

INNOVATION TOOLKIT

SCIENCE AND INNOVATION NETWORK

TRADECRAFT FOR INNOVATION DIPLOMATS

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TRADECRAFT FOR INNOVATION DIPLOMATS

A PROTOTYPE GUIDE BASED ON THE PRACTICES
OF THE UK'S SCIENCE AND INNOVATION NETWORK (SIN)

Introduction

Exploring & Informing

Influencing & Promoting

Cultivating & Connecting

Activating & Scaling

Case Studies

ABOUT THIS GUIDE

THE GUIDE IS DESIGNED TO HELP NEW RECRUITS TO:

- understand existing SIN tradecraft in supporting collaborative innovation
- increase the impact of their efforts to support innovation by drawing on examples from within the network, and techniques from beyond
- inspire new ways of supporting collaborative innovation that will benefit the UK innovation system and economy

THIS IS A FIRST PROTOTYPE OF A LIVING RESOURCE FOR SIN.

It is designed to help the network codify and collect examples of how they work effectively, and also stimulate effective new ways to support innovation in the future.

It is designed to be read as an easy access document rather than presented to an audience. However many of the resources could form the basis of group training activities, and it presents several resources to be downloaded and used as required.

How can innovation diplomats support collaborative innovation and drive economic growth?

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SIN HAS FOUR OVER-ARCHING GOALS WHICH TRANSLATE INTO FOUR TYPES OF ACTIVITY

B C D A Improve UK policy Influence science and Stimulate strategic Harness international science & innovation based on international innovation policies of technology partnerships collaborations to benefit governments, industry and investment to grow experience and emerging the UK and deliver wider UK innovation capability and academia to benefit opportunities and policy goals challenges the UK INFLUENCING CULTIVATING **EXPLORING ACTIVATING** & PROMOTING & CONNECTING NFORMING & SCALING EFFORTS TO SUPPORT COLLABORATIVE INNOVATION SPAN ALL THESE AREAS....

SCIENCE AND INNOVATION NETWORK
USE A RANGE OF APPROACHES IN EACH CASE:

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A & INFORMING

B & PROMOTING

C & COUNTRY CONNECTING

D ACTIVATING & SCALING

- Develop in-depth
 understanding of the host
 country innovation system
 (statistical data, tacit
 knowledge, horizon
 scanning etc)
- Create real-time information flows back to HMG on opportunities and threats
- Spot and communicate opportunities to wider stakeholders (that could help UK exploit strengths, achieve strategic policy goals, gain access to talent/ facilities/funding for innovation etc)

- Influence policies to improve the wider conditions for collaboration with innovative UK companies (eg IPR regime, market access)
- Encourage adoption of UK models and systems for supporting innovation (eg standards)
- Promote the strengths of the UK innovation system, creating demand for collaboration
- Promote the UK as a destination for foreign technology-based investments

- Build relationships with decision-makers (policy, funder, institution, VIP)
- Design and run targeted events and workshops to spur new international partnerships
- Organise missions and visits to familiarise researchers and companies with new opportunities
- Match individuals/institutions/ companies with appropriate international partners
- Channel and facilitate enquiries about the UK innovation system to the appropriate institution/ individual

- Follow up connections and encourage partnership development and best practice collaboration
- Develop, co-develop or identify external resources to help secure and scale promising collaborations (finance, advisory etc)
- Accelerate the commercialisation of research that could benefit the UK (See case study 4)
- Partner with other UK innovation support agents (UKTI, Innovate UK, RCUK, IPO etc) to help them achieve their international goals



B INFLUENCING & PROMOTING

- C CULTIVATING & CONNECTING
- D ACTIVATING & SCALING

- Develop in-depth understanding of the host country innovation system (statistical data, tacit knowledge, horizon scanning etc)
- Create real-time information flows back to HMG on opportunities and threats
- Spot and communicate
 opportunities to wider
 stakeholders (that could
 help UK exploit strengths,
 achieve strategic policy
 goals, gain access to talent/
 facilities/funding for
 innovation etc)

Eg In 2013, SIN Beijing worked closely with Nesta on a high profile research report on the Chinese innovation system and the prospects for UK-China collaboration on research and innovation

- Responding to government information requests
- Proactive briefings for government
- Targeted stakeholder newsletters
- Blogging and Tweeting
- Contributing to _Connect communities
- Media monitoring

INFLUENCING & PROMOTING

- Influence policies to improve the wider conditions for collaboration with innovative UK companies (eg IPR regime, market access)
- Encourage adoption of UK models and systems for supporting innovation (eg standards)
- Promote the strengths of the UK innovation system, creating demand for collaboration
- Promote the UK as a destination for foreign technology-based investments

SIN Canada worked with the Cell Therapy Catapult and industry representatives to hold a series of workshops which proposed a set of global standards, based on British standards and procedures, for therapies derived from stem cells.

- Presenting at local events and conferences on **UK** innovation
- Running showcases with UK partner organisations
- Organising targeted high-level visits in support of strategic objectives
- Providing political support/kudos through
- Capacity building workshops and materials

A & INFORMING

B INFLUENCING & PROMOTING

- C & CONNECTING
- D ACTIVATING & SCALING

The SIN officer in the Czech Republic used a ministerial visit to raise the profile of UK companies and help them gain access to tendering opportunities (See case study 5)

- Missions (inward, outward, thematic)
- Workshops,
- Receptions
- Visit programmes

- Build relationships with decision-makers (policy, funder, institution, VIP)
- Design and run targeted events and workshops to spur new international partnerships and to familiarise researchers and companies with new opportunities
 - Leverage ministerial visits to enable innovation collaboration
- Match individuals/institutions/ companies with appropriate international partners
- Channel and facilitate enquiries about the UK innovation system to the appropriate institution/ individual

collaborative R&D funds with UK partner

Contracting UK innovation consultancies

 Collecting and sharing real time funding opportunities (targeted and broadcast)

organisations

RCUK, IPO etc) to help

them achieve their

international goals









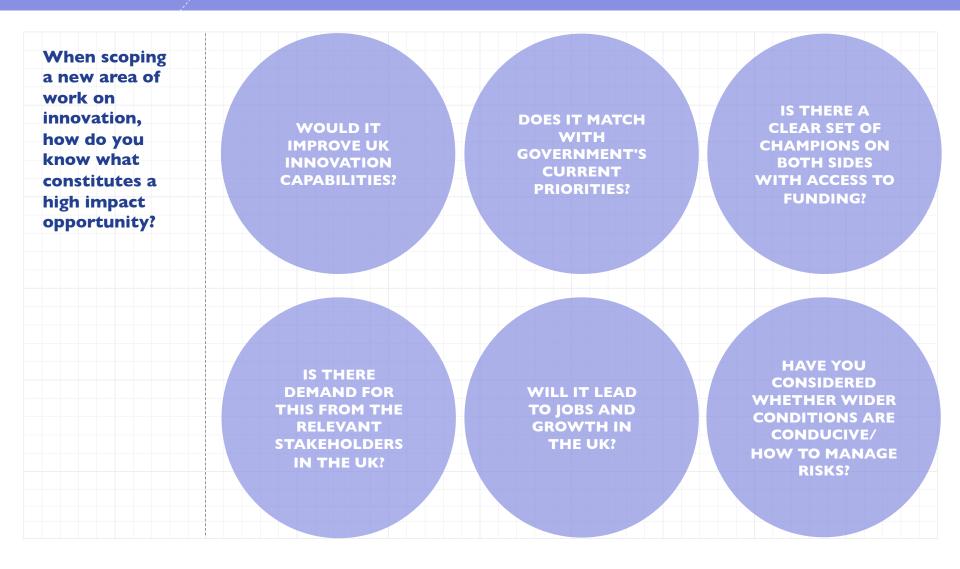
The following slides provide
Some practical guidance and
inspiration for improving impact
on innovation.

Innovation diplomats should seek to adapt these examples to their unique requirements, and to codify and share their own approaches.

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WHILE THERE IS NO PRECISE FORMULA FOR WHAT CONSTITUTES A HIGH IMPACT OPPORTUNITY, THERE ARE WAYS TO FOCUS IN ON UK PRIORITIES:



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BENEFIT FOR THE UK ECONOMY AND INNOVATION SYSTEM FROM THE COLLABORATION IS AN IMPORTANT ASPECT OF A HIGH IMPACT OPPORTUNITY. YET IMPACTS WILL OFTEN BE INDIRECT.

How will the UK economy and innovation system benefit from the collaboration?

FOR EXAMPLE:

- ✓ Will innovative UK companies gain access to specialist facilities, rare or complementary skills, important new markets, or new financing for innovation?
- ✓ Will it create jobs in the UK or drive investment into the UK innovation system?
- Will it improve the UK's competitiveness in a field, or help UK stakeholders solve social or technological problems?

Proving this potential benefit can be challenging. One commonly used approach is a "Theory of Change."

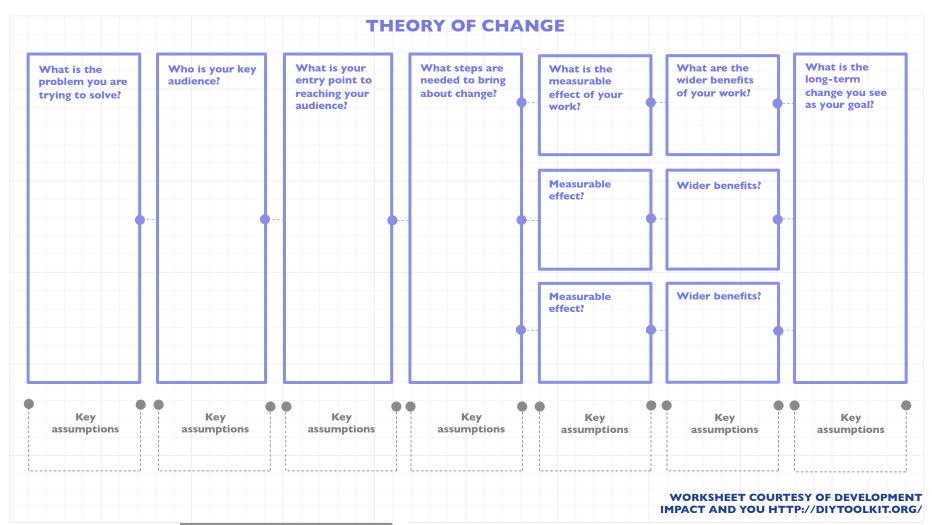
This is a planning process which acts as a roadmap of activities towards achieving a particular goal. It can help organisations plan how a range of activities complement each other. It is also often used to articulate interim goals so progress towards objectives can be tracked.

The following slide is a template for a theory of change exercise.

В

A EXPLORING & INFORMING

TO COMPLETE A **THEORY OF CHANGE** EXERCISE, START WITH THE PROBLEM YOU ARE TRYING TO SOLVE AND MAP OUT YOUR STEPS TOWARDS SOLVING IT. TO SPOT RISKS AND POTENTIALLY USEFUL CONNECTIONS, ITS IMPORTANT TO MAP OUT YOUR ASSUMPTIONS AT EACH STAGE...



\\/hat is the issue at stake?

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THE FCOS **INTERNATIONAL POLICY INFLUENCING GUIDELINES** IS A TRIED AND TESTED TOOL FOR DESIGNING POLICY INFLUENCING ACTIVITIES. MORE GUIDANCE AND EXAMPLES OF USE CAN BE FOUND ON SHAREPOINT.

VISION	What is the issue at stake?
	What are our interests and how does this fit with our values?
Why do we care	How does this fit with HMG and FCO priorities?
	What is the long term aim?
	What are the long, medium and short term objectives?
	What are the facts and drivers?
	Who are the players/audiences, what do they think, who influences them?
What is happening	What do Posts and FCO experts think?
now?	What do other (including Whitehall and non government) experts think?
	Has this happened before?
	Have I challenged initial assumptions?
SCENARIOS	What do we want to happen?
	What are the possible scenarios and what is their likelihood?
	Have I drawn on all available expertise?
	Have I challenged initial assumptions?
	What is our favoured scenario?
DECISIONS	In what different ways could we achieve our preferred scenario?
	Have I put genuine options to Ministers ?
	Have I incorporated different views?
	Have I presented my advice correctly?
	Have I considered the communications and Parliamentary implications?
PLANNING & DOING	What are the tools and levers at our disposal?
	Who should do what, to whom and by when?
How should we do	Who is accountable and who has day-to-day responsibility?
it?	Is everyone aware of what they need to doand doing it?
EVALUATION	ls the policy working?
	Have we measured what we are achieving?
	Do we need to adjust our approach?
	Have we shared any lessons learned?

Look at Guide 2: introduction to the UK innovation system for leads on organisations in the UK to partner with on making the case with research, or providing expert advice.

Improving the policy framework may be about urgently removing barriers (eg US lobbying against Chinese national procurement catalogues that inhibited opportunities for American firms) or it may be about longer term capacity building (eg SIN India efforts to build the quality of IP protection through customising the Lambert Toolkit to the Indian context.)

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UKTI'S INNOVATION IS GREAT' CAMPAIGN HAS PRODUCED A RANGE OF GOOD **PROMOTIONAL RESOURCES ON UK INNOVATION STRENGTHS** TO BE USED IN PRESENTATIONS, BUT THERE ARE MANY MORE SPREAD THROUGHOUT THE NETWORK



Guide to Innovation in the UK by the Brazilian SIN team



The commercial benefits of innovating in the UK

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SUPPORTING COLLABORATIVE INNOVATION COULD INVOLVE WORKING WITH A RANGE OF STAKEHOLDERS. FOR COLLABORATIONS TO WORK, ITS IMPORTANT THAT EACH PARTY HAS A CLEAR IDEA OF WHAT IT IS GIVING AND WHAT IT IS GETTING FROM THE ARRANGEMENT.



Who are your main stakeholders? Are you targeting new groups?

If you want to access new groups, you need to know what motivates them.

Guide I: Introduction to innovation policy and collaboration has details on what motivates firms to collaborate, and the arrangements they use to partner on innovation.

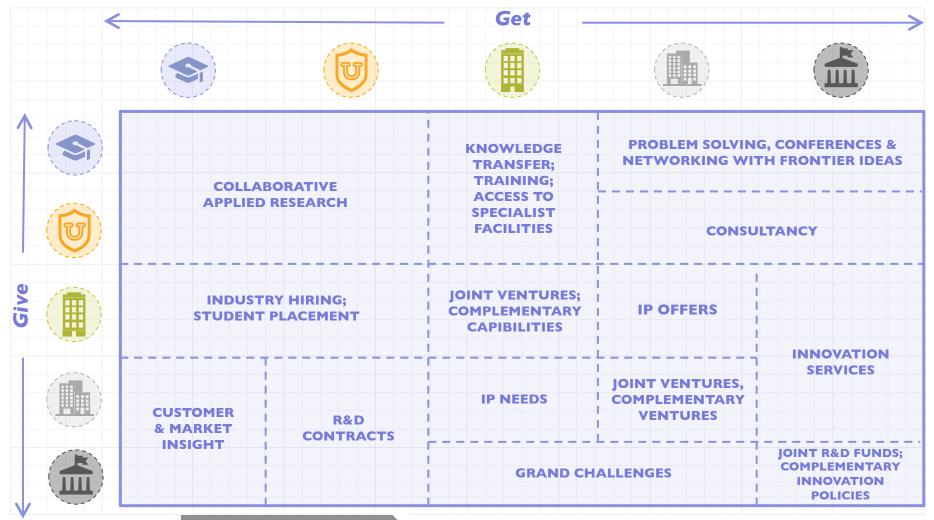


YOU MIGHT LIKE TO USE A GRID LIKE THIS ONE TO MAP OUT THE POTENTIAL COLLABORATIONS IN A GIVEN AREA:





THESE ARE JUST SOME EXAMPLES OF THE FORMS INNOVATION COLLABORATIONS MIGHT TAKE: GUIDE 1 HAS FURTHER GUIDANCE





PLANNING FOR INNOVATION IMPACT: HOW TO RUN BETTER MISSIONS

Missions and workshops are used frequently by SIN to cultivate and connect researchers and companies. The following tool is based on a Business Model Canvass which is used by companies to help them strategically about their activities. It has been designed to help SIN officers think about how to increase the impact of their activities on innovation from identifying a mission all the way through to monitoring and evaluation. It draws on SIN experience around the world, including the case studies at the end of this guide.

You can <u>download the template</u> on the **Nesta website**



PLANNING FOR INNOVATION IMPACT: HOW TO RUN BETTER MISSIONS

I. HAVE YOU IDENTIFIED A HIGH IMPACT OPPORTUNITY?

Eg. Have you scoped UK and local strengths? Do you know how these fit with UK policy priorities? Have you tested demand for this support with UK and local stakeholders (institutions, clusters, geographies)?

2. WHAT IS YOUR DESIRED OUTCOME AND WHAT IS THE BEST APPROACH TO ACHIEVE THIS?

Eg. Does it complement the work of other government partners? How will you fund the activity? How will you ensure it has impact? In what time frame do you expect this to happen?

3. HOW COULD PARTNERING MAXIMISE YOUR IMPACT?

Eg. Which local and UK based organisations can help? How can you work with them effectively? Do you understand their objectives?

4. HOW WILL YOU RECRUIT THE RIGHT PARTICIPANTS?

Eg. Which organisations will help you access the right people?

5. HOW WILL YOU DESIGN EVENTS TO MAXIMISE THE CHANCES OF DEVELOPING PRODUCTIVE NEW RELATIONSHIPS?

Eg. When can you hold your event to achieve most impact? Are there external 'hooks'? What format should the event take? Is it a one off or a series?

6. HOW WILL YOU GROW YOUR IMPACT THROUGH COMPLEMENTARY ACTIVITIES?

Eg. Does this activity require broader support for success? (Political support for collaborations? Policy changes to enable links? Capacity building? Publicity campaigns? Follow on funding to sustain linkages and scale impacts?) How does this event fit into your wider scheme of work?

7. HOW WILL YOU MONITOR AND MEASURE THE IMPACT OF YOUR INITIATIVE?

Eg. What data will you gather? How will you follow up, monitor and communicate outcomes? How will you know what role SIN played in the achievement?



ORGANISING EVENTS TO SPUR COLLABORATION CAN BE TIME CONSUMING, WITH UNCLEAR EXPECTATIONS OF OUTCOMES. THERE ARE A RANGE OF TECHNIQUES TO MAXIMISE CHANCES THAT PRODUCTIVE NEW CONNECTIONS WILL BE FORGED.

SIN TIPS FOR GOOD PRACTICE BEFORE THE EVENT

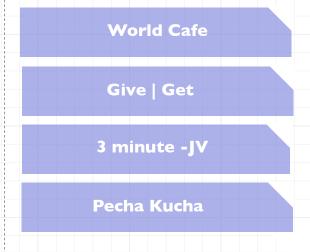
- Collect and distribute company and researcher profiles and presentations prior to the event.
 This allows companies to do background research into counterparts and their technologies, and possibly to contact them in advance of the event
- Arrange a group call to brief UK participants on how to prepare for the event and what to expect: discuss local cultural practices in relation to networking and collaboration

SIN TIPS FOR GOOD PRACTICE ON THE DAY

- Keep presentations as short as possible: event participants regularly want more time for networking but rarely complain that they didn't hear enough presentations
- Build sufficient time into the schedule for participants to arrange follow up meetings with contacts made during the mission
- Ensure qualified interpreters are available during networking sessions as well as presentations (if relevant)

IDEAS FOR INSPIRATION

There are many techniques which you can use to get people talking at events. In the following slides we present four example techniques/exercises to help forge collaborations that are commonly used by innovation brokers:





EXERCISE: WORLD CAFÉ

The room should be arranged in 4 tables/zones with equal sized groups and the maximum possible diversity of perspectives/experience within the groups should be ensured. Each table has one chairperson (who remains at the same table throughout) and is asked to focus on a different question related to the workshop theme. Each group then has 4 consecutive discussions (timed and typically 20 minutes each) with groups rotating after each round. Each table builds on the outputs of the previous group as follows:

PROPOSITIONS - To begin with, delegates are invited to work on their own and in silence by capturing their responses to the question post-it notes. After 5 minutes they then take it in turns to share their responses.

ROUND 2 - BUILD & CLUSTER - The chairperson begins by summarising the main points emerging from Round 1. They invite the group to build on the contributions of the previous team, in particular focusing on adding any points that didn't come out of the previous round. The group are asked to cluster the responses into some emerging themes (session target is 5-10 big themes).

ROUND 3 - BUILD & PRIORITISE - The chairperson begins by summarising the main points emerging from Round I and 2. They invite the group to build on the contributions of the previous team, in particular focussing on adding any points that didn't come out of the previous rounds. The group are then asked to prioritise the emerging

ROUND 4 - SENSE-CHECK & SELECT - The

chairperson begins again by summarising the main points emerging from Rounds I, 2 and 3. The group are invited to build on the contributions of the previous team, in particular focussing on adding any points that didn't come out of the previous rounds. The group are asked to sense check the rationale and thinking of the previous three groups and, if it hasn't already become apparent by this stage, select the top three propositions to work on at the next stage.





EXERCISE: GIVE | GET

When engaging a group for the first time around a theme it's sometimes interesting to ask them what they are looking to get from the session or the network, and also what they might be able to give. Prepare a template for people to complete individually at the event for just 5 minutes. Encourage people to start with at least 3 Get's and then at least 3 Give's (i.e. be selfish first and then altruistic). Ask everybody to capture (on a prepared template) their name and contact details together with the following information:

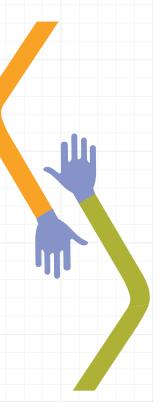
Give – What might you be able to offer other delegates in terms of time, money, skills, resources, knowledge, data, challenges etc?

Get – What would you be looking to get from other delegates potentially in terms of time, money, skills, resources, knowledge, data, solutions etc?

When everyone has captured this information invite them to discuss their **Give's** and **Get's** with their neighbour for 5 minutes, and if there is time, with their other neighbour.

Their Give/Get cards can be collected and put up in a public space for people to browse over coffee/lunch break and it's amazing how often people photograph the cards that interest them and make new connections as a result.

If there is time, as a moderator/facilitator you could call out some of the most interesting to the whole room (after coffee or lunch) along the lines of "Chris has a challenge with data visualization ... can anybody else help him with that?" or "Christina is offering specialist equipment at her university that does xyz... would anybody be interested in taking her up on that offer?" etc.



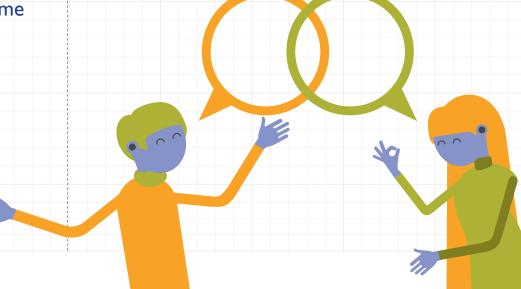


EXERCISE: 3 MINUTE 'JOINT-VENTURE'

Participants are asked to get into pairs — preferably someone they don't know. In their pairs they have 3 minutes to come up with a business idea and to give it a name. To do this, they need to find out about each other — what they do, what they could do together. After each round do a quick debrief. Who came up with something in 3 minutes? Who just had a nice chat but didn't come up with anything? Invite a few pairs to feedback what they came up with.

Typically there would be at least 2 rounds of this exercise – delegates are asked to switch partner for each round. The Joint Ventures can be noted on 'JV cards'. Once completed, the cards should be stuck somewhere visible.

The outcome is that it energises the group and sparks new connections and delegates start to think about how they might collaborate more together.



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EXERCISE: 'PECHA KUCHA'

This is a presentation format originating in Japan, and is actually the Japanese word for **'Chit Chat'.**

For larger events of 80-100+ people it works really well to invite **up to 10 people** to speak on a theme for **5 minutes each max** (timed with a clock visible to both the speaker and the audience and audience encouraged to applause when the time is up). It is good to have a **mix of speakers** e.g. half from large companies and half from smaller companies or universities and all speakers are asked to finish their talk with an 'Ask', namely an offer, a challenge, an opportunity or a question for the audience.

This helps drive engagement and networking later. There is no Q&A after each speaker but the host or facilitator perhaps comments very briefly on something interesting the previous speaker has just said, encourage other delegates to go and talk to the speaker in the networking afterwards, and then quickly introduce the next speaker. After the talks there follows an informal networking event.



WHICHEVER EVENT FORMAT YOU CHOOSE, THE MOST IMPORTANT SUCCESS FACTOR IS LIKELY TO BE THE **PARTICIPANTS**. NOT ONLY ARE THEY WORKING IN THE RIGHT AREA, BUT HAVE THEY GOT MOTIVE, MEANS AND OPPORTUNITY?

THE INCENTIVES THE LONGLIST THE SHORTLIST Seek low-hanging fruit -Do participants know what Build a database - create a list Are there existing demands for outcomes to expect? of potential participants based on support in this space that you data from multiple sources that are Will the event format put could help unlock through indicative of innovation (REF participants off (eg too long removing barriers or limited rankings, industry awards, Innovate away from the day job)? support? UK/Research Councils funding, Can you guarantee productive investor backing, news coverage. **Identify an ideal profile** – In links by quality controlling the Consider using other databases and universities eminent professors local participation and/or by services relating to specific fields or might be too busy, in firms, junior matching activities prior to the challenges like 100% Open radar staff might not have the authority mission? service, inno360, Ninesigma, Yet2, to form collaborative agreements, Innocentive etc Are there impact multipliers? the CEO might not have the Eg mission parallel to a local required technical knowledge to Ask your networks for trade show? have a productive discussion. recommendations – which are Who do you need in the room? Can you offer 'sweeteners' like the UK hubs for this type of expertise? Eg can KTNs or industry star speakers, high level Ensure capacity to follow political meetings or media bodies help? up - Have they shown demand coverage? for collaboration? Have they got the time and resources to pursue this opportunity?



SIN'S EMPHASIS ON ACTIVATING AND SCALING ACTIVITIES BEYOND WORKSHOPS AND EVENTS HAS GROWN CONSIDERABLY IN RECENT YEARS. SCALING IMPACT INVOLVES **EFFECTIVE PARTNERING** WITH OTHER ORGANISATIONS.

Effective partnerships are built on an understanding of the goals, strengths and methods of a potential partner. Failing to understand these areas is often a source of tension between organisations. After identifying an organisation you would like to work with, try to understand how the organisation works by asking yourself the following questions:

Strengths and capabilities:

What can you give to and get from each other to advance

Targets and goals:

Do you understand and approaches to judging success?

Methods and processes:

compatible? Could they align better?

Risks and challenges:

Where do potential Can you identify these in advance and take steps to avoid

The case studies at the end of this guide show a range of benefits that SIN can get from working with partners:

Where possible, SIN should think about how to build long term collaborations with partners, by considering what it can offer to partner organisations as well as what it can receive from them.

Look at **Guide 2** for a list of the organisations that SIN regularly works with and how it can build long term partnerships with them.



COLLABORATION WITH UKTI MAY BE AN IMPORTANT ROUTE TO SCALING INNOVATION COLLABORATIONS. SUCCESSFUL WAYS OF WORKING ARE NOT TRANSACTIONAL 'HAND-OVERS' BUT LONG TERM EFFORTS TO BUILD RELATIONSHIPS AND UNDERSTANDING COMPLEMENTARITIES.

GOALS & TARGETS:

- Helping UK business export & securing inward investment.
- UKTI is driven by targets: organisational targets include achieving £I trillion of trade value and £I.5 trillion of investment stock value by 2020. In the nearer term it has the following targets for 2014/15: 50,000 businesses assisted, 750 inward investments, £I0bn of High Value opportunities secured for UK businesses. UKTI posts also have individual targets.

STRENGTHS & CAPABILITIES:

- I 200 overseas staff based in embassies and over I 000 UK based staff (compared to around 90 SIN staff)
- Diverse relationships with SIN and prosperity officers
- The new UKTI innovation gateway, launched in 2014, is likely to work closely with SIN
- 'Hotspots' tool developed to help assess strategic value of markets – potential value for SIN too.



METHODS & PROCESSES:

- Work to a strict definition of 'high value opportunity' that may vary from that of SIN
- Core business of strategic relationship management means firm contacts are valuable
- Provides services to individual firms as well as supporting industrial groups

HOW TO ENSURE WIN-WIN SCENARIOS?

See <u>case studies</u> at the back of this guide for examples of how UKTI and SIN can work effectively together



SINCE COLLABORATIONS OFTEN TAKE A LONG TIME TO DEVELOP AND NEED HELP ALONG THE WAY, SIN CAN MULTIPLY THE IMPACT OF A MISSION OR WORKSHOP BY FOLLOWING UP AND OFFERING COMPLEMENTARY SUPPORT.

Can you provide further political support to unblock barriers to opportunities for UK organisations (Case studies I and 5)

Can you identify sources of funding for international collaborations on development focused research (Case study 4)

So you've run a good workshop or mission, now what?

Can you organise follow up workshops with the same participants to further develop relationships case study 4

Can you design your activity as part of a campaign rather than a single event? (Case study 6)



CONNECTIONS MADE THROUGH SIN OFTEN REQUIRE **EXTERNAL FUNDING FOR COLLABORATION** TO TAKE PLACE. MONITORING SOURCES OF FUNDING AND INFORMING EVENT PARTICIPANTS OF OPPORTUNITIES CAN MULTIPLY THE IMPACT OF ACTIVITIES

Three tips on identifying additional sources of funding for international collaboration:

SCOPE

Find out about sources of funding for a specific sector: talk to RCUK, the KTNs, BIS, Innovate UK UKTI, trade associations, the Catapults and their counterparts in the host country.

Eg Look at Horizon 2020 and Innovate UK, third sector organisations such as the Wellcome Trust

MONITOR

To keep informed of new funding calls: follow funders on Twitter, subscribe to industry mailing lists, use RSS feeds to receive email notifications relating to specific terms, e.g Brazil + international funding

Eg SIN Canada have used novel automated methods to monitor funding calls.

INFORM

Create a regular funding newsletter and send out to past event participants. Use social media, blogs and the _Connect platform to inform others about funding opportunities.

Eg SIN India produces a well read newsletter on funding opportunities for UK-India collaborations

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ACTIVATING & SCALING

TO ACTIVATE AND SCALE COLLABORATIONS, IT IS IMPORTANT FOR SIN TO MONITOR AND MEASURE THE IMPACTS OF ACTIVITIES OVER TIME.

This is easier said than done, given:

- Inherent risks and uncertainties of innovation
- Challenges of measuring impact of brokerage and intermediary activities on innovation
- Difficulty of judging the impact of individual interventions on economic growth

However, there are a range of ways to understand, monitor and measure the impact of an intervention/set of interventions.

In the following slides we outline two useful guides to measuring the impact of innovation support programmes:

A) Standards of evidence

B) Innovation indicators

D ACTIVATING & SCALING

MONITORING & MEASURING THE OUTCOMES OF INITIATIVES – **A) STANDARDS OF EVIDENCE**

There is a rich literature on how to demonstrate the impact of innovation support programmes. A commonly-used framework sets out 'standards of evidence' from 1-5.

Different standards require different data capture and evaluation techniques. These might range from narrative accounts to randomised control trials.

The first step is a clear set of goals, and a rationale for how your chosen activities will achieve them.

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You have manuals, systems and procedures to support and ensure faithful replication of your innovation.

You have one or more independent evaluations that confirms your conclusions and potentially replicates your results

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You can demonstrate causality with reference to a control group or comparison group

You capture data that shows positive change, but you cannot confirm that your intervention caused the change

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You can describe what you do and why it matters, logically, coherently and convincingly

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MONITORING AND MEASURING THE OUTCOMES OF INITIATIVES – **B) INNOVATION INDICTORS**

There are a wealth of innovation indicators:

- inputs like R&D spend, intangible investments
- outputs like publications, IP (patents, copyrights, design rights and trademarks), new products
- technometric indicators like processing speed or performance
- aggregated scoreboards by institutions like the OECD, EU and WEF

However, metrics on the innovation process: collaborations, alliances, networks, management etc are much harder to track, even if these are very important to judging the overall impact of innovation.

How could SIN judge the impact of its activities on innovation and economic growth? How would the following table look for you?

PHASE EXPLORING INFLUENCING CULTIVATING ACTIVATING	
& INFORMING & PROMOTING & CONNECTING & SCALING	
Eg high impact opportunities identified and validated Eg public attitudes towards UK innovation validated Eg public attitudes towards UK innovation capabilities or attitudes of key target stakeholders Eg public attitudes signed (value?), added value of intermediary support Eg funds created, finance raised, jobs created, market penetration	
METHOD OF assessment Eg expert panel assessment Eg email follow up, event follow up, survey to assess 'net promoter score,' testimonials, making support conditional on regular feedback, etc Eg email follow up, event follow up, survey to assess 'net promoter score,' testimonials, webscraping	
FURTHER IDEAS Weighting for importance - Qualitative judgements of collaboration value for UK?	



SIN COULD CONSIDER EXPANDING ITS METHODS BEYOND THE EXISTING RANGE. FOR INSTANCE, SIN COULD PLAY AN INFLUENTIAL ROLE IN SUPPORTING TARGETED COLLABORATIONS USING A METHOD LIKE **THE INNOVATION AIRLOCK**

Sometimes companies can be reluctant even to explore potential collaboration with other organisations. This is often because they fear the loss or contamination of their own IP for no gain if their explorations don't result in a successful new collaboration.

An **Innovation Airlock** can help. By engaging a **trusted third-party agent** such as SIN to act as a mediator, a company can have exploratory discussions with possible collaborators without fear of compromise. The trusted agent helps the company (and the potential collaborators) by providing:

• Insulation to limit IP flow in both directions. Any confidential information is received only by the agent, who has no commercial interest in the IP. Guided by criteria agreed with the company, the agent can then act as a proxy evaluator and decision maker without revealing the IP.

- **Simplicity** to allow the company to engage in just one conversation with the agent, whilst the agent handles the burden of all the many possible collaboration discussions.
- Coaching to help the company present its opportunity to potential collaborators most clearly and effectively, and to help potential collaborators sell their "offer" in a compelling way.
- Facilitation to ensure that the explorations proceed in an timely, orderly way, and with the maximum chance of success.

The airlock is a **temporary** arrangement. The ideal outcome is that the trusted agent can withdraw, leaving the company in one more new collaborations with other parties. However, if that's not possible, the company and any potential collaborators can withdraw having not revealed their IP to anyone other than the agent under NDA. In this way, the airlock keeps everyone clean whilst collaboration discussions take place.



RUNNING AN INNOVATION AIRLOCK – CHECKLIST FOR SIN

Here are some questions you should answer if you want to operate an Airlock successfully for a company: Have you clearly understood the needs that give rise Have you or the company identified a set or a source to the company's desire to collaborate? Can you of potential collaboration partners to engage through compellingly represent them (including any technical an Airlock? Will the potential collaboration partners be prepared for you to act on their behalf with everyone's factors) to other parties? best interests in mind? Will they see you as Have you clearly understood the concerns that give representing the company's position? rise to the desire to use an airlock? Have you agreed what information you can and cannot share with Have you defined a realistic process and timetable over potential collaboration partners? Have you entered which the airlock will run? Has that been into appropriate NDAs with all parties? communicated and agreed by all parties? Have you agreed with the company any decision Have you agreed at what point the airlock will end, what the desirable outcome is, and who and how any criteria that you will use on their behalf to decide whether any particular collaboration with a possible unsuccessful collaboration partners will be informed of partner has strong potential? Has the company any decisions? granted you ability to act in that way? Do you know what decisions will need to be referred back to them?



SIN INNOVATION SUPPORT CASE STUDY RESOURCES

WHAT ARE THEY?

Drawn from examples across the network, the following 10 case studies demonstrate a range of approaches to supporting international innovation linkages – from collaborative R&D funds, to improving access to foreign funding or markets, or influencing the wider conditions for innovation by UK firms.

HOW WERE THEY CHOSEN?

The cases are recognised as good practice by SIN and BIS, but are not an exhaustive index of possible approaches. A long list was taken from annual reports, which was then shortlisted by a panel of SIN officers, BIS officials and Nesta. The case study content was developed through interviews with the lead staff member.

WHY THIS APPROACH?

Although the annual report lists successful achievements, it doesn't provide much detail at all on how those successes were brought about. This approach breaks down those examples to share the process and activities behind those successes, and the SIN officers' views on what made it work.

HOW TO USE THESE CASE STUDIES

- Each case study is broken down into a series of steps: exploring & informing, cultivating & connecting and activating & scaling. Where it was an explicit goal, there is also a section on influencing and promoting, although these activities usually sit alongside all aspects of SIN's diplomatic work.
- Use these case studies when planning a new work stream or event: they provide tips on how to identify an opportunity, how to organise an event and different ways to grow the impact of an activity.
- The success factors section of each case study highlights the key features that made this activity work.
- Each case tells you the number of SIN officers at the post. Different posts may have resources for different scales of activity.
- The contact details of the relevant SIN officer are provided for you to follow up if necessary.
- A blank template is provided for you to share the processes and activities behind your own successes, key learning points on what to do, or what to avoid with other SIN officers.

CASE STUDY I: HELPING SPIN-OUTS ACCESS FOREIGN MARKETS

EXPLORING AND

SIN POST: São Paulo, Brazil

CULTIVATING AND CONNECTING

THEME: Tropical medicine

NO. OF SIN OFFICERS AT POST: 3

INFORMING

- SIN decided to set a goal of connecting innovative UK SMEs to opportunities in Brazil.
- SIN talked to UK and Brazilian organisations and identified UK strengths and Brazilian demand in tropical medicine.
- To identify event participants, SIN and UKTI funded a joint post to create a database of science parks, based on universities with high RAE scores in tropical medicine.
- They sent flyers to these science parks advertising a mission.

- SIN organised a 5 day mission, which included visits to companies, science parks and meetings with local funders (e.g. the Brazilian development bank).
- The schedule included ample time for participants to network.

- **ACTIVATING AND SCALING**
- After the initial mission in 2010, Oxitec, a University of Oxford spin out producing genetically modified mosquito eggs to control dengue fever, decided to enter the Brazilian market.
- Oxitec was required to conduct in country research to test and adapt its product to local conditions.
- This required political support from SIN it was the first time the Brazilian government allowed genetically modified insect eggs into the country.
- To do this SIN helped raise the profile of Oxited with the Brazilian government by inviting it on a ministerial visit. SIN also sent a reference letter to a government agency when the company applied for an import licence.
- 4 years after the initial mission, the company is now looking for a local partner to manufacture its product.

SUCCESS FACTORS AND LESSONS LEARNT

Identifying excellence— SIN Brazil took a novel and proactive approach to identifying participants Political support - SIN support removed barriers to collaboration

Long term engagement - The SIN team followed up with Oxitec for 3 years after the initial mission Strong UKTI-SIN relationship -UKTI support was crucial in identifying commercial contacts

CASE STUDY 2: BUILDING BRIDGES BETWEEN STARTUP COMMUNITIES

SIN POST: Netherlands THEME: Connecting digital start-ups NO. OF SIN OFFICERS AT POST: I **CULTIVATING AND EXPLORING AND ACTIVATING AND SCALING** CONNECTING **INFORMING** SIN Berlin delivered a successful. SIN's main role was liaising between the creative The follow up to the event was handled bilateral event to connect digital industries KTN and the 2 Dutch organisations, who by the KTN and the Dutch organisations. start-ups, working with the Creative recruited participants and organised the event. This is usually the case when a partner Industries KTN. The event format included plenty of time for organises an event for SIN. Knowing that Amsterdam has an networking. The event created a link between Dutch equally vibrant and innovative start- A session with a well known industry speaker helped and UK creative industry bodies, who up scene, the SIN officer contacted attract more UK and local participants. will go on to cooperate in other areas the KTN to explore the scope for a The focus of the event was learning, sharing in the future. experiences and finding partners, not just winning similar event. Shortly after the event a UK start-up SIN worked with the KTN to bring business. secured a €35.000 contract in the 2 Dutch partners on board. Netherlands.

SUCCESS FACTORS AND LESSONS LEARNT

Working with partners – SIN used member organisations to recruit business participants and organise event logistics, greatly increasing the impact a 'singleton' post can have.

Replicating good practice from elsewhere in the network- knowing what has worked at other SIN posts helped generate the idea for the mission and also helped SIN NL deliver the event on a tight timeline.

CASE STUDY 3: INVOLVING HIGH QUALITY INDUSTRY PARTICIPANTS IN SIN MISSIONS

SIN POST: Taiwan **THEME:** Internet of things NO. OF SIN OFFICERS AT POST: 2 **CULTIVATING AND EXPLORING AND ACTIVATING AND SCALING** CONNECTING **INFORMING** SIN officers set out to identify areas SIN combined their event with a UKTI mission and a This mission helped position the UK as an of UK strengths and Taiwanese important source of knowledge on internet local trade promotion event. This ensured that UK demand, settling on communications of things technologies and paved the way participants would get to meet a large number of local hardware and software design. After for further SIN work in this area. companies. talking to local and UK experts in SIN had no trouble finding academic participants for One SME which had never been to Taiwan these fields they found strong the mission but needed help recruiting UK SMEs. before was invited back to the country demand for internet of things They contacted the ICT KTN, who sent a flyer out after the mission and won a technology technologies for city management. licensing deal from a Taiwanese company, to its network. SIN decided to organise a mission 20 SMEs applied and while SIN took responsibility for worth over £100k. to connect applied researchers, but choosing participants, the KTN used its industry after talks with UKTI found an expertise to help with vetting. opportunity to also involve businesses.

SUCCESS FACTORS AND LESSONS LEARNT

Combining events - Running events in tandem with UKTI and local events made it more attractive for companies to attend. However, they learnt that they need to plan logistics early when organising missions around large local events, as they only have a limited travel budget.

Recruiting local participants – SIN found that getting comprehensive profiles of UK delegates allows you to better promote the event to local companies and ensure greater participation

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CASE STUDY 4: SPOTTING AND PURSUING OPPORTUNITIES TO ACCELERATE THE COMMERCIALISATION OF APPLIED RESEARCH

SIN POST: Bangalore, India THEME: Affordable healthcare NO. OF SIN OFFICERS AT POST: 3 **EXPLORING AND CULTIVATING AND ACTIVATING AND SCALING** CONNECTING **INFORMING** In 2011, SIN Bangalore identified At the SIN workshop the Institute of Biomedical SIN used GPF funding to take a delegation from affordable health care as a mutual Engineering (IBME) at the University of Oxford the Indian Institute of Science to Oxford for a priority for the UK and India, based and the Indian Institute of Science discussed the workshop to cement the relationship on discussions with UK and local possibility of future collaboration and agreed to SIN found a Wellcome Trust funding call on experts, and an understanding of each affordable healthcare in India and notified the follow up after the event. country's priorities. partners about it. SIN decided to use GPF money to The partners were successful in applying for a run a lecture series in Bangalore with £7m grant to develop an prosthetic hand speakers invited from the UK and The UK gained access to Indian IP, India contacted a range of researchers in benefited from UK engineering expertise and the UK about the opportunity. the resultant affordable healthcare product will contribute to the UK's commitment to addressing global challenges.

SUCCESS FACTORS AND LESSONS LEARNT

Activating partnerships – By organising follow up activities and identifying sources of funding, SIN helped move the collaboration forward Understanding collaboration timescales – It took 2.5 years from the initial lecture to the Wellcome award. Alongside planning new events and work streams, SIN officers made a time commitment to follow up with the participants of this work shop over the long term

CASE STUDY 5: WORKING EFFECTIVELY WITH UK PARTNER ORGANISATIONS TO SPOT AND PURSUE COMMERCIAL OPPORTUNITIES

SIN POST: Czech Republic **THEME:** Laser Technology NO. OF SIN OFFICERS AT POST: I **CULTIVATING AND EXPLORING AND ACTIVATING AND SCALING** INFORMING CONNECTING The Extreme Light Infrastructure The SIN officer worked with UKTI to recruit 8 To place UK companies in a good position project (ELI) is a large, pan-European to apply for ELI grants, the embassy invited companies to attend the mission; it asked the research project which aims to build Science and Technology Facilities Council in the ELI representatives to embassy events on lasers with a huge energy density. It is UK for advice on which companies it should several occasions, to make them feel 'part based across several sites, including one contact and it also talked to Czech partners about of the family'. A joint visit by UK and in the Czech Republic. who they would like to work with Czech Prime Ministers to the ELI facility Recognising the UK's strengths in laser in the UK. also helped cement the relationship. technology, SIN contacted the UK's The one day event included presentations and After the mission, UK companies went on Science & Technology Facilities Council one to one meetings with ELI consortium experts. to apply for ELI tenders and won a total of in 2009 about opportunities for UK UK £15 million in commercial and research researchers and companies to work contracts. with ELI. This was followed by a visit by

SUCCESS FACTORS AND LESSONS LEARNT

the Prime Minister

Working with UKTI – SIN identified the opportunity and focussed on introducing the project to researchers while UKTI took the lead in recruiting UK companies for a commercial mission.

Understanding of UK strengths in laser technology helped SIN identify a commercial opportunity Strong political support helped convert connections made at SIN events into tangible collaborations

CASE STUDY 6: WORKING AS A REGION TO SCALE UP IMPACT ON INNOVATION COLLABORATION OPPORTUNITIES

SIN POST:

Boston (lead), San Francisco, Chicago, USA

THEME: Synthetic Biology

NO. OF SIN OFFICERS AT POST: 2

EXPLORING AND INFORMING

- SIN US identified US strengths and investment interest in synthetic biology, which was also a UK priority.
- The teams mapped the landscape across the US for research, funding, and policy issues and identified the main organisations and individuals to talk to.
- SIN US discussed plans with, and secured participation from UK organisations representing research, business and policy.
- Three US clusters of excellence were identified as targets for a series of SIN events.

CULTIVATING AND CONNECTING

- The teams set up a year-long multi-city campaign with Events scheduled to coincide with major academic and industry conferences:
- London: a reception to launch & promote the programme & recruit delegates.
- Boston: meetings between researchers and funders from the UK and US, including a poster session, dinner and workshop.
- San Francisco: meetings for academics, policy makers, Innovate UK and industry from the UK with established synbio companies, start-ups, research institutes and investors.
- Chicago: meetings between UK and US academics and funders, including a reception with the UK Minister for Science.

ACTIVATING AND SCALING

- Instead of arranging a single workshop,
 SIN conceived of a range of activities around a single theme.
- Follow up is being coordinated with UKTI's S&I and VC units, and local UKTI teams.
- A US investor set up a VC company in the UK and is raising a fund.
- Imperial College will host the main synbio startup and investor conference in 2014.
- Three US companies are looking to expand to the UK.
- Innovate UK is linked into an existing US effort to standardise methods in synbio.

SUCCESS FACTORS AND LESSONS LEARNT

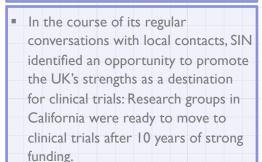
- Timing: Events were timed to coincide with major academic and industry conferences to reach a wide audience
- Partnering: Working with Innovate UK, the BIA (industry association) and UKTI ensured a strong focus on innovation.
- Connecting networks: SIN arranged meetings with established US networks, rather than individual labs, to maximise opportunities for linking

CASE STUDY 7: PROMOTING THE UK INNOVATION SYSTEM TO TARGETED INTERNATIONAL MARKETS

SIN POST: Los Angeles (lead), San Francisco, USA

THEME: Regenerative medicine – clinical trials

EXPLORING AND INFORMING



 The team confirmed that the time was right for a translational research and commercialisation focussed programme of work.

CULTIVATING AND CONNECTING

- SIN organised a road show of UK experts,
- including businesses, academics and the Cell Therapy Catapult, which reached over 100 local academic and industry researchers through meetings, a breakfast seminar and a session at the annual meeting of the California regen med funding agency.
- SIN worked with UKTI to choose a mix of UK participants covering regen med and clinical trials, to provide a full range pf advice to the Californian audience.
- SIN used it's strong network of connections in regen med, developed over several years, to identify local participants.

ACTIVATING AND SCALING

- This activity built on several years of events and contact building in this field.
- It helped the newly established Cell
 Therapy Catapult forge links with
 translational research centres, companies
 and investors in California.
- As a direct result of the mission, several companies and researchers chose to undertake clinical trials in the UK.

SUCCESS FACTORS AND LESSONS LEARNT

- Cultivating contacts SIN built on contacts developed over years to identify an opportunity for the UK and promote it to the right people
- Working with UKTI This helped SIN identify industry participants
- Focused activity The activity focused narrowly on regen med, rather than all potential clinical trial users, so select delegates could provide information tailored specifically to this community.

CASE STUDY 8: BILATERAL PARTNERING TO LOBBY THE EUROPEAN COMMISSION ON INNOVATION POLICY

SIN POST: Paris, France **THEME:** Innovation financing NO. OF SIN OFFICERS AT POST: 3 **CULTIVATING AND EXPLORING AND INFLUENCING AND ACTIVATING AND SCALING PROMOTING** CONNECTING INFORMING SIN France regularly The UK Treasury saw an opportunity In this instance, the meeting After the event, BIS and their French feeds intelligence back to promote the UK public participants were hand counterpart drafted a letter to the to the UK government procurement model and the Small picked by government, but Commission, SIN liaised with both and responds for Business Research Initiative (SBRI) in SIN is usually responsible for departments throughout the process. requests for input into France and also wanted to identify a identifying participants. The letter supported a paper on government reports. partner government to lobby the EU SIN fed into briefings in innovation financing, which led to new on innovation financing, with the goal preparation for the meeting Commission programmes on venture of making the EU environment more SIN helped develop links capital and innovation procurement. supportive of innovation. It asked SIN between the BIS board and This activity established a new to help it organise a bilateral meeting DG Research and innovation. relationship between SIN and the with the French Industry Ministry. French Industry Ministry, which they will use for future work.

SUCCESS FACTORS AND LESSONS LEARNT

- Intermediating SIN occupies a unique position for intermediating collaboration SIN turned an interest by two governments into a concrete activity by facilitating the event.
- Coalition building SIN can play an important role in building international alliances to influence supranational and global policies that may be more effective than the UK acting alone.

SUCCESS FACTORS AND LESSONS LEARNT

Even with strong political backing, this was an intensive and long term operation. Draw on existing collaborative funding mechanisms within the host country

Multiply impact through directing a range of activities towards a collective, ambitious goal

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CASE STUDY 9: WORKING WITH Innovate UK TO SET UP A BILATERAL COLLABORATIVE R&D FUND

SIN POST: Delhi, India NO. OF SIN OFFICERS AT POST: 3 **THEME:** Energy systems & affordable healthcare **CULTIVATING AND EXPLORING AND ACTIVATING AND SCALING** INFORMING CONNECTING Building on success supporting RCUK to grow Over at least a two year time frame, SIN A £5m Innovate UK-GITA matched bilateral research collaborations, the SIN team fund for collaborative R&D between have been supporting two distinct types of wanted to grow the amount of industrial R&D collaborative relationship: UK and India was launched in Autumn Political and official - from the agreement to collaboration between UK & India for mutual 2013, with first round calls closing April benefit. joint funding signed by science ministers at a 2014. They positioned the UK as a good partner bilateral council in 2012, through to the SIN continues to partner with for a new PPP funding instrument set up by negotiations between Innovate UK and the innovation consultancies such as the Indian govt to support international AcceleratorIndia on commercial events Indian government on the design of the joint collaborative R&D, called GITA. both to draw on appropriate company instrument. Given alignment with UK priorities and strong Commercial - Collaborating with the KTNS contacts, but also to use methodologies political support, they secured Innovate UK's and Innovate UK on several joint workshops like their '#Riffstream' approach to build interest in developing the opportunity - despite (eg medical devices, smart power and digital productive collaborations between lack of precedent for this kind of activity health) to refine focus of calls and build firms rather than relying on chance outside US/Europe. partnerships to access funding. conversations.

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CASE STUDY 10: RUNNING EFFECTIVE MISSIONS FOR PARTNER ORGANISATIONS

NO. OF SIN OFFICERS AT POST: 5 SIN POST: Beijing, China **THEME:** Sustainable manufacturing **CULTIVATING AND EXPLORING AND ACTIVATING AND SCALING** CONNECTING INFORMING As well as actively scoping opportunities for new After discussions with SIN, the KTN The EPSRC and MoST launched a £3m activities, SIN is occasionally asked to facilitate decided to run a mission to 3 cities funding call for joint industrial research events on behalf of UK partner institutions. in China. projects between UK and Chinese Innovate UK negotiated a joint funding call on The participants included 5 academics companies. sustainable manufacturing with the Chinese and 13 businesses. The event itself helped raise the profile Ministry of Science and Technology and decided SIN facilitated the mission. of the UK with 3 local governments they needed a mission to help create more links coordinating the efforts of a diverse across China. SIN will be able to build on between UK and Chinese companies who could group of stakeholders in the UK and these relationship in its future work. then go on to jointly apply for funding. Innovate China. UK asked the Chemistry Innovation KTN to run an event for them and the KTN in turn delegated in country organisation to SIN.

SUCCESS FACTORS AND LESSONS LEARNT

The Chemistry innovation KTN produced a report after the mission, which included the following feedback:

- Local contacts are key to organising effective partnering events: the attendance of companies at the individual events was best in Guangzhou and Shanghai, the two cities that SIN is based in SIN could consider developing local partnerships in cities beyond where they are based.
- The participants felt that there wasn't enough time to arrange follow up meetings with new contacts after the events. This could due to the 3 city format of the mission.

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