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EVALUATION OF THE SCIENCE MEDIA CENTRE

Final Report

An independent evaluation for the Ministry of Business, Innovation and Employment

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EXECUTIVE SUMMARY

The purpose of the SMC is to promote accurate, evidence-based science reporting

The Science Media Centre (SMC) exists to *facilitate and strengthen links between the media and science community*, for the purpose of promoting accurate, evidence-based reporting on science and technology.[1] They do this by providing media-training for scientists and science-training for reporters; and by making science-based commentary and contacts available to the media in response to breaking news and issues of interest to New Zealand.

The SMC has an annual operating cost of around $1,000,000. MBIE funds the SMC through its Nation of Curious Minds portfolio at a rate of $713,000 per year. Most of the shortfall is made up by its host organisation, Royal Society Te Apārangi (Royal Society), and a small amount of income is generated from other sources. The SMC services are delivered by a four-person team (also 4FTE), including a Director and three Media advisors.

Since the SMC was established in 2008,[2] a lot has changed:

- Journalists are under increasing pressure – brought on by the challenges to the commercial model for funding mainstream news and the shift to a continuous news cycle
- There is more information available to the public, including a rise in the global phenomena of 'fake news' and other misinformation or disinformation that cannot be trusted
- The public is increasingly consuming its news through online platforms, including global media outlets and social media, where mis/disinformation are more prevalent
- New Zealand has experienced numerous significant events, where science can provide insights that will help New Zealanders to understand what has happened and/or how to respond – including the current COVID-19 pandemic, Whakaari White Island eruption and MBovis outbreak.

Independent evaluation to provide assurance that the SMC meets its objectives and delivers value

The SMC was last reviewed in 2012.[3] The COVID-19 pandemic and other recent events have shown that New Zealand needs accurate and clear science-reporting in our mainstream media now more than ever. MBIE commissioned MartinJenkins to undertake an independent evaluation that will give assurance that their investment in the SMC is facilitating and strengthening links between the media and the science community, and increasing public awareness and coverage of science; and to provide

1 Combines the purpose stated in Terms of Reference and aim stated on the SMC website homepage, accessed 04 November 2020.

2 The SMC was established on 1 July 2008 as part of the "Engaging New Zealanders with Science and Technology" strategy. Royal Society won the tender to establish the SMC. The SMC has editorial independence and is an operationally independent unit.

3 In 2009, an evaluation of the SMC's first year of operation was undertaken to determine whether it was achieving its goal, and to identify areas for future activity. A review in 2012 provided an independent assessment of the governance and financial management of the SMC.

recommendations that will ensure the strategic purpose and direction of the SMC is appropriate and relevant going forward.

The SMC delivers value for New Zealand, there are opportunities for improvement and more resourcing would position the SMC for the future

The evaluation found overall, the SMC meets its objectives well and delivers value for New Zealand.

- the SMC is contributing to improved quality, breadth, and depth of science reporting by mainstream media outlets that reach a large proportion of New Zealand audiences
- the SMC delivers a range of services that are efficient and user-focused and have good uptake
- trust and confidence in the SMC are high
- looking forward there continues to be a need for the SMC.

This report makes three recommendations to position the SMC to better meet the evolving needs of the science-media sector.

Recommendation 1: Reaffirm that the core purpose of the SMC is to focus on science-reporting by *traditional* media, and science that is *newsworthy*

The SMC's purpose and scope are largely fit for purpose, but they are not universally understood. Particularly, the focus on *traditional* media outlets, and science that is *newsworthy*. Looking forward:

- The SMC's focus on science reporting by *traditional* media outlets continues to be appropriate.[4] There is high demand from traditional media outlets, and they reach most of New Zealand.
- The SMC will never be able to provide equal coverage to *all* science that is relevant to New Zealand. Confirmation is needed that the SMC will focus on *newsworthy* science, and there is also need for greater clarity about how *news merit* is determined.

Lack of understanding by a subset of stakeholders in roles across the science-media system about the SMC's purpose and scope creates risk for the SMC, as it may lead to undervaluing of the service and perception that some sectors are being unfairly underserved. Once confirmed, the SMC could take a more proactive approach to communicate its purpose and scope; and to promote its achievements and the value it delivers for service users and wider New Zealand.

Some interviewees are enthusiastic for the SMC to take on new challenges beyond its current purpose and scope (for example, through social media and direct to the public services). This enthusiasm reflects high levels of trust and confidence in the service, but expansion should be considered with caution to avoid distracting the SMC from its core purpose of improving science reporting by traditional media outlets, and creating competition with those outlets.

[4] 'Traditional media outlets' are formal organisations that publish stories created by journalists and reporters and have editorial oversight – including mainstream media outlets and those that reach focused audiences. Stories may be published through print, TV, radio and online including through social media. The distinction is from stories that are published by individuals and on platforms without editorial oversight – such as bloggers and social media platforms.

Recommendation 2: Revise the Terms of Reference (TOR) for the SMC to reflect a commitment to honouring te Tiriti o Waitangi, to rationalise the number of objectives and to encourage quality and diverse connections and coverage rather than growth

Except for funding constraints, the SMC is generally well positioned to respond to future challenges and needs in a changing science-media system. The TOR and objectives are largely fit for purpose: they reflect a logic that remains relevant to current and changing needs (build capacity across the system, connect people in different parts of the system, and increase access to science).

The SMC has invested in building its own tikanga understanding and te reo capability and has begun to build connections with Māori experts, researchers, and media. A statement in the TOR about the SMC's commitment to working with Māori and coverage of Māori interests and Mātauranga Māori research would clarify MBIE's expectations and provide greater direction for the SMC as they make strategic and operational decisions to prioritise their work.

The current objectives could also be rationalised, to reduce the number overall and to minimise overlap between them. Rewording the objectives to focus on quality and diversity of the SMC's connections and coverage, would better reflect the stage and maturity of the service.

Recommendation 3: Review the level of funding for the SMC to ensure security and continuity of the service going forward, and to enable the SMC to deliver more in relation to its purpose and objectives

MBIE funding does not cover the cost of the services delivered by the SMC. The annual shortfall of up to $291,000 is being topped up by its host organisation, Royal Society. This arrangement creates risk for the continuity of the service. It is not obvious how the SMC could cut costs without undermining the continuity of the service overall. None of the products and services the SMC provides are redundant; they work together to address weakness across the science-media system.

Interviewees are clear that the services delivered by the SMC are a public good and should continue to be funded by government. Alternative models for generating revenue could undermine the SMC model, which relies on independence, trust and easy access for all interested sector stakeholders.

Interviewees are generally satisfied with the services the SMC provides, but recognise that with more resource it could do more to deliver against its objectives. In particular, the SMC's coverage of scientists, science-related topics and media outlets is good but not universal. If more resource is available, we recommend the SMC focuses on enhancing delivery in five areas:

- Continue to explore opportunities to work with Māori (including Māori-media) and cover Mātauranga Māori research
- Increase connections with media that reach focused audiences, including those that are reporting issues of interest to Pacific communities and youth
- Expand coverage of some disciplines of science – particularly social science
- Further invest in strategic relationships with key stakeholders
- Continue to increase the focus on digital and video reporting.

A MIXED METHODS EVALUATION

The evaluation method is described in the SMC Evaluation Plan. It included seven evaluation questions, listed at Appendix 1. Key things for readers to know are:

- The evaluation collected feedback from 40 individuals, mostly through 1-1 interviews (n38) and some written feedback (n2)
    - Most interviewees who provided feedback are engaged users of the SMC's services. We are confident that we captured views from stakeholders in a wide range of positions across the science-media system, however their views may not be generalisable to less engaged / disengaged stakeholders.
    - Most interviewees could provide more than one perspective (eg Advisory Board member who is also a service-user from the media sector) and quotes are attributed to one of four sector perspectives, reflecting the 'hat' interviewees were wearing as they spoke: Advisory Board Member [Board Member], expert, scientist or researcher [Research], journalist, editor or reporter [Media], research communications advisor/manager [Research Communications]
    - The evaluation engaged a small number of Māori interviewees (n4). Again, they had high levels of engagement with the SMC and their views are not likely to be representative of the diverse perspectives held by all Māori across the science-media system.
- Other data sources included:
    - Analysis of the SMC's 2018 and 2020 surveys of service users and data extracted from its databases. Surveys had response rates of: Media 15% in 2020 (n144 of 937 invited), 21% in 2018 (n118 of 567); Scientists 23% in 2020 (n342 of 1,485), 31% in 2018 (n236 of 751)
    - Review of more than 40 existing documents, including policy and operational documents (including TOR and annual reports), selected information regarding the science-media sector and the operating models of international science media centres.

Table 1: Evaluation participants

Stakeholder perspective	Number of interviewees
Science, research, expert (inc. from Universities, CRIs, CoREs, NSCs)	14
Media (inc. from print, TV, radio, online, Māori-media, general public and focused-audience outlets/ specialist and general reporters, journalists, editors)	13
Research communications (inc. low users of the SMC's services)	9
SMC staff (x2), Royal Society and MBIE	4
SMC Advisory Board members	7
International SMCs (UK and Australia)	2
Māori-media, Māori researchers, Māori reporters	4
Women:Men	30:10
Total – numbers do not tally as many individuals represent more than one perspective	**40 individuals**

THE SCIENCE MEDIA CENTRE DELIVERS VALUE FOR NEW ZEALAND

The SMC are the biggest resource New Zealand science has. If you took the SMC out of the landscape, you would have a whole lot less science reporting [Media]

Overall, the SMC is meeting its objectives well, within the limits of its resources

We find that the SMC is meeting most of its objectives well (see Table 2 and Appendix 2).

Table 2: Summary assessment of how well the SMC has met the objectives set out in its TOR

Objective	Assessment / comment
Work with the media to improve the quality, depth and breadth of coverage of science related issues (particularly coverage of New Zealand science and innovation)	**Met well** Evidence from multiple sources shows the SMC is using a range of approaches to work with the media, both to upskill individuals and to provide direct support. Evidence from multiple sources shows the SMC support is contributing to improved quantity, quality, depth and breadth of coverage of science-related issues (examples and evidence are presented from p12). Some interviewees perceive that the SMC could take a broader focus in terms of the science-related topics that it covers, which *may* in turn lead to greater breadth of science coverage (particularly in the social sciences and Mātauranga Māori). Some interviewees perceive that the SMC could create greater connections with media that reach focused audiences in New Zealand (eg Māori-media, Pacific media and youth).
Improve the accessibility of science to the media	**Met well** Evidence from multiple sources shows that the SMC is providing a range of services that improve access to science for the media (proactive and responsive, access to information and to experts) and reduce barriers to media reporting if science (user focused services that can be accessed in different ways depending on need) and that there is high demand for those services across media service users. Importantly – the SMC has not become a gatekeeper in the system.
Provide training and resources to support scientists and research organisations to respond to the media's queries, and to communicate science more effectively (including raising awareness about the available communication channels)	**Met well** Evidence from multiple sources shows that the SMC is providing training and resources that are valued highly by users and are effective in raising users' confidence and skills. Services focus on building individuals' skills and confidence, as well as removing barriers to engaging with the media and creating an enabling environment (eg work with organisational research communications functions). There are some indications that demand for training may outstrip supply, and that there is appetite among some researchers for more support from the SMC to engage with social media, as a way to communicate science directly to the public.

Objective	Assessment / comment
Provide training and resources to support journalists to produce responsible and insightful science news reporting and analysis that is relevant to the New Zealand public	**Met well** Evidence from multiple sources shows the SMC is providing training and resources to journalists, and that training and resources are valued highly by users and are effective in raising users' confidence and skills. Some interviewees commented that their own skills had been enhanced through consuming the SMC's products, not just through attending training. The SMC's resources are designed to enable lots of different types of use by journalists, depending on their interests and needs: for example, different journalists may use the same Expert Reactions publication as a seed idea for a story, as a source of verbatim quotes that can be used immediately, or as a reference for experts to contact for interview.
Build networks and manage relationships between the key components of the science system and media	**Met** Evidence from multiple sources shows the SMC has engaged with experts, media and research communications staff from across wide-ranging subsectors of the science-media system, and more recently with some Māori-media. However, the SMC's reach is not universal. There are many reasons why individuals may not engage with the SMC. With more resource, the SMC could do more to expand and strengthen its relationships across the science-media system, including with experts from broader disciplines of science, research communication staff in some agencies, executive level stakeholders (who are not users of the SMC themselves, but will influence use of the SMC by others within their organisations) and media outlets that reach focused audiences. Evidence from multiple sources shows the SMC has contributed to building cross-sector networks and relationships (through 1-1 introductions, bringing groups of people together and making individuals' contact information available) Importantly – the SMC has not become a gatekeeper of those relationships There is evidence of relationships that began through the SMC continuing without the SMC's ongoing involvement
Work with the media to improve public awareness and debate about the role science and innovation can play in society and emerging issues	**Not met directly** There is limited data to assess how well the SMC has met this objective. The SMC does not report on this objective, and most interviewees see it as an indirect outcome of science-reporting, rather than the direct focus of the content of science-related media stories. As such, some interviewees believe that by supporting coverage of science-related issues, the SMC has contributed indirectly to debate about the *role* of science and innovation. Media coverage of science stories related to COVID-19 is an exceptional example of media coverage discussing the role of science more directly. Interviewees have mixed views about the extent to which this objective should be a direct focus for SMC or a by-product of the SMC's work.
Develop tools and resources to improve public access to New Zealand science content	**Not met directly** There is limited data to assess how well the SMC has met this objective. The SMC does not report on this objective, it is not listed in the 2017 Work Programme Agreement between MBIE and the Society, and it appears to be in contradiction of the scope set out for SMC in its TOR which states: *The Centre will not provide a service for the public, or for the education community, although some resources will be able to be accessed and used by them.* The public can access a wide range of the SMC's resources through their website and Scimex, and the SciBlogs platform that the SMC coordinates and edits. There is some evidence of media outlets hosting the SMC's Expert Reaction products directly on their website and/or linking readers back to SMC for further information. However, the primary and dominant way that the SMC contributes to this objective is indirectly, through its resources influencing science reporting that reaches the public through traditional media.

A consistent view from interviewees is that the SMC delivers a lot with limited resources, and that they have 'cut their cloth to fit' the budget that they have. Most interviewees believe that with more funding the SMC could deliver more in relation to *all* of the objectives. This is particularly true regarding building networks and managing relationships between the key components of the science system and media. While we have assessed this objective as having been 'met', it is an area where more could be done to broaden the diversity of connections and to strengthen strategic connections at the executive level if sufficient resource was available. While executive-level stakeholders are unlikely to be users of the SMC services themselves, they will influence use by others within their organisations, and their buy-in is therefore important for increasing engagement.

We see interviewees' enthusiasm for the SMC to do more as an indication of interviewees' trust and confidence in the SMC, rather than as an indication of failure to date. Opportunities for greater connections and other improvement are discussed later in this report (from p20).

Most interviewees view the two objectives that have not been met directly as by-products rather than the direct focus of the SMC's work:

- Objective: Work with the media to improve public awareness and debate about the role science and innovation can play in society and emerging issues
    - This is seen by interviewees to result from coverage of science stories rather than be the focus of science stories
- Objective: Develop tools and resources to improve public access to New Zealand science content
    - This is seen by interviewees to be a result of science reporting through the traditional media, rather than the SMC delivering content directly to the public, which is explicitly stated to be out of scope in other parts of the TOR.

Interviewees generally agree that the SMC would need to change its model to meet these two objectives (for example, by engaging directly with the public) and they should not be a core focus of the SMC.

The SMC has contributed to improved quantity, quality, breadth, and depth of science reporting – especially by mainstream media that reaches a large proportion of New Zealanders

The evaluation paid particular attention to the first objective set out in the SMC TOR: contribution to quality, breadth, and depth of science reporting. We focused on this objective because it speaks to one of the key ways that the SMC's activity should ultimately derive benefits for the New Zealand public – ie through influencing the science reporting that reaches them through traditional media outlets.

Taken together, there is good evidence that the SMC has contributed to science reporting by traditional mainstream media outlets. Most interviewees are very positive about the SMC's contribution, and can provide examples of improvements that they have personally experienced, or

observed in others, that are a direct result of engagement with the SMC. Interviewees' views are supported by administrative data and survey data.

The SMC supports greater *quantity* of science reporting

Many interviewees from a range of roles attribute the SMC with making science reporting easier, especially for junior and non-specialist reporters, by increasing access to quality and relevant information, and media-ready experts, that can be quickly converted to news stories.

> *[The SMC's contribution] is massive. I wouldn't have done half the stories I have done without their help. [Media]*
>
> *The SMC does fill a role that nothing else does - which is to provide those well researched, well curated [comments from experts in response to] science stories in a ready to use package that makes life much easier for reporters. When it is done well, also for our researchers. The SMC definitely does expand the coverage for science and there wouldn't be nearly as much without it [Research Communications]*
>
> *On the expert reactions, I see quotes [that the SMC made available] repeated in media stories... [Research Communications]*

The SMC's administrative and survey data shows increasing demand for and use of their services, and their services directly inform news stories. Highlights:

- **62%** of media-survey respondents report that they use the SMC's resources at least once per week in 2020, up from 26% in 2016
- the number of media-focused products released by the SMC that include comment from experts is increasing year on year (from **97** in 2016-17 to **153** in 2019-20)
- the SMC's input is directly attributable to **2,187** news stories in 2019-20, up from 1,380 news stories in 2018-19.

The SMC supports greater *quality* of science reporting

Interviewees note that the SMC's contribution to quality reporting occurs at many levels: from upskilling science reporters to be better able to critique and translate science through to upskilling experts to be more media-ready, and from providing easy access to quality information through to helping reporters to avoid reporting on poor science or to debunk poor science that has been reported.

> *I would go so far as to say the science reporting has improved since [the SMC] has been around, and I would credit some of that to them… [A mainstream news outlet] 10 years ago were running climate denial OpEds – I see less and less of that now. Coverage of COVID would have been really different 10 years ago. The credence given to Plan B type people would have been higher. [Media]*
>
> *…I take comfort in knowing my story is legitimate after speaking to the SMC. It has led to more confidence in science reporting, and from that, more frequent science reporting. [Media]*
>
> *For journalists with no background in science sometimes it can mean the difference between them writing a really misleading story and nothing being published at all. [For example] a paper came out on Fluoride and it was looking at some potential health risks. It was an outlier in the literature. It got a fair bit of pick up. The SMC got ahead of it and went to a whole bunch of experts and wrapped it in good information – that stopped a whole lot of media stories written by people with no knowledge. [Media]*

The SMC's survey data shows increasing confidence among experts and media that attend their training, and that their support influences the way science stories are reported. Highlights:

- **89%** of media-survey respondents agree that the SMC has an impact on the way science related stories are covered in New Zealand (up from 86% in 2018)
- **76%** of scientist-survey respondents agree they would feel confident responding to media queries on a broad range of issues within their area of expertise.

There is *breadth* in the topics and experts that are covered by the SMC

Several interviewees, particularly from media and research communications roles, have observed an increasing number and diversity of relevant experts that can be accessed through the SMC and perceive the SMC to cover a broad range of science-related topics – which in turn supports breadth in media reporting. However, this view is not universal. Some interviewees were less positive about the breadth of the SMC's coverage. Their views are discussed later in this report (see p22).

> *The SMC has helped to really encourage academics to embrace their role as public academics and get more comfortable speaking in a public sphere and communicating clearly in lay terms. [Research Communications]*

> *The SMC are really good at finding great papers, heaps of studies, always updating Scimex[5] – there is always stuff to write about just using what they put up. [Media]*

The SMC's administrative and survey data shows that they have access to a large number of experts, and that there is diversity among them. Highlights:

- **8,113** researchers are registered in the SMC database, from across organisations in the science-system and 43% are female
- **90%** of media survey respondents that were recommended an expert by the SMC agree recommendations are 'relevant'
- Media survey respondents report that their audiences are interested in a wide range of science topics and **93%** agree that the SMC helps them to cover a broader range of issues.

The SMC supports deeper analysis in science reporting

The SMC is seen to contribute to depth of coverage at various levels: for example, for non-specialist reporters, the range of experts that comment on a topic provides depth that might otherwise not be reported; for specialist reporters, the SMC's responsive Q&A service can provide access to research and experts that enables deeper coverage.

> *The expert commentary gives you a range of views and shows that there is a range of scientific views on a topic or decisions that are well reasoned. It shows there are multiple perspectives, and you might want to include those in your story. [Media]*

[5] Scimex is an online portal for science research news operated by the NZ SMC in conjunction with the Australian SMC

People like myself, we are not on the live reporting shifts so not churning out content like monkeys. We go and find exclusive stories and take deeper looks. The SMC is handy there. I might say I want to do a story looking at [a specific topic]. I know a few scientists I can call but maybe not well enough to just ring them up. The smarter thing to do is call the SMC with the questions I want to answer and ask for referrals. They know the people with the knowledge and media training. [Media]

Administrative data held by the SMC shows the number of media enquiries to the SMC and resources accessed is increasing year on year. Highlights:

- **4,358** resources were accessed via Scimex in 2019-20, up from 1,937 in 2016-17
- The SMC received **722** direct enquiries from media 2019-20, up from **328** in 2016-17.

Interviewees perceive positive flow-on effects for the public from the SMC's contribution to accurate and clear science reporting

Several interviewees expressed a view that quality science reporting supported by the SMC has led to a better-informed public, which has had positive flow on effects for New Zealand.

The SMC's role in supporting science-informed coverage of the COVID-19 pandemic is the most recent and perhaps most direct example. Interviewees also refer to other examples where science-informed reporting has had positive effects on public behaviour and/or support for government decisions, including the M-Bovis outbreak, the Whakaari White Island eruption and the botulism in baby formula scare.

Media in this country has really changed – if they are short of a news story they run a science story… the SMC has been critical in making the media believe the public like science stories and have the intelligence to absorb [science]. If we hadn't built that up over years – would we have the environment for a science-led response to COVID? The police going back onto Whakaari White Island is another example [of public support based on understanding the science]. [Research]

The timing of this review is fortuitous for the centre because COVID showed the SMC at its best and showed its impact – it demonstrated the need of the SMC. It was a huge, complex, fast moving, thorny, difficult to cover story – being covered at enormous volume by everybody, not just those that are experienced. There was a real knowledge and expertise gap the centre could help fill. The investment of the SMC over multiple years became really obvious. The people the SMC has groomed through their training and relationship building programs became the credible scientific face of the pandemic response that was independent from government and informed the public in ways other countries would be envious of. The way the media covered COVID and the profile of the scientific community over that period grew. [Board member]

These observations reflect well on the SMC and are not uncommon among interviewees. However, further exploration is needed to understand the full extent to which accurate and clear reporting of science by media has (or has not) changed public attitudes and behaviour (in general and in response to major events), which is beyond the scope of this evaluation.

The SMC delivers a wide range of services that are efficient and user focused

There is good take up of the SMC's services and we don't see evidence of redundant services

Within current resourcing, they have a pretty optimal mix at the moment. [Board member]

Most interviewees are active users of the SMC's services. Across the group we heard evidence of every service being used and valued by at least a subset of interviewees; and no single interviewee using and valuing all services equally. This is to be expected given that SMC services target different parts of the science-media system.

The SMC administrative and survey data show strong take up across current services, with the exception of face-to-face events that have decreased during the COVID-19 pandemic (Appendix 2).

The SMC has built efficiencies into many of its services, which is in line with its approach to not become a gatekeeper in the system. For example, by including contact details of quoted experts so that media can follow up with them directly if they choose.

This is not to say that all of the SMC's services are low-touch or automated. Many services continue to be resource intensive to deliver. These tend to draw on the knowledge and expertise of the SMC staff, and are particularly valued by those who use them. For example, the SMC welcomes bespoke queries from individual reporters and experts which require bespoke responses.

We also see evidence of the SMC deprioritising services and measures that are no longer relevant[6] and leveraging its partnerships with similar organisations in other jurisdictions[7], which further support the assessment of efficiency.

The SMC's services are tailored to users' varying needs

The SMC has a good understanding of the drivers and barriers experienced by individuals in different parts of the science-media system.[8] Interviewees from a range of roles commented that the SMC's services demonstrate this understanding and provide well considered responses. For example, the way the SMC runs its 'Expert Reactions' service responds well to varying needs of different users, by:

- making use of embargos to effectively extend the time that experts can respond while still meeting the media's need to meet tight deadlines

  I wasn't allowed to go out with [a specific report] for commentary because of the embargo. But the SMC knew who had the report and could get the commentary from them. So when the embargo was lifted I could get commentary in the first take of reporting. If it had been up to me to go out to those people after the fact it would probably have never happened – I would have been pulled

6 For example, content from SMC Desk Guides migrated online in 2019 as part of an overhaul of resources available on the SMC website.

7 For example, Scimex is a shared platform with the Australian SMC.

8 See Appendix 4 for discussion of service users' barriers and motivators.

onto another story or it would have been hours and hours [later], and readers may never read a follow up story. [Media]

- allowing experts to provide a written comment that can be quoted verbatim, thus reducing their concerns about being misquoted and making it easier for media to achieve quick turnarounds on stories, especially when experts can't be contacted.

  Experts don't have to worry about being misquoted. It works really well for us. [Research Communications]

Media interviewees also commented on how the SMC's services continue to be relevant and useful for reporters with different levels of experience in science-reporting, and who are in specialised and non-specialised roles. For example,

- Expert Reactions can be used verbatim by generalist news desk reporters, or as a 'seed' for a follow-up interview
- Scimex embargoed research reports and the SMC Picks help specialist reporters to stay abreast of issues and to identify story ideas, and the media enquiries service provides bespoke support for in-depth reporting.

  We use the SMC emails for the seed of a story, not just the whole story itself. [Media]

While there is some correlation between interviewees' job role and which services they use, this is not absolute. For example, some Research Communications staff report using the SMC solely to provide media-training for their experts, while others don't access training and do contribute to the SMC's Expert Reactions and/or have used the SMC for support with a particularly tricky media release.

Overall, interviewees find the SMC services to be user focused. The key exception is among Research Communications' staff, whose feedback is more varied (see p23 and Appendix 7 for more on this).

Trust and confidence in the SMC are high – driven by features of the model that should be protected

Trust and confidence are critical to the success of the SMC model. Use of the SMC services is voluntary, and to attract service users the SMC needs to be trustworthy and reliable.

We heard from most interviewees that the SMC has a good reputation for being trustworthy and there is confidence in the SMC to deliver. Key features of the SMC model have built service users' trust and confidence over years, and these should be protected.

The SMC is seen to be truly independent

I've been very impressed with their fierce independence. [Research]

Interviewees repeatedly commented positively about the SMC being truly independent, and how important independence is for the success of the model. Independence is critical for media to make use of the SMC's services and the SMC is seen to be independent from any:

- news outlet

- science organisation or science sector
- commercial interest, and
- government agency.

Government funding would not be associated with independence in every context. However, no interviewees raised concern that the SMC independence has been compromised by government funding, and the common sentiment was that as a public service it should be publicly funded.

> *I have no concerns about the SMC's independence with government funding. Maybe because I've seen it operate the same through various governments [Media]*

The SMC also has a relationship to Royal Society, and an Advisory Board made up of media and research stakeholders. Both are generally seen to provide more advantages than disadvantages and to not compromise the SMC's independence (see Appendix 5).

The SMC staff members are skilled and knowledgeable – they add value through their involvement

> *The SMC people have quite a background in science journalism. They understand the space, and how to communicate and translate research – that's their speciality. [Research]*

> *…because our science sector is so small it is possible for the SMC to be aware of every scientist working in New Zealand. So, they can give very specific and comprehensive lists to journalists. [Research]*

We repeatedly heard from interviewees that the SMC model is more than a basic introduction or information service, that the SMC adds value by applying a 'filter' that ensures its services are relevant to New Zealand and show high levels of understanding of both the media and science worlds in Aotearoa. An example of this is in the selection of experts that the SMC recommends to media to comment on an issue or story; the SMC is generally recognised for recommending experts that are knowledgeable, relevant and, importantly, "media ready".

Staff whose knowledge and expertise are well regarded and appreciated, and who can demonstrate that they have an accurate understanding of the working environments of their service users, is critical for building trust and confidence.

The SMC has a track record of delivering with integrity and a style that is non-judgemental and enabling

> *It's not the* what *you do it's the* how *you do it. The* how *is so good [with the SMC]. They are quick, responsive, non-judgemental, pleasant – no matter how low they have to go to catch my ball. [Research Communications]*

The SMC puts out a lot of products and receives very few complaints.[9] They also have a good track record for delivering high quality outputs, for being quick to respond to queries and for doing what they say they will do.

> *They are always ready to help… willing to listen when you express your pressures. They understand the realities and don't try to blame you for what the realities are. They don't suggest you should spend more time researching a story – they accept that you only have the time you have. [Media]*

The quote reflects a common theme in interviews, that the SMC operates professionally and in a manner that is approachable, constructive and enabling.

The SMC model is based on goodwill and mutual benefit

The SMC model works because a sufficient number of individuals across the science-media system see value in it, and are willing to contribute to it (Figure 1). The SMC has focused on building a model that produces mutual benefit. This contributes to trust and confidence among service users.

> *The SMC has done a great job of breaking down the mysteries of media to scientists. The stereotypical scientists are not the type who are gregarious and confident speaking to people who aren't fellow scientists, you see it at the workshops when they are pitching – they've got no idea how the media works. The SMC does a great job demystifying media to them. And they've done a great job explaining to the media that scientists are a different breed and need to be approached differently to how we approach other newsmakers – like politicians who know they need [to give] a 10 second soundbite. [Board member]*

Figure 1: The SMC operating model is based on goodwill and mutual benefit

Experts	Media	Research Communications staff	The public
Contribute to the SMC by providing quotes and comments	Contribute to the SMC by participating in training courses for experts; being available to hear experts pitch	Contribute to the SMC by facilitating access to relevant experts in their organisations, directing the SMC requests	Contributes to the SMC by funding the service
Benefit from the SMC through positive experiences of media exposure	Benefit from the SMC through access to science stories, media-ready experts and advice	Benefit from the SMC by leveraging the SMC channels and relationships for their experts / research, support and advice in tricky cases	Benefits from the SMC through improved science reporting in mainstream media
← The SMC supports individuals across the system to have better understanding of each other's drivers and constraints, access to information and connections - creating a more enabling environment for science reporting in the media →			

[9] A subset of Advisory Board members helps the SMC to review what has happened and address complaints when they arise. The SMC received 3 complaints in 2019/20, and no complaints for several years before this. Complaints are considered very low for an agency dealing in news.

AREAS FOR FUTURE FOCUS ARE GENERALLY SEEN TO BE OPPORTUNITIES RATHER THAN SHORTCOMINGS

The SMC administrative data shows that the service has good reach into the three key sectors of the science system – science, media and research communications – and that the SMC contacts are spread across subsectors of each, including different types of media and science organisations (see Appendix 2 from page 38).

Nonetheless, the SMC reach is not universal and the SMC services are not seen by interviewees to be serving all users (or potential users) equally.

There is little guidance in the TOR regarding how the SMC should balance its effort across the science-media system (we explore this topic further later in this report, see p26). The dominant view among interviewees is that the SMC has 'cut its cloth to fit' the available funding and resources, and that prioritisation decisions have generally been good. The SMC appears to have focused its efforts more on topics and experts that are likely to be picked up by the media, and towards media that are likely to pick up science stories and/or bring them to large New Zealand audiences.

Five key areas where interviewees commonly suggest the SMC could improve delivery are discussed below. As noted earlier, we do not find evidence of redundancy or inefficiency in the SMC's services. In this context, improvements represent opportunities that could be harnessed if additional resources are made available, rather than shortcomings or failures to date.

Continue to explore opportunities to work with Māori (including Māori-media) and to cover Mātauranga Māori research

The SMC's TOR make no reference to Māori-media and the science-interests of Māori audiences or to Mātauranga Māori and Māori experts, but they do require the SMC to contribute to the outcomes set out in *A Nation of Curious Minds – A National Strategic Plan for Science in Society*; one of which is to *Increase profile of Māori science/pūtaiao researchers and researchers in Mātauranga Māori.* We discuss the suitability of the TOR later in this report (see p25).

Māori individuals and organisations are in roles across all parts of the science-media system. The SMC has taken a slow and steady approach to increase the relevance of its services for Māori and its connections with Māori working across the system (including, Māori researchers and Māori reporters working in Māori media and in mainstream media outlets). The SMC has focused on building its own tikanga knowledge and te reo capabilities, adapting services in response to feedback, reaching out to connect with individuals, and responding to invitations to engage and collaboration opportunities that arise.

The SMCs Media-SAVVY training for Māori researchers and its recent collaboration with Te Hiku media are two examples of the SMC working well with Māori researchers and Māori media: one as a result of its own initiative and the other as a result of an MBIE initiative to provide additional support during the COVID-19 pandemic.

- Media-SAVVY training for Māori researchers is an SMC initiative that has had good take up and has received positive feedback from participants, both in terms of content (which shows good understanding of Māori researchers' incentives and barriers to engaging with media) and culturally appropriate delivery style, as well as efficacy (building confidence, skills and connections).
- A relationship between Te Hiku media and the SMC was developed with support from MBIE during the COVID-19 pandemic. It led to Te Pūtahi, a project that resulted in the development of a 12-episode podcast series for broadcast on iwi radio and online media platforms, as well as accessible through the SMC website. The project was based on collaboration, partnership and mutual benefit, and has led to continued collaboration to work together through Te Hiku's NZ On Air funded Haukāinga project.

Māori interviewees[10] report that the SMC's approach has so far been culturally appropriate. While the feedback is generally positive, interviewees and the SMC acknowledge that there remains a way to go for the SMC to increase its reach and relevance for Māori working in roles across the science-media system.

The SMC's survey data suggests that around 7-8% of the experts and reporters that the SMC engages with are Māori.[11] While we don't have any feedback from Māori who have not engaged with the SMC, some interviewees suggest there may be a lack of awareness of the SMC's services among Mātauranga Māori experts and reporters covering topics of interest to Māori audiences, or a perception that the SMC services are not relevant or needed by them. These views highlight that there is diversity of roles and interests among Māori working in the science-media system, and one approach will not suit all. The SMC should continue to explore opportunities for collaboration with the same commitment to partnership, codesign and mutual benefit that they have taken to date.

We received mixed feedback from interviewees (Māori and non-Māori) about how well the SMC provides platform for Mātauranga Māori research and experts - some interviewees observe this to be an increasing focus of the SMC's work, others report they have not noticed that the SMC has focused on Mātauranga Maori at all and still others report inconsistency and notable gaps.[12]

[10] The evaluation included four Māori interviewees from positions across the science-media system. Their views may not be reflective of Māori stakeholders in general, especially those who have not worked with the SMC or accessed their services.

[11] 15% of registered experts whose records were updated in the last 12 months identified as Māori (165 out of 1132). This is much higher than the proportion of Māori researchers that are typically employed across CRI and Universities. 8% of scientists that responded to the SMC survey identified as Māori (out of 324 respondents). This is likely to be more representative of who the SMC is reaching, because survey invitations are sent out to all registered experts, not just those whose data has been updated in the past 12 months. It is still generally higher than average for the sector (estimates range from 1% to 7% by organisation/department). 7% of media that responded to the SMC survey identified as Māori (out of 144 respondents) - No data is currently collected about the ethnicity of journalists registered in the SMC's databases. A small number of registered journalists have affiliations with Māori media outlets, including Māori television and at least four Iwi Radio stations.

[12] For example, the SMC published an Expert Reaction regarding an international study of Climate Change effects on Kūmara that did not include comment from any relevant Māori researchers. SMC reports that they reached out to research sector communications staff in

The dominant view, especially among non-Maori interviewees from research and media roles, is they would like to see the SMC further build its focus on increasing access to Mātauranga Māori research and Māori experts, including those who are fluent te reo Māori speakers. Some non-Māori media interviewees rely on the SMC for a Mātauranga Maori perspective in their science reporting.

In January 2019 the SMC recruited a Māori Board member with connections, knowledge and expertise to further build their internal capability. Recruiting Māori staff member/s is also suggested by interviewees as a good step for the SMC to consider.

Increase connections with media that reach focused audiences, including those that are reporting issues of interest to Pacific communities and youth

The SMC is perceived to have good reach into mainstream media outlets, that reach a large proportion of New Zealanders, but lesser reach into outlets that reach focused audiences, including Pacific and youth. Outlets that reach focused audiences are important for bringing science-related stories to *all* of the New Zealand public.

We have no information to assess the quantity, quality, breadth and depth of science reporting by these news outlets – and therefore whether there is a need or demand for the SMC's services. Further work is needed to understand what opportunities there are for SMC to work with outlets that reach focused audiences. Any change in the SMC's services to focus on needs of media that reach focused audiences should be codesigned with media stakeholders from those sectors, with an aim of mutual benefit.

Expand coverage of some disciplines of science – particularly social science

We received mixed feedback from interviewees about the breadth of the SMC's coverage across science disciplines, in particular the social sciences. Some interviewees perceive the SMC to be less interested in social sciences (either inherently or reflecting media interest in covering social science stories), while others perceive the SMC to be increasing its coverage in this space (in ways that may or may not be visible to service users).

> *[The SMC's focus] is broader but has a hard science bias. That's because of where they set out from [Royal Society] [Research]*

> *One area the SMC could explore more is social sciences. It all comes down to stats and interpretation and analysis at the end. In the past journalists have tended to shy away from hard sciences and lacked confidence in tackling it. Sometimes it doesn't seem relevant. It takes the SMC to make it relevant. Whereas journalists do inherently think they understand the social sciences more. But they do need the support there too even if they don't know it [Research Communications]*

several CRIs, a NSC and a CoRE in addition to the experts on their database for comment on this occasion. Two relevant Māori researchers initially agreed to provide comment, but were unable to follow through due to other commitments. Meanwhile, one of the CRIs had already provided comment from a non-Māori researcher. While it was not ideal, the team ultimately decided to proceed with this comment in isolation out of respect for the time and effort the CRI had invested in providing it.

I feel like they have become a lot more nimble to responding to social and economic stories with expert commentary. They used to seem quite hard science focused – now they are thinking how can we bring research and evidence to non-science debates: health, COVID, the budget, anything happening in NZ... certainly there have been some sociological perspectives on [hard science topics too] things like emission reduction – which I hadn't noticed until now. [Media]

Several interviewees across varied roles also proposed that the SMC could do more to produce 'primers' and briefings that aggregate information around key topics that aren't driven by breaking news, but are prompted either by emerging research or simply because the subject area is important for New Zealand.

Further invest in strategic relationships

Executive leaders

Some interviewees perceive that there is an opportunity for the SMC to gain greater visibility and buy-in to their role by reigniting relationships with executive-level stakeholders, particularly in MBIE, Crown Research Institutions, National Science Challenges and some Centres of Research Excellence.

[There is] some institutional scepticism from [a part of the sector]. I don't know why. The SMC has bent over backwards to build those relationships. [The SMC] has targeted the individual scientists' level, and [there is] great feedback from individuals about the SMC training. At the institutional level, it is time [for the SMC] to reach out to some exec teams again. Reset those relationships. [Board member]

Executive level stakeholders are less likely to be users of the SMC themselves, but they will influence use of the SMC by others within their organisations. Reaching out to executive level stakeholders may also provide an opportunity for the SMC to ensure good understanding of its purpose and scope, and raise awareness of its achievements and how it delivers value for service users and provides value for New Zealand.

Research Communications staff

The evaluation intentionally sought out interviewees from the Research Communications (RC) sector that have been low users of the SMC services. We received mixed feedback from these interviewees about their engagement with the SMC – ranging from very positive to quite reserved (see Appendix 7). Some interviewees talked about the complementary roles of the SMC and RC teams; others described a constructive relationship of mutual understanding, that had sometimes taken some time to achieve; and a few described the SMC as at best duplicating and at worst undermining the RC role.

Interviewees from non-RC roles (ie those in media and research or science roles) were generally very clear about the difference in roles between the SMC and RC, and that both bring value to the science-media system. The SMC's independence is a key point of difference from RC, that is highly valued by media.

Journalists are highly suspicious of anyone in any comms role. They have a job to do – get the story their bosses want in front of the media in a way that makes their bosses look good. It is useful to have the SMC as an intermediary to take away any suspicion. The SMC is a useful circuit breaker between "what will never make a story and don't waste anyone's time with it", and "this is really good and we can deliver it in a way that is good for everyone". [Board member]

When working well, RC and the SMC can be highly complementary, provide mutual benefit and do not duplicate each other.

> *Sometimes the SMC have picked up things we haven't because our [experts] are tardy letting us know when they publish. The SMC are good at contacting us then. [Research Communications]*

Good buy-in from RC is often critical for the SMC to engage with an organisations' experts. Ongoing engagement with RC units, and further engagement with executive-level stakeholders to whom those units are accountable, may support good buy-in. We heard some examples of the SMC tailoring its model to suit the needs of RC units, which vary across organisations. The SMC should explore opportunities to further build relationships with less engaged RC stakeholders, which will help to establish where value add could occur in different research organisation types.

Continue to increase focus on digital and video reporting

Interviewees noted that the way the media tells stories has changed, with data visualisation and video becoming increasingly important across all platforms (not just TV). The SMC has begun to focus on this, eg by supporting scientists to capture video footage. There is appetite for the SMC to do more to encourage experts to create this type of content and to link the media with it.

LOOKING FORWARD, THERE CONTINUES TO BE A NEED FOR THE SMC, AND WITH MORE RESOURCES THE SMC WOULD BE WELL POSITIONED TO MEET THE EVOLVING NEEDS OF THE SCIENCE-MEDIA SYSTEM

I think [the SMC] are really great and I would be really concerned if they disappeared from the New Zealand system. That would be dire for the media, and not just the media but for the citizens that need access to reliable information now more than ever before [Research]

The SMC's purpose, scope and objectives are largely fit for purpose, but they are not universally understood

The services provided by the SMC continue to be needed

Most interviewees strongly agree that there is an ongoing need in New Zealand for the functions delivered by the SMC. These functions underpin the logic of the SMC model:

- a science-informed society is beneficial for individual and collective wellbeing and progress, and is aligned with government priorities

  Getting science-based decision making is critical to good government decision making. Government can't make those decisions unless the public will go with them. So, an informed public is a team effort. [Research Communications]

- the traditional media has a role in informing the public about science-related issues but pressures on traditional media[13] mean they need support to be able to deliver on this role consistently and to a high standard
- science and research experts continue to face barriers and disincentives to engage with the public through the media, some of which can be overcome with training and support[14].

[13] Commercial pressures, turnover of journalists, and rapid turnaround news cycle

[14] Other pressures and disincentives are built into institutional and system design

In this context, the SMC is seen to be a government lever that can improve science reporting without compromising the independence of the press, and the logic of upskilling, resourcing and connecting the different parts of the science-media system remains sound.

> *They compensate for what is a small media group in New Zealand looking after science and health and other science adjacent issues. An even better solution would be for the scientific expertise in journalism to be better and more resourced. But in the absence of that, [the SMC] are a good backstop. [Media]*

The TOR is largely fit for purpose, but key aspects need to be reaffirmed to ensure stakeholders understand the SMC's strategy

We provide specific recommendations to improve the SMC's TOR and contracted objectives in Appendix 3. In summary, we find both are largely fit for purpose but not universally understood by interviewees, which may be undermining use of the SMC's services and diminishing perceptions of the value of the service overall. Affirming or reaffirming that the SMC is a service focused on *traditional* media and *newsworthy* science, and establishing the commitment to honouring te Tiriti o Waitangi, by working with Māori and covering topics of interest to Māori and Mātauranga Māori research, will strengthen the TOR going forward and help stakeholders to understand the SMC strategy and the rationale for their prioritisation decisions.

The SMC focuses primarily on *traditional* media

Some interviewees do not appear to know that the SMC's TOR specifically discourage them from focusing on direct communication with the public.[15] Focus on the science-media interface is fundamental to the SMC model. An SMC that was focused on direct delivery to the public would look quite different in the services that it delivers and may end up competing with traditional media outlets.

Interviewees have conflicting understandings of whether the SMC does or should focus on *all* science that is relevant to New Zealand or *newsworthy* science, and of how news merit is determined

There is little guidance in the TOR regarding how the SMC should balance its effort across the science-media system.

The SMC does not provide an equal platform for all science that is relevant to New Zealand, and nor could they with current funding. For some interviewees, lack of engagement from the SMC to support dissemination of their research is an indication of a gap. Others understand that the SMC makes judgement calls about *newsworthiness* and directs its limited resources accordingly.

> *They have done a pretty good job – there hasn't been that much interest from people for anything other than COVID. Other stories aren't getting traction from readers anyway. [Media]*

[15] From TOR 2014 "The Centre will not provide a service for the public, or for the education community, although some resources will be able to be accessed and used by them."

Ultimately it is up to the media what stories they report, and as such the SMC's efforts to raise the profile of less topical science may not be visible to wide ranging stakeholders, leaving some stakeholders with a perception that the SMC is biased towards some science topics and not others. [16]

> *It has been all COVID all year and I don't see how it could be anything else... We have had Whakaari White Island, earthquakes, COVID and it is absolutely right that during those times all of [the SMC's] efforts have gone to those things – if they were to put out something non-topical it is just going to sink. They don't have choice but to be responsive. They will give things a nudge. They give it a good crack and at least I know it happened even if I don't cover it. [Media]*

Clarity about expectations of the SMC's role in providing a platform for New Zealand research on topics that are not prominent in the news is important to gain greater buy-in from some parts of the science sector, and greater understanding of how the SMC makes prioritisation decisions. It will also help some stakeholders to understand the interface between the SMC's role and editorial decisions that rest with the media.

> *I see their role as a neutral one. Not a crusading one. As a facilitator to get important research into the public's knowledge. The judgement call happens inevitably on an editorial level [by the media]. I suppose media is the one with a direct connection to what audiences are doing. It is hard – there is so much good stuff going on… [Media]*

Expectations of the SMC in relation to honouring te Tiriti o Waitangi are not explicit

There is an absence of any specific reference to Māori, and very limited reference to Mātauranga Māori, in the SMC's TOR. This is an area that should be clarified. While the absence has not prevented the SMC from working with Māori, or covering Mātauranga Māori research, specific reference in the TOR would provide clearer direction for their strategy and resource prioritisation decisions.

Small changes will make the SMC's TOR fit for the future

Once the above elements of the SMC's purpose and scope are affirmed or reaffirmed, the SMC objectives could be rationalised, to reduce the number overall and to minimise overlap between them. Rewording the objectives to encourage quality and diversity of connections and coverage enabled by the SMC, would better reflect the stage and maturity of the service (see Appendix 3).

[16] For example, some interviewees noted that the SMC may be perceived to be 'left leaning', have an 'inner circle' of experts and more interested in promoting 'hard science' over 'social science'. The evaluation does not have sufficient information to conclusively assess whether there is foundation to any of these views. These views were not common among interviewees, and some interviewees provided counter views. Our impression is that clearer communication from the SMC about its criteria for selecting topics to focus on, and about the media role in picking up/not picking up stories, would help to address these perceptions.

The services delivered by the SMC are a public good, and should continue to be funded by government

The SMC delivers a public good

The common view among interviewees is that the SMC delivers a public good, and that the current model (fully government funded[17] and operating with independence from government) is appropriate for funding the SMC's functions in the New Zealand context.[18] The following quote captures a common sentiment among interviewees.

> *The last thing we need is [the SMC] to spend a huge amount of time trying to get money. [Research]*

In Appendix 6 we provide a summary of interviewees' feedback about the advantages and disadvantages of the SMC generating additional income through alternative funding approaches. Overall, the risks of any alternative funding models are seen to be high:

- **Loss of independence / perceived loss of independence diminishing value of the SMC:** the SMC has a strong reputation for independence that is critical to the success of its model and would be difficult to regain if lost. The government has few levers for improving science reporting without compromising independence of the press. The SMC is one of those levers and should be protected.
- **Loss of access / inequitable access further diminishing use of the SMC:** this includes for media and experts depending on decisions made at institutional level, and for freelance and smaller media outlets, in particular whose resources are more stretched.
- **Insecure funding leading to disruption or decrease in current level of service:** the SMC is generally seen to be generating a lot of output with little resource. Diverting existing resources to fundraising could diminish the current level of service. Alternative models may also lead to insecure and fluctuating levels of funding (and service) in future.

Funding provided by MBIE does not cover the costs of the services that the SMC delivers, creating risks for continuity of service

Table 3 shows that for at least the last four years, the SMC has been operating beyond the funding that is provided by MBIE, with the shortfall ranging from $52,000-$279,000. The shortfall is topped up by its host organisation, Royal Society. Some interviewees are concerned about the security of this arrangement going forward. A shortfall in funding creates a risk for continuity of services for the SMC.

[17] Currently the funding for the SMC is topped up Royal Society.

[18] This is not true across all jurisdictions, for example where public have low trust in government in relation to science, and/or where government is not trusted to not interfere with independent entities operating at arms-length.

Table 3: The SMC's income and expenses

	2016/17	2017/18	2018/19	2019/20
Total Income	**741,000**	**758,000**	**763,000**	**948,000**
- MBIE funding	713,000	713,000	713,000	713,000
- MBIE special project funding (COVID-19)	-	-	-	206,000
- Other sources (eg SAVVY)	28,000	45,000	50,000	29,000
Expenses	**1,020,000**	**916,000**	**954,000**	**1,000,000**
Shortfall topped up by Royal Society	-279,000	-158,000	-191,000	-52,000

Source: SMC Annual reports to MBIE

At the time of the evaluation, the SMC had a team of five staff, including a Director, three Media Advisors and a part-time Senior Media Advisor, constituting 4.5 FTE. The SMC usually has a staff of four, FTE of 4.0, but in 2020 staff resourcing was temporarily increased using special COVID-19 programme funding and reallocated contractor funding.

A common sentiment among interviewees is that the SMC creates a lot of output and value for New Zealand with the resource that they have available, and that there is no obvious way for the SMC to operate within its contracted funding (ie by reducing its costs by around a quarter) without creating vulnerability across the service.[19] We also did not find that any of the SMC services are redundant.

> *[it is] difficult to see how they could cut their costs without cutting output – there is no easy way to do it. If there were to be cuts, I'd say shut the whole thing down, and I'm not advocating for that. But it gets down to a certain level and it isn't viable anymore. I'd say increase the funding and let it do more. [Board member]*

Most interviewees would like to see the SMC funded at a higher level to increase security of the services that are currently provided *and* so that they can do more to achieve their purpose and objectives (in the areas set out earlier in this report).

Lack of brand recognition may lead to undervaluing the SMC

The SMC approach is to be an invisible enabler in the science-media system. To this end, the SMC has been intentional with not promoting its own brand, in an effort to avoid creating competition for credit/recognition that may discourage engagement from some service users (for example, competition for brand recognition with experts when they are quoted in news stories). For the public, the SMC seeks to foster trust in science and in New Zealand scientists, rather than trust in the SMC.

Most interviewees understand the SMC's strategy and appreciate their approach.

> *In a system where we are all trying to be highly collaborative it is problematic trying to give people a mandate that requires them to attribute outcomes to themselves. They are absolutely contributing to [science in the media] but it is not all labelled the SMC and it shouldn't be. [Research]*

Others either did not understand the approach or disagreed with it. They expressed concern that the lack of visibility creates a risk for the SMC to be able to demonstrate and communicate its value as a

[19] Most costs are for staff, and fewer staff would make it difficult for the SMC to maintain the level and continuity of its services.

publicly funded service. We encourage the SMC to work with service users to establish ways that the SMC can tell its performance story without creating unhelpful competition, and to proactively communicate its value to executive leaders in Research and Media organisations and other stakeholders that have an interest in SMC success.

Resource constraints aside, the SMC is seen to be adaptive and future focused

Overall, interviewees see the SMC to be adaptive and future focused, but constrained by limited resources. There is a common view that the SMC has a good understanding of both the media and science sectors and their changing needs, a good skill set for addressing future challenges and a user focus that is critical for adaptation.

> *I've noticed that when I go to the workshops [for] scientists the way the SMC explains the media is 100% right. They understand how it works at the moment which makes me confident they are well placed to understand how it is changing. [Media].*

Several interviewees also provided examples of the SMC being an adaptive organisation, which gives them confidence that the SMC will continue to adapt to changing needs going forward.

> *Everything they have done has been responding to changes. They were set up at a time when the media had begun to massively change….At the time there was some talk maybe this would be a short-term thing and then media would settle into a new model – but it hasn't settled. It is still moving and evolving. [Research]*

Many interviewees from a range of roles expressed concern that the SMC's capacity is already stretched, raising concerns about their capacity for innovation. The SMC notes that where they have been able to provide small amounts of seed funding to support new initiatives, they have been able to gain greater buy-in and collaboration from sector stakeholders. For example, supported by special COVID-19 programme funding, the SMC funded a data visualisation specialist to negotiate embargoed access to datasets from cell phone towers in order to complete a series of embeddable video animations that mapped population movements going into lockdown. This work helped to boost media engagement with the other services the SMC was also developing to link data journalists across multiple media organisations (shared Slack channel, GitHub data repository and data scraping tools).

> *They do a lot with a small team honestly; I have been feeling for them this year… I hesitate to create more work for them. They do what I need them to do already... From my niche I am getting what I need. [Media]*

Enthusiasm from interviewees for the SMC to take on new challenges reflects the high levels of trust and confidence in their service, but should be cautiously considered to avoid distraction from their core purpose

We heard enthusiasm from many interviewees in a range of roles for the SMC to do more in areas that are adjacent to their current purpose or service delivery focused model. For example, delivering services direct to the public; services focused on combatting misinformation/disinformation through social media; and researching the science-media system rather than just delivering services within it (see Appendix 8).

If additional funding were available, it is possible that MBIE could both shore-up the SMC to ensure continued service and potentially leverage more value from SMC's trusted reputation and strong operating model by expanding the SMC's purpose. However, we caution that any move to expand the SMC's purpose and scope would need to be carefully considered to ensure that expansion did not become a distraction from the core purpose or create competition with current service users.

APPENDIX 1: EVALUATION QUESTIONS

1 The objectives for the SMC are outlined in its Terms of Reference. How well have these objectives been met? The objectives are listed below:

   a work with the media to improve the quality, depth and breadth of coverage of science related issues (particularly coverage of New Zealand science and innovation)

   b improve the accessibility of science to the media

   c work with the media to improve public awareness and debate about the role science and innovation can play in society and emerging issues

   d provide training and resources to support scientists and research organisations to respond to the media's queries, and to communicate science more effectively (including raising awareness about the available communication channels)

   e provide training and resources to support journalists to produce responsible and insightful science news reporting and analysis that is relevant to the New Zealand public

   f build networks and manage relationships between the key components of the science system and media

   g develop tools and resources to improve public access to New Zealand science content.

2 Are the SMC objectives still fit for purpose and are the performance measures appropriate: If not what changes are recommended?

3 How well is the SMC strategically positioned to meet future challenges in a rapidly changing media and scientific landscape (where, for example, social media channels, media apps, online digital media have become mainstream)?

4 What are the relative merits of the activities that the SMC undertakes (e.g. workshops, Scimex service, etc) to facilitate and strengthen links between the media and the science community?

5 Is there an opportunity to increase the range of users within the science and media sectors? Are there any significant obstacles which prevent potential users benefiting from the services offered by the SMC?

6 Are the governance arrangements between the Society and SMC, and the role of the Advisory Board, appropriate?

7 What are the advantages and disadvantages of SMC current funding model, and of SMC generating additional income through sponsorship, membership (subscription) or charging for some services?

APPENDIX 2: SUMMARY OF THE SMC'S DELIVERY OF ITS OBJECTIVES

Overall, the SMC has met its objectives well.

Objective 1: Work with the media to improve the quality, depth and breadth of coverage of science related issues (particularly coverage of New Zealand science and innovation)

Assessment: Met well

Commentary

Evidence from multiple sources shows the SMC is using a range of approaches to work with the media, both to upskill individuals and to provide direct support.

Evidence from multiple sources shows the SMC support is contributing to improved quantity, quality, depth and breadth of coverage of science-related issues.

Some interviewees perceive that the SMC could take a broader focus in terms of the science-related topics that it covers, which may in turn lead to greater breadth of science coverage (particularly in the social sciences and Mātauranga Māori).

Some interviewees perceive that the SMC could create greater connections with media that reach focused audiences in New Zealand (eg Māori-media, Pacific media and youth).

The objective has two parts: 1) activity: work with media 2) short term outcome: improve quality, depth and breadth.

Performance data captures information about the SMC outputs, demand from the media for the SMC services and short-term outcomes. Data could be strengthened by looking more systematically at the quality of outputs (eg the number and diversity of experts quoted) and diversity of outlets reached.

Table 4: Objective 1 supporting data

Measure	2016/17	2017/18	2018/19	2019/20
Number of media enquiries, resources accessed shows steadily increasing demand for SMC services from media				
- Direct queries	328	348	464	722
- via Scimex	1937	3006	5085	4358
Number of media items with input from SMC shows SMC inputs directly influencing science reporting (short-term outcomes of SMC work)				
- tracked / directly attributable from expert reactions	-	-	926	1547
- tracked / directly attributable from other activities	-	-	454	640
- estimated / indirectly attributable (note, tracking method is now outdated)	4437	3754	-	-
Number of media focused products shows SMC is producing an increasing number of media focused outputs with content from experts				
Expert reactions issued to the media	76	82	112	133
Expert Q&A / briefings	21	7	16	20

Source: SMC 6 monthly reports

The SMC's survey data shows media have a positive assessment of the SMC impact

- In 2020, 89% of media respondents say the SMC has an impact on science coverage
- In 2020, 93% of media respondents say the SMC helps them cover a broader range of science-related issues

Some data is also captured and intermittently reported that speaks to the qualities of products. Eg in 2018/19 the SMC reported on the number of Expert Reactions featuring only NZ experts (significantly higher than the previous year), number of NZ experts quoted in total (significantly higher than the previous year), number of international experts quoted (significantly lower than the previous year).

Objective 2: Improve the accessibility of science to the media

Assessment: Met well

Commentary

Evidence from multiple sources shows the SMC is providing a range of services that improve access to science for the media (proactive and responsive, access to information and to experts) and reduce barriers to media reporting if science (user focused services that can be accessed in different ways depending on need) and that there is high demand for those services across media service users.

Importantly – the SMC has not become a gatekeeper in the system.

The objective looks at the SMC's activity and take up of the SMC's services.

Data is also available about the media and science subsectors that registered users represent.

Data could be strengthened by looking more systematically at the breadth of science covered in research papers/sciblogs articles and diversity of registered users (including the types of media and media audiences reached, and science disciplines).

Table 5: Objective 2 supporting data

Measure	2016/17	2017/18	2018/19	2019/20
Scimex data shows steadily increasing demand for and uptake of SMC services from across science-media subsectors				
- Scimex users – journalists registered in period	376	414	412	509
- Scimex users – experts registered in period	123	136	163	176
- Scimex users – comms staff registered in period	188	89	105	102
- Scimex – journalists receiving Scimex daily	-	-	114	169
- Scimex – number of research papers featured	3191	3220	3296	3521
- Scimex – web stats: sessions	145582	205985	283254	350027
users	92586	133328	199353	264600
page views	342934	427385	505379	573350
session duration (mins)	3.06	2.29	3.46	1.32
SMC website data shows generally increasing use of SMC website, which holds data and information as well as directing traffic to Scimex				
- SMC website – web stats: sessions	93942	74532	135205	152614
users	74920	58343	112893	127691
page views	135669	106485	169035	196066
session duration (mins)	1	1.04	0.42	0.42
Sciblogs data Shows high but fluctuating use of the platform				
- Sciblogs number of new articles	659	811	416	369
- Sciblogs web stats: users	178957	204737	176582	216567
- Sciblogs web stats: page views	391352	396560	350421	384585

Source: SMC 6 monthly reports

Note: All of the Scimex user data is NZ-specific. The number of research papers featured and web traffic stats are the total across the site regardless of geographic origin. This is because all users have access to all papers. NZ journalists frequently opt to browse Australian papers and vice versa. Many papers have joint Aus/NZ authorship and many have international authorship but have been selected as "of interest" to journalists in our region).

The SMC's survey data shows media have a positive assessment of the SMC's value

- 97% of media respondents say the SMC is useful
- 93% of media respondents say the SMC is valued
- 62% of media respondents say they use the SMC's resources at least once a week (which is increasing from survey to survey)

Objective 3: Provide training and resources to support scientists and research organisations to respond to the media's queries, and to communicate science more effectively (including raising awareness about the available communication channels)

Assessment: Met well

Commentary

Evidence from multiple sources shows the SMC is providing training and resources that are valued highly by users and are effective in raising users' confidence and skills. Services focus on building individuals' skills and confidence, as well as removing barriers to engaging with the media and creating an enabling environment (eg work with organisational research communications functions).

There are some indications that demand for training may outstrip supply, and that there is appetite for more support from the SMC to engage with communication channels outside mainstream media.

The objective looks at the SMC's activity and take up of its services, as well as the self-reported outcomes for scientists.

Data could be strengthened by looking more systematically at the diversity of training participants (including the breadth of science disciplines reached).

Table 6: Objective 3 supporting data

Measure	2016/17	2017/18	2018/19	2019/20
SMC training data - experts shows steady demand for and uptake of SMC training courses				
Participants across all workshops	927	1144	1166	670* impacted by COVID)
- Science Media SAVVY – Full workshop	60	52	59	24*
- Science Media SAVVY – Express	90	109	106	32*
- Media SAVVY for Māori researchers	23	12	23	-*
- SAVVY new media skills	29	65	48	42
- Short talks and workshops	725	906	930	572*

Source: SMC 6 monthly reports

The SMC's survey data shows researchers have a positive assessment of the SMC supports

- 95% of workshop participants that responded to the survey say they communicate research more effectively due to training
- 84% of scientists are confident responding to media after the workshop (20% before)

In addition, research conducted by University of Auckland and Te Pūnaha Matatini physicist Georgia Nixon looked at the impact of the SMC on the media profile of scientists it works with. The research

‘scraped’ the websites of major news organisations, detecting comments by experts that had worked with the SMC and found that taking a SMC Science Media Savvy course or providing comment to one of its Expert Reaction columns can permanently boost a scientist’s presence in the media.

Objective 4: Provide training and resources to support journalists to produce responsible and insightful science news reporting and analysis that is relevant to the New Zealand public

Assessment: Met well

Commentary

Evidence from multiple sources shows the SMC is providing training and resources to journalists, and that training and resources are valued highly by users and are effective in raising users’ confidence and skills.

Some interviewees commented that their own skills had been enhanced through consuming the SMC products, not just through attending training.

> *I learned a lot about science reporting early on from those expert commentaries. They taught me as a junior reporter the kinds of questions I should ask and limitations of research and where it sits… That I could approach [science] from a critical point of view to start with! It has been an education to me over the years [Media]*

The SMC’s resources are designed to enable lots of different types of use by journalists, depending on their interests and needs: for example, different journalists may use the same Expert Reactions publication as a seed idea for a story, as a source of verbatim quotes that can be used immediately, as a reference for experts to contact for interview.

The objective looks at the SMC’s activity and take up of its services, as well as the self-reported outcomes for journalists.

Data could be strengthened by looking more systematically at the diversity of training participants (including the breadth of media outlets reached).

Table 7: Objective 4 supporting data

Measure	2016/17	2017/18	2018/19	2019/20
SMC training data - media shows steady demand for and uptake of SMC training courses				
Newsroom workshop participants	64	60	49	60
Aotearoa Science Journalism Fund projects	-	11	10	12
Sponsor science reporting category of annual media awards	1	1	1	1
Provide work placement experience for journalism / science communication student	1	1	1	1
Journalism school talks and workshops (participants)	Not counted	Not counted	25	-* (impacted by COVID)

Source: SMC 6 monthly reports

The SMC's survey data shows high usage of the SMC's services by media and positive perceptions of immediate outcomes from the SMC's supports

- 63% of media respondents that participated in workshops say they influenced how science is covered
- 82% of media respondents that participated in workshops say it would be useful for others
- 76% of media respondents are confident covering a broad range of science issues
- Media respondents report high usage of a range of the SMC's services: Expert reactions (79%), SMC picks (70%), media query hotline (69%)

Objective 5: Build networks and manage relationships between the key components of the science system and media

Assessment: Met

Commentary

Evidence from multiple sources shows the SMC has engaged with experts, media and research communications staff from across wide-ranging subsectors of the science-media system, and more recently with some Māori-media. However, the SMC reach is not universal. There are many reasons why individuals may not engage with the SMC. With more resource, the SMC could do more to expand and strengthen its relationships across the science-media system, including with experts from broader disciplines of science, research communication staff in some agencies, executive level stakeholders and media outlets that reach focused audiences.

Evidence from multiple sources shows the SMC has contributed to building cross-sector networks and relationships (through 1-1 introductions, bringing groups of people together and making individuals' contact information available).

Importantly – the SMC has not become a gatekeeper of those relationships.

There is evidence of relationships that began through the SMC continuing without the SMC's ongoing involvement.

The objective looks at the SMC's activity and the connections and relationships built.

The SMC has started to capture data to identify database contacts that identify as Māori.

Data could be strengthened by looking more systematically at the diversity of the SMC's contacts (including the breadth of science disciplines and media outlets reached) and how people from different parts of the system connect with each other.

Table 8: Objective 5 supporting data

	2016/17	2017/18	2018/19	2019/20
Connecting and networking with science and media sector contacts (activities) Shows ongoing focus on connecting with sector stakeholders				
- Relationship meetings	Not counted	Not counted	75 (6 mo)	100 (6 mo)* (impacted by COVID)
- Science / media networking events	2	2	2	2
- Experts added /updated in SMC databases	Not counted	388	832	1124

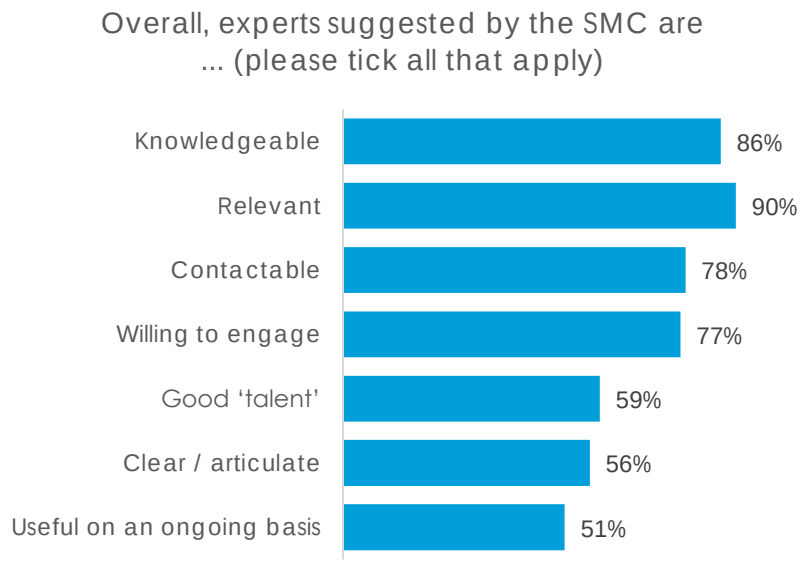
Source: SMC 6 monthly reports

The SMC's survey data shows positive perceptions of connections resulting from the SMC's input

- 72% of scientist respondents that had participated in a workshop report positive interactions with media after workshops
- 80% of media respondents that had participated in a workshop report further contact with scientists after workshops
- 89% of scientist respondents report positive interactions with media after providing commentary to SMC

79% of Media survey respondents have had an expert recommended to them by the SMC and Figure 2 shows that Media respondents' assessments of the experts recommended by the SMC are generally positive.

Figure 2: Media perceptions of experts recommended by the SMC



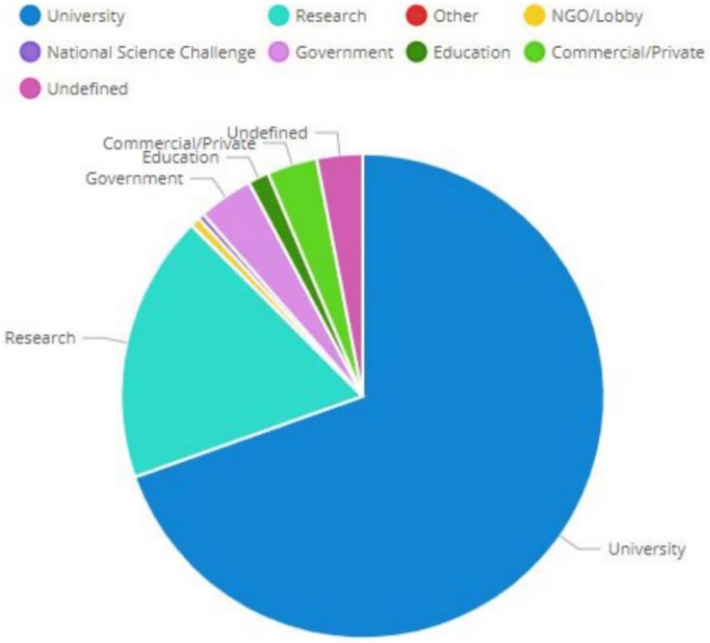
Source: SMC media survey 2020 (n144, of whom 79% had been recommended an expert)

The SMC's reach in the Science and Research sector

- The SMC's contact databases include:
  - 8,113 researchers (from all types of organisations)
  - Representing roughly 40-45%[20] of the research workforce
- The SMC has coverage across organisation types, with most experts associated with universities (Figure 3)
  - Note that around 50% of the research workforce is estimated to be employed by universities. Note that associations to National Science Challenges are likley to be underrepresented
- Around 15% of experts that have had their records updated in the database in the past 12 months identify as Māori (n165 out of 1132)
  - The database field is "Of Māori origin?" and captures researchers who have identified themselves as Māori. Those without an entry in this field may be data-deficient especially for historical database records. No one is labelled "non-Māori". No other ethnic data is recorded.
- Around 43% of experts identify as female, 2% do not specify gender.

[20] Excerpt from Royal Society Te Apārangi working paper circulated in August 2020 entitled *The Research Workforce of Aotearoa* supplied to the SMC by Andrew Cleland. The paper estimates the research workforce, excluding post-graduate students to have a headcount between 18,000-20,000

Figure 3: Researchers in the SMC's expert database by organisation type (Total=8,113)



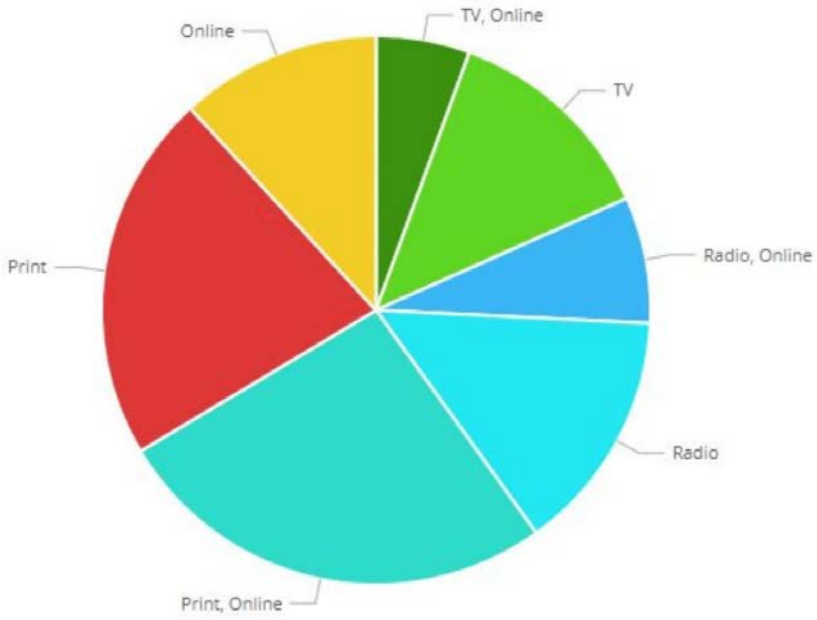
Source: Data extracted from the SMC databases for the evaluation

The SMC's reach in Media sector

- The SMC's contact databases include:
  - 584 journalists
  - Representing roughly 36%-40%[21] of journalists
- The SMC has good reach across types of media (Figure 4)
- The SMC is reaching media whose audiences have broad science-related interests (Figure 5)

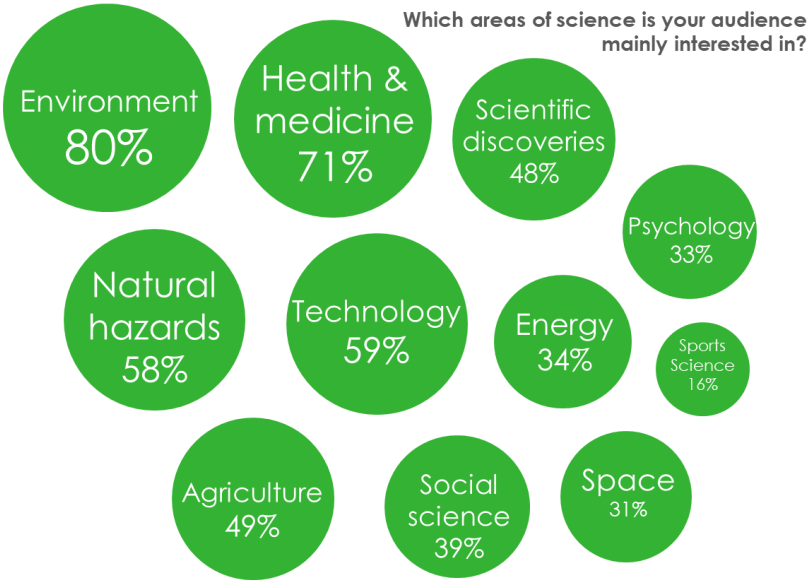
[21] According to the Census, 1,197 print journalists, 219 radio journalists, and 219 television journalists worked in New Zealand in 2018. This number more than halved compared to the 2006 census.

Figure 4: Journalists registered in the SMC database by media type (Total=584)



Source: Data extracted from the SMC databases for the evaluation

Figure 5: Proportion of media survey respondents who report their audiences are interested in areas of science

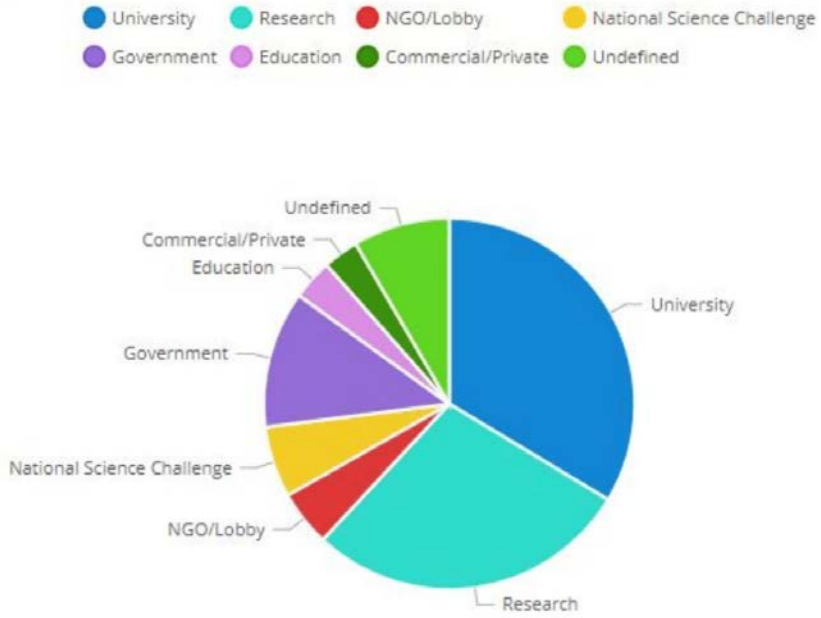


Source: SMC media survey 2020 (n144)

The SMC's reach in Research Communications sector

- The SMC's contact databases include:
  - 224 communications staff
- The SMC has coverage across organisation types, with most experts associated with universities and CRIs (classified as 'Research') (Figure 6)
  - Note that associations to National Science Challenges are likley to be underrepresented if they are not individuals' sole affiliation.

Figure 6: Research Communications staff registered in the SMC database by organisation type (Total=224)



Source: Data extracted from the SMC databases for the evaluation

Objective 6: Work with the media to improve public awareness and debate about the role science and innovation can play in society and emerging issues

Assessment: Not met directly

Commentary

There is limited data to assess how well the SMC has met this objective. The SMC does not report on this objective, and most interviewees see it as an indirect outcome of science-reporting, rather than the direct focus of the content of science-related media stories. As such, some interviewees believe

that by supporting coverage of science-related issues, the SMC has contributed indirectly to debate about the role of science and innovation. Media coverage of science stories related to COVID-19 is an exceptional example of media coverage discussing the role of science more directly. Interviewees have mixed views about the extent to which this objective should be a direct focus for the SMC or a by-product of the SMC's work.

The intent of this objective could be captured in the intervention logic, with the specific objective either dropped or clarified to show it is a by-product rather than direct focus of the SMC's work.

Objective 7: Develop tools and resources to improve public access to New Zealand science content

Assessment: Not met directly

Commentary

There is limited data to assess how well the SMC has met this objective. The SMC does not report on this objective, it is not listed in the 2017 Work Programme Agreement between MBIE and the Society, and it appears to be in contradiction of the scope set out for the SMC in its TOR which states: The Centre will not provide a service for the public, or for the education community, although some resources will be able to be accessed and used by them. The public can access a wide range of the SMC's resources through their website and Scimex, and the SciBlogs platform that the SMC coordinates and edits. There is some evidence of media outlets hosting the SMC's Expert Reactions products directly on their website and/or linking readers back to the SMC for further information. However, the primary and dominant way that the SMC contributes to this objective is indirectly, through its resources influencing science reporting that reaches the public through traditional media.

This objective could be dropped.

APPENDIX 3: THE SMC'S OBJECTIVES AND PERFORMANCE MEASURES

Including a revised and agreed intervention logic model for the SMC in the TOR would help to ensure all parties have a shared understanding of the SMC's purpose and scope, and of *how* the SMC proposes to affect change.

The objectives are generally still relevant, but could be rationalised to reduce the number overall and to reduce the overlap between them (for example, 'work with the media' and 'provide training and resources to support journalists'). The two objectives that are not a direct focus of SMC work could be dropped:

- Objective: Work with the media to improve public awareness and debate about the role science and innovation can play in society and emerging issues
    - This is a by-product of the SMC's work but not the direct focus of the content of its coverage. It would be part of the intervention logic model, but its more removed from the SMC's direct influence than other objectives. The intent of this objective could be captured in the intervention logic, with the specific objective either dropped or clarified to show it is a by-product rather than direct focus of the SMC's work.
- Objective: Develop tools and resources to improve public access to New Zealand science content)
    - This objective conflicts with other statements in the TOR about the SMC's scope, and working directly with the public is not part of the SMC model. It could be dropped

Phrasing of the objectives could be revised to focus on quality and diversity rather than to imply a need of growth, which is out of keeping with the current stage of maturity of the service.

Overall, the SMC performance measures are reasonably suitable for tracking what the SMC is delivering (eg numbers of Expert Reactions created), reach and uptake of services (eg website usage), and to some extent, the short-term outcomes of using the SMC's services (eg direct input to science stories in the media). They draw from a range of sources, including administrative data and service user surveys, which is good, and do a good job of going beyond 'easy to collect' information without creating an unwieldy burden of monitoring.

Performance measures and KPIs could be revised to focus on quality or diversity of the SMC's reach and services rather than growth, which is out of keeping with the current stage of maturity of the service.

The SMC's performance measures do not provide a good picture of the contribution that the SMC makes to broader outcomes for New Zealand. This is appropriate because broader outcomes are beyond control and direct influence of the SMC and are likely better captured through case studies

and occasional research rather than monitoring. Nonetheless, it is important for the SMC to be able to draw the line of sight from its activities to outcomes for service users and impacts for the New Zealand public. The narrative reporting in its 6-monthly reports go some way towards this.

The SMC could also consider taking a more proactive approach to telling its performance story to service users, potential service users and other stakeholders (including funders and individuals working at the executive level of sector organisations). The SMC should discuss with stakeholders how this can be done without creating competition-for-credit for outcomes, which could discourage service use. Numbers will be part of this picture (eg demonstrating use of the SMC's services and diversity of the SMC's reach and coverage). Detailed case studies that track the SMC's contribution through to societal outcomes are also an option that could be explored. If resources allow, the SMC may also consider adding to its portfolio of regular surveys to capture broader perspectives about the impact of its work – for example, from individuals/ agencies/ decisionmakers' whose work is impacted by media coverage of science. If this approach is taken, surveys will need to be carefully constructed to ensure they do not create perverse incentives for the SMC to focus on some topics and not others, and no targets should be attached.

APPENDIX 4: BARRIERS AND MOTIVATORS FOR SERVICE USERS

The barriers and motivators for individual experts to engage with the media, and for the media to engage with science reporting, are generally seen to be key drivers for them to also engage or not with the SMC. Most of the incentives and disincentives are outside of the SMC's control, and relate to the wider system for funding and recognising science and science reporting, and the constraints of different organisational environments.

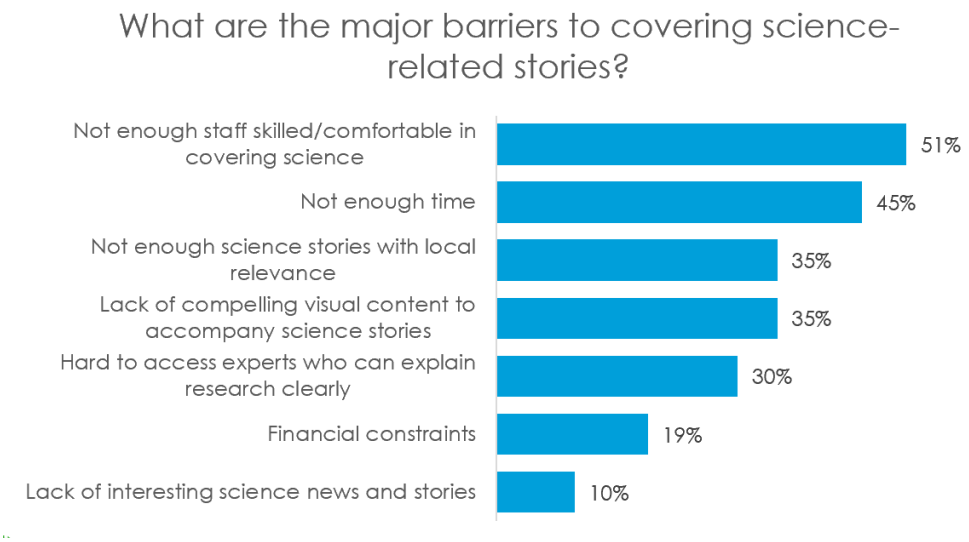
The SMC's surveys capture data from service users about the barriers and motivators of engaging for them (See figures overpage).

We find that the SMC is alert and responsive to service users' enablers and constraints and there is evidence of the SMC's services being designed to address barriers, when these fall within the scope and purpose of the SMC's work – for example

- Gathering expert reactions on embargoed research reduces **time** pressure for a response; expert reactions can be reused verbatim by multiple news outlets, reducing the demand on experts' **time** for interviews
- The SMC provides feedback to experts about media take up of their comments, which can be used for 'impact' reporting, potentially supporting **professional incentives**
- Media-SAVVY training courses builds participants **skills** and **confidence** for engaging with the media.

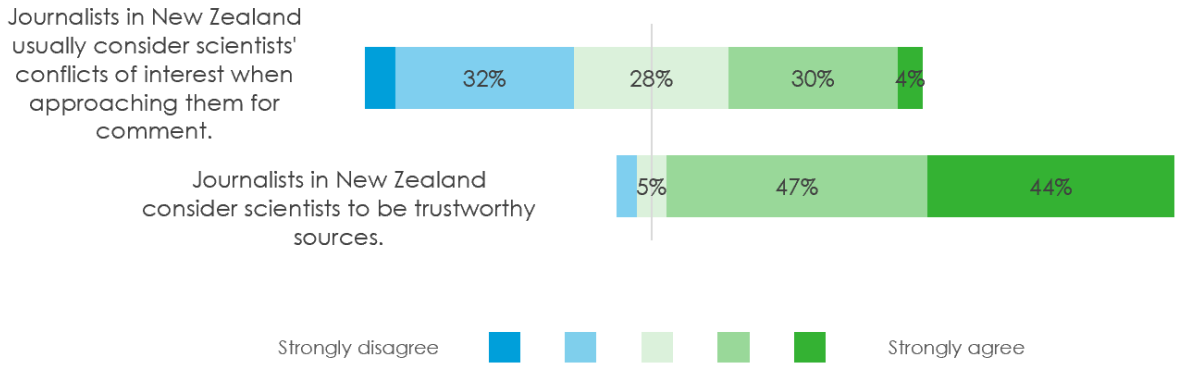
Media survey respondents' barriers and motivators for engaging with science reporting

Figure 7: SMC Media survey 2020 respondents' perceptions of media barriers to covering science-related stories



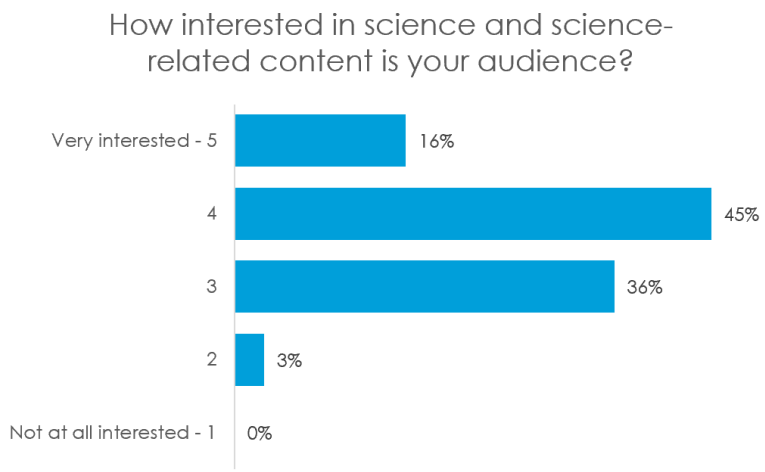
Source: SMC Media service users Survey 2020 (n144)

Figure 8: SMC Media survey 2020 respondents' perceptions of media attitudes to science



Source: SMC Media service users Survey 2020 (n144)

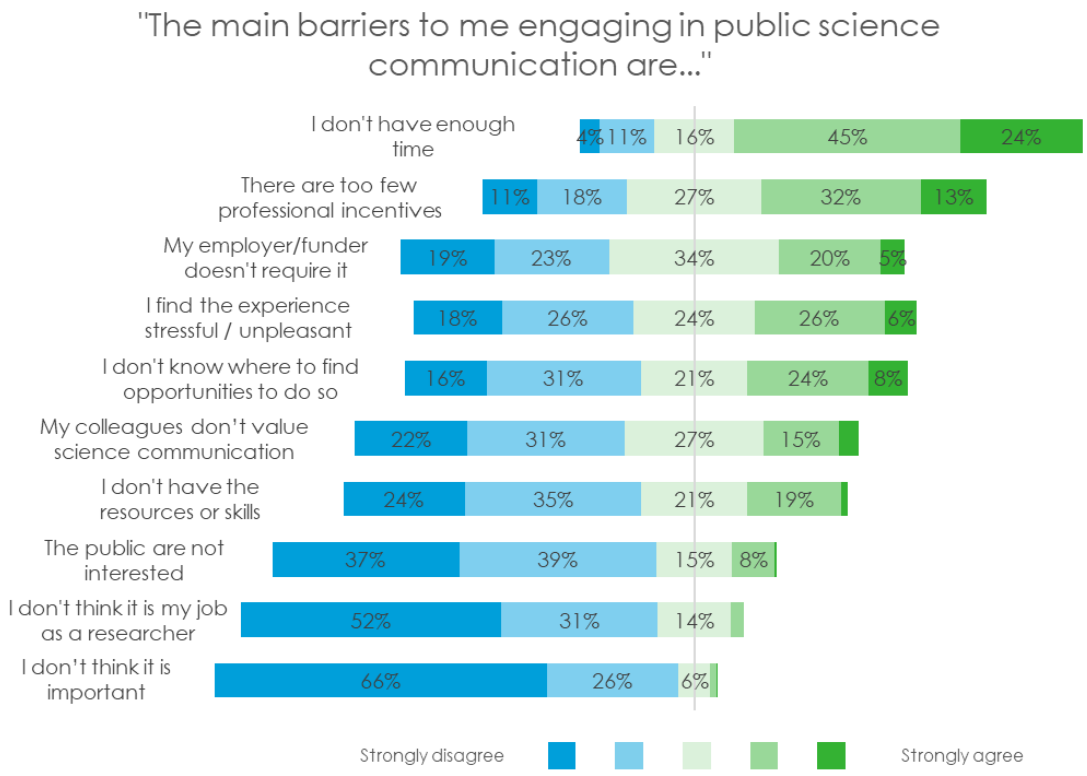
Figure 9: SMC Media survey 2020 respondents' perceptions of audience interest in science-related content



Source: SMC Media service users Survey 2020 (n144)

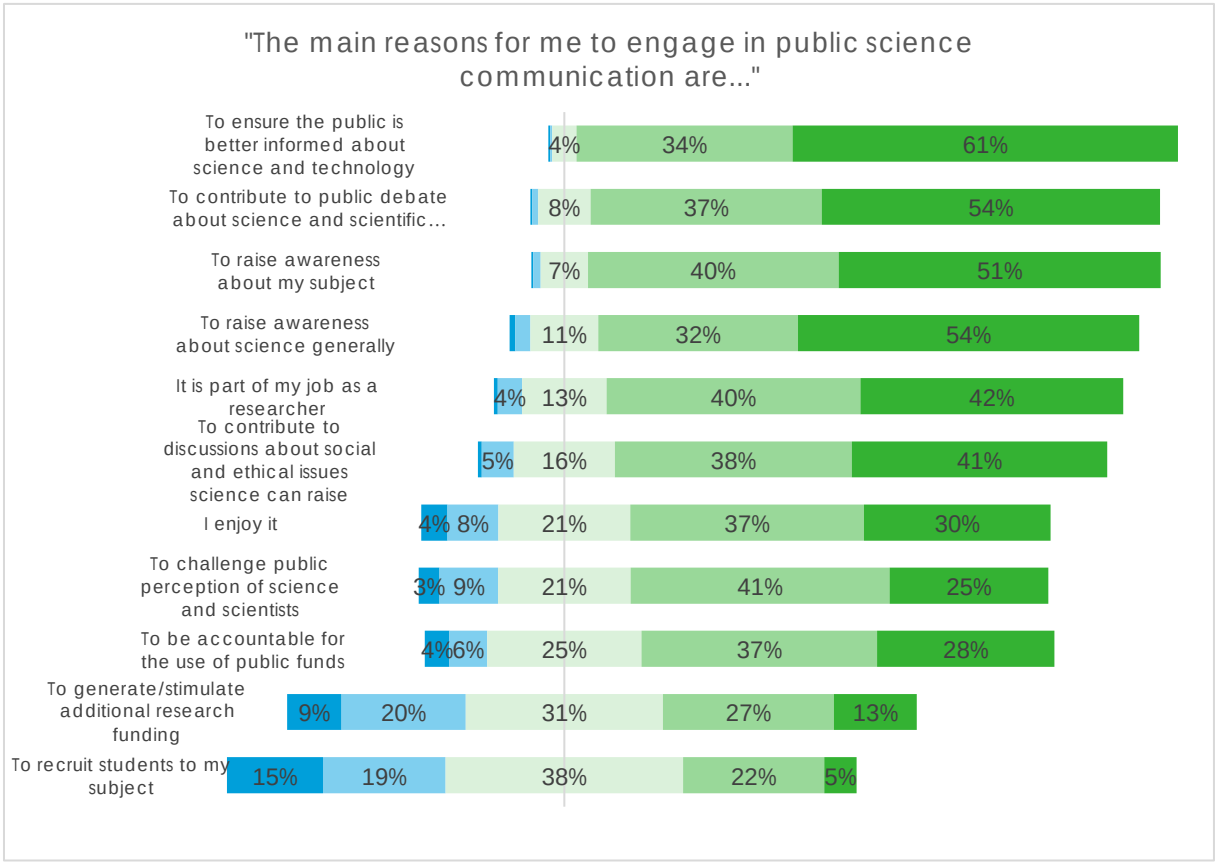
Scientist survey respondents' barriers and motivators for engaging with media

Figure 10: SMC Scientists survey 2020 respondents' assessment of barriers to public communication of science



Source: SMC Scientist service users Survey 2020 (n324)

Figure 11: SMC Scientists survey 2020 respondents' assessment of reasons for engaging in public communication of science



Source: SMC Scientist service users Survey 2020 (n324)

APPENDIX 5: THE SMC'S GOVERNANCE ARRANGEMENTS AND ADVISORY BOARD

Overall, the relationship with Royal Society Te Apārangi is seen to be positive.

Table 9: Relationship to Royal Society Te Apārangi

Advantages	Disadvantages
Good alignment of values and principles between the SMC and Royal Society: particularly with regard to independence and science stakeholders Provides security for the SMC, particularly through funding top ups Seen to be an efficient way for the SMC to access overhead services, compared to complete independence	Creates a distance between the SMC and the funder, MBIE, which may be reducing visibility and awareness of the SMC model and value. May also lead to missed opportunities for the SMC to work more collaboratively with other relevant programmes

Few interviewees were able to provide feedback about the role of the Advisory Board, as those who are not directly involved have limited visibility of its membership and role. Those who could provide feedback were generally positive about the suitability and calibre of members and the connections that the Advisory Board members enable across the science-media sector and their role of providing advice.

The role of the Advisory Board is seen to be appropriate for the current governance arrangements – ie a governance board is not needed because the SMC is governed through Royal Society.

Board members generally report that the level and nature of demand on their time is appropriate and that the SMC makes good use of their expertise, connections and knowledge (both as a group and as individual members). Members particularly commented on the value they get from hearing from other Board members about emerging issues, challenges and opportunities in their area of the science-media system.

Science media centres in other jurisdictions have different TOR for their Boards and different processes for appointing Board members. These reflect the different models and funding arrangements

- the UK SMC has both a governance board and an advisory board, reflecting its status as an independent charity and ongoing need for sector input.
- The AUS SMC has a very large board made up of representatives from their gold tier sponsor organisations. An advantage of the model is high level of engagement from sponsors, disadvantage is that it limits the ability to select individual members based on their expertise.

APPENDIX 6: ALTERNATIVE FUNDING APPROACHES

The current funding model – a government funded SMC - is generally seen to be fit for purpose in a New Zealand context, although the level of funding is insufficient to cover the services the SMC delivers. The SMC has 'cut its cloth to fit' the resources it has, and with additional funding could deliver more against its objectives.

Table 10: Advantages and disadvantages of additional revenue-raising models

	Discussion	Advantages and disadvantages
Full Government funding	Neither the UK nor the Australian SMC receive significant ongoing funding directly from national or federal governments Government funding is seen to be a risk in countries where trust in government overall is low, or specifically in relation to government science. We didn't receive feedback to suggest that stakeholders in New Zealand are concerned about government interference in the independence of the NZ SMC. To the contrary, one interview reflected that the NZ SMC has existed through several changes of government and they have not detected any related change in quality or focus. Seen to be an appropriate way to fund a 'public good' – which NZ SMC is perceived to be	ADVANTAGES • Stable and predictable funding • Maintains independence • Maintains equitable access – does not introduce a barrier for service users DISADVANTAGES • Can be difficult to increase funding • Current funding is insufficient for the level of service provided
Donations models	The UK SMC is fully funded through donations from over 100 funders - including scientific bodies, science-based companies, science publishers, universities, patient research charities, media organisations, research funders and government Donations are capped at 5% of annual funding (except in exceptional cases that are Donors are acknowledged and linked through the UK SMC website, but do not receive any other 'perks' that aren't available to all service users A donations model is seen to be appropriate in an environment where there are many organisations with an interest in the SMC mission	ADVANTAGES • Donations can be declined from specific organisations (eg if a donor has previously sought to influence the SMC through their donor-recipient relationship; or if association with the organisation would not be advantageous) DISADVANTAGES • Potential for unstable / unpredictable funding • Requires ongoing relationship management

	Discussion	Advantages and disadvantages
Sponsorship models	The Aus SMC has a diverse funding model that is underpinned by sponsorship. To ensure the independence of the Centre, each sponsorship is capped at 10% of total operating costs, and sponsorship is offered in tiers. Sponsors receive tailored services (such as training, bespoke annual reports focused on organisational use of SMC services) and benefits according to their 'tier' – with the highest tier 'Foundation Sponsors' receiving a seat on the SMC board (currently 19 organisations are Foundation Sponsors, resulting in a large Board that is not selected). A sponsorship model is seen to be appropriate in an environment where there are many organisations with an interest in the SMC mission and incentives are required to attract funding from sector stakeholders. It is important for incentives to be sufficiently attractive to potential funders without creating undue burden to deliver.	ADVANTAGES • Model can be adapted to respond to changing stakeholder interests DISADVANTAGES • Potential for unstable / unpredictable funding • Needs careful management to avoid loss of independence/ perceived loss of independence • Can generate significant work to fulfil sponsorship commitments • Requires ongoing relationship management
Membership / Subscription models	Stakeholders had strong doubts about the appropriateness of membership/subscription models in New Zealand. There is a perception that there isn't money available within the media to pay for SMC services, even if they are highly valued.	ADVANTAGES • Creates incentive to focus on services that are valued and relevant DISADVANTAGES • Potential for unstable / unpredictable funding • May further reduce focus on important topics that have less media/public interest • Needs careful management to avoid loss of independence/ perceived loss of independence • Reduced equity of access (although this can be mitigated)
Charging for services	NZSMC does charge for some of its training services, but these are still heavily subsidised Some interviewees thought there may be opportunity for SMC to increase their fees for training, as long as measures are introduced to ensure cost does not become a barrier to access.	ADVANTAGES • May help to indicate comparative value of services • Services can be dropped when demand is low DISADVANTAGES • Potential for unstable / unpredictable funding • May incentivise SMC to focus on commercial services rather than value adding services • Reduced equity of access (although this can be mitigated)

APPENDIX 7: THE SMC'S ROLE IS COMPLEMENTARY TO RESEARCH COMMUNICATIONS

The most mixed feedback that we received about the SMC was from interviewees that work in the Research Communications sector (RC). In some ways this is not surprising as the evaluation intentionally sought out interviewees from this sector that have been low-users of the SMC. We also sought to explore a hypothesis that there is duplication between the SMC and RC roles.

Interviewees in RC roles have mixed uptake of the SMC's services, reflecting mixed views among them about the value of the SMC. They can be grouped into three categories (Table 11).

Table 11: Three types of perspectives from Research Communications interviewees (RC)

Positive view of the SMC	Mixed or neutral view of the SMC	Negative view of the SMC
Interviewees with a positive view generally have: • Good understanding of the SMC model and purpose that matches the SMC TOR • Positive view about the complementarity between SMC and RC roles – don't perceive duplication • Varying use of SMC services to support their objectives – not one size fits all	Interviewees with a mixed or neutral view generally have: • Mixed understanding of the SMC model and purpose • Mixed views about the complementarity between SMC and RC roles – some have been through a process with SMC to develop to shared understanding that is mutually beneficial • Mixed levels of use of the range of services SMC offers –due to low awareness; or SMC services not previously fitting their needs	Interviewees with a negative view generally have: • Understanding of the SMC role and purpose that doesn't match SMC TOR, or • Negative view about the complementarity of SMC and RC roles – perceive SMC duplicates or even detracts from what RC are trying to achieve • Low or no use of SMC services – although some use them strategically (eg for accessing media-training)

Positive view of the SMC	Mixed or neutral view of the SMC	Negative view of the SMC
I have used SMC mostly as a result of emails for expert comment, when that involves anything regarding [subject area of interest] I contact our guys. From our point of view that is exceptionally useful. We always get quite a bit of coverage from having our experts in there [Research Communications] The SMC support me as a stretched thin on the ground comms person. NZ media change all of the time. Keeping on top of that when you want to do an OpEd piece is really hard – and you have to work even harder for technical pieces. SMC help to direct me. Fast. [Research Communications] The SMC is important and vital to my role… Their role enhances what I am delivering… for example, if there is a breaking news story and a journalist wants a response and they ring me and I can't get through to [my researchers] immediately they just move onto the next person, they don't care. SMC steps into that with the embargo service which extends the timelines for [my researchers] to respond [Research Communications] The SMC can help handle a tricky situation. For example, we had an academic that had to make a retraction of a scientific paper and the SMC could help with that and handling tricky questions. [Research Communications]	They have expanded what they do and I have fallen behind on my understanding of that – I need to do a deep dive. In preparation for this interview, I have seen things [on SMC website] that I didn't know about. [Research Communications] SMC on the whole has done a really good job with us to appreciate our needs. [Eventually SMC adapted to meet our needs] It was a big thing. [Research Communications]	I think a lot of what SMC are doing is duplicating - every CRI and Uni has a comms team… Sometimes how they present themselves tends to bypass the comms teams and go straight to scientists. The comms teams are there for a reason. We get accused of being gatekeepers – but we understand the lines of what can and can't be said, our role is to understand that. SMC don't understand the intricacies. [Research Communications]

Experts and media interviewees generally see the SMC and RC as having different roles that do not overlap – there is room for both.

> *The CRIs have a commercial objective and unis want to raise the profile of their researchers – generally the level of trust in NZ is high but they are trying to give you the most newsworthy version of their research, the SMC is an independent filter. I often use them for a list of experts. If I go to a uni they are pitching just their people to me [Media]*

> *Some orgs don't like SMC because they feel that they fulfil the role of the comms team – but they are independent so from the journalist and scientist perspective they are a much better place to go [Research]*

The SMC helps journalists to navigate RC networks and processes.

> *If we do something off our own bat, we go through uni comms people. It can be a very long process. Unis seem to split out their comms people by schools / faculties. That is fine but it means I need to find the right person, and they may not be there. Most of the time I don't have much luck at all. It might not happen at all. Then I get an email from the comms people saying – "I tried, I asked our staff, no-one is available." It's usually late in the day [which is a problem for a news deadline]. I have never had that with SMC. [Media]*

Working well with the RC sector is important for the SMC to reach wide-ranging experts, and to support experts to reach media. Collaboration is a two-way process.

> *It is for me to get stuck in and talk to my other comms managers that deal in similar areas and we need to sort out "what do we want" then sit and have a conversation with one of [the SMC staff] about what do we all want from each other. There is more that could be made of this opportunity. [Research Communications]*

APPENDIX 8: POTENTIAL FOCUS AREAS THAT ARE ADJACENT TO THE SMC'S CURRENT PURPOSE AND/OR SERVICE DELIVERY FOCUSED MODEL

Note that most of these suggestions would require additional funding and many are adjacent to the SMC's current purpose and/or service-delivery focused model.

Table 12: Interviewees' suggestions for potential additional focus

Social media
Many suggestions: • supporting scientists to understand the connection between social media and mainstream news media (likely within current mandate and already addressed somewhat through training courses) • supporting scientists to engage with social media as a channel for science reporting to the public (likely outside current purpose which is focused on science reporting in traditional media) • using data analytics to track how well science-reporting travels through social media (likely outside current purpose which is focused on science reporting in traditional media, and service-delivery focused model; and would require different skill sets) • using data analytics to track spread of misinformation/disinformation through social media (likely outside current purpose which is focused on science reporting in traditional media, and service-delivery focused model; would require different skill sets)
Combatting misinformation / disinformation
The SMC's training and services help to prevent misinformation and bad science being reported through mainstream media, by upskilling journalists and providing 'good' science that scientists can easily access for science stories. *Disinformation and misinformation has become a real issue. Particularly around COVID. But for a long time around Climate Change too. The SMC's response has been a good one – don't leave the vacuum for the misinformation to fill…. But with Social Media and the number of platforms available it will be an increasing problem [Research]* Several interviewees noted that misinformation/disinformation is a growing problem, especially outside of traditional media (social media and in some international media sources). Suggestions for how SMC could contribute to combating this problem include: • developing a quality mark / tagging system for readers to understand where science reporting has come from (likely could be done within current purpose but needs further research to determine demand and relevance) • conducting research and providing strategic advice to support stakeholders across the science-media system to combat mis/disinformation (likely could be done within current purpose but not a key part of the SMC's current approach; needs further research to determine demand and relevance)
Researching the science-media landscape, to support greater impact

Some interviewees would like to see the SMC take a more active role in researching the science-media landscape, and producing strategic advice and direction to the sector about *how* different functions should be delivered. For example, undertaking research to explore the impact of science reporting. (While not outside current purpose, this would be a change from SMC core business as a service delivery organisation; further research needed to identify whether there really is a gap that wouldn't duplicate other professional bodies that support research communication and journalists, for example)

More focus on providing services directly to the public

As discussed, some interviewees believe this already the SMC's role, others would like to see the SMC take up this role. (Outside of current purpose, would require a significant change of approach if it were a core focus and could create competition with traditional media)

Wire service / service to write press releases

Some interviewees would like to see the SMC take a more hands on role in drafting press releases for experts and writing science stories that can be reported verbatim by media outlets. Others argue against both of these suggestions as they would duplicate the roles of RC and reporters respectively. (Likely could be done within current purpose, but is not part of the SMC approach to be an enabler rather than duplicate/replace other functions in the system)

Supporting scientists to communicate and liaise with each other

A small number of experts suggested the SMC could have a role in:

- Connecting experts with each other for the purpose of collaboration around common media engagements (likely could be done within the SMC's current purpose, although more research needed to determine the level of demand)
- Connecting experts with each other for the purpose of general collaboration around research (likely outside of the SMC's current purpose)

ABOUT MARTINJENKINS

This report has been prepared for the Ministry of Business, Innovation and Employment by Penny Fitzpatrick and Donella Bellett from MartinJenkins (Martin, Jenkins & Associates Limited).

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