, including in accessing overseas markets, regulatory barriers, and a need for cooperation between firms to resolve industry-wide barriers, such as agreement on standards. There has also been a general failure of business to engage effectively with the research sector.

The Growth Centres are intended to operate in the space where industry organisations have yet to develop or pay attention to firms seeking to disrupt the industry. They are designed to be closer to the research sector to facilitate engagement between these organisations and business. Hence success should see higher rates of commercialisation of research, it should see a greater two-way flow of staff between research and business organisations, and it should see a rise in business expenditure on R&D. These changes should translate into sector growth and profitability.

A differentiated approach may be required to ensure that the Initiative promotes rather than hinders market driven responses to exploit opportunities and overcome barriers to innovation and expansion.

Advanced Manufacturing Growth Centre (AMGC)

Figure 5 | Key findings

- AMGC is mostly on track to meet its business plan objectives and funding agreement requirements.
- AMGC has primarily focused on collaboration and commercialisation activities.
- AMGC has a range of activities in place to support collaboration. Most of these are in the early stages and therefore expected benefits are yet to be realised.
- AMGC project funding was slow to get started, with no projects in the first two financial years. More recently AMGC has built momentum and now reports having signed a total of 22 projects.
- AMGC’s Sector Competitiveness Plan has contributed thought leadership on the characteristics of competitive manufacturing businesses and the opportunities to improve performance through advanced knowledge, processes, and business models.
- Survey respondents report that sector awareness levels of AMGC are strong.
- Almost all of the AMGC members that responded to the survey are satisfied or very satisfied with their engagement with AMGC.
- Whether AMGC’s initiatives will deliver sector-wide impact and/or additionality remains unclear at present.

Operating environment

Manufacturing in Australia is undergoing a significant transformation. Value creation in the sector occurs along the value chain with the highest value activities such as: the development of new concepts; R&D; production of key components; and in the downstream activities of marketing, branding, and customer service.

AMGC contends that many businesses, regardless of the goods they produce, use highly skilled workers, advanced processes and unique business models. Hence, being ‘advanced’ is defined not just by what is made but how it is made. AMGC includes the pre and post production activity related to manufacturing in its definition of the sector.

AMGC identified a number of challenges associated with increasing the competitiveness of Australia’s advanced manufacturing sector. These include; reducing manufacturing production costs; improving management and leadership capabilities; increasing collaboration between businesses to overcome the challenges of scale; increasing the value differentiation of Australia’s manufactured products and associated services; re-aligning export strategies towards higher potential markets; and increasing connections with global value chains.

AMGC operates in a relatively crowded eco-system. Manufacturing is primarily represented by the Australian Industry Group (Ai Group) – whom AMGC collaborates with on a number of initiatives. Other peaks operating in the sector include Manufacturing Australia, and the Association for Manufacturing Excellence. There are also many specialised associations operating across the sector that are affiliated with specific industries.

Figure 6 | Overview of AMGC stakeholder survey

Survey responses:	111
Stakeholders invited to respond:	193 selected AMGC members
Response rate:	57 per cent
Distribution rationale:	Distributed to members that AMGC has high levels of engagement with

Sector engagement

AMGC’s member organisations engage with it on a regular basis. Thirty-seven per cent of the members that responded to the online survey interact with AMGC on a monthly basis.

Building a strong membership base has been a key focus for AMGC. It reports having 303 members at the end of FY 2017/18. The majority of AMGC’s members (around ninety per cent) are businesses.

The survey results indicate that AMGC is primarily engaging with well established businesses that are

more innovation active and export focused relative to industry averages.

Survey respondents report that sector awareness levels of AMGC are strong –noting that AMGC did not distribute the survey to non-member organisations.

Almost all of the AMGC members that responded to the survey (ninety-four per cent) are satisfied or very satisfied with their engagement with AMGC – although we note the potential for positive response bias in who responds.

Project funding

AMGC manages a core project fund to support demonstration projects and the Advanced Manufacturing Early Stage Research Fund (AMESRF) which funds smaller businesses to conduct rapid initial feasibility testing to progress an idea more quickly to larger-scale research or commercialisation.

AMGC's project funding was slow to get started, with no projects in the first two financial years. More recently AMGC has built momentum and now reports having signed a total of 22 projects with 3 AMESRF projects in the pipeline.

All AMGC projects have multiple business partners and usually one research partner.

The most commonly anticipated outcomes from the limited number of survey respondents that also received project funding are: new or enhanced collaboration with businesses; enhanced capabilities and capacity to drive commercial outcomes; and inspiration for new ideas.

While AMGC has quantified the expected benefits of its projects, most projects are currently at too early a stage to definitively assess outcomes. Three projects are nearing completion; consultation with one business indicated that the project funding was critical to its ability to develop its product which is now enabling the business to export to the US market.

Objective 1: Increasing collaboration and commercialisation

AMGC's strategic intent is to increase the level of collaboration between businesses and researchers and across the supply chain through more effective interaction between SMEs and Tier 1 operators.

AMGC's activities include: setting the direction through communication activities and advocating for change, including to change civil and defence procurement policy to drive demand for 'advanced'

approaches. AMGC also funds collaboration hubs, which facilitate the sharing of resources, research outcomes, capabilities and skills between businesses; and demonstration projects.

The survey results indicate that AMGC has played an important role as a connector and facilitator. Over seventy per cent of survey respondents indicated that AMGC has provided some or great support to: build relationships and networks with other businesses; better understand how to collaborate on challenges; connect to other government departments, researchers or academics.

AMGC has played a more modest role in supporting commercialisation given that funded projects are still at a relatively early stage of implementation. The most commonly cited outcome AMGC has provided some or great support to members to achieve is with developing ideas into a product or service the market will want (forty-three per cent of survey respondents).

Objective 2: Enhancing management and workforce skills

AMGC's strategy is to identify industry knowledge priorities; raise awareness of the need for the capabilities that will improve growth and competitiveness; and demonstrate best practice using case studies. AMGC is also seeking to influence the training agenda through its role in representing industry on Industry Reference Committees.

AMGC also views collaboration hubs as a key means of developing skills and capability. For example, the Industry 4.0 hub in Queensland is providing an opportunity for businesses to share skills and knowledge. The extent to which the sharing of information is occurring is unclear.

Survey responses indicate that AMGC has had a large impact on helping members to understand new technologies (eighty per cent) and trends in the sector (sixty-eight per cent).

Objective 3: Improving international opportunities and market access

AMGC's strategy is primarily focused on undertaking an advocacy role to facilitate engagement with supply chains. Project funds have been used to support access to supply chains and export opportunities.

AMGC advocates for advanced approaches that increase competitiveness to enable reshoring of manufacturing activity. AMGC has also advocated for smarter civil and defence procurement as a 'pull' factor to drive advanced practices through the supply

chain and is seeking Austrade's help to map under-served export markets for the manufacturing industry.

AMGC's KPI, that eighty per cent of funded projects provide manufacturers with an opportunity to be connected to global supply chains, has yet to be achieved.

AMGC has supported Austrade with SME representation at major expos and trade shows.

Objective 4: Identifying opportunities for regulatory reform

AMGC reports that consultation with industry during the development of the Sector Competitiveness Plan indicated that regulation is not a high priority for the sector. This has been reinforced through further consultation with stakeholders as part of this performance assessment.

Only a small proportion of survey respondents (twenty-eight per cent) have engaged with AMGC on regulatory matters.

AMGC (with FIAL) is contributing to the development of the Export Council of Australia's Trade Barriers Register.

Additional or indirect outcomes

AMGC's Sector Competitiveness Plan has contributed thought leadership on the characteristics of competitive manufacturing businesses and the opportunities to improve performance through advanced knowledge, processes and business models.

AMGC published *Advanced Manufacturing: a new definition for a new era* to a positive media and stakeholder reception. The report launch was timed to follow the closure of the last automotive assembly line and to emphasise how Australian manufacturing has turned a corner.

AMGC advocating for a change to the Advanced Manufacturing definition used by the Australian Bureau of Statistics.

AMGC regularly engages with state agencies, industry peaks, businesses and the education sector to

progress the innovation agenda. AMGC is very active in meeting with businesses, industry associations and ecosystem stakeholders. It reports an average of over 30 meetings per month, and the MD and Chair regularly deliver keynote presentations and convene workshops and roundtables.

AMGC is reasonably well represented on the boards of research entities across the sector. AMGC is active on social media and its general media activities gain national attention.

Performance measurement

AMGC has published an industry-wide impact strategy to measure economic outcomes against the three components of advanced knowledge, process characteristics and business models. Each advanced component is mapped against measures such as an increase in R&D expenditure, collaboration, STEM skills, capital intensity, technology asset intensity etc.

The ability to measure the impact on manufacturing under AMGC's broader definition of the sector may prove challenging as it is now proposed to also incorporate businesses outside of manufacturing.

AMGC has thus far used case studies, published on its website and promulgated through media, to demonstrate impact.

Sector impact

Whilst there is a high-level of satisfaction with the support AMGC provides at a member level, the extent to which AMGC's initiatives will deliver sector-wide impact remains unclear at this point in time.

AMGC appears to have had significant impact on relatively small number of businesses to date. Of the 60 to 62 business that responded to survey questions about how engaging with AMGC had impacted their bottom line, eleven of the businesses (eighteen per cent) said that AMGC provided great support to grow their revenue, seven (twelve per cent) had great support to improve their profitability, and nine (fifteen per cent) had great support to increase the number of employees.

AustCyber

Figure 7 | Key findings

- AustCyber has met or is on track to meet its business plan objectives and funding agreement requirements and has achieved an impressive amount despite only being operational for a relatively short period of time.
- AustCyber has directed its efforts and resources across all of the Initiative’s objectives.
- AustCyber recently announced the first seven projects that it will support under its Project Fund. The first round was oversubscribed with 51 separate applications.
- AustCyber has played a very active role in connecting stakeholders across the sector and aligning strategies, policies and programs related to cyber security.
- AustCyber has worked with businesses to build their capabilities and provide opportunities to access new markets and finance. AustCyber has led or co-led eight overseas delegations and missions and reported some significant early commercial outcomes.
- AustCyber has invested substantially in sector-wide approaches to skills and has already achieved some notable outcomes (such as the new national TAFE curriculum).
- AustCyber has high awareness levels across the sector and achieved strong sector support and buy-in.
- Survey respondents are overwhelmingly satisfied with their engagement with AustCyber and qualitative feedback from survey respondents and interviews was also generally very positive.

Operating environment

Australia’s cyber security sector is relatively small but growing rapidly as all sectors of the economy respond to the increasing demand for outsourced cyber security solutions, such as hardware, software and services. AustCyber estimates that there were approximately 260 businesses operating in the sector in June 2018.

Given the nascent nature of the sector, AustCyber faces little competition from other entities doing similar work. This has allowed AustCyber to proactively define its role and contribution to the sector.

Some of the barriers to sector growth identified by AustCyber include: the limited collaboration and scattered public funding for cyber security R&D; the small size of the local market which constrains the growth prospects of smaller Australian cyber security businesses and start-ups; and an under-supply of job-ready cyber security professionals.

Strategy

AustCyber’s stated purpose is to act simultaneously as a ‘multiplier’ and ‘connector’ across the sector. The importance of this role, and the critical importance of the cyber security industry more broadly was reinforced in the national Cyber Security Strategy. This strategy underlined the need to support sovereign capability development and ensure Australia takes advantage of the significant economic opportunities in the global cyber security market.

AustCyber has directed its efforts and resources across all of the Initiative’s objectives. AustCyber has focused primarily on defining the sector and aligning the research, education and innovation related activities. AustCyber has also worked with businesses to build their capabilities and provide opportunities to access new markets and finance.

Figure 8 | Overview of AustCyber stakeholder survey

Responses:	132
Stakeholders invited:	624 (includes 238 students)
Response rate:	21 per cent
Distribution rationale:	Distributed to 331 stakeholders who actively engage with AustCyber. Ribit also distributed the survey to 238 students and 55 employers who attended joint AustCyber/Ribit events.

Sector engagement

Sector stakeholders engage with AustCyber frequently. Survey respondents interact with AustCyber at least once a month or more – most commonly to participate in events and seek opportunities for collaboration and commercialisation.

AustCyber reports that it has had in-depth engagement with over 650 companies and that over 230 Australian cyber security companies have participated in its programs.

AustCyber typically works with newly established, innovation active and export focused businesses. Over half of the 40 businesses that responded to the survey exported goods or services in FY 17/18, and 19 had a taxable income less than \$1 million in FY 17/18.

Awareness levels of AustCyber within the sector are strong. Over three quarters of survey respondents indicated that the sector has moderate to strong awareness of AustCyber.

Survey respondents are overwhelmingly satisfied with their engagement with AustCyber – although we note the potential for positive response bias in who responds.

Project funding

AustCyber recently announced the first seven projects that will be supported under its Project Fund. The first Project Fund round was oversubscribed with 51 separate applications.

Objective 1: Increasing collaboration and commercialisation

AustCyber has already played a very active role in connecting stakeholders– aided in part by the relatively small, engaged and homogenous nature of the sector. Almost all of the businesses that responded to the survey (ninety-seven per cent) said that AustCyber had provided support to build relationships and networks with other businesses, and three quarters have received support to connect to other government departments.

AustCyber has supported businesses to achieve commercialisation outcomes. Over forty per cent of businesses responding to the survey said that AustCyber has provided some or great support to develop their ideas into a product or service the market will want, refine existing products or services, or bring a new product to market.

AustCyber has facilitated Memorandums of Understanding (MOUs) for the national network of Cyber Security Innovation Nodes with five of the eight state and territory governments. While the infrastructure for the nodes are in place, awareness levels of the nodes are still low within the sector.

AustCyber's series of seven pitching events have to date facilitated 44 business pitches from 30 different companies, both nationally and in the USA. These events are designed to build pitching capability across the sector, with the long term aim of achieving improved commercialisation outcomes.

AustCyber is working closely with the recently established Cyber Security CRC based in Perth. AustCyber's CEO is an ex-officio member of the board and the two entities have signed a Statement of Intent which will guide future collaborations.

Objective 2: Enhancing management and workforce skills

AustCyber has invested substantial efforts in aligning education and training frameworks in Australia with international best practice. AustCyber has already achieved some very significant wins in this space – most notably in facilitating the development and endorsement of the first national cyber security curriculum for TAFE institutions.

AustCyber was invited to lead the education and skills stream of the Government's Cyber Resilience Taskforce. AustCyber has also provided input into continuing education offerings, co-provided by Optus and Macquarie University.

AustCyber's three co-branded networking events with CSIRO's Data61's Ribit have resulted in over one thousand student interviews with potential employers across three events. AustCyber reports that on average across all Ribit events, nearly half of all participating employer organisations found a student to fill roles on offer.

Objective 3: Improving international opportunities and market access

AustCyber has invested in creating a platform upon which Australian businesses can enter international markets.

Businesses responding to the survey noted that AustCyber has already provided some or great support around entering new international markets or channels and identifying new customers and markets.

Initial reports and feedback from the eight overseas delegations and missions also indicate some significant early commercial outcomes for the businesses on these trips.

For example, two of the companies that attended the RSA Conference in San Francisco in 2017 signed contracts during the delegation, with a further three companies signing contracts in the months following (including one multi-million-dollar agreement). More recently, 17 of the 65 delegates who attended the April 2018 mission to the USA expected to achieve over \$1.5 million in commercial outcomes and 30 delegates expected to enter into an international commercial agreement over the next 12 months.

Over three quarters of the survey respondents that participated in an international event with AustCyber said they gained moderate or significant support to engage in new or enhanced collaboration with other Australian organisations on the same trip and to improve their understanding of overseas markets.

Objective 4: Identifying opportunities for regulatory reform

AustCyber has a twin focus on policy advocacy and regulatory reform, with the aim of communicating the role that governments in Australia can and should play in fostering sector development.

Considering the relative infancy of the cyber security sector in Australia, AustCyber has taken a consultative approach to identifying regulatory reform priorities.

AustCyber's recent regulatory reform work includes working with the MITRE Corporation to analyse the US Government's National Institute of Standards and Technology's (NIST) Mobile Device Security Practice Guide's applicability to Australia. AustCyber intends to engage with domestic stakeholders on a roadmap to consider, and where relevant, implement recommendations from this work.

Additional or indirect outcomes

AustCyber has worked hard to raise awareness of its mission and programs. AustCyber reports that its staff

have delivered presentations, keynotes and participated in panels at over 140 conferences and events across a variety of sectors in Australia and overseas.

AustCyber has a very active Twitter presence which includes the @AustCyber and @Cyber_Roo accounts.

AustCyber has worked closely with government agencies to define and improve the understanding and measurement of what is still a very nascent sector.

Performance measurement

The relatively small size of AustCyber's sector may make impact measurement easier, but the sector's relative infancy also means that there are no official ABS statistics that describe its characteristics and performance over time.

Sector impact

AustCyber has already achieved strong sector support and buy-in for its mission of growing an Australian cyber security ecosystem – as evidenced by the positive qualitative feedback from survey respondents.

AustCyber has supported the growth of a relatively high proportion of businesses. Of the thirty one business that responded to survey questions about how engaging with AustCyber had impacted their bottom line, eleven of the businesses (thirty six per cent) said that AustCyber has provided great support to grow their revenue, five (sixteen per cent) had great support to improve their profitability and eight (twenty six per cent) had great support to increase the number of employees.

AustCyber's impact thus far appears to have been more visible in the ACT and NSW. This is likely to change as the new national network of nodes become operational.

Food Innovation Australia Limited (FIAL)

Figure 9 | Key findings

- FIAL is mostly on track to meet its business plan objectives and funding agreement requirements.
- FIAL has made the decision to keep its strategy largely unchanged for the last three years. FIAL has focused predominantly on working with businesses operating at the food processing stages of the sector value chain – as opposed to the agribusiness end.
- FIAL has focused heavily on building the market and product development capabilities of businesses through its Market Channel Readiness program of workshops, and on facilitating access to prospective overseas buyers through trade shows and missions.
- FIAL’s project fund comprises three streams. Two of the six projects approved under the core stream of project funding are on track to be completed. FIAL has co-funded 71 smaller projects through the Enterprise Solution Centre. FIAL recently announced funding for four clusters under its Cluster Programme.
- Feedback from the survey respondents indicates that sector awareness levels of FIAL are moderate.
- Survey respondents are generally satisfied with their engagement with FIAL.
- There are mixed views about the extent to which FIAL effectively engages with other organisations. Some survey and interview feedback noted an apparent overlap in services, although some of the same stakeholders also reported that FIAL has addressed this duplication.
- Whether FIAL’s initiatives have delivered sector-wide impact and/or additionality remains unclear as yet and will be challenging to identify in a large and fragmented sector.

Operating environment

FIAL operates in a large, diverse and highly fragmented sector that comprises multiple industries. This poses substantial challenges for entities like FIAL that have a sector-wide mandate in developing strategies that affect change across the sector. There is also an extensive array of government, not-for-profit and private sector entities working across the Food and Agribusiness sector.

Figure 10 | Overview of FIAL’s stakeholder survey

Responses:	417
Stakeholders invited to respond:	~4,000
Response rate:	~10 per cent
Distribution rationale:	Distributed to all contacts in FIAL’s CRM who have agreed to receive their mailouts.

Some of the barriers to sector growth identified by FIAL include: prevailing cultural attitudes towards risk aversion and not making the investments required to secure existing market share or grow new markets; a general reluctance to engage, cooperate and collaborate with SMEs and other stakeholders; misalignment between the federal, state, local and regional levels of government in the provision of

services to build the capability and competence of the industry; and a disconnect between the research community and businesses is resulting in poorly defined business solutions and commercialisation outcomes.

Strategy

FIAL has deliberately adopted a narrow and targeted engagement approach to work more with businesses in the food sector, although this has changed in recent times with an increased focus on value-adding agribusinesses.

The overarching objective of FIAL’s strategy has been to support businesses in the sector to move from ‘Businesses of Today’ to ‘Businesses of Tomorrow’ (which are more willing to take risks to grow) through cultural and transformational business change. FIAL’s first Sector Competitiveness Plan estimated that there were only 3,000 ‘Businesses of Tomorrow’ – which equated to five per cent of the 57,000 businesses in the sector that were operating and employing staff in 2016/17.

FIAL has focused its efforts primarily on the Initiative’s objectives of increasing collaboration and commercialisation and improving access to global supply chains and international opportunities. FIAL’s main levers for executing its strategy have been to build business capability (primarily through

workshops) and fund small scale projects with individual businesses.

Sector engagement

FIAL reported in mid-2017 that over 3,500 stakeholders had participated in its capability building workshops.

FIAL typically works with businesses that are more innovation-active, export-focused and larger than broader sector averages.

Feedback from the survey respondents indicates that sector awareness levels of FIAL are moderate – which is to be expected given the sector's size and diversity.

Survey results indicate that half of FIAL's stakeholders interact with it a few times a year - most commonly to participate in FIAL events.

Survey respondents are generally satisfied with their engagement with FIAL - although we note the potential for positive response bias in who responds.

Project funding

FIAL provides funding to businesses and research entities in the sector through three main programs: The Core Project Fund; the Enterprises Solutions Centre; and the Cluster Programme.

The progress of projects under FIAL's core program of project funding are behind target. Two of the six projects are on track to be completed. The other four funded projects are unlikely to be completed because of issues related to IP ownership and compliance with funding eligibility criteria.

FIAL has co-funded 71 smaller projects through the Enterprise Solution Centre (ESC) across five funding streams. Four of these streams are co-funded by various state government agencies. Two thirds of ESC funding recipients are defined by FIAL as small businesses and there is an even split between metropolitan based and rural and regional recipients.

Not all off the ESC-funded projects will achieve benefits. For at least 13 of the funded projects, the expected outcomes are not likely to be realised for a variety of reasons. These reasons include funding recipients going out of business, solutions not being commercially viable, legal proceedings and IP issues, or no viable paths to market.

The extent to which outcomes and benefits have been realised and can be measured across the ESC-funded projects varies substantially. FIAL has published several case studies on businesses that have received ESC funding on its website and

conducted initial assessments of potential economic benefits.

Those businesses that received ESC funding and responded to the survey identified "new or enhanced collaboration with researchers" and "dedicated funding to commercialise an existing idea" as the outcomes they most expect to realise.

FIAL recently announced funding for four clusters under its Cluster Programme after receiving 32 applications for funding. Three of the four funded clusters are pre-existing.

Objective 1: Increasing collaboration and commercialisation

FIAL has played an important role as a connector and facilitator within the sector. Over two thirds of businesses responding to the online survey stated that FIAL has provided some or great support to build relationships and networks with other businesses. Over two thirds of non-business respondents (e.g. universities and research organisations) said that FIAL has provided some or great support to better understand how to collaborate on challenges in the sector to provide solutions.

In 2017/18, 92 people from businesses and research organisations participated in the Innovation Readiness series of workshops. These workshops are designed to stimulate innovation and broker connections and collaboration.

FIAL is involved in the creation and management of sector-related CRCs. This includes supporting the development of the Food Agility CRC and supporting the development of the Stage-1 bid for and sitting on the board of the Fight Food Waste and Fraud CRC.

Objective 2: Enhancing management and workforce skills

FIAL's primary channels for building management and workforce skills within the sector are its various workshops and programs for businesses. These include the Innovation Readiness series (see Objective 1 above) and the Market Channel Readiness series of workshops which are run in conjunction with the Department's Entrepreneur's Programme. There were 240 attendees across 28 Market Channel Readiness workshops in 2017/18.

FIAL has provided input to universities on the design of undergraduate courses related to food processing. FIAL also participates in the Food, Beverage and Pharmaceutical Industry Reference Committee – the Industry and Skills Committee for the sector.

Objective 3: Improving international opportunities and market access

FIAL has focused heavily on building market and product development capabilities of businesses through its Market Channel Readiness series of workshops, and on facilitating access to prospective overseas buyers through trade shows and missions.

In 2016/17 and 2017/18 FIAL facilitated stands at six trade shows in China, Dubai, Hong Kong and Singapore. FIAL reports that these six shows enabled a combined total of over 6,500 supplier-buyer connections and included 134 companies – noting that some may have attended multiple shows.

Survey respondents report that FIAL has provided the greatest levels of support around identifying new customers and markets and understanding or navigating local regulations.

Objective 4: Identifying opportunities for regulatory reform

Thirty per cent of the survey respondents have spoken to FIAL about challenges relating to government or industry regulation in their industry. Over one third of the survey respondents that have engaged with FIAL on industry regulation issues said that FIAL listened to their feedback and made suggestions about what to do next.

FIAL has focused the majority of its regulatory reform efforts on advocating for a national approach to food safety certification in partnership with the Australian Food and Grocery Council. It will likely take a while longer to realise the benefits from this project.

FIAL is currently working with the Export Council of Australia and AMGC to launch the Trade Barriers Register online platform.

Additional or indirect outcomes

FIAL engages regularly with state agencies across the country to provide advice on policy and programs and co-fund grants for the sector. FIAL also has close working relationships with Austrade, CSIRO and the Department. FIAL was funded in 2018 through the Department of Environment and Energy to support the implementation of the National Food Waste Strategy over a two-year period.

FIAL is well represented on the boards of research entities across the sector.

The extent to which FIAL has provided thought leadership and contributed to an increased understanding of the sector is not clear. The amount of unique analysis and strategic fore-sighting provided in FIAL's Sector Competitiveness Plans and its other publications tends to be limited.

FIAL is active on Twitter and is one of only two Growth Centres to have a Facebook account – which has over 4,000 followers.

Performance measurement

FIAL employs multiple channels to collect performance related data – but these are not currently unified or consistent. FIAL predominantly utilises case studies to measure long term outcomes for the stakeholders it has had meaningful engagement with.

Sector impact

It is hard to make a definitive assessment about FIAL's impact at a sector-wide level, against its ambitious sector-wide goals at this point in time. It is important to acknowledge the challenges inherent in affecting and measuring impact in such a large, diverse, dispersed and fragmented sector.

Most of the self-assessments that FIAL has made about its sector-wide impact have been largely qualitative and reliant on case studies profiling a relatively small number of businesses. FIAL is yet to verify its initial estimates of the economic value of its programs.

FIAL appears to have had significant impact on a relatively small number of businesses. Of the 120 to 124 business that responded to survey questions about how engaging with FIAL had impacted their bottom line, fourteen businesses (eleven per cent) said that FIAL provided great support to grow their revenue, nine (seven per cent) had great support to improve their profitability and 7 (six per cent) had great support to increase the number of employees.

The extent to which FIAL partners effectively within its eco-system is unclear. Some of the survey and interview feedback from industry peaks, associations or networks focused on an apparent overlap between FIAL and services offered by other organisations. Other key partners indicate that much of this duplication has been addressed.

METS Ignited

Figure 11 | Key findings

- METS Ignited has made significant progress against its business plan objectives and has met its funding agreement requirements.
- METS Ignited focused most on collaboration and commercialisation.
- As at June 2018, METS Ignited had allocated \$7.9 million to 13 projects across two Project Fund rounds.
- METS Ignited has developed strong relationships with the Chilean mining sector, generating opportunities for METS companies to access new markets through the METStech Passport and Expande initiatives.
- METS Ignited has actively engaged with the Queensland Government to deliver a range of initiatives including the Bowen Basin Cluster Program, METS Accelerator Pilot and RISE Accelerator. These programs aim to connect mining and energy resources start-ups with industry leaders, entrepreneurs and subject matter experts.
- Three quarters of survey respondents indicated that there is moderate to strong awareness of METS Ignited across the sector. The majority (eighty-four per cent) of survey respondents said that they were satisfied to very satisfied with their engagement with METS Ignited.
- Whether METS Ignited will deliver sector-wide impact remains unclear as many of METS Ignited's focused initiatives have only been in place for a short period of time.

Operating environment

The Mining Equipment, Technology and Services (METS) sector - as defined by METS Ignited - comprises businesses that provide specialised products and solutions for mineral exploration, extraction and mining supply chains. The sector includes a diverse range of businesses such as equipment manufacturers, engineering services and mine software product and technology developers, whose primary function is to support the mining and mineral extraction industries.

The primary challenge currently facing the METS sector is how to develop a more strategic relationship with the mining sector to unlock opportunities for collaboration and innovation. There are also challenges and opportunities related to translating public sector research into successful commercial outcomes and improving access to the global supply chains of large global miners.

For nearly thirty years, Austmine has been the METS sector's predominant industry body and has played a formative role in defining the sector and quantifying its economic impact. Accordingly, Austmine has traditionally delivered many similar initiatives to those now being delivered by METS Ignited, such as those aimed at facilitating connections between METS companies, miners and researchers, and supporting skills development.

Austmine and METS Ignited have formalised a collaborative working relationship and there has been relatively little duplication in activities between the two organisations.

Strategy

METS Ignited's vision is for the Australian METS sector to have an 'aligned, efficient and agile industry ecosystem with a high degree of collaboration, global leadership in innovation, and a growing share of the global market'. To achieve this vision, METS Ignited is intentionally focusing its efforts on improving collaboration between the METS sector, miners and researchers to facilitate the commercialisation of innovation.

Initially, METS Ignited's strategy focused on delivering a broad range of initiatives. Over time however, METS Ignited has narrowed its strategic focus to emphasise building collaboration and improving access to international markets.

METS Ignited's present strategy focuses on creating opportunities for METS companies to partner with

Figure 12 | Overview of METS Ignited's survey

Responses:	216
Stakeholders invited to respond:	MI distributed the survey to 1,270 contacts
Response rate:	17 per cent
Distribution rationale:	Distributed to contacts who have had active engagement with METS Ignited (e.g. attended at least one METS Ignited event).

large resource sector companies with demand for new innovation. To do so, METS Ignited seeks to leverage existing programs run by organisations such as Austmine, existing government funding such as the CRC programme and state government funding.

Sector engagement

Survey results indicate that nearly ninety per cent of METS Ignited's stakeholders interact with it a few times a year. The most frequent reason for engaging is to participate in METS Ignited organised, or supported, events or forums.

METS Ignited works with businesses that are more innovation-active, export-focused and larger than the sector averages.

While METS Ignited engages with businesses across the country, its focus is on Queensland, New South Wales, and Western Australia. This aligns with the geographic profile of businesses in the sector.

The majority of survey respondents (seventy-seven per cent) indicated that there is moderate to strong awareness of METS Ignited across the METS sector.

Eighty-four per cent of survey respondents said that they were satisfied to very satisfied with their METS Ignited engagement - although we note the potential for positive response bias in who responds.

Project funding

As at June 2018, METS Ignited had approved 13 projects across two Project Fund rounds, with a combined project value of approximately \$40 million (which includes co-funding from project partners). In the first funding round in 2016/17, METS Ignited allocated approximately \$0.8 million to five projects. There was a significant increase in the amount of funding allocated in the second project round, with a total of \$7.1 million awarded across eight projects. In addition to these projects, a further four projects, with a combined project value of \$1.5 million have been approved under the Bowen Basin Cluster Program.

Project fund participants expect to gain substantial benefits from participating in these projects. These benefits include developing new relationships with other businesses and organisations and improving access to international markets and global supply chains.

Objective 1: Increasing collaboration and commercialisation

METS Ignited has played an important role within the sector as a network coordinator. Through the Project

Fund, as well as its numerous collaborative programs and initiatives, it has facilitated new relationships between METS businesses, Tier 1 and Tier 2 miners, governments, research organisations and education providers. Key programs and initiatives include the CORE Innovation Hub (in partnership with NERA), the Bowen Basin Cluster Program and the METS Ignited Collaboration Award.

METS Ignited has also brokered connections between research organisations and industry, primarily through its role in facilitating the development of CRC bids. To date, METS Ignited has contributed to the development of two CRC bids.

Over three quarters of the business that responded to the survey said that METS Ignited has provided some or great support to; build relationships and networks with other businesses; connect and collaborate with researchers or academics; and better understand how to collaborate on challenges in the sector.

METS Ignited has played a more modest role in supporting commercialisation outcomes. The most commonly cited outcome METS Ignited has provided some or great support to survey respondents to achieve was bringing a new product to market.

Objective 2: Enhancing management and workforce skills

METS Ignited has placed less of an emphasis on enhancing management and workforce skills relative to other objectives in the Initiative. At the business level, METS Ignited has focused on building the capabilities and knowledge of individual entities through its Masterclass series, and involvement in mentoring programs. To date, METS Ignited has delivered Masterclasses to a total of 350 businesses across Australia.

METS Ignited has also recognised the work that other organisations, such as Austmine, are already doing in education and made a strategic decision to focus resources elsewhere.

At the sector level, METS Ignited has concentrated on ensuring that the industry's skill needs are well defined and understood. METS Ignited has worked with the Minerals Council of Australia to deliver the Future Minerals Workforce Program, which assisted senior managers to prepare organisational/workforce strategies. METS Ignited has also signed a MOU with the Australian Technology Network to encourage more undergraduate and postgraduate industry placements.

METS Ignited (along with MTPConnect and NERA) has funded the Australian Academy of Technology and Engineering to expand the Industry Mentoring Network in STEM pilot in the sector to all states.

Stakeholders are generally satisfied with METS Ignited's direct efforts to enhance management and workforce skills.

Objective 3: Improving international opportunities and market access

METS Ignited's recent activities to develop international opportunities and enhance market access for SMEs show promise.

Notably, METS Ignited has fostered strong relationships with the Chilean mining sector, as demonstrated by the METStech Passport exchange program whereby Australian and Chilean businesses engage in a two-week exchange to explore commercial collaborations.

METS Ignited has also been active in supporting the International Mining and Resources Conference (IMARC) and facilitating connections between Australian METS companies and through training seminars and international delegations.

In late 2017, METS Ignited commenced a collaboration with Austrade to develop a METS brand definition and value proposition, as well as an international market strategy.

Survey and interview feedback from other stakeholders suggested that METS Ignited is not as active in the market access space as other established industry bodies, and that METS Ignited could achieve more impact by focusing its efforts on leveraging the work done by others.

METS Ignited's efforts to address this include using IMARC and promoting the Austmine conference as the premier global METS innovation event.

Objective 4: Identifying opportunities for regulatory reform

Identifying regulatory reform opportunities was not one of METS Ignited's main priorities during its first year of operations. Since then, METS Ignited has adopted a more proactive approach to regulatory reform and developed a reform implementation roadmap.

METS Ignited has progressed the reform issues they believe they can influence at a local level and are now seeking to develop mechanisms to influence many of the state-based matters through the Resources

committee of COAG. METS Ignited began collaborating with NERA on regulatory reform issues in 2017 to broaden the scope of work to encompass the entire supply chain of the resources sector.

To date, the reform priorities that identified by METS Ignited primarily relate to standards harmonisation.

Additional or indirect outcomes

METS Ignited regularly engages with state agencies across the country to provide advice on policy and programs and to co-fund grants for the sector. METS Ignited has also undertaken work to better define the sector.

METS Ignited worked with external consultants in 2017 to define and describe the METS sector using nine product or service segments. This segmentation built on existing work by the Mineral Council of Australia and Austmine to segment the sector.

METS Ignited is well-represented on the boards of research entities across the sector and is playing an active role in developing new research entities in the sector by supporting a range of CRC bids.

METS Ignited has a fairly active social media presence and maintains Twitter and LinkedIn accounts.

Performance measurement

METS Ignited developed a measurement and evaluation framework in 2017 but has not yet employed the framework to measure impact. METS Ignited is currently developing a quarterly measurement framework.

Sector impact

It is not possible to make a definitive assessment about METS Ignited's impact at a sector-wide level at this point in time.

Survey and interview feedback indicates that METS Ignited's approach to collaboration and commercialisation has been beneficial for many of those involved in funded programs, masterclasses and pilot activities.

A modest proportion of the businesses that responded to the survey indicated that METS Ignited has had a positive impact on their performance. Twenty-one businesses (twenty-three per cent of respondents) said that METS Ignited has provided great support to grow their revenue and twelve businesses (thirteen per cent) received great support to improve their profitability.

MTPConnect

Figure 13 | Key findings

- MTPConnect is mostly on track to meet its business plan objectives and funding agreement requirements.
- MTPConnect’s activities to date have focused mainly on collaboration and workforce skills, including in collaboration with academic and industry partners – so these can have a dual purpose.
- MTPConnect’s project fund of \$15.6 million has almost been fully committed, through 3 rounds of funding, and 37 approved projects. Many of MTPConnect’s projects have a collaboration focus and aim to promote commercialisation of research. These activities are, however, more focused on the early stages of the value chain.
- Around a quarter of MTPConnect’s projects have a major focus on training to build understanding, skills in commercialisation and technical skills (which are mainly aimed at developing the capacity to deliver clinical trials).
- MTPConnect report participating in over 42 inbound and outbound trade missions, many with Austrade.
- MTPConnect is well represented on the boards of many research entities across the sector.
- MTPConnect has worked across a range of regulatory reform issues. MTPConnect provided input into the Samsom Review and has ongoing engagement with the TGA and other agencies notably on Conformity Assessment Bodies, promoting an accelerated assessment of medical devices.
- The majority of survey respondents (eighty-six per cent) reported that there are moderate to strong levels of awareness of MTPConnect across the sector. A similar proportion (eighty-five per cent) of survey respondents were satisfied or very satisfied with their engagement with MTPConnect.
- It is difficult to make a definitive assessment about MTPConnect’s sector-wide impact at this point in time.

Operating environment

MTPConnect covers three industries: pharmaceuticals, biotechnology, and medical devices. Digital health overlaps each of these, but most so with medical devices, although data is the key resource for some aspects of digital health.

MTPConnect operates in a fairly crowded and complex eco-system. Government plays a major role as a funder of research, regulator and procurer. CSIRO, universities and research institutions provide research services, some in conjunction with hospitals.

There are multiple sources for research grants, and funding for early stage commercialisation. MTPConnect aims to facilitate access to this funding rather than compete.

There are at least 11 industry organisations that represent different parts of the sector. Some are well-established and resourced (such as Medicines Australia and AusBiotech). MTPConnect works closely with many of these organisations.

Some of the barriers to sector growth identified by MTPConnect include; increasing the rates of commercialisation; growing small local companies to medium and large scale; and maximising the value of intellectual property monetisation.

Strategy

MTPConnect’s strategy has seven priorities. Two of these priorities focus specifically on clinical trials and medical devices. The other five priorities are broader and reflect the Initiative’s objectives related to promoting collaboration, commercialisation, engagement with Asian markets, and addressing regulatory constraints.

MTPConnect’s activities to date have focused primarily on collaboration and workforce skills, including in collaboration with academic and industry partners – so these activities have a dual purpose. MTPConnect has focused less on access to markets and supply chains, although some of the collaboration and workforce development activities businesses have had an Asian market focus.

Figure 14 | Overview of MTPConnect’s survey

Stakeholders invited to respond:	2,323
Response rate:	13 per cent
Distribution rationale:	Distributed to key contact(s) in organisations MTPConnect regularly interact with plus recipients of its monthly newsletter.

Sector engagement

MTPConnect reported in August 2018 that it had engaged with 3,750 companies, universities, research organisations and industry associations.

Survey responses indicate that stakeholders predominantly interact with MTPConnect a few times a year. The most common reasons for engagement are to participate in MTPConnect supported events and forums, followed by seeking opportunities for collaboration and commercialisation.

MTPConnect has good visibility within the sector. The majority of survey respondents (eighty-six per cent) reported that there are moderate to strong levels of awareness of MTPConnect across the sector.

Over three quarters (eighty-five per cent) of survey respondents were satisfied or very satisfied with their engagement with MTPConnect - although we note the potential for positive response bias in who responds.

Project funding

MTPConnect's project fund of \$15.6 million has almost been fully committed, through three rounds of funding, and 37 approved projects that range from \$100,000 to \$1 million in funding. All projects have received at least matched funding and have at least two businesses as partners. The projects are predominantly being led by research organisations (some of which are run by industry).

The projects fall into four main categories – *accelerators*, that aim to assist start-ups with early stage commercialisation, *workforce development*, with a focus on developing skills in commercialisation, *providing access to 'infrastructure'*, such as databases, and specialised equipment, and a range of activities intended to support the *expansion of clinical trials*.

Objective 1: Increasing collaboration and commercialisation

Many of MTPConnect's projects have a collaboration focus and aim to promote commercialisation of research. These activities are, however, more focused on the early stages of the value chain, than growing small businesses into larger ones.

MTPConnect reports a large number of events and networking opportunities and other activities. From the reporting it is difficult to identify which ones have been organised by MTPConnect versus which ones it attended.

MTPConnect is currently managing the Government's Medical Research Futures Fund's BioMedTech Horizons grant program. This program is aimed at the commercialisation of new technologies.

Survey results indicate that MTPConnect has achieved relatively modest collaboration and commercialisation outcomes thus far. The most commonly cited collaboration outcomes that business received some or great support from MTPConnect to achieve are connecting to other government departments (fifty-eight per cent) and connecting and collaborating with researchers or academics (fifty-seven per cent).

Three quarters of respondents that work in other types of organisations (e.g. research organisations, universities, associations etc.) received some or great support from MTPConnect to better understand how to collaborate on challenges in the sector.

Objective 2: Enhancing management and workforce skills

Around a quarter of MTPConnect's projects have a major focus on training to build understanding, skills in commercialisation and technical skills. The technical skills are mainly aimed at developing the capacity to deliver clinical trials.

One project which aims to improve access for SMEs to technical services includes a major training component. The Bridge Program, which is entering its second round, took a business training toolkit designed to educate researchers about how to engage in commercialisation of pharmaceuticals, and expanded the reach across the country.

MTPConnect (along with METS Ignited and NERA) has funded the Australian Academy of Technology and Engineering to expand the Industry Mentoring Network in STEM pilot in the sector to all states.

Objective 3: Improving international opportunities and market access

MTPConnect reports over 42 inbound and outbound trade missions, many with Austrade. This includes organising, with AusBiotech, a major Australian presence at the Bio Conference (BIO) in the United States in 2017 and 2018.

MTPConnect reporting cites numerous conferences, some delegations, and other events that engage with the international community where it has represented the sector. Two projects have focused on building a better understanding of and connections in the Asian market, including a report on Life Sciences in

Australia for a Chinese audience, and missions to Hong Kong, Singapore and China.

Objective 4: Identifying opportunities for regulatory reform

MTPConnect undertook a review of the regulatory environment as a separate project. It did not provide a comprehensive scoping of the international and domestic regulatory environment for the sector, in large part due to the highly specific nature of the regulatory issues facing what is a fragmented sector.

The report did identify a number of areas for action. These have served to focus some of the regulatory reform activities, such as ensuring the importation of single dose packaging for use in clinical trials.

The other area of progress is on adaptive regulatory reform with the Therapeutic Goods Administration (TGA).

MTPConnect's other regulatory reform activities have been largely opportunistic, and dependent on whether additional funding was available.

MTPConnect has also represented the sector's interests in recent reviews, serving on review panels, and presented industry perspectives to various government agencies.

Additional or indirect outcomes

MTPConnect has had considerable engagement with government programs. This includes working with: the Entrepreneurs' Programme to assist early stage SMEs; the CRC Program, NHMRC and MRFF in relation to commercialisation aspects in grant funding; Austrade in relation to in and out bound missions and guidance provided to SMEs in relation to accessing the supply chain in Asia; and DFAT in addressing some specific challenges faced by some SMEs in access overseas markets.

MTPConnect has produced a number of publications that are useful for readers that are new to the sector and want to gain an overarching view.

MTPConnect is well represented on the boards of many research entities across the sector.

MTPConnect is active on Twitter, which it uses to disseminate information (such as when grant opportunities arise).

Performance measurement

Project fund recipients have started reporting to MTPConnect on a range of indicators, and the most recent business plan sets out clear output KPIs. The

reporting includes output indicators such as the number of people who completed a training program, or the number of businesses who use a subsidised facility.

Project fund recipients are also reporting (where appropriate) the generation of patents, new technologies invested or progressed, new products launched, and new start-up companies formed. Project recipients are required to report for three years post the completion of the project. Given the lengthy time lags involved in bringing products to market in this sector, consideration should be given to the data that will be available to assess impact in the future.

Sector impact

Qualitative feedback on MTPConnect from survey respondents was generally positive. University stakeholders tended to be more positive, along with organisations that had received project funding. The feedback from businesses was more mixed – some were very positive about the engagement and collaborations, some appreciated the service but thought that more could be done (particularly in their location), while others did not see MTPConnect as offering anything new to the sector.

Only a few of the business that responded to the survey reported that their engagement with MTPConnect had made a major contribution to improving their bottom line. Around eight businesses (ten per cent) reported great support from MTPConnect in boosting revenue and employment, and about half this number reported great support for improving profits.

This is to be expected given the length of the R&D cycles in the MTP sector. The time from lab to market is around 15 years for a drug and 10 years for a medical device but can be much longer.

The investment in projects and activities that aim to make Australia a more attractive destination for clinical trials has the potential to bring benefits to consumers as well as to Australian SMEs.

As an objective of MTPConnect is to grow small businesses into medium size and large businesses, there is potential for impact to be seen sooner.

MTPConnect's current focus of activities and projects is more on the early stages of development, and on forming relationships, so the time required to realise significant impact will be longer than if the focus was more on the 'growing the market' end of the spectrum.

National Energy Resources Australia (NERA)

Figure 15 | Key findings

- NERA is on track to deliver on its business plan objectives and is meeting its funding agreement requirements.
- NERA's initiatives primarily focus on collaboration and commercialisation.
- NERA has recently become more active in providing international opportunities and is working to build supply chain capability by supporting the development of innovation offers to Tier 1 businesses.
- NERA uses the Project Fund as a primary vehicle to deliver on its strategy by requiring applications to demonstrate alignment with Industry Knowledge Priorities and Sector Competitiveness Plan. NERA has 28 funded projects underway and a further seven under negotiation.
- NERA interacts with a high number of organisations in WA, relative to other states and territories.
- Feedback from survey respondents indicates moderate awareness of NERA within the sector. The majority (seventy-seven per cent) of survey respondents are satisfied or highly satisfied with their engagement with NERA.
- It is difficult to make a definitive assessment about NERA's impact against its sector-wide goals at this point in its operation, as it is only starting to move beyond the 'Formulating' stage of its 10-year transformation plan.

Operating environment

NERA has been operating as the oil, gas and energy resources sector Growth Centre since February 2016.

Activities within the sector include the exploration, development and extraction of energy and fuels from oil, gas, coal and uranium, and related services and inputs.

The sector has faced a decline in commodity prices, from the high levels experienced over the past decade, and faces continuing high capital costs. There are also challenges and opportunities related to new technologies and new energy sources that could be used to achieve cleaner, lower cost production methods.

programs to increase its capacity and reach. NERA is working with APPEA on its regulation and decommissioning work. It meets with other industry peaks such as the MCA and resources councils but is not working on strategies with these other industry bodies.

APPEA has traditionally delivered many similar initiatives to those now being delivered by NERA. NERA's role has a greater focus on SMEs and connecting them with Tier One supply chains.

Strategy

NERA's activities to date have largely centred on developing the capability of businesses to collaborate, particularly to improve the engagement of SMEs with Tier 1 operators. NERA has recently started to increase its activities in relation to SMEs accessing global supply chains.

Sector engagement

NERA has engaged broadly across the sector and is generally well regarded.

Half of the survey respondents interact with NERA a few times a year. Respondents' top reasons for engaging with NERA are to seek opportunities for collaboration and commercialisation and participate in NERA events and workshops.

NERA engages with a high proportion of SMEs, with over three quarters of the businesses that responded to the survey employing less than 20 people.

Survey results and project fund allocations suggest that NERA's engagement has heavily focused on

Figure 16 | Overview of NERA stakeholder survey

Survey responses:	302
Stakeholders invited to respond:	~4,000
Response rate:	~8 per cent
Distribution rationale:	Distributed to all of the contacts in NERA's CRM.

There are other organisations in sector that perform similar roles to NERA, such as the Australian Petroleum Production & Exploration Association (APPEA) and the Minerals Council of Australia (MCA).

NERA identified early in its establishment the importance of leveraging existing institutions and

businesses located in Western Australia and in the oil and gas sub-sectors.

Feedback from survey respondents indicates moderate awareness of NERA within the sector.

The majority (seventy-seven per cent) of survey respondents are satisfied or highly satisfied with their engagement with NERA - although we note the potential for positive response bias in who responds.

Project funding

NERA has provided \$12.4 million in funding for 28 projects. All but four of the projects involve multiple organisations. An additional seven projects are under negotiation in the pipeline.

Survey respondents that have received project funding expect to gain substantial benefit from participating in these projects. Around half of the survey respondents noted that they expect to gain significant benefits from new or enhanced collaboration with businesses and researchers and enhanced capabilities and capacity to drive commercial outcomes.

Objective 1: Increasing collaboration and commercialisation

NERA's collaboration and commercialisation strategies aim to support stakeholders to develop the skills and knowledge required to build collaborative capability, with a focus on developing SMEs' skills and know-how. NERA is primarily demonstrating the benefits of collaboration through conferences, media and cluster development capability.

Specific activities supported by NERA include the SME maximiser program 'Opportunity Knocks' and the CORE Innovation Hub (in partnership with METS Ignited), both of which aim to build the capability of SMEs to meet Tier 1 productivity requirements. The Subsea Innovation Cluster is developing the Australian subsea service sector as a global centre of excellence. The Nureka innovation project provides an online platform for operators both in Australia and globally to post challenges and crowd source solutions from suppliers. The LEAP innovation vouchers provide funding of up to \$20,000 to SMEs to prototype new innovations.

Most of NERA's collaboration activities are in the early stages and therefore expected benefits are yet to be realised and are not yet at a scale to demonstrate outcomes or impact across the sector. Despite this, over two thirds of the business respondents to the survey (sixty-nine per cent) said that NERA has

provided some or great support to develop relationships and networks with other businesses.

Survey responses show that NERA's role to date in supporting commercialisation outcomes has been limited. Only a very small proportion of businesses reported gaining support to develop new products or connect with other organisations to address technical challenges.

Objective 2: Enhancing management and workforce skills

NERA has identified eight Industry Knowledge Priorities which largely reflect the objectives of the Initiative. NERA's focus on workforce skills aims to address specific skills needs such as collaboration, innovation, and digital capability.

Key activities to support this objective include: project funds to support the development of identified capability needs in automation and robotics; funding the Industry Mentoring Network in STEM (along with MTPConnect and METS Ignited) program; and NERA's *Preparing Australia's Future Oil and Gas Workforce* – a report on the sector's skills needs.

Objective 3: Improving international opportunities and market access

NERA has a range of activities and projects to build supply chain capability, both through innovation offers to Tier 1 businesses and through global connections.

NERA has recently become more active in providing international opportunities. For example, in conjunction with Austrade, NERA led a delegation of ten businesses to launch an Australian pavilion at the Gastech conference in Barcelona in 2018. NERA is currently negotiating future delegations to the UK and USA.

Other NERA activities have supported new market knowledge and capability for local and global markets. These include convening workshops at industry conferences (including the Australian Oil and Gas Conference) and facilitating opportunities such as 'Meet the Buyer' events.

Businesses that have engaged with trade delegations report that they have been valuable in developing knowledge of overseas markets and creating relationships and connections.

Objective 4: Identifying opportunities for regulatory reform

NERA's regulatory reform activities include working with Standards Australia; leading a committee to ensure harmonisation of Australian standards with international oil and gas industry standards; and funding demonstration projects that support approaches to improved and timely regulation.

Additional or indirect outcomes

NERA regularly engages with state and territory government agencies in WA, NT and Queensland to provide advice on policy and programs and receive co-funded grants from governments for the sector.

NERA board members sit on the boards of research entities across the sector and are therefore well positioned to be aware of opportunities for NERA within the innovation ecosystem.

NERA's Sector Competitiveness Plan provides thought leadership on the challenges and performance of the sector. The sector-wide data and analysis generated by NERA has been enhanced by incorporating stakeholder insights on challenges and opportunities.

NERA's industry competitiveness analyses also provide unique and data-driven insights into the current state of the industry subsectors from a global viewpoint.

NERA's social media activity levels are modest, relative to other Growth Centres.

Performance measurement

NERA predominantly utilises case studies to measure long term outcomes for the stakeholders it has had meaningful engagement with.

Sector impact

NERA's impact to date largely relates to collaborative activities and building knowledge and capability to support businesses that know to engage through NERA tools, publications and workshops.

NERA reports that its project pipeline is enabling structural reform across the sector, improving commercialisation of innovation and technology through new partnerships between researchers, industry, supply chains, start-ups and SMEs and integrating them into global markets.

The qualitative feedback on NERA's performance to date was generally positive. Stakeholders value NERA's ability to facilitate access to decision-makers in the sector. SMEs value the ability to raise their profile with larger businesses; the potential for new market opportunities; connections to industry through initiatives such as the mentoring program and the practical support provided through the project funds.

NERA's activities are not yet at a scale to demonstrate outcomes or impact across the sector as most activities are still at the early stages. As a result, the extent to which NERA's initiatives will deliver sector-wide impact in the longer term is not clear at this point in time.

A small proportion of businesses reported that NERA has supported them to achieve growth. Of the 92 to 95 business that responded to survey questions about how engaging with NERA had impacted their bottom line, thirteen businesses (fourteen per cent) said that NERA provided great support to grow their revenue and twelve business (thirteen per cent) had great support to improve their profitability.