BRII Pilot Post-Commencement Evaluation

Final Report Presentation

August 2018

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Current program design and implementation -

- BRII currently addresses the needs for which it was designed
- The Department has been actively involved in all pilot stages
- BRII employed multiple marketing channels to engage with SMEs
- 180 SMEs applied for feasibility study grants
- SMEs find BRII well designed and managed
- BRII's assessment processes were transparent and well managed
- SMEs are generally satisfied with the support they are receiving during BRII
- There were several timing issues at points during the pilot implementation

Performance assessment -

- The Department collects much of the data outlined in the BRII Evaluation Strategy
- There is scope to augment current data collection practices ahead of the impact evaluation

Future program design and implementation considerations -

- Changes to program design and implementation would likely be required if BRII is scaled up in the future
- There are different avenues for funding a potential expansion of BRII
- BRII could be strengthened by leveraging the expertise of existing Government programs
- Improved communication of BRII's benefits will help to achieve the objective of cultural change in procurement
- Well defined challenges are crucial to the success of BRII

Executive Summary

Executive Summary

The Business Research and Innovation Initiative (BRII) supports Small to Medium Enterprises (SMEs) to develop innovative solutions to government challenges. The BRII pilot is administered by the Department of Industry, Innovation and Science ('the Department') and provides grants and support to 20 SMEs working across five challenges. The findings of this post-commencement evaluation are based on consultation with participating SMEs, challenge agencies, the Entrepreneurs' Programme Committee (EPC), Innovation and Science Australia (ISA) representatives and Departmental policy and program staff, as well as an extensive review of relevant program documentation and a survey of feasibility study and proof of concept SMEs. The evaluation has found that the pilot is well designed and implemented. There is emerging evidence that some program outcomes are already being realised, particularly for the nine SMEs that have progressed to the second stage of proof of concept funding.

FINDINGS - OUTCOMES FOR SMES

- **The BRII pilot program has supported a wide diversity of SMEs** – The SMEs that progressed to the proof of concept stage range from established (founded over 20 years ago) to businesses that were formed specifically for the program. The proof of concept SMEs span three industries, with two-thirds operating within the Professional, Scientific and Technical Australian and New Zealand Standard Industrial Classification (ANZSIC) industry division.

- **BRII has stimulated the innovative capacity of SMEs** – Receiving funding and support under BRII has stimulated the innovative capacity of the majority of the participating SMEs. Outcomes from participating in BRII include accelerating new and existing R&D, and developing new collaborative partnerships.

- **Commercialisation outcomes are already emerging** – Just under half the SMEs that progressed to the proof of concept stage have started to commercialise IP developed through the BRII. In some instances, SMEs are also securing or getting close to securing commercial applications for their new products and IP both nationally and overseas. Notable examples include Likely Theory securing a contract with PM&C to use their Converlens engagement platform for the APS Review and Atamo developing new technologies for malaria and other deadly mosquito-borne diseases overseas. SMEs have noted that the ability to retain IP is vital to their future success and a major drawcard of the BRII.

- **SMEs have valued the sustained proximity with challenge agencies** – The majority of SMEs have greatly appreciated and derived benefit from the ability to work so closely over such a long period of time with potential end customers within the challenge agencies. Those SMEs that worked closely with agencies during the feasibility study stage also tended to provide high quality proof of concept applications.

- **The capabilities of SMEs varied** – Challenge agencies reported substantial differences in the capability, engagement and savviness of the SMEs.

- **SMEs' lessons about working with government varied based on their prior knowledge** – The extent to which the BRII pilot has enhanced SMEs' confidence and their ability to work effectively with government varies. The SMEs that had not worked with government before BRII have benefited from learning about the culture, practices, lexicon and pace of government. Other SMEs that have worked previously with government and/or are led by former public servants have gained less new knowledge.

FINDINGS - OUTCOMES FOR GOVERNMENT

- **Challenge agency staff working on BRII are highly positive about the process and potential outcomes** – All of the representatives interviewed from the challenge agencies would be willing to participate in any future rounds of BRII, despite the substantial in-kind resourcing required to manage their involvement in BRII.

- **The broader internal visibility of BRII in challenge agencies is variable but improving** – The extent to which the intent and emerging outcomes of BRII are known beyond the staff immediately involved with the challenges varies by agency size. Further work will be required to promote BRII once the proof of concepts are complete, particularly in larger challenge agencies. The Department can accelerate this awareness raising through updated case studies (written and video), ministerial briefings and building the capability of SMEs to effectively present their solutions to senior government leaders.

  Recommendation 1: The Department works with each challenge agency to increase the visibility of BRII's outcomes to date across Government and other key stakeholders between now and the conclusion of the pilot, to further enable the program's intended outcomes for Government.

- **Agencies see value in the challenge approach and working with SMEs** – In most instances, the current proof of concept solutions diverge substantially, which most agencies see as stimulating innovation. Challenge agencies value the unique capabilities, speed, agility and open-mindedness of the SMEs, as well as their willingness to partner with other firms to supplement their expertise where necessary. This contrasts to the approaches and working styles brought to problem solving by the much larger companies with whom agencies typically work.

- **Agencies will still gain benefits from BRII regardless of the procurement outcomes –** While it is not yet clear whether any of the agencies will ultimately procure the solutions, they are still gaining value from working with the SMEs to find new ways to approach difficult policy and service delivery challenges.

- **It is not yet clear whether agencies will adopt innovative procurement practices or work more with SMEs** – The extent to which new approaches to procurement or engaging with SMEs will gain broader traction in challenge agencies post-BRII will depend largely on the ultimate success of the solutions and the extent of associated benefits that can be promoted to agency executives.

BRII has acted as a catalyst for innovation in some agencies – BRII has already acted as a direct and indirect catalyst for growth in innovation-led approaches or capabilities in two agencies (DAWR and AUSTRAC).

FINDINGS - PROGRAM DESIGN AND IMPLEMENTATION

- **BRII has been well designed and implemented** – There is broad consensus among the challenge agencies and the majority of SMEs that BRII has been well designed and implemented. The challenge agencies have appreciated that support from the Department has ranged from hands-on to light touch at the right points throughout the pilot. SMEs have benefited from the ongoing support, information and advice provided by program staff. The majority of SMEs have also found the initial application and ongoing reporting and administration requirements to be reasonable.

- **The initial design and description of each challenge is key to achieving high quality outcomes** – Challenge agencies and SMEs agreed that the way in which each challenge was described was important for stimulating high quality applications that then translated to the development of fit-for-purpose products. Key features of helpful definitions include the level of detail in the problem description and the features of the desired end product.

  Recommendation 2: The Department maintains an active role in working with agencies to identify, scope and design challenges for any future rounds of BRII to maintain a consistently high quality of challenge scope and design.

- **Challenge applications need longer lead times –** Agencies were given one month to develop and submit their BRII challenge applications. This was insufficient for the challenge applications to be as well developed as they could have been. While the Department offered assistance to develop challenge applications, it was not universally taken up.

  Recommendation 3: The Department provides agencies with forewarning about forthcoming rounds and allows at least ten weeks for challenge applications to be developed.

- **Timelines for the initial phase of BRII need adjusting** – There were several points throughout the implementation of the BRII pilot that either took too long or did not allow sufficient time. Specifically the initial approval processes for the SMEs that were awarded feasibility study funding took longer than expected.

  Recommendation 4: The Department reconsiders the timeframes for subsequent rounds of BRII, with a specific focus on streamlining the feasibility study application assessment process.

- **The implementation of the BRII pilot has been well resourced** – The number of staff supporting the implementation of BRII within the Department is relatively high relative to other comparable programs within the AusIndustry division. While required during the pilot stage, the current staff to challenge ratio may be unsustainable if the program were to scale up.

- **The economic and public value benefits of BRII are potentially large, but not yet well understood** – The economic and public value benefits from some of the solutions are likely to be substantial if they are successful.

  Recommendation 5: The Department works more actively with challenge agencies to understand and – where possible – measure these benefits ahead of the BRII impact evaluation (which is scheduled for 2020-21). This will also help to communicate the potential benefits of BRII to other agencies that could be involved in future rounds of BRII.

FINDINGS - FUTURE PROGRAM DESIGN AND IMPLEMENTATION

- **A strong communications strategy around BRII's outcomes will help achieve program objectives –** this will contribute to momentum and cultural change within the APS.

Recommendation 6: The Department investigates the feasibility and potential benefits of more closely linking SMEs that participate in any future rounds of BRII with other relevant government programs including AusIndustry programs.

- **There are opportunities to codify and more broadly share the body of knowledge developed through the pilot** – The program staff supporting BRII have provided SMEs with a range of information and advice, both formally and informally. Future iterations of BRII would benefit from this knowledge being captured in existing program documentation as well as translated into FAQs and webinars that share information and advice for SMEs on how to work with Government. This intelligence could also be incorporated into other Government resources such as the Selling to the Australian Government Guide produced by the Department of Finance and the sellers guide available on the DTA's Digital Marketplace.

  Recommendation 7: The Department ensures that the knowledge base developed through the BRII pilot is appropriately captured and packaged so that it can be easily accessed by any future BRII participants and potentially used to supplement other related Government resources for SMEs.

- **It will be important to maintain fidelity to the model if other agencies adopt BRII** – If the BRII model is adopted independently by other agencies it will be important for the Department to clearly define the model and support these agencies to implement the program. This will ensure that the BRII brand is not detrimentally affected, the experience and expectations of SMEs remain consistent and evaluations can compare program outcomes more easily.

  Recommendation 8: The Department clearly articulates the features and rationale of the BRII model and any key lessons learned at the conclusion of the pilot. This will ensure that any other agencies that may wish to adopt a similar challenge-based model can, while preserving the intent and integrity of the program.

Recommendations

1. The Department works with each challenge agency to increase the visibility of BRII's outcomes to date across Government and other key stakeholders between now and the conclusion of the pilot, to further enable the program's intended outcomes for Government.

2. The Department maintains an active role in working with agencies to identify, scope and design challenges for any future rounds of BRII to maintain a consistently high quality of challenge scope and design.

3. The Department provides agencies with forewarning about forthcoming rounds and allows at least ten weeks for challenge applications to be developed.

4. The Department reconsiders the timeframes for subsequent rounds of BRII, with a specific focus on streamlining the feasibility study application assessment process.

5. The Department works more actively with challenge agencies to understand and – where possible – measure these benefits ahead of the BRII impact evaluation (which is scheduled for 2020-21). This will also help to communicate the potential benefits of BRII to other agencies that could be involved in future rounds of BRII.

6. The Department investigates the feasibility and potential benefits of more closely linking SMEs that participate in any future rounds of BRII with other relevant government programs including AusIndustry programs.

7. The Department ensures that the knowledge base developed through the BRII pilot is appropriately captured and packaged so that it can be easily accessed by any future BRII participants and potentially used to supplement other related resources for SMEs.

8. The Department clearly articulates the features and rationale of the BRII model and any key lessons learned at the conclusion of the pilot. This will ensure that any other agencies that may wish to adopt a similar challenge-based model can, while preserving the intent and integrity of the program.

The Department notes and agrees with the evaluation recommendations

BRII Program Team response

Overall the BRII program area is pleased to receive confirmation that the evaluation found that the BRII had been well designed and implemented. The BRII program area is also pleased at the multiple outcomes achieved to date by SMEs and Government this early in the process.

Recommendation	Response
Recommendation 1	Noted and agreed
Recommendation 2 (and 3)	The BRII program area agrees and notes that once the decision on future rounds is confirmed, the program area will work with the policy area to identify ways in which to work actively with agencies on challenges and to provide forewarning of upcoming rounds.
Recommendation 4	The BRII program area agrees and is also looking into streamlining processes, not just feasibility application assessment processes, but also challenge application and assessment processes that include ISA/EPC.
Recommendation 5	Noted and agreed.
Recommendation 6	Noted and agreed. The BRII program area has linked several BRII participants to AusIndustry programs such as the Accelerating Commercialisation program.
Recommendation 7 (and 8)	The BRII program area agrees and has processes in place to capture knowledge gained and lessons learnt and will look into capturing specific BRII findings.

BRII Policy Team response

BRII Policy Team note the findings of the evaluation and agree with the comments provided by Program Team.

This evaluation considers program design, implementation and outcomes to date

The BRII Pilot Post-Commencement Evaluation will support the Department of Industry, Innovation and Science (the Department) to surface and take on board the lessons from Round 1 of the pilot phase of the BRII, and optimise future iterations of the program. Round 1 of the pilot phase commenced in 2016 and will conclude in 2019. While the primary focus of this post-commencement evaluation is on program design and implementation, it also considers any short-term outcomes that have been realised to date. An impact evaluation of BRII is scheduled to be conducted in 2020-21.

The evaluation is structured around the following lines of inquiry:

1. What is the identified need for the BRII and is the design of the BRII suitable to address the need?
2. How well is the BRII being implemented?
3. What short-term outcomes has the BRII achieved?
4. What performance measurement systems are currently in place?

Nous Group conducted the evaluation with oversight and guidance from the BRII Evaluation Reference Group and the Department's Evaluation Unit.

Stakeholder groups consulted as part of this evaluation

Stakeholder group	Proof of concept SMEs (all)* Feasibility study SMEs (all)*	Proof of concept SMEs (9) Feasibility study SMEs (3) SMEs that did not progress to feasibility study (1)^	Successful challenge agencies (5)	ISA board members (2) EPC member (2)	Program staff Policy staff
Engagement method	Online survey	Interviews	Interviews	Interviews	Interviews

*The survey was distributed to all SMEs that progressed to the feasibility study and/or proof of concept stage. Eight proof of concept SMEs and six feasibility study SMEs responded to the survey. ^Two SMEs that did not progress to the feasibility study were contacted for interviews, however only one SME responded to the request for an interview.

This evaluation explored four key lines of inquiry

Evaluation lines of inquiry

Line of Inquiry	Research questions	Report section	Recommendations
1. What is the identified need for the BRII? Is the **design** of the BRII suitable to address the need?	• What was the policy problem the program was tasked to solve in implementation? • How does the BRII align with other Government initiatives/policy priorities? • To what extent can lessons from similar international programs be considered in the future design of the BRII?	• Program overview • Current program design and implementation	
2. How well is the BRII being **implemented**?	• Are activities being delivered consistent with the program theory? • To what extent were program delivery timetables realistic? • To what extent did the program target the correct applicants (both agencies and SMEs)? • To what extent are BRII administration processes well designed and efficient? • What is the level of satisfaction of the participating SMEs and Agencies with respect to the administration of the program, at each stage?	• Current program design and implementation	• Recommendation 2 • Recommendation 3 • Recommendation 4 • Recommendation 6 • Recommendation 7 • Recommendation 8
3. What short-term **outcomes** has the BRII achieved?	• To what extent has SME awareness of opportunities/confidence to supply to Government changed? • To what extent has the BRII contributed to an increase in innovation activities among participating SMEs? • To what extent are challenge agencies more aware of SMEs as providers? • To what extent has BRII changed challenge agencies' attitudes towards procuring innovative solutions?	• Outcomes for SMEs • Outcomes for Government	• Recommendation 1 • Recommendation 5
4. What **performance measurement** systems are currently in place?	• Is it clear how the effectiveness of the program will be measured? How sound are the program's data collection methodologies?	• Performance assessment	

Program overview

This section provides a high level summary of BRII's design and current status.

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Overview of BRII

The Business Research and Innovation Initiative (BRII) pilot was announced in December 2015 as part of the 'Government as Exemplar' pillar of the National Innovation and Science Agenda (NISA). BRII aims to help Government agencies find novel solutions to otherwise intractable public policy and service delivery problems and to foster innovation among Australian small-to-medium enterprises (SMEs). The program was allocated $15.2 million in funding over the four year period from 2015-16 to 2018-19.

Objectives

1. Drive innovation and commercialisation within Australian SMEs

2. Change the nature of government procurement through sourcing innovative solutions

Intended SME Outcomes

1. Stimulate the innovative capacity of SMEs

2. Improve business capability to access national and international markets

3. Develop SMEs confidence and awareness when working with government as a possible customer.

Intended Government Outcomes

1. Stimulate the innovative capacity of Australian Government agencies

2. Encourage Australian Government agencies to participate in sourcing innovative solutions.

*Note: there are four lead challenge agencies, however three additional agencies (ACIC, FACS NSW and CSD ACT) are working with the challenge agencies on their challenges. Source: BRII Program Guidelines; New Policy Proposal; BRII Program Logic; BRII 2015 – Costing Justification with Additional Questions and Answers

$12m
grant funding

5
Challenges

4
Agencies*

20
Feasibility study SMEs

9
Proof of concept SMEs

BRII was designed to address two distinct needs

The BRII was designed to encourage Government to foster more innovative procurement and support Australian businesses to generate more new-to-market innovations. These two needs – as originally identified by the Department before the inception of BRII – are summarised below.

1. Government procurement is overly focused on risk minimisation which limits opportunities to procure and foster innovative ideas and technologies

- Government expends a large amount on procurement (around $49 billion in 2013-14).

- Agencies typically focus on risk minimisation and use standard procurement channels.

- This means that Government agencies are less likely to procure innovative and new ideas and technologies that address public policy and service delivery challenges.

- Government can do more to foster innovation through its procurement processes. In 2015-16 Australia ranked only 70th out of 144 countries on how government procurement fosters innovation (World Economic Forum).

Extent to which government purchasing decisions foster innovation
(Australia's ranking and score out of 7 in the Global Competitiveness Index)
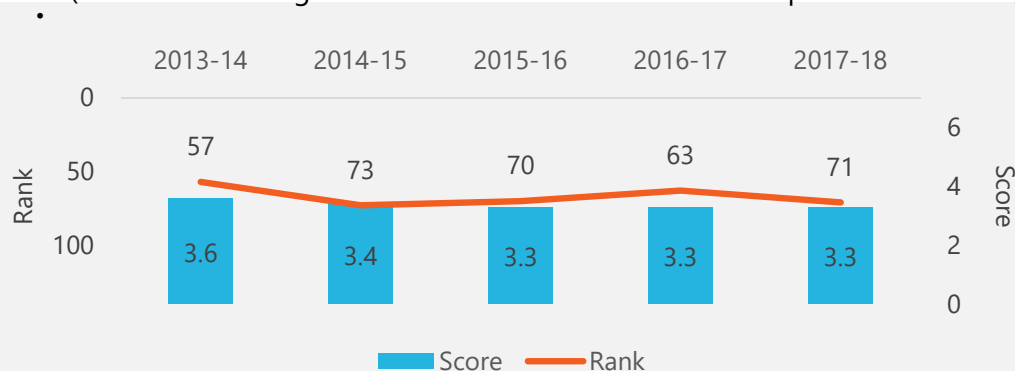
2. Australian businesses lag behind their OECD peers in generating new-to-market innovations which hampers their international competitiveness

- New-to-market innovations encompass new-to-industry, new-to-Australia and new-to-world goods and services.

- New-to-market innovations are crucial for the international competitiveness of Australian businesses. Businesses that generate new-to-industry or new-to-Australia innovations are 50 per cent more likely to export than new-to-firm innovators.

- Australia is poor at generating new-to-market innovations relative to most other OECD members. In 2012-13 only 5.7 per cent of Australian businesses generated any such innovations, compared with up to 26 per cent of businesses in top OECD countries.

% of firms in OECD countries introducing products new to the market, manufacturing and services, 2010-12 (top 10 countries and Australia)
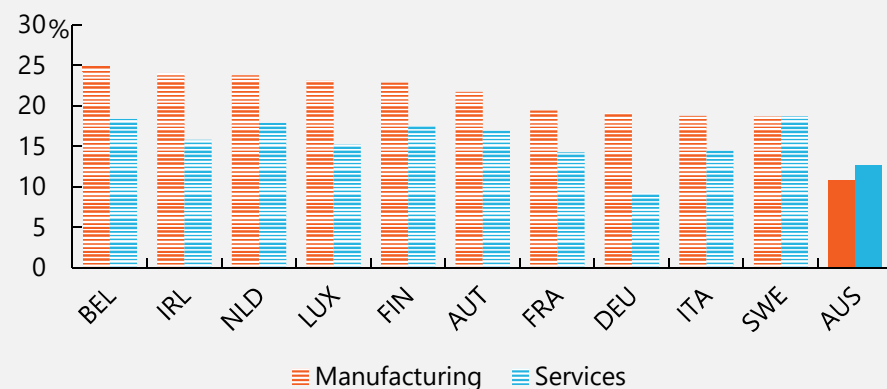
Source: Departmental briefing documents; World Economic Forum, 2018, *Global Competitiveness Index*, available: here; OECD Science, *Chapter 4. Unlocking innovation in firms - Firms introducing products new to the market, manufacturing and services, 2010-12,* 2015, available: here.

The intended outcomes of BRII are expected to be realised over the next decade

The BRII pilot program logic outlines that the intended outcomes for SMEs and Government from participating in BRII are expected to be realised over the next decade. This evaluation has found strong and emerging evidence that some of the longer term program outcomes have already started to be realised, particularly for the nine SMEs that have progressed to the second stage of the BRII pilot and received proof of concept funding.

Intended outcomes from the BRII pilot program logic model

Outcomes (1-2 years)	Outcomes (2-3 years)	Outcomes (4-10 years)
SME awareness of opportunities to supply to government increases	Tender responses from SMEs increase	SME capability to access national and international markets increases
	SME confidence working with agencies increases	Innovative capacity of participating SMEs increases
	Collaboration among SMEs, agencies and industry partners increases	Commercialisation of new to market products/services among participating SMEs increases
Innovation activities increase among participating SMEs and agencies		Government procurement of, and collaboration on, innovative solutions from SMEs increases
More informed policy decisions and continuous improvement of program		
Agencies' awareness of SMEs as providers of innovative solutions to national policy and program challenges increases	Potential solutions to challenges (proofs of concept) increase	
	Agency confidence working with SMEs increases	

Legend:
- SME outcome
- Dual outcome
- Government outcome

Source: BRII Evaluation Strategy

BRII has been modelled on similar programs in the UK and the US

The BRII has been modelled on the US's Small Business Innovation Research (SBIR) Program and the UK's Small Business Research Initiative (SBRI). The BRII awards grants to a smaller number of SMEs than the SBIR and SBRI. However, the monetary value of BRII's feasibility and proof of concept grants is similar to those awarded through both the SBIR and SBRI. The table below compares key elements across each of these programs.

Comparison of BRII with similar international programs

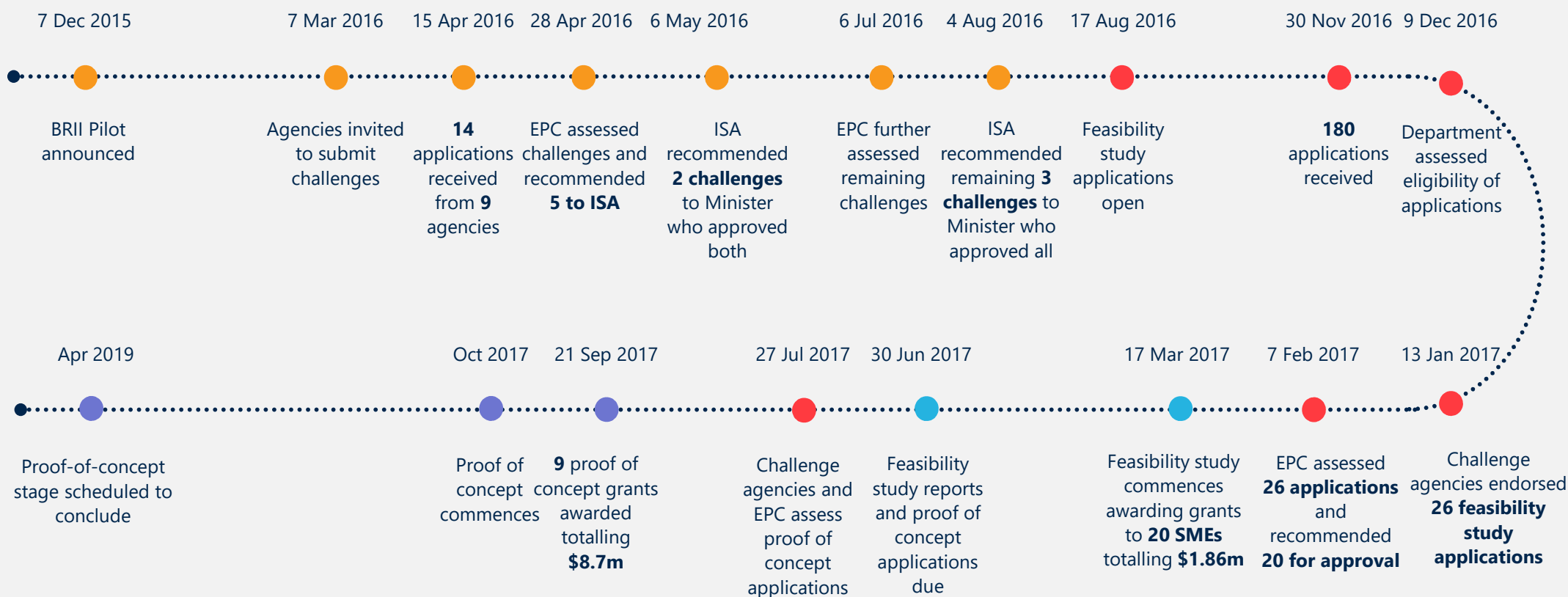|	BRII	US SBIR	UK SBRI
YEAR ESTABLISHED	2016	1982	2009
ADMINISTRATION	Centralised	Decentralised	Innovate UK partners with agencies to help them set up their own competitions
FUNDING SOURCE	DIIS administered funds	3.2% of agencies' extramural budgets over $100m	Agencies' procurement budgets, with co-funding from Innovate UK
TARGETS	No	Yes – percentage of agencies' procurement spend	Yes – £200m across government for FY14-15, with individual targets set for six departments
FUNDING PER GRANT PHASES	1. $100k feasibility study (3 months) 2. $1m proof of concept (18 months)	1. $150k feasibility study (6 months) 2. $1m R&D work (2 years) 3. Optional non-SBIR funding for further development and commercialisation	1. £50 - 100k feasibility study (2-6 months) 2. £250k - £1m proof of concept (18 – 24 months)
TOTAL GRANT FUNDING	$12m	~$2b p.a.	~£81m p.a.
NUMBER OF GRANTS	20 feasibility study grants 10 proof of concept grants	2,500 – 4,500 feasibility study awards p.a. 1,000 – 2,000 R&D awards p.a.	2,164 projects (as of 2016)
NUMBER OF AGENCIES	7	11	22
BUSINESS ELIGIBILITY	SMEs	<500 employees	Business or research organisation of any size

Source: DIIS, *MS17-000631 US SBIR program,* 2017; David Connell, *Leveraging public procurement to grow the innovation economy: an independent review of the Small Business Research Initiative,* 2017, available here.

The BRII Pilot is currently at the proof of concept stage

The timeline below provides an overview of the three main stages of the BRII: 1) **Challenge development** – Government agencies develop proposals for specific challenges they would like solved, which are then assessed by the Entrepreneurs' Programme Committee (EPC) and Innovation and Science Australia (ISA); 2) **Feasibility study** – businesses apply for grants of up to $100,000 to develop a feasibility study over three months; and 3) **Proof-of-concept** – ISA may award further grants of up to $1 million to businesses that demonstrate feasible proposals to develop a proof of concept over an 18 month period.

BRII pilot program high level timeline

● Challenge development   ● Application assessment   ● Feasibility study   ● Proof-of-concept

7 Dec 2015	7 Mar 2016	15 Apr 2016	28 Apr 2016	6 May 2016	6 Jul 2016	4 Aug 2016	17 Aug 2016	30 Nov 2016	9 Dec 2016
BRII Pilot announced	Agencies invited to submit challenges	**14** applications received from **9** agencies	EPC assessed challenges and recommended **5 to ISA**	ISA recommended **2 challenges** to Minister who approved both	EPC further assessed remaining challenges	ISA recommended remaining **3 challenges** to Minister who approved all	Feasibility study applications open	**180** applications received	Department assessed eligibility of applications

Apr 2019		Oct 2017	21 Sep 2017		27 Jul 2017	30 Jun 2017		17 Mar 2017	7 Feb 2017	13 Jan 2017
Proof-of-concept stage scheduled to conclude		Proof of concept commences	**9** proof of concept grants awarded totalling **$8.7m**		Challenge agencies and EPC assess proof of concept applications	Feasibility study reports and proof of concept applications due		Feasibility study commences awarding grants to **20 SMEs** totalling **$1.86m**	EPC assessed **26 applications** and recommended **20 for approval**	Challenge agencies endorsed **26 feasibility study applications**

The five BRII pilot challenges are managed by four agencies

The Department received 180 applications from SMEs for feasibility stage grant funding across the five challenges. The initial articulation of the challenges ranged from broad and nebulous (e.g. 'Digitally enabled community engagement in policy and program design') to much more specific and highly technical challenges (e.g. 'On-the-spot technology for measuring pyrethroid surface residue').

		Applications
Digitally enabled community engagement in policy and program design	DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE and DEPARTMENT OF SOCIAL SERVICES (DSS) – Innovation in the digitisation of communication, information handling, data analytics and social media tools offers the opportunity to develop new methods to engage citizens. Combining these into a platform that consistently engages the business community could effectively offer an increase in the volume and quality of business/citizen contributions to policy and program development.	63
Improve transparency and reliability of water market information	DEPARTMENT OF AGRICULTURE AND WATER RESOURCES – Australia needs an innovative solution to the problem of water market transparency. Enhancing water market transparency will improve community confidence in Australia's water markets and thus contribute to sustainable management of scarce water resources.	28
On-the-spot technology for measuring pyrethroid surface residue	DEPARTMENT OF AGRICULTURE AND WATER RESOURCES – DAWR is looking for a technology that would permit on-the-spot quantitative measurement of the amount of residual and knock-down pyrethroids on interior aircraft surfaces, to prevent the introduction into Australia of exotic mosquito species and the diseases they may carry.	21
Sharing information nationally to ensure child safety	DEPARTMENT OF SOCIAL SERVICES – When families with children at risk move location, the government and non-government services providing support to the family can lose contact exposing the children to greater risk of harm. These families can be relatively mobile. In addition to current legislative reform initiatives it is necessary to concurrently explore the feasibility of developing an innovative national digital solution to facilitate the sharing of information.	40
Tracking the effect and value of information products	AUSTRAC – AUSTRAC is looking for available options that could utilise technology such as blockchain to create 'smart information products' that would allow producers of information to determine whether their products are effective, add value and represent the best allocation of resources to produce the information in the first place.	27

Source: DIIS, *MS17-000177 BRII update Jan 2017,* 2017

Outcomes for SMEs

This section discusses the extent to which the BRII has enhanced SMEs' innovative capacity, improved their capability to access national and international markets and developed their confidence in engaging with government as a possible customer.

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The BRII pilot program has supported a wide diversity of SMEs

To be eligible for BRII, SMEs are required to have turnover of less than $20 million for each of the three years prior to their application. The size and maturity of BRII proof of concept SMEs varies both within and across each of the five challenges. With the exception of the water market information challenge for which there was only one SME, each of the challenges has SMEs of distinctly different sizes. The figure below shows the year each company was registered and their turnover in FY15-16.

Proof-of-concept SMEs by age

Year of company registration
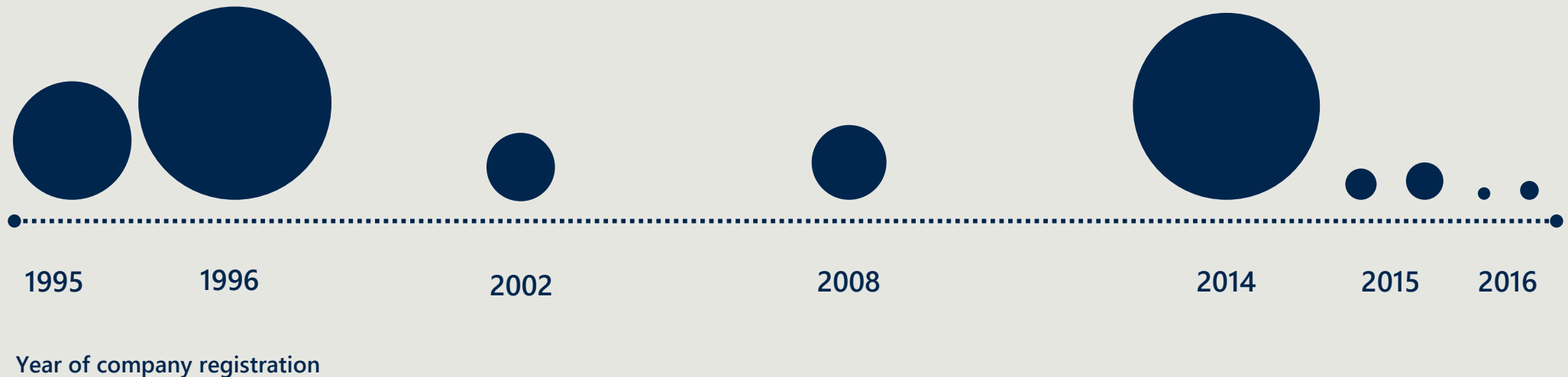
Note: Size of bubble represents SME turnover (FY15-16)

Source: Feasibility study applications; ASIC company register (accessed 6 June 2018).

The proof of concept SMEs greatly value BRII

The SMEs interviewed for this evaluation have been largely positive about their experiences with, and outcomes from, the BRII pilot. The key themes raised by the SMEs are summarised below.

- The proof of concept grant has provided each SME the funding needed to create new technology, or refine and apply their existing technology in new ways. SMEs have found the following two elements of the BRII to be particularly valuable:
  - The ability to retain their IP and receive funding without forfeiting control of their businesses
  - The opportunity to engage closely with challenge agencies to develop a solution to a clearly defined problem, rather than develop a product and search for a market.

- Several SMEs have used the BRII funding to bring expertise into their businesses (e.g. software developers), which has resulted in higher quality technologies than previously possible, as well as upskilling their staff. Several SMEs anticipate these partnerships will endure beyond the duration of BRII.

- The majority of proof of concept SMEs are proactively exploring commercialisation opportunities beyond the BRII program and considering other market applications for their solutions. SMEs believe the opportunity to develop a concrete product provides a proof point for commercialising the solution in other areas. In doing so, the SMEs note that there is a need to balance external commercialisation opportunities with ensuring that Government gets the solution it needs.

- SMEs have generally enjoyed the competitive nature of the BRII, although one SME suggested that the Department consider the possibility of providing opportunities for SMEs to collaborate once they reach the proof of concept stage.

- Most SMEs already had experience working with Government agencies prior to BRII. Nevertheless, they agree that participating in BRII has deepened their understanding of working with Commonwealth agencies.

- There have been some minor difficulties, such as the SMEs involved in the Child Safety challenge experiencing delays in accessing the data from the NSW and ACT government agencies required to develop their proof of concept, due to the sensitive nature of the information.

BRII gave us certainty and we were able to plan. We have employed three graduates as a result of that we would otherwise have had difficulty employing. Certainty of funding going into the future is vital for small business and BRII relieved some of that pressure.

This grant gives access to market we would never have had access to otherwise and an amazing foot up to build something that would have required heavy investment from someone, which then dilutes what an SME is because of the investment.

This to me, is one of the best examples of the federal government delivering on its commitments to support local innovation and small businesses. We couldn't ask for a better platform to build something, prove our worth and go on and turn it into a sustainable business providing platform to multiple industries.

Source: SME interviews (n=11)

BRII has enhanced government engagement for some SMEs

BRII has successfully engaged some SMEs that previously had limited experience working with government. Four proof of concept and four feasibility study survey respondents had either never, or only occasionally worked with government.

The majority of survey respondents agreed that BRII has increased their knowledge of government operations, with eight of the 11 SMEs indicating that they are more proactively pitching business ideas to government agencies post-BRII. One proof of concept SME noted that BRII enables simpler and more direct engagement with government than traditional procurement processes.

Impact on SME government engagement (n= 11)

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Our company's knowledge of how government operates has increased post participation in BRII	1	3	4	3	
We are more actively monitoring potential business opportunities with government agencies post participation in BRII	1	2	5	3	
We feel that we are more likely to win work with government agencies post participation in BRII	2	3	3	3	
We are more proactively pitching business ideas to government agencies post participation in BRII	1	1	1	5	3

Source: SME online survey

> *BRII has enabled us to engage [with government] at a much more meaningful level and created the potential for a long term business relationship.*

> *Our rapport with government agencies has improved.*

> *We are increasing our awareness of relevant government agency needs and opportunities.*
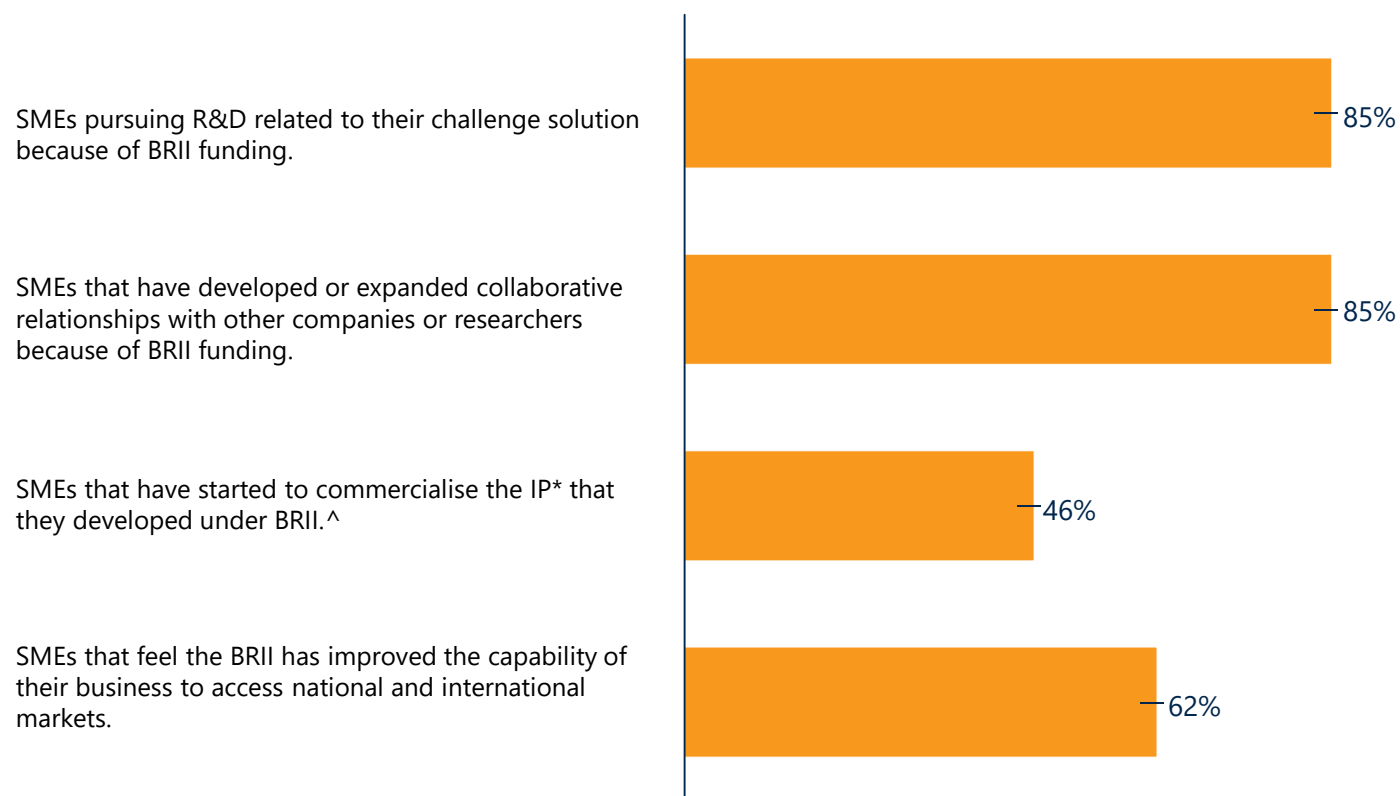
> *Government agencies are much more willing to engage since we won the BRII grant.*

Source: SME online survey

22

BRII is already acting as a catalyst for some SMEs to pursue commercialisation opportunities

Many of the feasibility study and proof of concept grant recipients are already exploring options for commercialising the IP they have developed as part of BRII. To assist with this, several companies have contacted the Accelerating Commercialisation stream of the Entrepreneurs' Programme.

Impact on R&D and Commercialisation (n = 13)

Category	Value
SMEs pursuing R&D related to their challenge solution because of BRII funding.	85%
SMEs that have developed or expanded collaborative relationships with other companies or researchers because of BRII funding.	85%
SMEs that have started to commercialise the IP* that they developed under BRII.^	46%
SMEs that feel the BRII has improved the capability of their business to access national and international markets.	62%

Source: SME online survey. *IP was defined as including, but not being limited to, patents, trade secrets, memoranda of understanding and licensing agreements. ^Four participants who stated they had not started to commercialise IP, intend to do so in the near future.

> *[We are] actively marketing the products developed under the BRII challenge both locally and overseas.*

> *We are already working on expanding the applications of the developed IP to other areas.*

> *We are thinking about several opportunities to extend the IP, including to extend what we have learnt into other markets.*

Source: SME online survey

Outcomes for Government

This section discusses the extent to which the BRII has stimulated the innovative capacity of Australian Government agencies and encouraged Australian Government agencies to participate in sourcing innovative solutions.

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Challenge agencies are positive about BRII's value so far

The extent to which the intended BRII outcomes for Government have been realised through the pilot is more modest than for the SME outcomes. This is to be expected given the size, complexity and operating environment of the challenge agencies. Nevertheless, each challenge agency reports that they have benefited from participating in BRII.

Agencies value the opportunity to work with SMEs to tackle complex challenges

- Agencies value the opportunity BRII provides to source bespoke solutions to difficult challenges and approach enduring challenges in completely new ways. This is partly attributable to the inherent flexibility the BRII brings to problem solving – only the problem, not the solution is pre-determined.

- In most instances, the current proof of concept solutions diverge substantially – which most agencies see as stimulating innovation. Agencies also value the unique capabilities, speed, agility, open-mindedness and willingness to partner of many of the SMEs.

- While it is not yet clear whether any of the agencies will ultimately procure the solutions, they are still gaining value from working with the SMEs to find new ways to approach enduring challenges.

- Agencies reported substantial differences in the capability, engagement and savviness of the SMEs.

- All agencies consulted would be willing to participate in any future rounds of BRII, despite the substantial in-kind resourcing required to manage their involvement in BRII. Representatives from DSS working on the information sharing challenge did note that there were complexities associated with working in partnership with other agencies and jurisdictions.

Relative to conventional procurement approaches, BRII has given us much greater freedom for discovery and to do things differently. Innovation can be overused as a concept but this was genuine innovation. We were able to bring in some seriously left field thinking during the feasibility study.

[BRII gave us a] different way of filtering challenges facing us every day.

If BRII is successful, it will be a lot easier for us to argue for the challenge process to be funded through [our agency]. If the solution works, it will create the evidence base for why we pursue this approach.

In the Commonwealth we find a solution and want someone to implement it. Going to this challenge and saying 'show us what you can do' was of great value.

BRII has started to build the innovative capacity of some challenge agencies

The visibility of BRII within Government agencies has generally been restricted to the teams working directly alongside the SMEs. To maintain BRII's momentum there is scope to promote the program more broadly both within current challenge agencies and across Government more generally (Recommendation 1).

Further promotion of BRII will help to improve its visibility across Government

- The broader internal visibility of BRII among challenge agencies is variable, but it is getting better. The emerging lessons from BRII are also yet to reach the procurement teams in the large agencies which have had no direct involvement as all funding under BRII has been managed by the Department.

- Further work will be required to promote BRII once the proofs of concept are complete and procurement outcomes are clear, particularly in larger agencies. The Department can accelerate this awareness raising through updated case studies (written and video), ministerial briefings, engaging with agency procurement staff and building the capability of SMEs to effectively present their solutions to senior government leaders.

- The extent to which innovative approaches to procurement and SME engagement will gain broader traction in agencies post-BRII will depend largely on the success of the solutions in development and how well they are promoted across agencies.

- The Department may need to give further consideration to the procurement processes for BRII solutions, at the conclusion of the pilot. This should be a focus of the impact evaluation.

BRII has built the capability and innovative capacity of some agencies

- BRII has already acted as a direct and indirect catalyst for the growth in innovation-led approaches or capabilities in two agencies (DAWR and AUSTRAC).

- Several agencies also noted the immense value they gained from interacting with the members of the Entrepreneurs' Programme Committee (EPC). Specifically, agencies valued the role the EPC played in 'stress testing' the SME applications, to ensure the solutions proposed would be commercially viable.

Source: Challenge agency interviews

"

Initially it felt like BRII was flying under the radar, it didn't get traction. It has changed since we invited someone from our innovation team to a presentation from [an SME]. But there's still a need to sell it through the Department.

BRII has built the business case for acting for more innovation. The whole program is literally innovation in action. BRII has been really important for this   we are recruiting into our new innovation hub space to continue uplifting capability.

The insights from EPC were really valuable. It was cool and very unique in the APS to be put in something like the 'shark tank.'

Interacting with the EPC and ISA members was really valuable and we have been agitating to get more access. We would have liked to have capitalised more on their powerhouse of brains.

"

Source: Challenge agency interviews

The extent to which the challenge agencies already procure from SMEs differs

One of the BRII's objectives is to influence the nature of government procurement through increasing the frequency with which innovative solutions are sought. It is therefore interesting to look at the value of goods and services procured from SMEs by the challenge agencies, as a proportion of their total procurement spend. It is notable that all agencies were above the Government benchmark of 26 per cent in 2016-17, which in turn was well above the Commonwealth Procurement Rules target of at least 10 per cent (by value) of procurement from SMEs by non-corporate Commonwealth entities. The goods and services procured from SMEs by the challenge agencies as a proportion of their total procurement spend differed considerably in the 2016-17 financial year. Figures range from 40 per cent for the Department of Agriculture and Water Resources to 83 per cent for AUSTRAC. We note that these figures do not indicate what type of goods and services are procured from SMEs.

Challenge agency procurement of goods and services from small business and SMEs in 2016-17 (% of value of all procurement)

Australian Government procurement of goods and services from small business and SMEs by FY (% of value of all procurement)
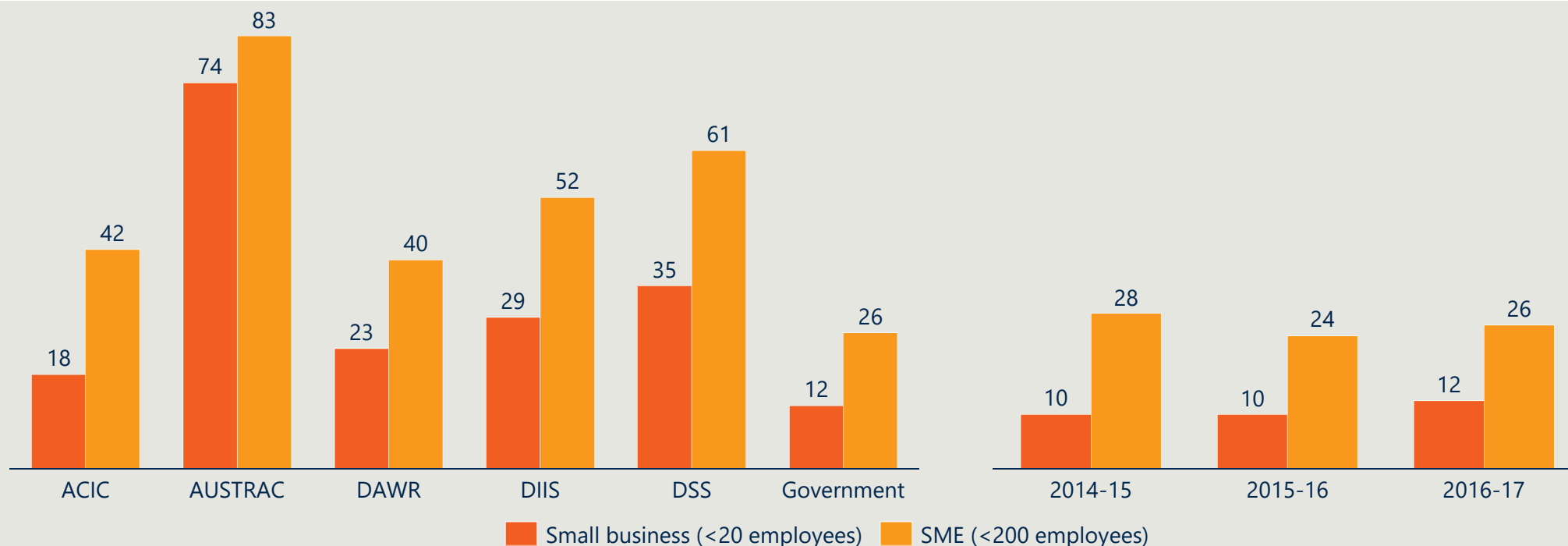
Source: Department of Finance, reported Finance data, *Statistics on Australian Government Procurement Contracts*. available from <https://www.finance.gov.au/procurement/statistics-on-commonwealth-purchasing-contracts> Note: Small Business is a subset of SME. An SME is defined as a business which has less than 200 employees and operates independently of any parent organisation for taxation arrangements. A small business is defined as a business with fewer than 20 employees.

Challenge solutions could deliver a range of economic and public value benefits

Consultation with challenge agencies indicates that if implemented, proof of concept solutions have the potential to deliver a range of economic and public value benefits, not only to their challenge agency, but to Australia more broadly. While these benefits are nascent and top of mind, it is important the Department works more actively with challenge agencies to understand and – where possible – measure these benefits ahead of the BRII impact evaluation which is scheduled for 2020/21 (Recommendation 5). It is important to note that the magnitude of potential benefits and the time over which they may take to be fully realised will vary by solution. The table below provides an indication of benefits that could potentially stem from each challenge.

Indication of potential benefits by challenge, as estimated by challenge agencies*

	Digitally enabled community engagement in policy and program design	Improve transparency and reliability of water market information	On-the-spot technology for measuring pyrethroid surface residue	Sharing information nationally to ensure child safety	Tracking the effect and value of information products
ECONOMIC BENEFITS	• Reduced cost of public consultation	• Reduced information asymmetry for water market participants by consolidating information in one place • Improved understanding of how the water market functions, leading to more competitive pricing and more efficient water allocations	• Significant avoided costs from better mitigation of biosecurity/public health risks • Reduced cost of current monitoring processes due to new technology	• Reduced costs of information sharing across jurisdictions • Potential for solution to be applied in other complex information sharing contexts	• More efficient targeting of resources to develop information products of greater value
PUBLIC BENEFITS	• More direct contribution to policymaking and public debate	• Increased community confidence in water markets	• Improved consistency and reliability of current vector monitoring processes	• Earlier identification of children at risk • More appropriately tailored interventions • Enhanced child safety	• More informed intelligence decisions
LIKELY BENEFICIARIES	• DIIS, DSS and other agencies that adopt the solution	• Water market participants • DAWR	• DAWR • Australian public	• Vulnerable families • Child protection authorities	• AUSTRAC and ACIC

Source: initial challenge applications. *Note: these initial high level estimates will require further validation and quantification by the Department and challenge agencies as soon as possible to strengthen the evidence base ahead of the impact evaluation.

Recommendations

1. The Department works with each challenge agency to increase the visibility of BRII's outcomes to date across Government and other key stakeholders between now and the conclusion of the pilot, to further enable the program's intended outcomes for Government.

5. The Department works more actively with challenge agencies to understand and – where possible – measure these benefits ahead of the BRII impact evaluation (which is scheduled for 2020-21). This will also help to communicate the potential benefits of BRII to other agencies that could be involved in future rounds of BRII.

Current program design and implementation

This section discusses how BRII has been implemented and managed to date, as well as the strengths and weaknesses of the current process.

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BRII currently addresses the needs for which it was designed

BRII has been appropriately designed and implemented to address the two distinct needs for which it was initiated (p. 14). As the program matures the extent to which BRII is addressing these needs will become clearer. However, if there is appetite to extend the reach of BRII, the Department will need to consider how it could be scaled up. It is important to note that the full extent of will be better assessed at the impact evaluation stage. The table below provides an overview of the extent to which BRII addresses each need, the program's reach and opportunities to extend the program.

		EXTENT TO WHICH BRII ADDRESSES NEED	PROGRAM REACH
IDENTIFIED NEED	**1. Government procurement is overly focused on risk minimisation which limits opportunities to procure and foster innovative ideas and technologies**	Each challenge has enabled enduring problems to be approached in completely new ways. Challenge agencies are yet to determine if they will procure the solutions. The visibility of the BRII amongst agencies' procurement teams is likely to be a key determinant of the extent to which BRII fosters innovative procurement practices. Current challenge agencies' procurement teams may have limited visibility of BRII, partly because the Department manages the grant process.	Only four agencies participated in BRII. However, a further three agencies (ACIC, FACS NSW and the ACT CSD) were involved in two of the challenges. Other agencies also gained organic exposure to BRII (e.g. QLD, NSW and VIC primary industries agencies through the water market challenge).
	2. Australian businesses lag behind their OECD peers in generating new-to-market innovations which hampers their international competitiveness	The BRII grant is sizeable and of sufficient value to enable SMEs to develop close-to-final prototypes. Presenting difficult, previously unsolved challenges to SMEs provides licence to innovate and necessarily increases the likelihood SMEs will develop new-to-market innovations. Working in sustained proximity to the potential end customer also gives SMEs the opportunity to design a product for a clearly defined market.	The number of SMEs involved in BRII is very small relative to other AusIndustry programs designed to foster innovation.

Source: Departmental briefing documentation.

The Department has been actively involved in all pilot stages

The Department has been actively engaged with stakeholders across all stages of the BRII. The figure below outlines the main roles that the Department's policy and program staff have played throughout the pilot.

Department roles across different stages of the BRII pilot

Challenge Development
- Coordinate challenge application process
- Work with agencies to scope challenges and answer enquiries

Marketing
- Coordinate BRII marketing campaigns and roadshows
- Manage content development for campaign materials (e.g. YouTube videos) and create content (e.g. BRII FAQs)

Application Assessment
- Manage the feasibility study and proof of concept assessment processes

Feasibility study and proof of concept stages
- Provide advice and support to SMEs and challenge agencies

Ongoing Administration
- Work with SMEs and challenge agencies to monitor progress and reporting
- Manage program budget, risk and data collection
- Capture emerging findings and iterate program design where appropriate
- Manage Ministerial/Secretary/ISA board briefings

BRII pilot staffing levels

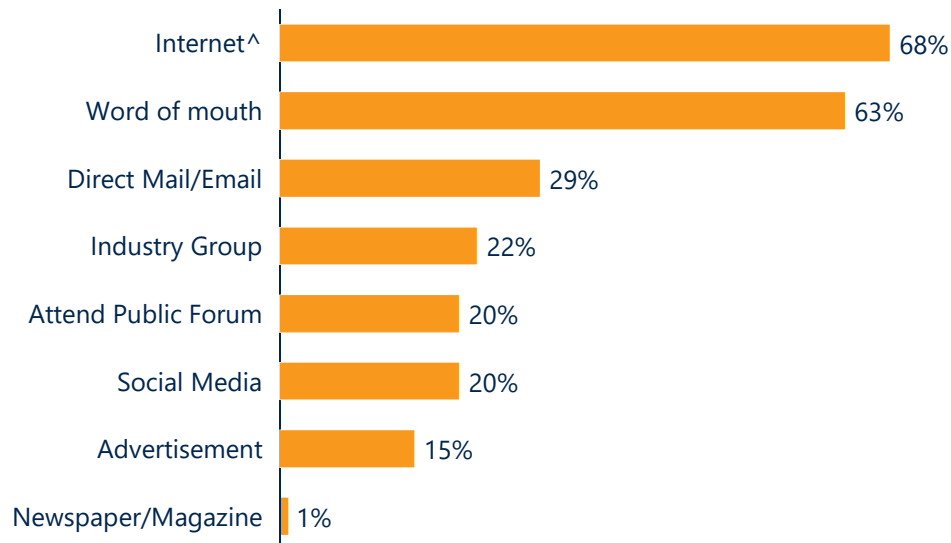| FY	Projected ASL
2015 16	0
2016 17	9.4
2017 18	5.5
2018 19	7.5
2019 20	4.1

Source: Department of Finance, BRII Costing Agreement, 2015

BRII employed multiple marketing channels to engage with SMEs

The Department spent $138,000 on marketing and promoting the BRII pilot over a three month period. The majority of these funds were spent on online advertising and media and communications plans for the program and each challenge. The Department also produced short videos explaining each challenge that were uploaded to the website business.gov.au and the BusinessGovAu channel on YouTube. The Department expended a total of $40,000 on digital engagement, Google ad words and search optimisation.

The most common ways that SMEs found out about the BRII pilot were via the internet and word of mouth.

How feasibility study grant applicants heard about the BRII (n=180)*

Channel	Percentage
Internet^	68%
Word of mouth	63%
Direct Mail/Email	29%
Industry Group	22%
Attend Public Forum	20%
Social Media	20%
Advertisement	15%
Newspaper/Magazine	1%

*Applicants were able to select multiple sources. ^Internet marketing of BRII included: text links; banner advertisements and promoted posts on Facebook and LinkedIn.

Source: BRII Program team, *Lessons learned*, 2017

Marketing and communication insights from the pilot

- Future rounds could make better use of the ISA Board and EPC members' personal and professional networks to promote future rounds of the BRII.

- The Department's standard AusIndustry grant marketing package may need to be tailored for any future BRII rounds to enable the Department and challenge agencies to market the BRII through specific channels (e.g. challenge agencies' stakeholders and the BRII mailing list).

- Informal feedback indicates that the BRII videos were well received and may have contributed to applicants' identification of the internet as the most common way they found out about the program.

- The popularity of the YouTube videos differed. Challenge 1 (On-the-spot technology for measuring pyrethroid surface residue) received 657 views and Challenge 5 (Sharing of information nationally to ensure child safety) received 374 views (as of 12 June 2018).
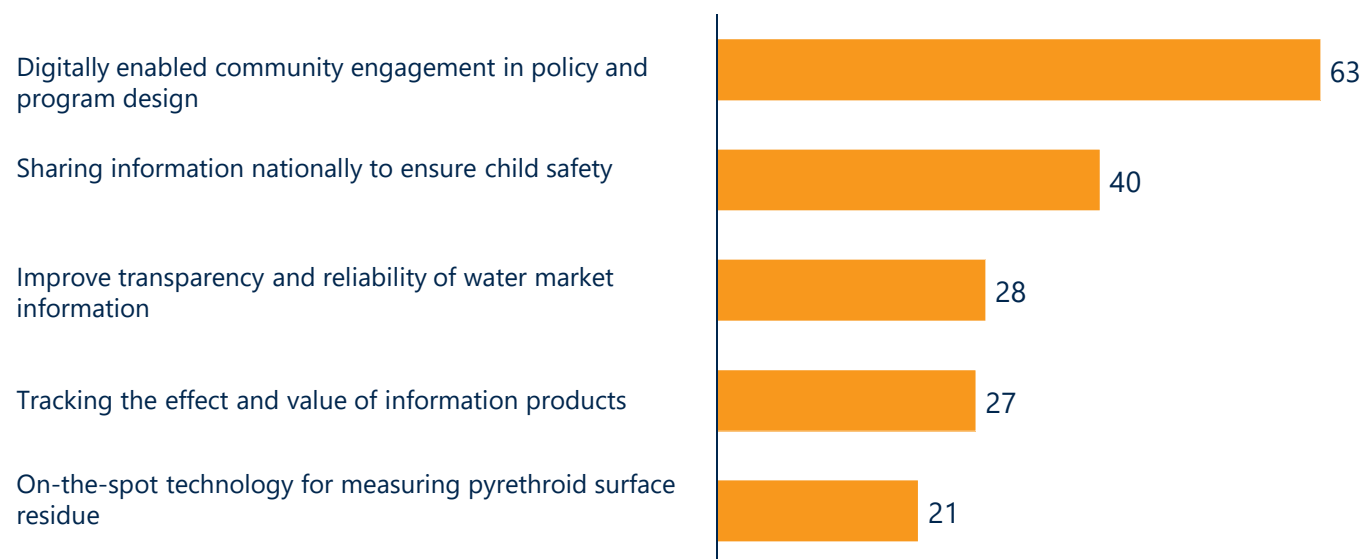
Source: BRII Program team, *Lessons learned*, 2017, interviews with ISA

180 SMEs applied for feasibility study grants

Applications for the BRII feasibility study opened in August 2016. 180 applications were received across the five BRII challenges. Some businesses submitted multiple applications proposing different solutions for the same challenge, or multiple applications across different challenges.

The joint DIIS and DSS challenge requesting a solution for digital community engagement in policy and program design received the most applications (63) followed by the DSS challenge for the development of an information system for ensuring child safety. Across the five challenges, 20 of the 180 SMEs that applied progressed to the feasibility study which equates to 11 per cent of all applicants.

Number of applications per challenge

Challenge	Applications
Digitally enabled community engagement in policy and program design	63
Sharing information nationally to ensure child safety	40
Improve transparency and reliability of water market information	28
Tracking the effect and value of information products	27
On-the-spot technology for measuring pyrethroid surface residue	21

Source: DIIS, *MS17-000177 BRII update Jan 2017 – Appendix A*, 2017.

Feasibility study merit criteria
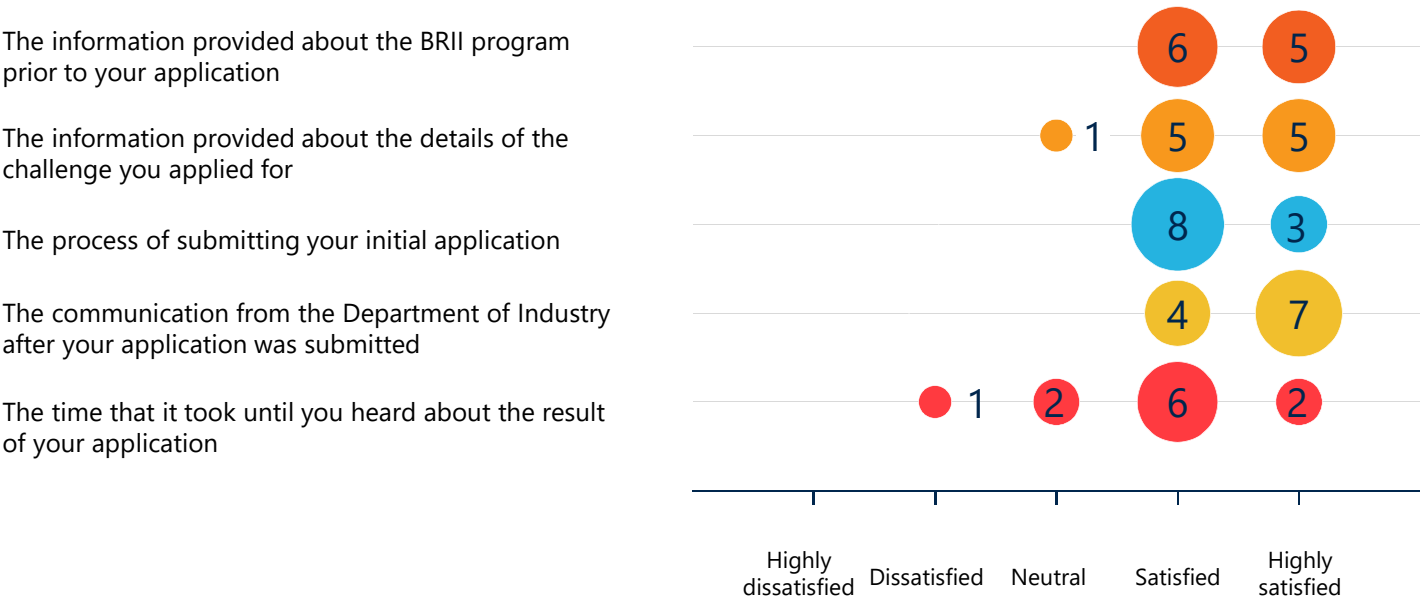
1. Extent to which the proposed solution meets the challenge

2. SME's capability and capacity to deliver the proposed solution to the challenge

3. Market opportunity – the market need for the solution within government and the future commercial potential of the solution in domestic and/or international markets

4. Value for money of the proposed solution given the level of funding sought

SMEs find BRII well designed and managed

There is broad consensus among proof of concept and feasibility study grant recipients, as well as challenge agencies, that BRII is well designed and implemented by the Department. Our review of program documentation and interviews with policy and program staff also support this finding, and indicate that BRII administration processes are well designed and efficient.

Only one SME has been highly dissatisfied with their overall experience in BRII. The majority of SMEs were satisfied with the initial application stage. **Appendix A** provides an overview of SMEs' engagement with the BRII pilot.

SMEs' satisfaction with the Initial Application Stage (n= 11)

	Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied
The information provided about the BRII program prior to your application				6	5
The information provided about the details of the challenge you applied for			1	5	5
The process of submitting your initial application				8	3
The communication from the Department of Industry after your application was submitted				4	7
The time that it took until you heard about the result of your application	1	2		6	2

Source: SME online survey

> *The BRII program has been very well designed and managed. I hope that the program will receive funding in future years to give other companies the opportunity to develop innovative solutions for the Australian and international market.*

> *The program is well designed and managed to deliver on the key goals of engaging SMEs with Government and stimulating the growth and development of SMEs.*

> *The Department of Industry support has been excellent. Even though the challenge agencies obviously still have their daily workload to contend with, they have also been very proactive in helping steer our solution.*

Source: SME online survey

35

BRII's assessment processes were transparent and well managed

This evaluation has found that the assessment of feasibility study and proof of concept grant applications were transparent and well managed. The assessment criteria were clearly defined and explained. The decision processes to award grants were also well documented.

One SME suggested the Department could have more clearly emphasised the equal weighting of the merit criteria, in particular, the need for the solution to be generalised 'over and above solving the client's problem'. Additionally, there was some dissatisfaction with the timeliness and quality of feedback at the end of the application and feasibility study stages, respectively. To address this, the Department could work with challenge agencies to increase the level of feedback SMEs are provided after the feasibility and proof of concept grants are awarded.

SME satisfaction with the feasibility study and/or proof of concept stage application processes

The time that it took to have your feasibility study assessed (n=11)

The feedback that you received about why you did not progress to the proof of concept stage (n=4)

The process of submitting the application for a proof of concept grant (n=7)

	Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied
The time that it took to have your feasibility study assessed		1	2	6	2
The feedback that you received about why you did not progress to the proof of concept stage	1		1	1	1
The process of submitting the application for a proof of concept grant				4	3
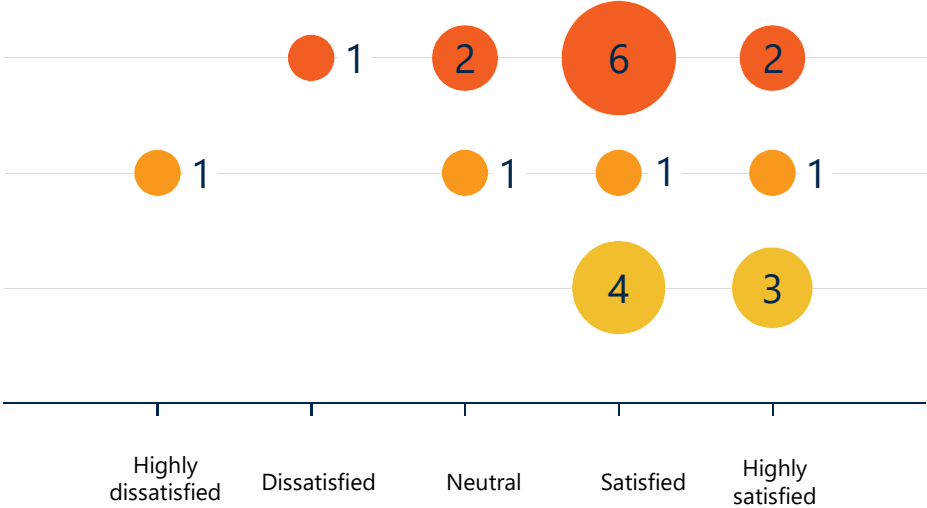
Source: SME online survey

SMEs are generally satisfied with the support they are receiving during BRII

SMEs are largely satisfied with the level of support they received from both the Department and their challenge agency during the proof of concept and/or feasibility study stages. SMEs have been particularly pleased with the level of administrative support provided by the Department's program team and the willingness of challenge agencies to connect SMEs to relevant areas of expertise within their respective departments.

Our consultations with challenge agencies and SMEs also indicate that both challenge agencies and the Department have maintained appropriate levels of separation between the grantees to ensure confidentiality of their respective solutions.

One SME indicated dissatisfaction with the support they are receiving as they develop their proof of concept ("The challenge agencies have been very disengaged and not willing to provide much input but rather want to leave it to us and wait to see if we 'get it right'").

SME satisfaction with the support they received across the feasibility study and/or proof of concept stages
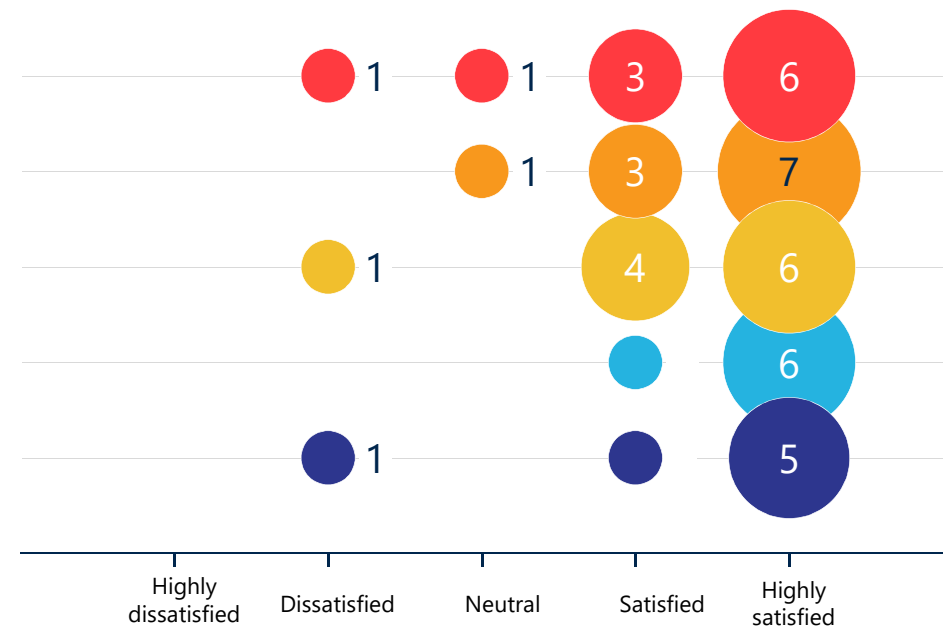
The information and support provided by your challenge agency during the feasibility study stage (n= 11)

The timeliness and quality of support you received from the Department of Industry as you developed the feasibility study (n= 11)

The feedback you received on the initial drafts of your feasibility study (n= 11)

The timeliness and quality of support you are receiving from the Department of Industry as you develop your proof-of concept (n=7)

The timeliness and quality of support you are receiving from your challenge agency as you develop your proof of concept (n=7)

	Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied
Challenge agency – feasibility		1	1	3	6
Department – feasibility			1	3	7
Feedback on drafts		1		4	6
Department – proof of concept				(small)	6
Challenge agency – proof of concept		1		(small)	5

Source: SME online survey

There were several timing issues at points during the pilot implementation

There were several points throughout the implementation to date of the BRII pilot that either took too long or did not allow sufficient time. These timing issues, along with recommended changes for any future rounds of the BRII are outlined in the figure below. In particular we recommend that the Department provides agencies with forewarning about forthcoming rounds and allows at least ten weeks for challenge applications to be developed (Recommendation 3). The feasibility study application assessment process should also be streamlined to reduce the burden of assessment on the EPC (Recommendation 4).

	CHALLENGE DEVELOPMENT	FEASIBILITY STUDY APPLICATIONS	FEASIBILITY STUDY	PROOF-OF-CONCEPT APPLICATIONS	PROOF-OF-CONCEPT
Timing challenges	• Agencies given one month to develop challenges • EPC/ISA took four months to assess and approve challenges	• Assessment process took three months due to two-pass assessment process	• SMEs would benefit from more time to investigate and quantify the market potential of the solution	• SMEs would benefit from more time to develop the proof of concept application	• Some SMEs have had delayed access to data
Suggested changes	• Allow ten weeks for challenge development • Allow ten weeks for challenge assessment • Build in an opportunity to brief ISA in greater detail on the proposed challenges	• Shorten assessment timeframes, whilst retaining opportunities for challenge agencies to gain value from interacting with EPC. This could be achieved by pairing an Accelerating Commercialisation Adviser with each challenge agency to undertake the initial assessment of feasibility study applications. This could help the challenge agencies to assess the commercial potential of the applications, reducing the burden on the EPC for evaluating commercialisation outcomes.	• Allow an additional four weeks for SMEs to complete and submit their feasibility study report	• Allow a further two weeks to develop proof of concept application	• Consider the complexity of data requirements before approving a challenge
Time allocation	• Increase time allocated to challenge development • Reduce time allocated to challenge assessment	↓	↑	↑	No change

Source: BRII program team, *Lessons learned*, 2017; SME and challenge agency interviews.

Recommendations

3. The Department provides agencies with forewarning about forthcoming rounds and allows at least ten weeks for challenge applications to be developed.

4. The Department reconsiders the timeframes for subsequent rounds of BRII, with a specific focus on streamlining the feasibility study application assessment process.

Performance assessment

This section discusses the mechanisms currently in place to measure the extent to which BRII's outcomes are being achieved and provides suggestions for improvement ahead of the Impact Evaluation.

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The Department collects much of the data outlined in the BRII Evaluation Strategy

The Department currently collects much of the data required to assess the BRII pilot's design and efficiency (e.g. program documentation, past research and administrative data and documentation) in line with the recently completed BRII Evaluation Strategy. The Department has also started to keep a log of lessons learned during the pilot. The majority of this policy and program documentation is centralised, complete and well maintained and the Department has done a thorough job of recording key decisions regarding program design.

It will be important to maintain this level of document management following the organisational restructure that will see a change in the composition of the BRII program team. It may also be timely and valuable for the program staff to hold another 'lessons learned' workshop.

Currently, some data relating to SME outcomes is collected through BRII program documentation, such as feasibility study and proof of concept applications, challenge meeting group notes and milestone reports. However, outside of formal reporting requirements, systematic aggregation of this information is limited – most of it is contained within PDFs and emails or not captured at all.

The table below provides a high level assessment of the extent to which data outlined in the BRII Evaluation Strategy is being collected and identifies some key gaps that could be addressed ahead of the impact evaluation.

Assessment of current evaluation data collection practices

Focus area	Suggested data type	Key gaps	Status
DESIGN	• Program documentation and/or literature reviews		🟢
EFFICIENCY	• Program administrative data • Surveys, interviews and comparative data		🟢
OUTCOMES AND IMPACT	• Program administrative data • Surveys, interviews and comparative data	• Data on emerging commercialisation outcomes beyond status reports (see next page) • Data to measure changes in agency procurement and innovative capacity • Economic and public value benefits of proposed solutions.	🟡
LESSONS LEARNED	• Surveys, interviews and comparative data	• Lessons learned by challenge agencies	🟢

🟢 Most data is readily available, systematically collected and collated

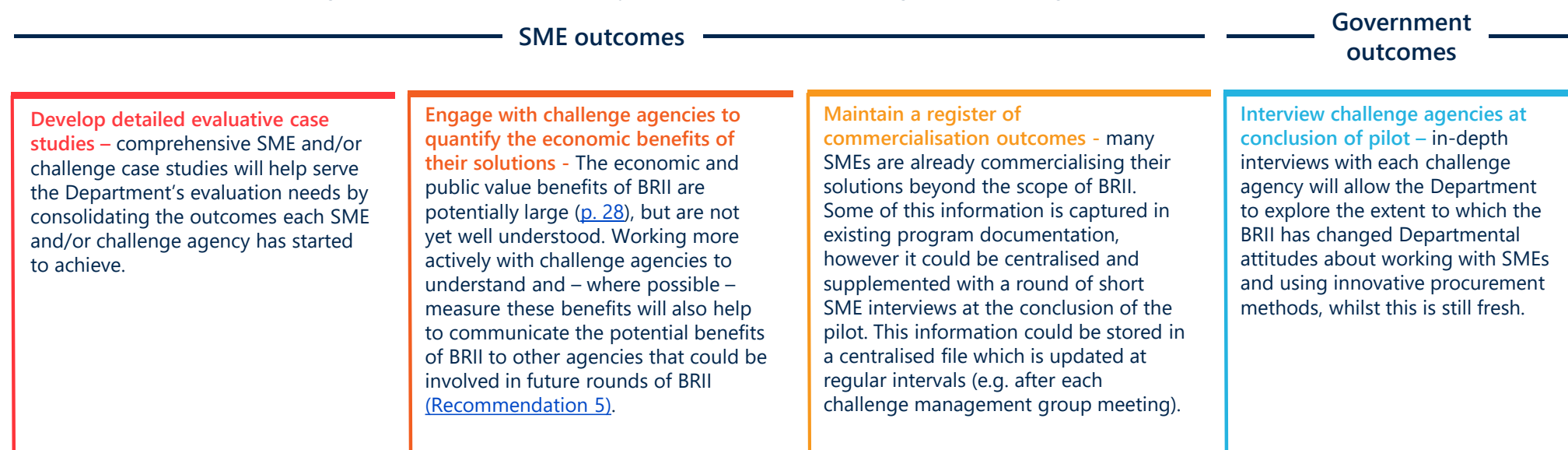🟡 Some data is collected on an ad-hoc basis, but not systematically collated

🔴 No data is currently collected

Source: DIIS, 2018, *Business Research and Innovation Initiative Evaluation Strategy*

There is scope to augment current data collection practices ahead of the impact evaluation

This evaluation has found that many long-term outcomes for SMEs are already starting to be realised. Many SMEs have already increased their innovative capacity* and are actively pursuing commercialisation opportunities. However, systematic collection of this data is limited and there are opportunities to augment current data collection practices to focus more on SME outcomes. Capturing this information whilst it is fresh and top-of-mind for both the SMEs and challenge agencies will have the following benefits:

1. It will enable the Department to build a comprehensive evidence base to evaluate the BRII's SME outcomes, which can be supplemented by longer-term outcomes data collected during the impact evaluation.

2. It will help to mitigate the inherent risk of staff turnover. The impact evaluation is scheduled for 2020-21 – approximately two years after the conclusion of the BRII pilot – by which time many SME and challenge agency staff may have moved on to new roles.

3. It will assist the Department to communicate the BRII's benefits to prospective SMEs and challenge agencies, which in turn will help maintain momentum for possible future rounds of BRII.

The Department should also give further consideration to how it will measure the BRII's outcomes for Government, particularly regarding cultural change in procurement processes. The diagram below identifies four ways the Department can strengthen its existing evidence base.

SME outcomes			Government outcomes
Develop detailed evaluative case studies – comprehensive SME and/or challenge case studies will help serve the Department's evaluation needs by consolidating the outcomes each SME and/or challenge agency has started to achieve.	**Engage with challenge agencies to quantify the economic benefits of their solutions** - The economic and public value benefits of BRII are potentially large (p. 28), but are not yet well understood. Working more actively with challenge agencies to understand and – where possible – measure these benefits will also help to communicate the potential benefits of BRII to other agencies that could be involved in future rounds of BRII (Recommendation 5).	**Maintain a register of commercialisation outcomes** - many SMEs are already commercialising their solutions beyond the scope of BRII. Some of this information is captured in existing program documentation, however it could be centralised and supplemented with a round of short SME interviews at the conclusion of the pilot. This information could be stored in a centralised file which is updated at regular intervals (e.g. after each challenge management group meeting).	**Interview challenge agencies at conclusion of pilot** – in-depth interviews with each challenge agency will allow the Department to explore the extent to which the BRII has changed Departmental attitudes about working with SMEs and using innovative procurement methods, whilst this is still fresh.

*We define innovative capacity as the capacity of an SME to undertake innovation activities which may include, but not be limited to: expenditure on R&D; the introduction of new or significantly improved goods or services, operational or organisational processes; and the adoption of new or significantly improved marketing methods.

Future program design and implementation considerations

This section discusses possible improvements to BRII that could be implemented in future rounds.

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Changes to program design and implementation would likely be required if BRII is scaled up in the future

The Innovation and Science Australia board recommended "continuing and potentially expanding" BRII in the recent *Australia 2030: Prosperity through Innovation* (a recommendation that Government 'supports in principle').

If Government is to expand the scale of future iterations of BRII, it will need to manage a range of challenges associated with:

1. Funding the program

2. Maintaining a pipeline of suitable challenges

3. Increasing SME engagement levels

4. Managing the program with relatively fewer resources.

Potential future changes the Department could consider to address these challenges are provided on the right.

Potential future changes to BRII

1. Funding the program
- See next page

2. Maintaining a pipeline of suitable challenges
- Allow challenges to be mounted on a rolling basis to maintain momentum
- Work actively with agencies to increase the visibility of BRII's outcomes to date across Government (Recommendation 1)
- Work closely with Government Agencies to encourage them to submit innovation challenge/s for each round of BRII or create a quota of agencies to be involved in BRII each year
- Engage with the Department of Finance and DTA to share lessons

3. Increasing SME engagement
- Increase the number of challenge rounds to increase SME participation
- More actively cross-promote BRII through existing Departmental programs
- Utilise ISA and EPC networks more broadly

4. Managing the program with relatively fewer resources
- Develop more online 'self serve' material (e.g. FAQs, webinars etc.) for SMEs and challenge agencies about how best to work with one another

There are different avenues for funding a potential expansion of BRII

Options for funding a potential expansion of BRII range from Government continuing to fund the program through the Department to the introduction of whole-of-Government quotas – as per the SBIR model in the United States. A high level summary of potential models is provided below – ordered by degree of change from the status quo and scale of the potential funding that would be available to BRII. If the Government considers changing BRII in the future, it will be important to maintain integrity to the model to ensure that all participants experience a high quality of support (Recommendation 8).

The UK Government's experience with funding the SBRI may also hold some useful lessons for the BRII program. When the SBRI was first launched in 2001, agencies were encouraged to advertise R&D contracts suitable for SMEs on an SBRI website. However, uptake levels remained low. The SBRI was successfully relaunched in 2009, under a model more similar to the SBIR. Innovate UK now works closely with other agencies to help them establish SBRI competitions, and in some cases provides co-funding to encourage agency participation.

Different models for funding a potential expansion of BRII by degree of change and scale of potential budget

DEGREE OF CHANGE

LOW → HIGH

Model	STATUS QUO	CO-FUNDING	ORGANIC GROWTH	SELECTED TARGETS	HARD TARGETS
Overview	Government continues to fund BRII through the Department.	The Department continues to manage BRII but funding is provided in part by the relevant challenge agencies.	The Department supports other agencies to develop and implement BRII or similar programs like Defence's *Innovation Hub,* that are funded by the relevant agency – while still allowing ISA and EPC to play active advisory and assurance roles.	Government identifies selected agencies that would then allocate a proportion of their R&D budget to challenge based procurement from SMEs.	Government mandates that all agencies over a certain size allocate a proportion of their R&D budget to challenge-based procurement from SMEs.
Analogous programs			UK SBRI		US SBIR

BRII could be strengthened by leveraging the expertise of existing Government programs

For any future iterations of BRII, there may be value in considering how the program could make more active and intentional use of existing programs funded by the Department and other relevant Government agencies, to allow SMEs to access an even broader range of expertise, support and advice (Recommendation 6). This in turn could have a multiplier effect on the program's commercialisation outcomes. We do not recommend that BRII SMEs access additional grant funding under these programs while they are receiving support under either stage of BRII.

If this recommendation were to be adopted, we note that the Department would need to work closely with other programs' policy owners to consider the implications of extending support to BRII recipients. The diagram below shows where potential points of crossover with BRII could occur.

Points where all SMEs supported by BRII could be provided with access to Department programs by stage of solution development

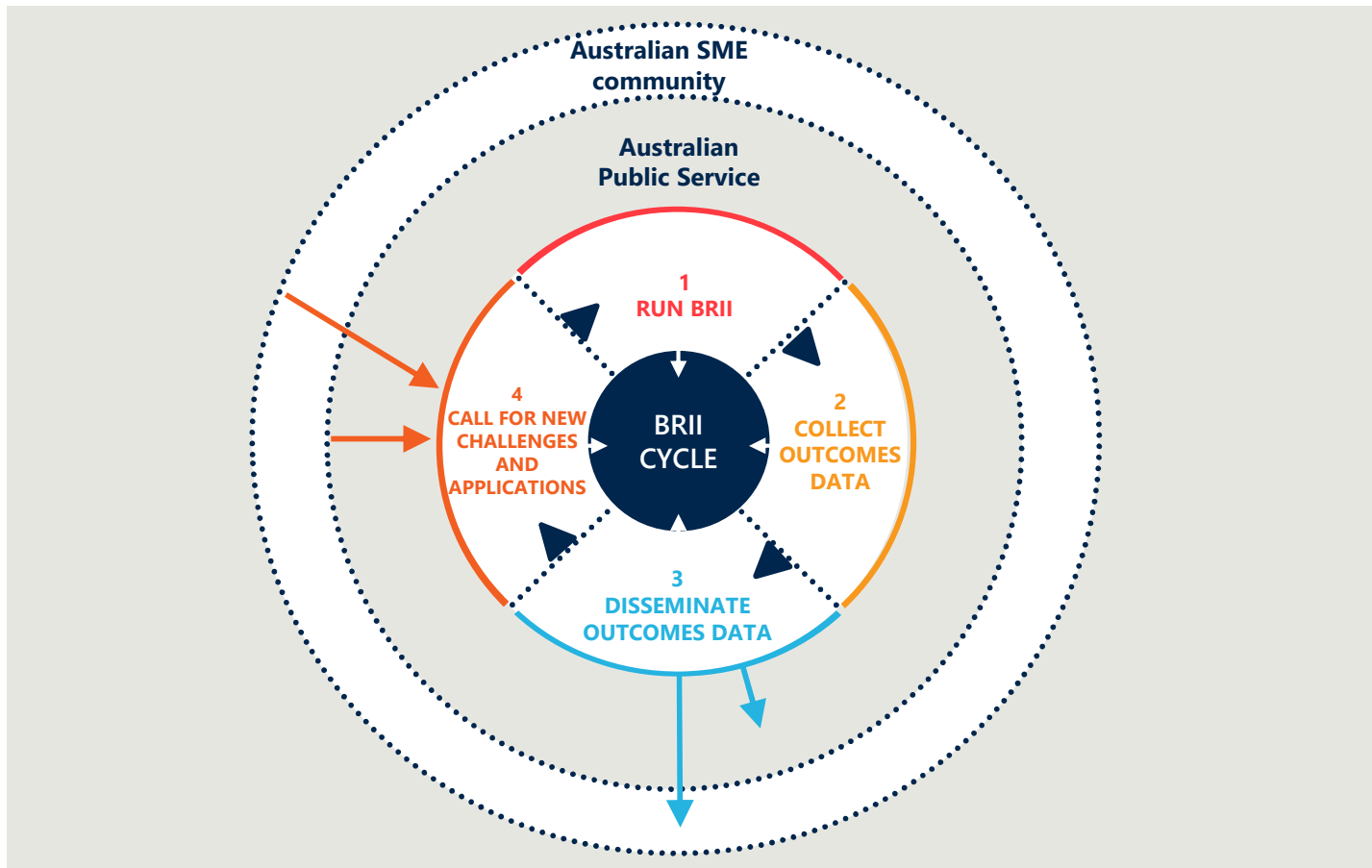| UNDERSTANDING THE MACHINERY OF GOVERNMENT	PARTNERING WITH EXTERNAL RESEARCHERS	DEVELOPING THE SOLUTION	INVESTIGATING AND PURSUING COMMERCIALISATION PATHWAYS	SEEKING FUNDS TO SCALE UP SOLUTIONS	MARKETING CHALLENGE SOLUTIONS INTERNATIONALLY
Entrepreneurs' Programme (Business Management)*	Entrepreneurs' Programme (Innovation Connections)	R&D Tax Incentive^	Accelerating Commercialisation (Commercialisation Guidance) Growth Centres (when applicable)	Early Stage Venture Capital Limited Partnerships	Entrepreneurs' Programme (Business Management) Export Market Development Grants (Austrade)

*If necessary, the Department could explicitly identify Industry Partner advisers that have expertise in working with Government and/or build the capabilities of a small number of advisers. ^We note that whilst BRII grantees may not be able to claim the R&D Tax Incentive for expenditure incurred using BRII grant funding the R&D Tax Incentive could be beneficial for further commercialisation of the solution beyond the proof of concept stage.

Improved communication of BRII's benefits will help to achieve the objective of cultural change in procurement

Communicating the outcomes of BRII across government and the SME community in an engaging way will be crucial to the success of potential future rounds of BRII (Recommendation 5). Communication materials should focus on the tangible benefits SMEs and challenge agencies have gained from participating in BRII, and should be developed close to the end of the proof of concept stage to maintain momentum for subsequent BRII rounds. The diagram below illustrates how this communication can be built into the BRII cycle. Example communication channels are provided on the right.

Process for communicating the benefits of BRII

Australian SME community

Australian Public Service

1 RUN BRII

BRII CYCLE

2 COLLECT OUTCOMES DATA

3 DISSEMINATE OUTCOMES DATA

4 CALL FOR NEW CHALLENGES AND APPLICATIONS

Well defined challenges are crucial to the success of BRII

There is broad consensus across all stakeholder groups that successful challenges clearly articulate the problem they have been designed to solve, but remain open to a range of solutions. In addition to providing prospective challenge agencies with more time to develop their proposals, the Department should work more actively with agencies to help them turn their *problems* into *challenges* (Recommendation 2). Our consultations indicated that challenge agencies would particularly value assistance in designing the challenge to meet the 'Market opportunity' criteria – the market need for the solution within government and the future commercial potential of the solution in domestic and/or international markets. The diagram below provides an overview of support mechanisms the Department could consider using to increase the assistance and expertise available to agencies at various stages of the challenge development process.

Proposed challenge development process

	BRII ANNOUNCED	PROBLEM IDENTIFICATION	CHALLENGE DEFINITION	SUBMISSION
Step	Agencies invited to develop challenge proposals	Agencies identify problems they would like to solve through BRII	Agencies turn their problem into a challenge that meets the BRII challenge guidelines	Agencies submit well-defined challenges that clearly articulate the problem
Assistance	BRII program team provides guidance material about the BRII program	BRII program team provides guidance material about the design features of a good challenge and how to clearly articulate it to attract high quality innovative solutions	Workshop with BRII program team and EPC member **or** Accelerating Commercialisation adviser to help agencies consider the commercialisation aspect of the challenge* Agencies given opportunity to follow up with Accelerating Commercialisation adviser to refine their challenge proposal	BRII program team provides guidance about submission process as required

*We note that the Department would need to further consider the feasibility and practical implications of leveraging the Accelerating Commercialisation advisers who are employed by external Industry Partners under the Entrepreneurs' Programme.

Recommendations

2. The Department maintains an active role in working with agencies to identify, scope and design challenges for any future rounds of BRII to maintain a consistently high quality of challenge scope and design.

6. The Department investigates the feasibility and potential benefits of more closely linking SMEs that participate in any future rounds of BRII with other relevant government programs including AusIndustry programs.

7. The Department ensures that the knowledge base developed through the BRII pilot is appropriately captured and packaged so that it can be easily accessed by any future BRII participants and potentially used to supplement other related resources for SMEs.

8. The Department clearly articulates the features and rationale of the BRII model and any key lessons learned at the conclusion of the pilot. This will ensure that any other agencies that may wish to adopt a similar challenge-based model can, while preserving the intent and integrity of the program.

Appendix A – Outcomes by SME

Digitally enabled community engagement in policy and program design

DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE and **DEPARTMENT OF SOCIAL SERVICES**

Digitally enabled process to provide a faster, lower cost and broader based consultation and co-design process to enable business and community organisations to participate in the design of policies and programs by Australian Government Agencies.

	COLLABFORGE	LIKELY THEORY
Solution	A web-based app that will assist users to tailor engagement plans. Using Artificial Intelligence (AI), Scaffle contains tools that will help identify potential audiences to consult, set a budget and encourage users to consider the aims of their engagement at each step throughout the planning stage.	Technological platform of tools to support a variety of engagement contexts, processes and methodologies that work with current consultative approaches. It will help identify, reach and manage relevant stakeholders, uncover expertise, find consensus, and apply modern data analysis and reporting techniques with management tools for the moderation, communication and audit of the engagement process.
Grant value	$999,800	$997,550
Grant period	12 months	12 months
Expected launch	August 2018	October 2018
Collaborations	Subcontracted software company	Data61 CSIRO, Centre for Deliberative Democracy University of Canberra, Engage2
IP applications beyond BRII	Exploring use of product by other Commonwealth agencies.	Exploring use of product with other Commonwealth countries, Australian universities and organisations. It will deliver the technology solution for the APS review.
Progress	Proceeding to plan and budget	Proceeding to plan and budget
Impact on business	Team has upskilled through exposure to high quality software developers used as contractors. They found it somewhat costly forgoing consulting work to resource BRII.	Provided Likely Theory necessary funding to apply existing technology in a targeted way.
Key takeaways	"Difference with BRII – have developed an actual product...we have a re-sellable product that we can continuously take to market."	"Feel very much like we're part of the team and government...people are willing to talk and connect you to other people. From a commercialisation perspective that is so valuable."

Improve transparency and reliability of water market information

DEPARTMENT OF AGRICULTURE and WATER RESOURCES

MARSDEN JACOB ASSOCIATES

Improve transparency and reliability of water market information to increase market participation by water licence holders and enhance consumer confidence in Australia's water markets.

Solution	The WaterFlow website and app solution brings up-to-date water market information into a single location. WaterFlow makes checking the water market quick and simple with real-time notifications of pricing changes, storage levels, seasonal determinations and more. Marsden Jacob are keen to launch prior to summer which is the main water trading period.
Grant value	$1m
Grant period	18 months
Expected launch	November 2018
Collaborations	N/A
IP applications beyond BRII	WaterFlow website and app will be open to the public. They are speaking with businesses in the water market sector.
Progress	Proceeding to plan and budget
Impact on business	Injection of funding enabled development of apps and websites previously too expensive to develop. Hired 2 staff members.
Key takeaways	"[We have] very literally [developed] apps that otherwise would not have been done"

On-the-spot technology for measuring pyrethroid surface residue

DEPARTMENT OF AGRICULTURE and WATER RESOURCES

On-the-spot measurement technology to determine whether pyrethroid residues on interior aircraft surfaces are high enough to kill mosquitoes and other insects.

	IUGOTEC	ATAMO
Solution	Portable Insecticide Compliance (PICo) device based on ion mobility spectrometry that will be able to measure pyrethroid residues on various internal surfaces of aircrafts. The design and capabilities of the analysing unit have attracted great interest from DAWR, as it may be useable in other contexts in the biosecurity operations sphere.	Hand held portable automated spectrometer system comprising of a sampler device and a spectrometer operating on UV-vis technology that will be able to measure pyrethroid residues on various internal surfaces of aircrafts.
Grant value	$997,785	$1m
Grant period	17 months	14 months
Expected launch	March 2019	December 2018
Collaborations	Queensland University of Technology and Tofwerk AG, Switzerland	Chemsearch Consulting, Professor Allan McKinley University of Western Australia, Plastics Moulding and Tooling Australia
IP applications beyond BRII	Considering applications in broader biosecurity, ag-tech and defence sectors.	Collaborating with Innovative Vector Control Consortium (IVCC) who was selected by DFAT to receive $18.75 million to develop and disseminate vector control technologies for malaria and other vector borne diseases.
Progress	Proceeding to plan and budget	Proceeding to plan and budget
Impact on business	Purchased capital equipment.	Hired three graduates.
Key takeaways	"It's basically given us much better capability early on – and faster than we would have been able to achieve otherwise."	"Encouragement to engage with broader markets is a key feature of the BRII program and something we were very keen to do."

Sharing information nationally to ensure child safety

DEPARTMENT OF SOCIAL SERVICES

Innovative technology that allows child protection authorities to identify when a child at risk, or an adult of interest, is known to child protection authorities in other jurisdictions.

	FACTIL	ITREE
Solution	A secure, scalable, inter-agency data sharing system that will provide real-time and partial-match search functionality for person, location and relationship information between Australian state and territory child protection systems to identify when a child at risk or an adult of interest has moved over state boundaries and is known to other child protection jurisdictions.	An innovative software solution which offers integrated search and alarm features. It enables Australian state and territory child protection agencies to share vital information about children at risk and adults of interest when either has moved over state boundaries.
Grant value	$857,741	$933,921
Grant period	12 months	14.5 months
Expected launch	November 2018	February 2019
Collaborations	Informal collaboration with researchers at University of Melbourne and the Australian National University	N/A
IP applications beyond BRII	Considering other applications in different government jurisdictions.	No plans, but will look to commercialise following BRII.
Progress	Factil was offered an extension due to delays accessing data from Challenge agencies. Challenge agencies were somewhat concerned that milestones were not fully met.	Proceeding to plan and budget
Impact on business	Will become the main part of business.	Will complement existing products.
Key takeaways	"We were passionate about our methodology and our approach, but hadn't got the market yet to be knocking at the door. Completely transformative."	"The program gives you a lot more freedom to innovate."

Tracking the effect and value of information products

AUSTRAC

Using "smart information products" to track the effect and value of information products through the life of the information.

	ATRAXIUM	HOUSTON KEMP
Solution	A blockchain-backed platform designed to securely capture feedback on the value of information products. It achieves this by providing a new approach to feedback collection by combining automated metadata from information products and direct feedback from recipients.	'InfoTrac' is a decentralised file sharing platform that uses distributed ledger technology (e.g. blockchain) to provide immutable information product tracking and valuation. Houston Kemp is developing natural language algorithms to identify relationships between information products and support product valuation and user recommendations.
Grant value	$961,000	$1m
Grant period	14 months	12 months
Expected launch	January 2019	September 2018
Collaborations	N/A	N/A
IP applications beyond BRII	Considering applications of technology in banking sector and broader intelligence community.	Extremely confident there will be further applications beyond scope of BRII, which will be pursued at a later date.
Progress	Proceeding to plan and budget	Proceeding to plan and budget
Impact on business	Employed 3-4 people as subcontractors.	N/A
Key takeaways	"We couldn't ask for a better platform to build something, prove our worth and go on and turn it into a sustainable business providing a platform to multiple industries."	"Perfect example of well-directed private sector resources at something that's a genuine need...it's a really savvy way of encouraging innovation."

Appendix B – Case studies

ATAMO – On-the-spot technology for measuring pyrethroid surface residue

Company and solution overview

Atamo was established in 2003 and specialises in developing professional electronic engineering solutions. Over the course of the feasibility and proof of concept stages, Atamo has developed a hand-held portable automated spectrometer system to measure pyrethroid residues on various internal aircraft surfaces. Atamo has collaborated with several individuals and companies to develop this solution, including researchers who helped to test and refine technical elements of the initial design, and several businesses that helped to prototype, produce, and further test the solution.

Outcomes to date

As a result of BRII, Atamo has been able to expand its innovative capacity and access new commercial opportunities. The proof of concept funding has enabled Atamo to fund its R&D at a scale they 'wouldn't have been able to' achieve without the grant, and has provided the company the certainty needed to employ three graduates. Atamo has identified several applications of their solution beyond the scope of the BRII challenge, for which it has already started to pursue commercialisation pathways. The company has joined with the Innovative Vector Control Consortium (IVCC) in a Product Development Partnership funded by DFAT to develop and disseminate vector control technologies for malaria and other deadly mosquito-borne diseases.

Key takeaways from their experience with BRII

Atamo 'was very impressed by the structure of the program from the beginning' and has found the administrative processes involved 'very reasonable'. Atamo has particularly valued the opportunity to have 'direct engagement with a serious customer' and the encouragement they have received to engage with broader markets, beyond the scope of the BRII. Atamo also values the 'open' and 'enthusiastic' engagement it has experienced from the Department of Agriculture and Water Resources, and notes that challenge agency engagement is likely to be crucial to the success of the BRII.

> " For many years when people have asked me what government can do to help, the answer is to be a customer. "

> " We have been able to move to a slightly larger scale than otherwise would have been. "

> " It's been a much easier engagement than going through the normal processes. "

LIKELY THEORY - Digitally enabled community engagement in policy and program design

Company and solution overview

Likely Theory was established in 2015, specifically for the BRII. Over the course of the feasibility study and proof of concept stages, Likely Theory collaborated with data scientists at CSIRO's Data61, engagement specialists at Engage2 and research experts at the Institute of Governance at the University of Canberra, to develop *Converlens,* a modern discussion and insights platform for government agency engagements that is powered by AI to make engaging with the right participants more simple and less costly.

Outcomes to date

Participating in BRII has enabled Likely Theory to rapidly scale up and quickly transform technology they were 'developing in the background' into a specific application targeted to the challenge. As a result, Likely Theory is well positioned to start pursuing commercialisation pathways. The company recently secured a contract with PM&C to use their *Converlens* engagement platform for the APS Review, and is actively exploring opportunities to develop commercial partnerships with other governments and organisations. Specifically, the company is collaborating with Warwick Business School in the UK, Curtin University in Western Australia and discussing future trials with governments both domestically and abroad. In addition, Likely Theory intends to explore how *Converlens* can be used more broadly by organisations to communicate internally with staff.

Key takeaways from their experience with BRII

Likely Theory regards the BRII as a program that puts SMEs in a 'privileged position with flexibility and freedom' to overcome one of the biggest hurdles facing SMEs – the ability to expand their business without losing equity, which is traditionally required to generate capital. They have also valued the close engagement with government as a customer, noting that 'one of the biggest challenges from a start up perspective is meeting with customers.' Likely Theory did note that they have engaged differently with their respective challenge agencies. Whilst Likely Theory engaged with the Department of Industry, Innovation and Science at a strategic level, due to its involvement with the Open Government Partnerships team, they noted the Department of Social Services has been more directly focused on solution delivery.

> " [Our solution was] quite new, cutting edge – weren't sure if government would go for it but they did. "

> " [BRII] gives you the opportunity to fund and scale up and develop quickly. "

> " It's absolutely valuable and a fantastic experience. "

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ITREE - Sharing information nationally to ensure child safety

Company and solution overview

Itree was established in 1996. It is based at the University of Wollongong's Innovation Campus, where it specialises in intelligent solutions for safety, regulation, compliance and enforcement. Over the course of the feasibility study and proof of concept stages, the company has developed an innovative software solution that enables Australian state and territory child protection agencies to share vital information about children at risk and adults of interest when either has moved over state boundaries.

Outcomes to date

Itree is a well established company that already has several technology offerings in the market. However, they believe the solution they have developed through BRII has the potential to 'complement and potentially exceed' their existing solutions. Whilst Itree does not currently have concrete plans to commercialise their product it will 'actively seek potential opportunities' to apply the solution beyond the context of the BRII challenge, at the conclusion of the Programme. With this in mind, they are deliberately designing the solution to be 'configurable and extendable'.

Key takeaways from their experience with BRII

Overall, Itree found BRII a valuable experience, commenting 'the program is a great idea, and we have loved to be a part of it and start this amazing product which we hope really provides value to the community.' BRII has not changed the way Itree works with government, however it found that their engagement with government through BRII differed to their usual engagement: 'typically in a commercial problem, the government agency more directly influences how it should work... you're not usually given time and space to do this.' Itree suggested several tweaks to BRII could have improved their experience. Namely, allowing companies to use a blended rate when claiming salary costs to make project management easier, and ensuring that access to data is thought about in advance so that it is available at the commencement of the proof of concept stage – there were some delays in accessing the data, due to its sensitive nature.

" Access to real data is critical to proving the solution. "

" The program gives you a lot more freedom to innovate. "

" We built this from the ground up – it's a new, innovative thing. "

Appendix C – Program details

There were five successful challenges

The average grant value at the feasibility study stage was $92,446. The average grant value at the proof of concept stage was $971,977

	Challenge	Brief Description	Challenge Agency	Feasibility study SMEs	Average Feasibility Grant Value	Proof of concept SMEs	Average proof of concept grant value
	Digitally enabled community engagement in policy and program design	Digitally enabled process to provide a faster, lower cost and broader based consultation and co-design processes to enable business and community organisations to participate in the design of policies and programs by Australian Government Agencies.	Department of Industry, Innovation and Science and Department of Social Services	• Crawford Kaye • Likely Theory • Futuregov • Collabforge	$89,117	• Collabforge • Likely Theory	$998,675
	Improving transparency and reliability of water market information	Improve transparency and reliability of water market information to increase market participation by water licence holders and enhance consumer confidence in Australia's water markets.	Department of Agriculture and Water Resources	• Civic Ledger • Aither • NGIS • Marsden Jacob Unit Trust	$94,456	• Marsden Jacob	$1,000,000
	On-the-spot technology for measuring pyrethroid surface residue	On-the-spot measurement technology to determine whether pyrethroid residues on interior aircraft surfaces are high enough to kill mosquitoes and other insects.	Department of Agriculture and Water Resources	• Atamo • AUSSI Systems • Panorama Synergy • Micropace • Iugotec	$91,542	• Atamo • Iugotec	$998,893
	Sharing of information nationally to ensure child safety	Innovative technology that allows child protection authorities to identify when a child at risk, or an adult of interest, is known to child protection authorities in other jurisdictions.	Department of Social Services	• Factil • Itree • Leading Directions	$99,730	• Factil • Itree	$895, 831
	Tracking the effect and value of information products	Using "smart information products" to track the effect and value of information products through the life of the information.	AUSTRAC	• Avinium • Gosource • Houston Kemp • Atraxium	$90,419	• Atraxium • Houston Kemp	$980,500

Source: Feasibility study grant agreements; proof of concept grant agreements

Appendix D – Glossary

Glossary of key terms

Glossary of key terms

Abbreviation	Term
ANSZIC	Australian and New Zealand Standard Industrial Classification
BRII	Business Research and Innovation Initiative
EPC	Entrepreneurs' Programme Committee
ISA	Innovation and Science Australia
NISA	National Innovation and Science Agenda
SBIR	Small Business Innovation Research program
SBRI	Small Business Research Initiative
SME	Small-Medium Enterprise