

## SFI input to Smart Specialisation consultation

### Summary

Science Foundation Ireland welcomes the opportunity to input into the consultation on Smart Specialisation.

The national research and innovation system has several well-performing organisations which focus on the immediate and short-term needs of the enterprise sector.

In contrast, SFI focuses on the medium- and long-term enterprise sector needs. SFI invests in research which can create emerging economic sectors, ones in which Ireland can take a global leadership position. This longer-term view is vital for a Small Advanced Economy to compete globally.

For example, SFI were strategically focusing on and funding the Internet of Things far in advance of the IoT becoming a global movement.

We suggest that the importance of this foresight based, future-oriented, longer-term outlook is called out in the new Smart Specialisation strategy.

### Response to “How we would like SFI to contribute” email

**“SFI’s work on industry/academic collaboration would be of most interest to us in the development of this strategy”**

SFI’s model, of research excellence in the Higher Education Institutions increasing industry/academic collaboration and attracting Foreign Direct Investment, has been very successful. SFI believes this model works very well alongside smart specialisation. For example, the SFI Research Centres are virtual centres, typically spread across the Republic, which aggregate the distributed excellence in the Higher Education Institutions. Even in this “bottom-up” model, many of these Research Centres are very strongly aligned with regional specialisms, due to the industry cost-share requirements built into the programme. For example, the CÚRAM Research Centre for Medical Devices, led in NUIG, is well-aligned with Galway being a global hub for medical technology.

SFI’s new organisational strategy [\*Shaping Our Future\*](#), published in 2021 and grounded on extensive stakeholder consultation, includes several relevant actions. These actions provide a summary of SFI’s plans for industry/academic collaboration.

*Excellent Research, ER2: Grow and evolve the SFI Research Centres programme and other enterprise facing SFI programmes to drive research across all areas of STEM. SFI will develop and support the growth of existing Research Centres. New Proto-Centres will be funded to start the process of scaling existing groups of expertise up to full Research Centre levels and SFI will explore the options for merging existing centres into National Research Institutes in future funding phases. The new Research Centres, Proto-Centres and National Research Institutes will be funded in areas of unique opportunity for Ireland and where the Centre model is appropriate.*

*Tangible Benefits, TB5: Introduce new programmes to improve SME and entrepreneur engagement with both SFI-individually funded researchers and with SFI Research Centres, for example, creating*

*research and innovation hubs for industry and academic engagement across the regions, so that real-world impacts of knowledge transfer are better realised. These hubs will follow EU Smart Specialisation principles, building key skills in regional clusters. The new schemes will focus on reducing lead time, bureaucracy and complexity. SFI will better collaborate with Enterprise Ireland, the Institutes of Technology and the new Technological Universities. SFI will explore the use of European State Aid Exemptions and, in conjunction with the revised National Intellectual Property Protocol, they will ensure that maximum benefits can be realised through the collaborative efforts of enterprise and the research community alike.*

Tangible Benefits, TB6: *Enhance the Research Centres programme to further its economic and societal impact. The new funding model for the second phase of the Research Centres will ensure a step-change increase in the funding leveraged by the Research Centres. SFI will develop an ambitious programme for the third phase of Research Centres.*

Cohesive Ecosystem, CE3: *Incentivise and require researchers to engage early and often with adopters, designers, end-users and purchasers of their research outcomes, with entrepreneurs, and with regional groups to maximise the potential impact of the research funded by SFI. This includes introducing appropriate engagement mechanisms, so that stakeholder involvement in the review process results in selecting proposals with more potential impact.*

**“Are there strategic priorities that SFI would like to see reflected in the S3? Is there a particular message SFI would like to communicate in the strategy?”**

SFI’s key response to this question is that the S3 should also consider longer term strategic priorities. As is stated in the summary, SFI focuses on the medium- and long-term enterprise sector needs. SFI invests in research which can create emerging economic sectors, ones in which Ireland can take a global leadership position. This longer-term view is vital for a Small Advanced Economy to compete globally. SFI suggest that this view be reflected in and communicated in the S3 strategy.

Additionally, SFI very much agrees with the messages in the consultation paper, in particular:

- 1) The importance of increasing investment into research and innovation
- 2) The importance of a more simplified and streamlined national research system which would support agility and increase the ease of interaction between enterprise and the Higher Education Institution system.

Both messages were consistently received from all stakeholders across the system throughout SFI’s extensive Strategy consultation process.

**“With regard to the five cross-cutting strategic aspects of S3 (1. Digitalisation and digital transformation 2. Green transformation for enterprise 3. Innovation diffusion 4. International collaboration on RD&I 5. Actions to improve the national or regional enterprise research and innovation system) are there any messages or actions that SFI would like to include under these headings?”**

SFI will be working with DFHERIS to deliver the new National Grand Challenges Programme (NGCP). This programme has been funded out of the National Recovery and Resilience Programme. The NGCP will see mission-oriented challenges used to incentivise researchers to deliver tangible impact for society in areas such as health, agriculture and climate. The two focus areas for the NGCP will be green and digitalisation. SFI and DFHERIS aim for the roll out the NGCP to be very closely aligned with the

new smart specialisation strategy as it targets the cross-cutting strategic aspects 1. digitalisation and digital transformation and 2. Green transformation for enterprise.

Although at the very early stages, SFI is proposing a new scheme as part of the European Regional Development Fund. SFI have proposed the establishment of three to four Centres for Technology Innovation & Entrepreneurship (CTIE) focused on expedited translation of cutting-edge research in the areas of health, climate, digital transformation & manufacturing into commercial application (spin out formation and technology licensing opportunities). If successful, this programme will be aligned to smart specialisation. Specifically, each CTIE will leverage strengths and develop key skills in regional clusters.

The CTIE programme will also target increasing research intensity in SMEs, jobs in SMEs, and SME engagement with the public research system.

The CTIEs will also focus on reducing lead time, bureaucracy and complexity. To compete on export markets / global markets, it is critical to accelerate time to market in research time from initial idea through to concept. SFI aims to focus on collaborative working across IoTs, TUs and SMEs to help progress this.

**“What are Ireland’s current sectoral or research strengths? Are these strengths specific to any one region? Where are the opportunities for Ireland?”**

In its new strategy *Shaping Our Future*, SFI commits to foresighting and horizon scanning to incorporate Ireland’s future economic needs into SFI’s decision making process. SFI aim to increasingly ask the question “Why in Ireland” to determine the strategic advantages of funding a particular proposal in Ireland. SFI aim to invest in areas where Ireland is “nearly world-class” to provide the additional impetus needed to attain a global leadership position.

As part of the foresighting work, SFI have done some quantitative analysis to determine priority areas for new emerging Research Centres. This work is at an early stage and is currently being qualitatively tested using the Delphi Method. For indicative purposes only (both because the work has not yet concluded and because the findings are specifically for new emerging Research Centres), some of the highest priority areas resulting from this process are:

- Cybersecurity and cryptography
- Medicinal chemistry
- Genetic regulation / epigenetics / chromosomal biology
- Particle physics and Astronomy

Though this particular process / methodology was not region specific, it could be updated and applied to smart specialisation to provide a longer-term regional specific view of national needs.

**“Are there any SFI actions relating to enterprise RD&I in other national strategies which could be translated into this strategy? Are there actions that were under consideration but not included in other strategies, that may now be suitable for S3?”**

The successor to Innovation 2020 will likely include several of these actions.

Action 14 in the National Cyber Security Strategy: “Science Foundation Ireland, along with DBEI and DCCA, will explore the feasibility through the SFI Research Centre Programme, the Research Centre

Spoke programme or other enterprise partnership programmes, to fund a significant initiative in Cyber Security Research.”

There are also several relevant actions in the national AI strategy “AI – Here for Good”.

**“Do you have supporting case studies or profiles for any of the input you are providing? Are there SFI Research Centres that have success working with enterprise for which you could provide a case study for the strategy?”**

Yes, we have several. We would be glad to discuss with you to choose according to your preferences.

#### [Response to open Consultation Questions](#)

We have responded to most of the relevant consultation questions above. For all of the below questions, SFI has no comments in addition to those above. However, we do look forward to the resulting learnings which will be valuable for SFI.

**“Which RD&I initiatives have been successful for your sector/region? Which programmes should continue? Which RD&I programmes for enterprise are not working?”**

**“How do we generate a stronger, unified ecosystem approach to RD&I across the country to strengthen the visibility of our RD&I supports?”**

**“How do we target RD&I spend in a way which maximises impact for the economy and which addresses the market failure evident in low RD&I in the indigenous SME sector?”**