Research and Information Service
Briefing Note

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The Small Business Research Initiative

Key points

- The Small Business Research Initiative seeks to enable government departments and other public sector bodies meet to challenges by procuring innovative solutions to those challenges from technology organisations;

- The scheme is open to a range of organisations, but it is expected that the competition on offer will be of particular interest to SMEs and micro-businesses;

- Competitions have two phases. During the first, successful applicants are awarded a grant of up to £100,000 for a two to six months contract. Applicants who successfully enter the second phase will be offered contracts with a maximum value of £1m and a maximum length of two-years;

- The aim of phase two is the development of a *'well defined prototype'*;

- Applicants retain the intellectual property associated with the project;

- The range of business areas that have run a competition is broad. The list of closed competitions include, for example: energy and climate change; defence; tourism; health; the environment; education; animal welfare; assisted living; demographic change; communications; transport; and policing;

    ▪ To date Northern Ireland advertised one competition via the SBRI. The Northern Ireland Tourist Board has used it to procure a series of mobile apps to promote tourist numbers and spend.

1   Introduction

The following paper provides an overview of the Small Business Research Initiative (SBRI) and provides examples of projects that have been taken forward through the scheme.

2   What is the Small Business Research Initiative?

The SBRI seeks to enable government departments and other public sector bodies to meet challenges by procuring innovative solutions to those challenges from technology organisations.

The SBRI will utilise the government procurement system to:

> *…accelerate technology development, support projects through stages of feasibility and prototyping which are typically hard to fund.*[1]

Any organisation may submit an application to an SBRI competition, although, it is anticipated that the opportunities available through the SBRI will be of particular interest to SMEs. Specifically the SBRI is:

> *… aimed at organisations working on the development of an innovative process, material, device, product or service.*[2]

In addition to established firms, pre-start-up companies may apply although contracts will only be awarded to legal entities. Universities may also apply provided they can demonstrate a plan to commercialise results. The same is true for charities, so long as they apply via their 'trading company'.[3]

The SBRI process begins with a public sector body identifying a specific challenge. This then becomes an open competition open to the *'broad business community'.* All competitions are advertised on the Technology Strategy Board (TSB) website. Applications can be made to the TSB or to the specific public sector body. All applications are assessed with those judged to be the most promising awarded development contracts.[4]

Competitions have two phases. During the first, successful applicants are awarded a grant of up to £100,000 for a two to six months contract. During this phase, applicants

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[1] The Technology Strategy Board *Overview of the SBRI* (accessed 12 November 2012)
http://www.innovateuk.org/deliveringinnovation/smallbusinessresearchinitiative/overview-of-sbri.ashx
[2] The Technology Strategy Board *SBRI – FAQs*
http://www.innovateuk.org/_assets/0511/faqs_dept_compcode_005%20faqs%20v4.pdf
[3] *Ibid*
[4] *Ibid*

will concentrate on R&D aimed at proving the *'scientific, technical and commercial feasibility of the proposed project'.* The results of Phase 1 will determine whether the project will go forward to Phase 2. It is not anticipated that all projects will enter a second phase.[5]

Applicants who successfully enter the second phase will be offered contracts with a maximum value of £1m and a maximum length of two-years. The aim of phase two is the development of a *'well defined prototype'.* At the end of phase two it is *'intended that what has been developed will be manufactured and marketed as a way of fulfilling requirements'.*[6] The applicant will retain the intellectual property rights:

> *… although certain rights of usage may be applied by the funding authority including royalty-free, non-exclusive licence rights and the right to require licenses to third parties, at a fair market price.*[7]

Key benefits of the SBRI have been identified, as follows:

- Competition is driven by a defined challenge;
- Stimulates the creation of innovative new products of services;
- Operates under EU-pre-commercial procurement guidelines;
- Projects are offered a fully-funded development contract as opposed to a grant;
- The process is fast-track and simplified;
- The initiative is aimed at SMEs in particular;
- A government department acts as the lead customer; and,
- The firm retains intellectual property rights.[8]

3   Case studies

The TSB website provides details of open and closed SBRI competitions. The range of business areas that have run a competition is broad. The list of closed competitions include, for example: energy and climate change; defence; tourism; health; the environment; education; animal welfare; assisted living; demographic change; communications; transport; and policing.

To date, Northern Ireland has advertised one competition via the initiative. The Northern Ireland Tourist Board has used SBRI:

> *… to purchase the development of 3-7 innovative Apps, which will be suitable for download across mobile platforms* [9]

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[5] *Ibid*

[6] *Ibid*

[7] *Ibid*

[8] The Technology Strategy Board *Drug driver testing* (12 April 2012)
    http://www.innovateuk.org/_assets/pdf/case%20studies/randox/drug-driver-testing.pdf

The rationale underpinning this purchase was a desire to increase the number of visitors to Northern Ireland and to encourage those visitors to spend more when they were in the region. Specifically, NITB sought applications which would:

- Utilize Geographical Information held by Northern Ireland Government and available under EU Inspire Regulations and other relevant information held by NITB and other government bodies;
- Be available for download by visitors to Northern Ireland by Easter 2011;
- Be available on more than one platform (e.g. iOS, Android, Blackberry, Windows); and
- A distribution plan and business model to sustain the App.[10]

Four apps were subsequently produced and launched in June 2011. These were:

- Pocket Northern Ireland which provides a detailed tourist map, audio commentary and information on various attractions;
- Take a Hike, a walking app which will help visitors search for and share information on the best walking trails in Northern Ireland;
- My Tour Talk which includes driving and walking tours and information on attractions and accommodation; and
- View Ranger offers outdoor enthusiasts mapping, guides and trip sharing ideas.[11]

The procurement process received 72 bids in total, which was at the time of launch the sixth highest of any SRBI competition. Over 20 of these bids came from Northern Ireland companies, all of which were SMEs or micro businesses. Four companies were successful; two of these were from Northern Ireland. Contracts totalling £81,000 were awarded.

Commenting at the product launch, a representative of successful applicant My Tour Talk said:

> *Winning this exciting competition has given My Tour Talk the opportunity to bring to market the perfect travel companion in a really useful and easy to use iPhone and Android app. As a result of government adopting this innovative form of procurement, My Tour Talk can now provide visitors and locals with the ultimate travel experience, should they be planning a day out, a holiday or the up and coming staycation.*

The Minister of Enterprise, Trade and Investment also commented on the SBRI, stating:

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[9] NI Executive *Foster launches tourism apps* (24 June 2011) http://www.northernireland.gov.uk/index/media-centre/news-departments/news-deti/news-deti-june-archive-2011/news-deti-foster-launches-new-tourism.htm

[10] *Ibid*

[11] *Ibid*

Considering the high standard of competition, it is particularly encouraging that two of the winners are small local companies. I am sure that this is the first of a number of projects where Northern Ireland government in partnership with the Technology Strategy Board will use procurement to stimulate the private sector and especially our small businesses." [12]

The remainder of this section will look at a range of other projects procured through the SBRI.

3.1 Driver drug testing – The Home Office

In June 2010 the Home Office launched an SBRI competition to fund development work on an oral fluid screening device for the detection of drug drivers by the police. The competition was co-funded by the Home Office, the Technology Strategy Board and the Department of Finance.[13]

As a result of this competition the County Antrim based firm Randox is taking forward the development of a *'Evidence Multistat'* detection system following the successful completion of a £90,000 phase 1 feasibility study.[14]

The firm has been awarded a £250,000 phase 2 contract to build a prototype device with the aim of cutting the testing time from 20 minutes to eight minutes. The device will have the capability of testing for the presence of 13 different drugs from a single oral fluid sample.[15]

It is envisaged that the technology being developed by Randox will have an impact beyond the UK police force. The global market for drugs testing was US$1.9bn in 2007 and is estimated to increase to US$2.6bn by 2014. Randox currently sells diagnostic products to 130 countries and will be able to use the same distribution networks to exploit the commercialisation of this innovation.[16]

The product may also have uses beyond the police service. Customs, prison services, prisons, hospitals, the military, rehabilitation clinics, and private transport firms are all potential markets.

There are other potential benefits for the firm:

By-products of the SBRI competition and resulting relationship with the Home Office have included Randox gaining insights into the specific requirements of markets such as the police. Randox has also been introduced to other notable contacts, for example generating interest in its

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[12] *Ibid*

[13] The Technology Strategy Board *Drug driver testing* (12 April 2012)
      http://www.innovateuk.org/_assets/pdf/case%20studies/randox/drug-driver-testing.pdf

[14] *Ibid*

[15] *Ibid*

[16] *Ibid*

antibody for testing ketamine, a horse tranquiliser widely abused in the UK.[17]

Commenting on the project, and on the SBRI, Randox's Assay Development Manager stated:

Detecting multiple drugs in oral fluid at such low cut-off concentrations and to Home Office specifications was a significant challenge, hut we overcame it with the help of SBRI funding. The market for this product is vast – and expanding rapidly.[18]

3.2   Hospital hygiene – Department of Health and the National Health Institute of Health Research

During 2008 the Department of Health ran a competition through the SBRI with a view to finding innovative solutions to health care associated infections such as MRSA and C. difficile. The competition received 53 applications, of which 13 business were awarded contracts for further development.[19]

Of these 13 successful applicants, Creo Medical was awarded £100,000 to take forward its Non-Thermal Plasma Hand Sterilisation System. This system has the potential to provide high-speed hand sterilisation without the need for scrubbing with soaps or gels. Using this system, those who require hand sterilisation place their hands into the machine, in a similar way to modern hand dryers, and plasma-ionised gas with microbiological properties scans across the hands, sterilising them in a way that ensures full coverage.[20]

It is hoped that the new technology will:

…encourage more people to abide by the hospital hand-cleaning request, being quicker, easier and kinder to the skin, and be far more effective at killing bacteria[21].

To date the contract has enabled Creo Medical to prove that its concept is viable. The system is currently at the second phase of development. Commenting on SBRI, Steve Morris of Creo Medical stated:

SBRI has been a breath of fresh air. Although horror stories abound about endless red tape when applying for Government support, nothing could be

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[17] *Ibid*

[18] *Ibid*

[19] The Technology Strategy Board *Hospital hygiene* (13 May 2011) http://www.innovateuk.org/content/case-study/sbri/hospital-hygiene-under-the-microscope.ashx

[20] *Ibid*

[21] *Ibid*

further from the truth with the SBRI initiative. We were awarded a contract direct with the Department of Health.[22]

3.3 Empowering people through technology – the Department of Business, Innovation and Skills

In January 2011 the Department of Business, Innovation and Skills launched a competition through SBRI which aimed to *develop technologies which will ensure that learners with communication difficulties can function effectively and independently across a range of learning and living situations'.*[23]

The Aberdeen based micro-business Technabling has been awarded a £150,000 contract (Phase 2) to develop a prototype of software that can translate sign language into text. The software will be developed to work with smart phones and other mobile devices. It is anticipated that the final product will:

> *…allow users to 'talk' to the device in sign language. The video stream captured by the device cameras is then software processed to recognise sequences of user gestures through a locally stored 'library' of core concepts or words. These are then assembled into sentences, which are outputted as text in real time.*[24]

During phase 2, the company aims to extend the image capture technology to include all gestures with in British Sign Language and to develop a prototype into *'a fully-fledged product'* that is *'affordable to the average person'.* According to information provided by the TSB, the technology has the potential to *'transform the way 100,000 British Sign Language users communicate with other people'.*[25]

The Director of Technabling commented on the SBRI, stating:

> *Our company vision is that of a society where user-friendly, affordable technology removes barriers to communication for all, and the SBRI initiative has helped us bring this closer to reality.*[26]

3.4 Low carbon life for terraced houses

The Retrofit for the Future Competition was launched as part of the UK Government's target to save 80% of CO_2 emissions from existing housing by 2050. A total of 87 housing projects across the UK will benefit from the scheme receiving a share of £17m

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[22] *Ibid*

[23] The Technology Strategy Board *Empowering people through technology* (12 April 2012)
   http://www.innovateuk.org/content/case-study/sbri/empowering-people-through-technology.ashx

[24] *Ibid*

[25] *Ibid*

[26] *Ibid*

of government funding to demonstrate low carbon building technology for existing housing.[27]

Each retrofit prototype receives an average of £142,000 (Phase 2) to demonstrate how the technology can cut carbon emissions. The funding is designed to:

> …*stimulate the implementation of innovative, proof of concept demonstrator houses that may offer cost effective solutions for wider roll-out across the UK. Each demonstrator house will then be evaluated by the Energy Saving Trust for two years and its potential assessed for adoption across the UK.*[28]

One example of a demonstrator prototype funded through the Retrofit for the Future scheme, via the SBRI, is a project in Liverpool which began in June 2010. This project saw the refurbishment of a three-bed end terrace house that had fallen into disrepair. The project has been taken forward by the Plus Dane Energy Group, who aim to test *'whole-house'* energy efficiency technologies in the building.[29]

- The refurbishment includes a range of energy reduction measures, including:
- Maple *'Supawall'* and *'Supafloor'* technology to prevent heat loss from the home. These insulation systems utilise 140mm thick polyurethane insulation which *'provides exceptional thermal properties'*;
- Triple glazed windows;
- Space heating provide by a mechanical ventilation unit with heat recover. This system will take heat from the rear, south facing conservatory and circulate through the rest of the house. This should reduce energy consumption by recovering heat that would be otherwise wasted;
- Solar power water heating will also be located on a south facing roof;
- A small high efficiency gas-fired boiler to serve as a supplemental heat source for both water and space heating.[30]

All the technology used in the retrofitting process will be sourced from UK suppliers.

3.5 Virtual motorways – The Department of Transport/Highways Agency

The Department of Transport and the Highways Agency ran an SBRI competition to explore how virtual reality might be applied to the transport industry. Specifically, the public bodies wanted to see how the technology could improve the managed motorway approach on a test-bed section of the M42.[31]

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[27] The Technology Strategy Board *Low carbon life for terraced houses* (1 October 2010) http://www.innovateuk.org/content/case-study/sbri/low-carbon-life-for-terraced-houses.ashx

[28] *Ibid*

[29] *Ibid*

[30] *Ibid*

[31] The Technology Strategy Board *Virtual motorways* (12 January 2011) http://www.innovateuk.org/content/case-study/sbri/virtual-motorways-to-manage-real-life-jams.ashx

Nine competition entries were received and three companies were awarded £100,000 to develop a prototype model.

One of these, Risk Solutions, developed the VRSiMM (virtual reality simulation in motorway management) system to help train traffic controllers. The technology enables staff at the Highway Agency's traffic learning centre to simulate real-world conditions, to *'watch vehicles move in exactly the same way they would see them on their normal control centre systems'* and to:

> *…observe traffic responding to steps they take to manage incidents and congestion. For example, when delays start to build up on a particular stretch of road staff will be able to take action. This may include: varying the speed limits, opening a hard shoulder, using overhead motorway signs, or sending a traffic officer to the scene.*

> *Because the simulation runs much faster than real time, it can also predict what is likely to happen in the future so controllers can anticipate problems.[32]*

Commenting on the SBRI process, the Director of Risk Solutions stated:

> *We have been delighted with the SBRI initiative which has given us a unique opportunity to develop an innovative and valuable system. We wouldn't have been able to do the job without the funding and it has been a rewarding experience for everyone involved.[33]*

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[32] *Ibid*
[33] *Ibid*