



Engineering and
Physical Sciences
Research Council

Welcome



Engineering and
Physical Sciences
Research Council

Links between UKRI and policy

James Dracott, Head of ICT Theme
EPSRC, UKRI



UK Research and Innovation

We work with the government to invest over £7 billion a year in research and innovation by partnering with academia and industry to make the impossible, possible. Through the UK's nine leading academic and industrial funding councils, we create **knowledge with impact**.



**UK Research
and Innovation**



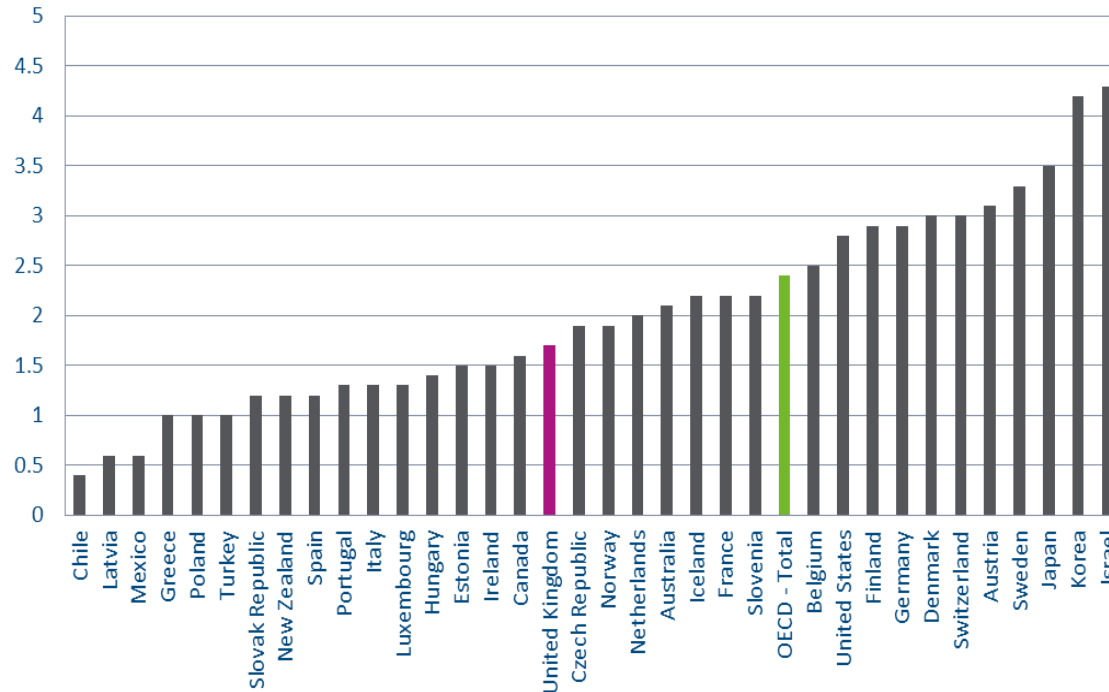
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UKRI Structure



UKRI – working towards 2.4%

Gross Expenditure on R&D as a percentage of GDP



In 2015 UK's expenditure on R&D represented **1.7%** of GDP – below the OECD average R&D intensity of **2.4%**.

R&D
SPENDING

The Government has committed to reaching **2.4%** of GDP investment in R&D by 2027, and to reaching **3%** in the longer term. As a first step it will invest an additional **£2.3bn** over what was previously planned in 2021/22. UKRI will work with the Government to develop a roadmap for meeting this target.



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UKRI connections

Arms length independent body- we do not write policy!

But we do talk to those who do....



Department for
Digital, Culture
Media & Sport



Cabinet Office



HM Treasury



Foreign, Commonwealth
& Development Office



National Cyber
Security Centre



Department for
Business, Energy
& Industrial Strategy



Ministry
of Defence



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Department for
International Trade

UKRI link to policy

- We create strategies which ensure and build the strength of UK research and innovation and recognising UK priorities
- And we publish them!
- We consult with the academic and innovation community, and help to link the community with government departments.
- We support specific investments which gather evidence for better policy making decisions (e.g. What Works centres, funds for engagement in centres and grants, impact acceleration accounts)
- We publicise the achievements of our portfolio to ensure the benefits of investment into research and innovation are well known.

UKRI Strategy

- We have multiple layers of strategy (UKRI wide, EPSRC wide, theme, research area)
- What we publish is what the strategy is- we will be saying the same things to government as we are saying on the website.
- The frameworks are there to help, not to hinder- a common way to articulate an area of research, aspect of the portfolio or roadmap.
- We consult with our advisory streams, but also every day when we talk to the community!

Delivering UKRI's vision and the Government target of 2.4% of GDP spend



Deliver economic impact



Create social and cultural impact



Push frontiers of human knowledge and understanding



Foundations for excellent research and innovation

Best environment for research and innovation



Trusted and diverse system



Leading talent



Global Britain



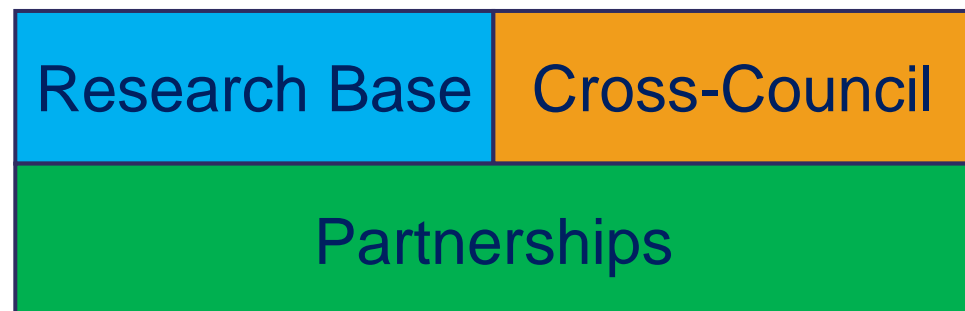
Infrastructure



UKRI as an outstanding organisation

EPSRC Vision

- To make the UK recognised as the place where the most creative researchers can deliver **world-leading engineering and physical sciences research**
- To work within the research ecosystem of UKRI, the R&D base within business, SMEs, government departments, charitable organisations and international **partnerships** to identify and tackle new research challenges and **deliver societal and economic impact** from our research base
- To build on our **strong working partnerships with business** to play a leading role within UKRI, particularly working in **partnership with IUK**, in delivering economic prosperity to the UK (and hence the government's target of 2.4% of GDP invested in R&D by 2027)



The Priority Framework

Delivering economic impact and social prosperity



Productive
Catalysing growth



Connected
Enhancing future digital technologies



Healthy
Transforming healthcare



Resilient
Ensuring adaptable solutions

Realising the potential of engineering and physical sciences research



Promoting excellence in research



Realising excellence in people



Connecting the research landscape to accelerate impact



Enhancing business engagement

Enabling the engineering and physical sciences to deliver



Managing our portfolio and priorities



Future-proofing state-of-the-art research infrastructure



Accessing talent through equality, diversity and inclusion



Inspiring, informing, and interacting with the public

**Discovery Research
in Engineering and Physical Sciences**



	FUNDING	RESEARCH	INNOVATION	SKILLS	NEWS, EVENTS AND PUBLICATIONS	ABOUT US
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Research	>
Our portfolio	>
Themes	>
Information and communication technologies (ICT)	>
Strategy	>

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ICT strategy

Research and training in Information and Communication Technologies (ICT) is a priority for EPSRC, and provides technologies vital to the prosperity of the UK, as well as the safety and wellbeing of its people. ICT research underpins a number of domains and is essential to achieving all of the EPSRC Prosperous Nation Outcomes.

ICT research covers a wide range of areas from photonics, to computer science, to electronics and communications technologies. It is vital that the research we support meets the needs of both technologists and technology users further along the ideas chain. Hence our portfolio must include both upstream and downstream research across these mutually supporting areas.

The ICT research we support has led to key advances in a number of domains and in many cases is world leading. As detailed in individual research area rationales we want to continue to support world class research to maintain a strong capability across the ICT landscape. In order to balance the portfolio, and meet the needs of the UK, there are some areas we want to support more and some where we want to encourage a refocussing of effort.

In addition to continuing to support areas of existing strength, the Theme also wants to encourage innovative thinking and support the

Share:

See also

- [About us](#)
- [Case studies](#)
- [Facts and figures](#)
- [Strategic Plan 2015](#)
- [Delivery Plan 2016/17-2019/20](#)
- [ICT research - The Next Decade Workshop video](#)

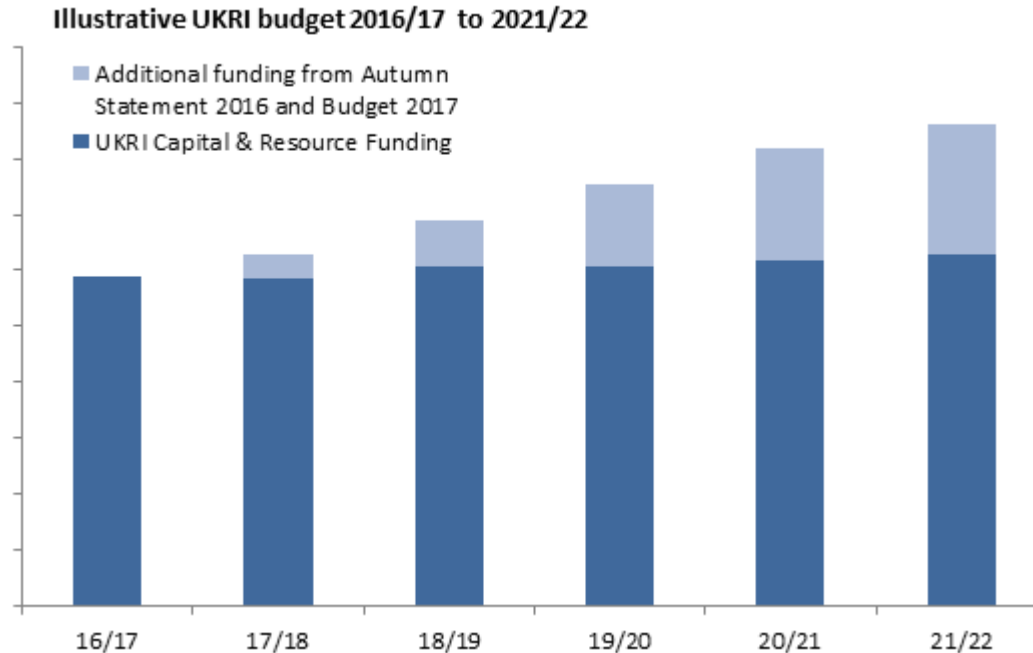
ICT Theme Approach to Balancing Capability	
Accelerating Impact	
UK ICT Pioneers	>
ICT Theme Approach to Building	



What we do with the strategies

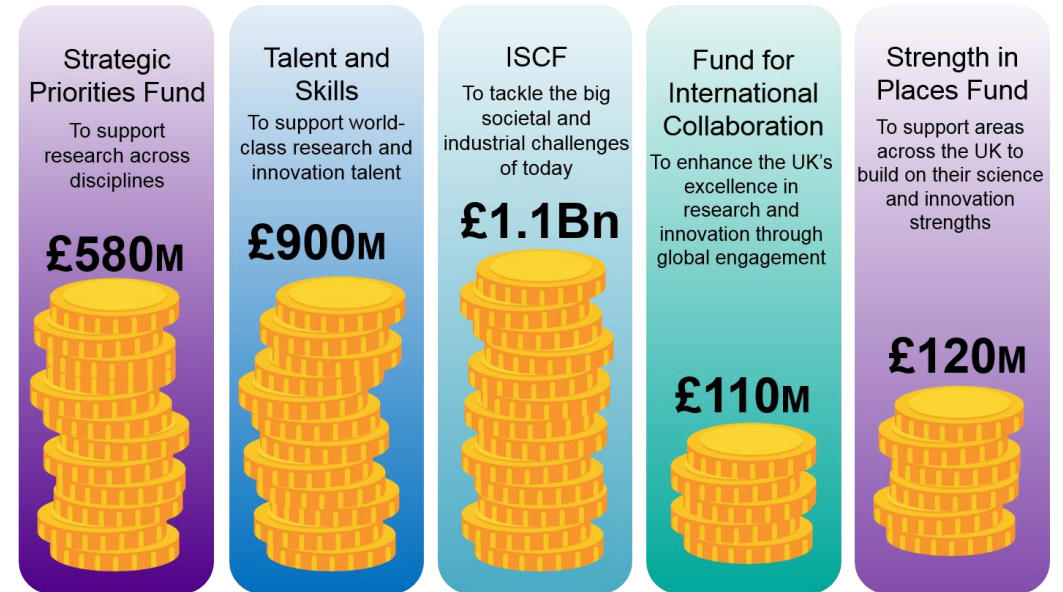
- Use them to collate evidence and identify future opportunities.
- Develop specific strategic activities
- Provide guidance to peer review on our current priorities and foci
- Feed in to other organisations and to government on what our priorities are
- Our primary way of communicating to policy makers on what is important

UKRI – opportunities (why is this important)



UKRI National productivity Infrastructure Fund (NPIF) £7bn 2017/19 to 2021/22

So far:



- Communication relies on being able to understand each other- common languages and ways of thinking about things always helps!

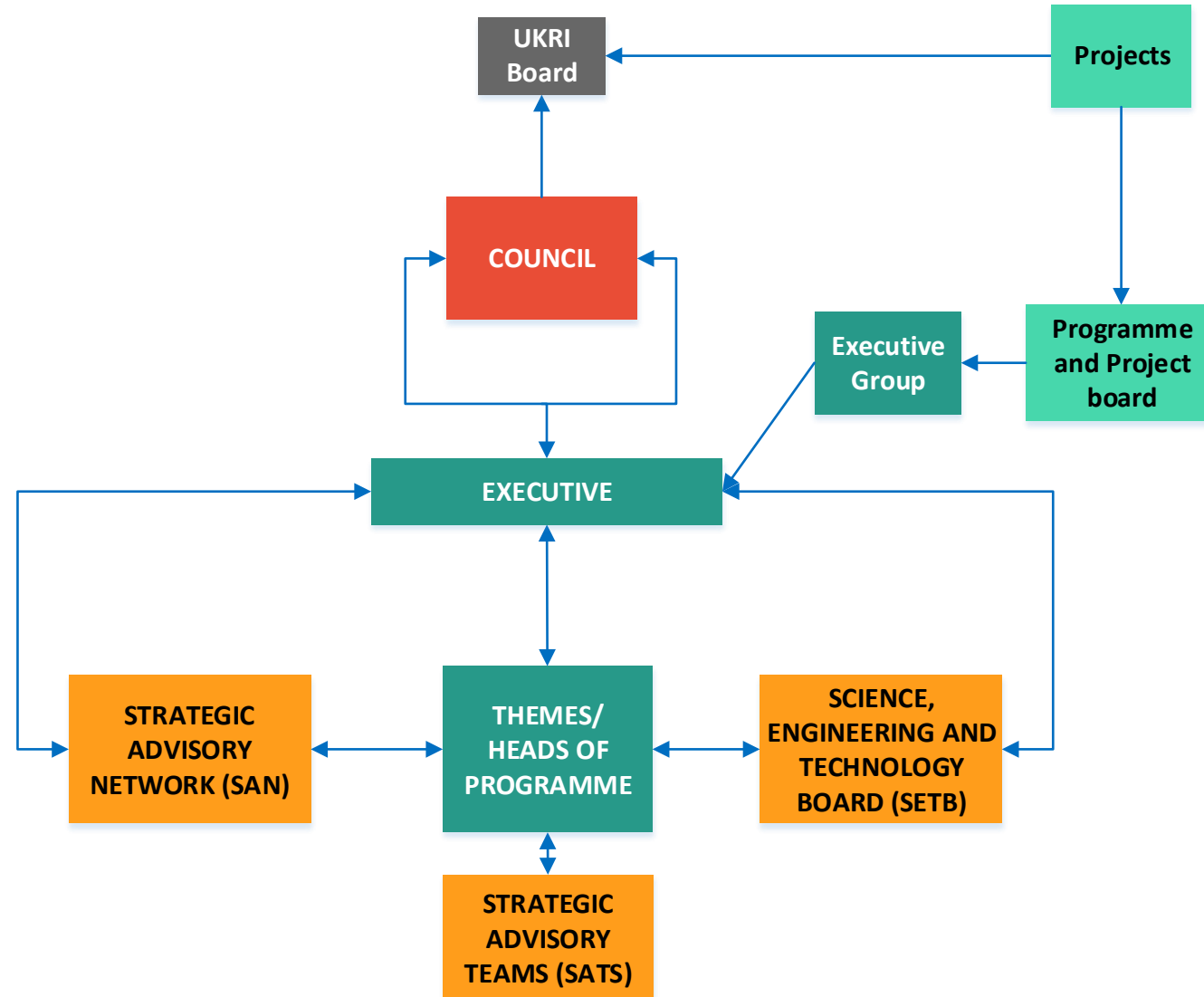
Spending Review 2020

- SR20 sets out the government's plan to cement the UK's status as a global leader in science and innovation by investing nearly **£15 billion in R&D in 2021-22**
- The government has provided an ambitious multi-year settlement for the National Academies and UK Research and Innovation's core research budgets. These will grow at an unprecedented rate: by more than £400 million on average per year for the next three years. **By 2023-24 the government will be investing £1.4 billion more per year in core funding for its world-leading research base**
- **£450 million in 2021-22 to support government priorities**, drive the development of innovative ways to build new science capability and support the whole research and innovation ecosystem. SR20 allocates £350 million of this investment to UK Research and Innovation. This includes the first **£50 million towards an £800 million investment by 2024-25 in high-risk, high-payoff research.**

How can I get involved?

- Talk to us!
- Send us things!
- Respond to calls for evidence (from consultations through to emails and phone calls)
- Attend workshops
- Become part of our official advice streams

EPSRC Advice Streams



Roles of Decision Making & Advisory Groups

Council

Provides strategic direction and decisions across the **whole EPSRC portfolio**

Strategic Advisory Network (SAN)

Provides strategic policy advice and recommendations by considering **cross-cutting themes**

Science, Engineering and Technology Board (SETB)

Provides scientific guidance across the **whole remit of EPSRC**

Strategic Advisory Teams (SATs)

Provide strategic policy and scientific advice and recommendations at a **theme and research level**

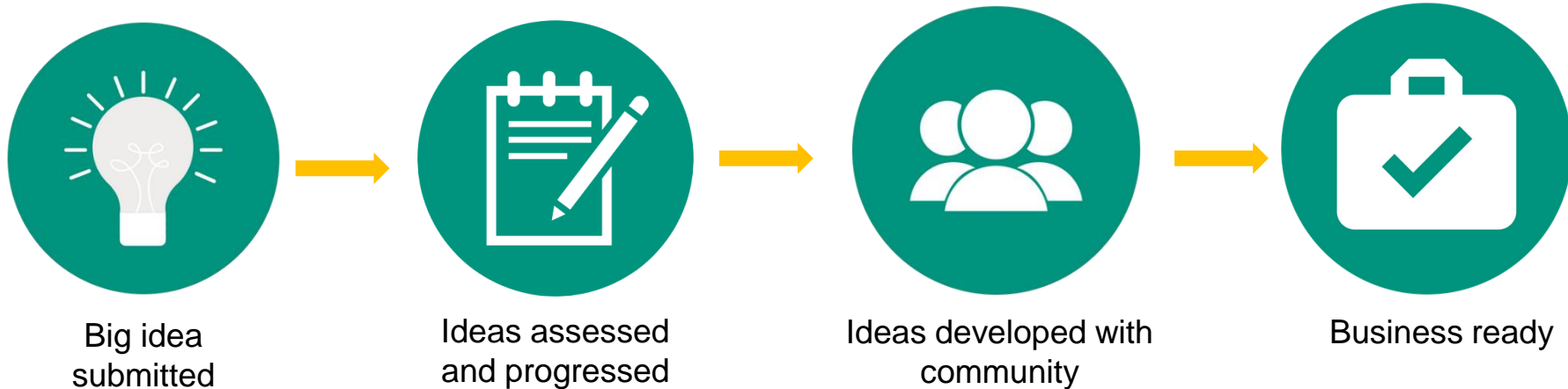
We also seek advice from our established relationships with universities and business

Big ideas – Pushing the boundaries

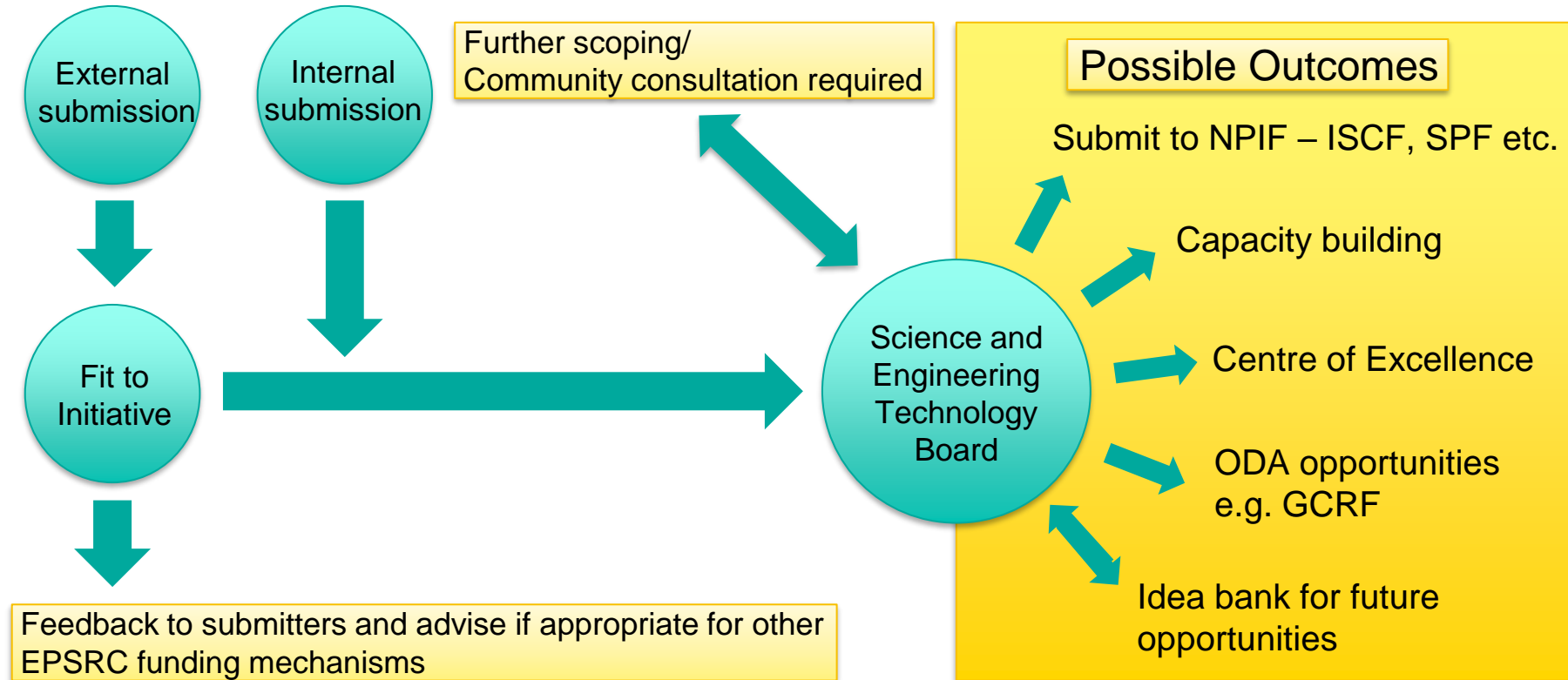
Framework to identify and prioritise new “Big Ideas” that is flexible, responsive and organisationally robust.

A way to tell us if you have a great idea, rather than saying “wouldn’t it be great if UKRI did X....” . Allows EPSRC to get on the front foot (here’s one we prepared earlier, Blue Peter model).

Supports the development of ideas from conception to business case in a consistent manner. Some ideas that have come in have been submitted to SPF – there is no defined route to progress them to business case stage, thus the most appropriate route will be explored



Big Idea Process



Using scientific and technological insight to identify and champion new research challenges at the cutting edge of engineering and physical sciences for future investment

UKRI as a conduit

- We help to link departments to members of the community or relevant networks/institutions
- We run workshops or convene special interest groups with government departments
- We feed in evidence in our own right to consultations, commissions and for ministerial questions.
- We work with other funding organisations, learned societies and representative bodies to create a single voice on specific issues.
- We organise specific events to highlight areas of research and innovation to HMG (parliamentary affairs team)

UKRI comms

- We publicise the achievements of our portfolio to ensure the benefits of investment into research and innovation are well known.
- We regularly publish case studies from the portfolio in discovery and innovation
- We provide funds to allow grant holders to do this!



There is money to do this...

- EPSRC Fellowships
- Impact acceleration accounts
- Networks
- On Grants!
- (slight reveal) EPSRC Public Engagement champions

Wilo's laws of communication

1. Communication usually fails, except by accident.
 - a) If communication can fail, it will.
 - b) If communication cannot fail, it still most usually fails.
 - c) If communication seems to succeed in the intended way, there's a misunderstanding.
 - d) If you are content with your message, communication certainly fails.
2. If a message can be interpreted in several ways, it will be interpreted in a manner that maximizes the damage.
3. There is always someone who knows better than you what you meant with your message.
4. The more we communicate, the faster misunderstandings propagate.
5. In mass communication, the important thing is not how things are but how they seem to be.
6. The importance of a news item is inversely proportional to the square of the distance.
7. The more important the situation is, the more probable you had forgotten an essential thing that you remembered a moment ago

Remedies

Language differences

Learn the language

Read what they themselves have written

Learn how they refer to things and use that to shape your own language

Cultural differences - the wider the audience the more they will fail to meet your assumptions

Learn these differences and incorporate them in your writing and communication

Personal differences - any assumption about the prior knowledge on the subject matter fails for any reasonably large audience

Validate assumptions

Document your assumptions

Test your assumption

Lost data - the listener doesn't pay attention as a critical moment and misses something indispensable

Document needed information in writing

James's tips for engagement

- Engagement is not easy and takes time- people move, opinions change, narrative and evidence endures.
- This boils down to good dissemination of knowledge- to the public, to policy makers, to other disciplines.
- Ultimately this is about how Computer science can help other disciplines, the UK, the world. Be realistic and focus on those aspects
- Answers to questions as they are asked are more likely to succeed, but don't be afraid of coming forward with answers without being asked
- Policy makers genuinely do want to know how to do the best they can for the UK
- UKRI and policy makers can only act on what they know- make it easy to find out!

- Be realistic- don't over promise!
- One simple message from the community is far more likely to be effective at the start, but the nuance and detail will be required at some point.

R&D Roadmap

Government Published UK R&D Roadmap in July 2020

The Roadmap marks the start of a conversation to identify:

- the strengths and challenges facing the sector
- the issues that need to be addressed
- how we want to work with universities, business, the third sector and across government to cement the UK's reputation as a science superpower

Government welcomed responses to high-level questions in an online survey – Important to input to such surveys to get the voice of the computing research community heard.

R&D
SPENDING



Engineering and
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ICT Team

You can always contact the relevant Portfolio Manager!

Email addresses are available on the EPSRC website, but generally Firstname.lastname@epsrc.ukri.org

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Software, Programme Grants, Discipline
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Data Science

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AI Technologies

Vacancies

Communications, Image & vision computing



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Questions?



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Thank you



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