



Department for the  
**Economy**  
[www.economy-ni.gov.uk](http://www.economy-ni.gov.uk)

# Innovation Strategy Progress Report

Progress Report to 31 December 2016



## INTRODUCTION

The Innovation Strategy was launched in 2014 and this report provides a progress update against the actions and progress on delivery of the targets set by that Strategy. In summary, at 31st December 2016, 18 of these actions (30%) have been completed, and the remainder are all on target to deliver within the timescale specified. An update on each of the actions is attached.

The Innovation Strategy also outlines a number of challenging and ambitious long term goals and medium term targets in order to drive the growth of the economy. Each of these indicators provides an overview of progress on each using updated information since the Strategy was published. Progress against these targets is set out in Table 1, however, in summary:

- **One** has already been exceeded (R&D companies)
- **Seven** have shown an improvement (knowledge economy employment, total R&D expenditure, H2020 drawdown, business R&D expenditure, business start-up rate, private sector turnover from innovation)
- **Two** have remained at their baseline level (European Innovation Scoreboard ranking and the UK Innovation Ranking)

An Innovation Dashboard which provides a more detailed analysis of NI Innovation performance has been developed. This covers a wider range of indicators across the whole innovation spectrum. This can be found at the following link:  
<http://matrixni.org/about/innovation-dashboard/>

## Table 1 - Progress on Innovation Strategy Targets

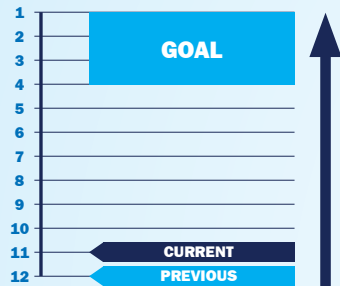
Long Term Goals	Baseline	Year	Latest Position	Year	Milestone (2020)	Goal (2025)
European Innovation Scoreboard Ranking	Strong Innovator*	2014	Strong Innovator	2016	Strong Innovator	Innovation leader
UK Regional Innovation Ranking	11 (of 12)	2008-10	11 ↔	2012-14	Top 6	Top 4
Employment in the Knowledge Economy	33,370	2011	39,499 ↑	2013	45,000	54,000
Total R&D Expenditure	£616m	2012	£749.6m ↑	2015	£950m	£1.2bn
Medium Term Targets	Baseline	Year	Latest Position	Year	Target (2020)	
Drawdown from H2020	€0m	2014	€47.2m ↑	2016	€145m	
Business R&D expenditure	1.4% of GVA**	2012	1.5% ↑	2015	1.8%	
Number of R&D Companies	496	2012	714 ↑	2015	650	
Business Start Up Rate	7.0%	2012	8.7% ↑	2014	14%	
Collaboration Amongst Innovative Firms	45%	2008-10	50% ↑	2012-14	60%	
Private Sector Turnover from Innovation	25%	2010	26% ↑	2014	£22bn	

\* **Note:** The European Innovation Scoreboard results published in 2016 replaced Innovation Follower with the term 'Strong Innovator', the other three categories remained the same. Northern Ireland remained a "Strong Innovator".

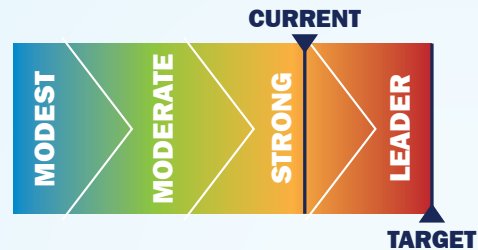
\*\* ONS revised its NI GVA estimate in 2012 from £29.4bn to £32.7bn. NISRA also revised its estimate of total R&D expenditure for 2012. The baseline was revised down from 1.6% of GVA to 1.4% of GVA. The target is therefore more challenging to meet.

# TARGETS

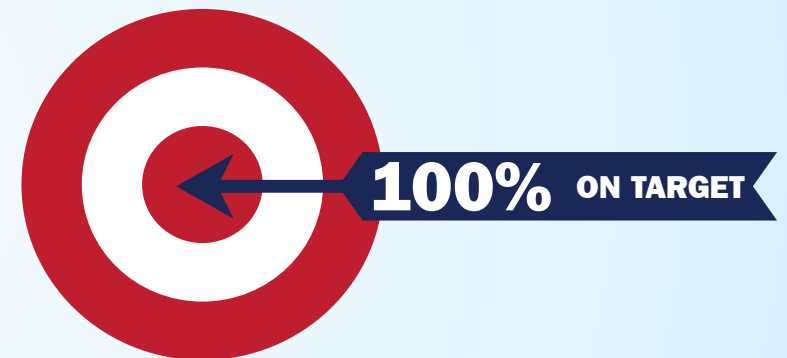
## UK Regional Innovation Ranking



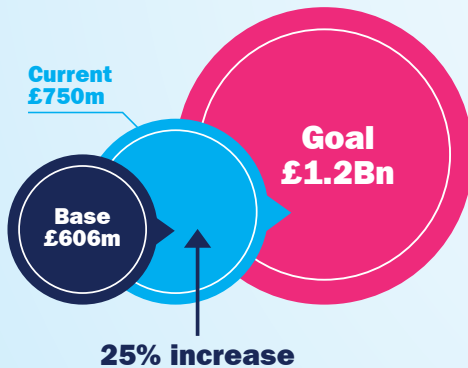
## European Innovation Scoreboard Ranking



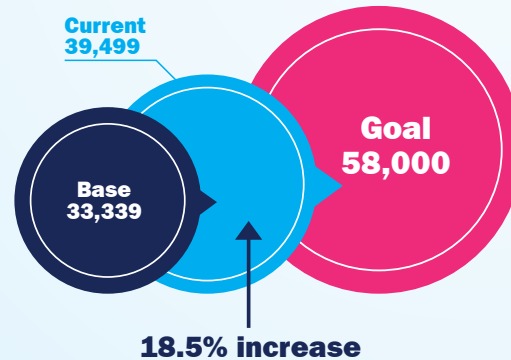
## Innovation Strategy Actions



## Total R&D Spend



## Knowledge Economy Jobs



[CLICK HERE FOR MORE INFORMATION ON THE TARGETS](#)

## Innovation Strategy – Key to RAG Status delivery descriptors

<b>RED</b>	0	Strategy action/commitment implementation not achieved and/or not expected to be achieved or commencement of implementation has been delayed.
<b>AMBER</b>	0	Strategy action/commitment implementation commenced, but progress is slower than anticipated.
<b>GREEN</b>	60	Strategy action/commitment achieved or is on target for delivery within timescale.

### Timescale for delivery of Actions:

Short (S) = 0-2 years

Medium (M) = 3-5 years

Long (L) = Beyond 5 years

**Note** – Invest NI updates cover the period to 30th September in line with their reporting processes.

## Progress Update

CULTURAL CHANGE					
No.	Action	Timeframe	Delivery organisation	Progress to 31 December 2016	Delivery Confidence RAG Status
A1	Examine feasibility of establishing a Northern Ireland Innovation Council.	S	DfE	<p>Action ongoing.</p> <p>The potential role of an Innovation Council is part of consideration to the longer term advisory and monitoring requirements for the new NI draft industrial Strategy</p>	Green
A2	Ensure that innovation and enterprise and the reform of the Northern Ireland public sector are central to any future Programme for Government.	S	DoF	<p>Action ongoing.</p> <p>The new draft PfG framework 2016-2021 incorporates a high level outcome around 'an innovative, creative society where people can fulfil their potential'. Significant work has already taken place in relation to developing an innovative culture e.g. the piloting of a Staff Innovation Scheme in DoF and the expansion of the NI Ireland Innovation Lab.</p> <p>PSRD have worked closely with officials in the TEO to map and identify linkages between the OECD Report recommendations, the Cross Cutting Reform programme and draft PfG outcomes and indicators.</p> <p>We also continue to engage with Carnegie Roundtable to align Wellbeing recommendations with the new PfG.</p>	Green
A3	Appoint 'Innovation Champions' within Government Departments to drive and coordinate the innovation and reform agenda.	S	DoF / DfE	<p>Action complete.</p> <p>Reform/Innovation Champions have been appointed in each NICS department. They have been involved in promoting the reform initiatives being led by Public Sector Reform Division and have engaged with the OECD in the public governance review.</p>	Green

## CULTURAL CHANGE

A4	<b>Incorporate innovation and creativity into training and development programmes for public servants and into core competencies for managers.</b>	M	DoF	<p>Action ongoing.</p> <p>CAL delivered their first “Innovation and Creativity” course in November 2016 and have also developed two online resources which are now available on the CAL intranet site, entitled:</p> <ul style="list-style-type: none"> <li>• Creating a climate in which creativity and innovation can flourish; and</li> <li>• Creativity self assessment and reflection tool.</li> </ul> <p>In addition CAL put in place a suite of training packages to support digital awareness and agile development of services.</p> <p>Following a review of the pilot courses CAL have developed 3 classroom interventions around Agile and Scrum methodology, and another 3 e-Learning packages have subsequently been developed to provide awareness for the wider NICS audience:</p> <ol style="list-style-type: none"> <li><u>1.</u> Digital Awareness</li> <li><u>2.</u> Going Digital – What to Consider?</li> <li><u>3.</u> Introduction to Agile &amp; Scrum</li> </ol> <p>PSRD and CAL have worked closely to deliver a series of SCS Masterclasses on the topic of ‘Public Sector Reform and Innovation’.</p>	Green
A5	<b>Introduce a scheme to improve public services by stimulating innovation amongst staff, service users and the wider public.</b>	S	DoF	<p>Action complete.</p> <p>The “IdeasEngine” Innovation scheme trial has been in place since June 14. To date, the scheme has generated over 300 ideas, with six meriting a reward. The scheme is currently being evaluated to determine its future direction.</p>	Green



## CULTURAL CHANGE

A6	<b>Build the capability and capacity of the Public Sector Innovation Lab to address public sector policy challenges.</b>	S	DoF / DfE	<p>Action ongoing.</p> <p>Fourteen labs and one behavioural science project were completed in 2015/16 with associated learning developed. There are currently 2 projects going to trial with 7 other projects at various stages of development.</p> <p>One of the current trials is to test a behavioural insights intervention on the payment of court fines. The other trial is to nudge citizens to recycle more. This trial will be run in sample areas in 5 local councils. A School's Challenge is also underway with a completion date of March 2017 with a Dragon's Den type event being organised. The challenge is for students to design and develop prototypes of the household landfill bin of the future.</p> <p>Interest in the Innovation Lab continues to grow with a variety of new projects underway covering all aspects of our <b>i-dec</b> methodology – (innovation through <b>d</b>esign, <b>e</b>xperimentation and <b>c</b>reativity).</p> <p>The first in a series of planned sessions sharing our methodology was held in December 2016 with an awareness session for a range of NICS and other public sector colleagues on Systems Dynamics Modelling. This session generated a lot of interest in the methodology and how it might be used.</p> <p>The application of System Dynamics Modelling to dementia services continues to provide unique insights which will help the DoH and NHS colleagues shape strategy and services for the future.</p> <p>Links with other Labs within the UK and further afield continue to be established with a focus on learning and knowledge sharing to refine methodologies and maximise Lab impact. Consideration is being given to Labs from different jurisdictions working collaboratively on a subject of national/international interest.</p>	Green
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## CULTURAL CHANGE

<b>A7</b>	<b>Encourage companies to invest in attaining international standards such as International Office for Standardisation (ISO).</b>	M	INVEST NI / DfE	<p>Action ongoing.</p> <p>For the period 1st April 2016 – 30<sup>th</sup> September 2016 a total of 34 companies have received support to attain international standards such as ISO 9001, ISO 14001, OHSAS 18001, AS 9100 (Aerospace), ISO 27001 (Information Security), FSC (Forestry Stewardship Council's Chain of Custody) European standards such as EN 1090, EU Type Approval as well as food related standards such as BRC, SALSA and HALAL certification as well as UK government standard Cyber Essentials Plus.</p> <p>34 companies attended the following two CE Marking seminars between 01/04/2016 to 30/09/2016:</p> <ul style="list-style-type: none"> <li>• CE Marking Mechanical Engineering – 20<sup>th</sup> April 2016 (18 companies)</li> <li>• CE Marking Electrical Engineering – 4<sup>th</sup> May 2016 (16 companies)</li> </ul>	Green
<b>A8</b>	<b>Develop a new innovation communications strategy involving businesses, government, academia, and media to showcase excellence in innovation and to inspire our young people.</b>	S	DfE	<p>Action ongoing.</p> <p>NISP Connect are leading on this on behalf of DfE. They have already undertaken a number of initiatives designed to underpin the importance of entrepreneurship, particularly among our young people, and are already supporting students to engage in innovation.</p> <p>In addition, the department will be working with local authorities to support them to encourage companies, particularly SMEs to engage in open innovation.</p>	Green
<b>A9</b>	<b>Create a Chief Scientific Advisor role for Northern Ireland to provide a coordinated approach to science within the public sector.</b>	S	DfE / DoH/ DAERA	<p>Action ongoing.</p> <p>Options for creating a scientific advisory function remain under consideration, with ad hoc arrangements still in place. The CSAs for DoH and DAERA continue to represent Northern Ireland's interests at the UK Chief Scientific Advisory Committee, supported by MATRIX &amp; DfE. Further consideration will be given to this issue under the auspices of the draft Industrial Strategy.</p>	Green

## CULTURAL CHANGE

<b>A10</b>	<b>Introduce a range of new leadership programmes and also develop a management strand within Invest NI's Skills Growth Programme.</b>		INVEST NI	<p>Action ongoing.</p> <p>The new Invest NI Leadership Team programme commenced in September 2014. The programme, aimed at SME senior teams, includes Executive Education delivered by Dublin City University and Business Coaching. 60 participants, across 20 companies have completed the programme and a further 15 companies with 45 participants taking part in the 16/17 programme. Feedback has been very positive with outputs including new markets identified and achieved, improved innovation, increase in sales and reduced costs.</p> <p>The programme has also been identified as a vehicle for pre-scaling clients and approval has already been given for an additional cohort in 17/18.</p> <p>Invest NI's Leader Programme, which involves a mix of business mentoring, leadership coaching and peer networking, has been evaluated and the economic appraisal confirms the need for Invest NI to continue to support companies in this space. Over 70 companies have participated in the programme and a further 16 are taking part in the 2016/17 programme.</p> <p>Through Invest NI's Skills Growth Programme (SGP), Invest NI has proactively promoted investment in developing leadership and management capability within companies. In 2016/17, management development will account for 25% of secured company spend on training through SGP. Invest NI Leadership support now secures around £8m per annum investment in leadership and management within Invest NI account managed customers.</p>	Green
<b>A11</b>	<b>Conduct a pilot Innovation Survey for Micro Businesses.</b>	S	DfE	<p>Action complete.</p> <p>A pilot Innovation Survey for Micro Businesses was carried out and a report outlining the results published in December 2014.</p>	Green

## CULTURAL CHANGE

A12	Develop a new social innovation working group, to identify and report on future opportunities and promote the concept of social innovation.	S	DfC	<p><b>Action complete.</b></p> <p>Group established and work programme agreed. This includes taking forward the Social Innovation Manifesto as a Vision to guide the work of the group.</p> <p>Key aspects of the SIWG work to date include:</p> <ol style="list-style-type: none"> <li>1. DfC supported Young Foundation to deliver an Accelerator programme in 15/16 and continue to be involved in their work (now supported by Big Lottery and BCC). A number of the projects that emerged from the 15/16 Accelerator are now working with us on a DfC pilot Investment Readiness.</li> <li>2. DfC established links with Social Innovation NI. Social Innovation NI is a cross-sectoral collaboration (led and resourced) by Building Change Trust which aims to make it easier for those with innovative solutions to social challenges to access the support they need to deliver their ideas with impact and at scale and also to support the VCSE and others to develop innovative solutions to current and future challenges.</li> </ol> <p>Support also extended to sponsorship of the Unusual Suspects Festival in October 2016. Over four hundred people attended nearly 30 events</p> <p>View the short film or read the short report using the following links to find out more about the connections that were made and the impact that the festival had on people.</p> <p><a href="#">film</a></p> <p><a href="#">short report</a></p>	Green
A13	Cultural Change	Establish accelerator programmes to act as key catalysts for social innovators in Northern Ireland.	BCT/Social Indigo	<p><b>Action complete.</b></p> <p>The Young Foundation DSD contract to establish an accelerator programme has been completed. They produced a report highlighting the demand for Social Innovation within Northern Ireland and will continue to work with social innovations with the aid of Big Lottery support.</p>	Green

## KNOWLEDGE GENERATION

No.	Action	Timeframe	Delivery organisation	Progress to 31 December 2016	Delivery Confidence RAG Status
B1	<b>Investigate the potential to introduce innovation audits within companies linked to the provision of intensive mentoring.</b>	S	INVEST NI/ InterTrade Ireland	<p>Action ongoing.</p> <p>Innovation Audits have been introduced to the Fusion Programme. In addition, an online Design Diagnostic Tool to assist identification of the required business innovation support has been developed and is now available via the Invest NI website. DfE and Invest NI are working on an Innovation awareness and Accreditation Action Plan and will engage with stakeholders on this.</p>	Green
B2	<b>Incentivise research performers to engage in networking/ mentoring to increase the technological activities and capabilities of enterprises.</b>	S	DfE / INVEST NI	<p>Action ongoing.</p> <p>Business case currently underway to increase Technology Transfer Programmes such as Innovation Vouchers, Knowledge Transfer Partnerships and Fusion. In addition NISP Connect has increased the number of Springboard graduates.</p>	Green
B3	<b>Run competitions to support innovation in key areas where there is potential for NI companies to compete on a global basis.</b>	S	DfE	<p>Action ongoing.</p> <p>Through a partnership of DfE, Invest NI and CultureTech ran its first open data competition.</p> <p>This competition sought ideas for commercial exploitation of open public data.</p>	Green

## KNOWLEDGE GENERATION

B4	Increase efforts to encourage companies to invest in R&D.	S	INVEST NI	<p>Action ongoing.</p> <p>Invest NI continues to support companies to engage in R&amp;D.</p> <p>From 1<sup>st</sup> April 2016 – 30 September 2016 Invest NI has supported 77 businesses to engage in R&amp;D activities. The scale of R&amp;D projects undertaken has ranged from £2k (project definitions) to large c£3.3m projects. During this period, Invest NI supported 23 companies that were new to R&amp;D.</p> <p>The agency also reviewed its approach to encouraging collaborative R&amp;D. Invest NI has worked closely with both Innovate UK and with colleagues in NI to promote opportunities for businesses to engage in collaborative R&amp;D competitions on a national and European basis.</p> <p>Delivery of R&amp;D support is highly dependent on ERDF funds. This secures availability of budget for an increasing pipeline of projects. However, a number of future projects of significant scale will require additional budget allocation.</p>	Green
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## KNOWLEDGE GENERATION

<b>B5</b>	<b>Encourage companies to deepen their R&amp;D capabilities and develop their Technology Management capabilities.</b>	S	INVEST NI	<p>Action ongoing.</p> <p>From 1<sup>st</sup> April 2016 – 30<sup>th</sup> September 2016 Invest NI assisted 77 businesses to undertake R&amp;D projects. This support ranged from small near market R&amp;D projects to large industrial R&amp;D projects.</p> <p>Invest NI has offered 27 businesses project definition support to help them plan activities in advance of proceeding with a full R&amp;D project. The majority of R&amp;D costs supported in R&amp;D projects are linked to labour costs which result in enhanced levels of technical expertise within the businesses supported. Project definition support also encourages an increased focus by businesses on collaborative R&amp;D activity and progressing into open innovation activities that will result in greater levels of R&amp;D forming the foundation of future growth plans in overseas markets.</p> <p>As part of the focus on account development plans (ADPs) there is an emphasis on encouraging businesses to adopt a more strategic and planned approach to their R&amp;D activities.</p>	Green
<b>B6</b>	<b>Undertake new research and technology capabilities study across the public and private sector.</b>	S	MATRIX	<p>Action ongoing.</p> <p>A new R&amp;D and Innovation Dashboard is being developed which will bring a variety of data sources together into one place at sectoral level. The data can then be interrogated to identify sectors where there is a high level of R&amp;D intensity and where innovation is growing. The aim is to create an interactive map to identify ‘hot spots’ of innovation and wider economic activity across Northern Ireland by sector and subsector.</p>	Green

## KNOWLEDGE GENERATION

B7	<b>Focus funding and support for research and innovation in both our education and company base in priority areas</b>	M	INVEST NI / DfE	<p>Action ongoing.</p> <p>Between 1<sup>st</sup> April 2016 and 30<sup>th</sup> September 2016 approximately 90% of R&amp;D&amp;I support to businesses has been in priority areas. In that period, approx. £6m of support went to businesses and to the HE / FE base in support of enhanced levels of commercialised R&amp;D through collaborative R&amp;D projects.</p> <p>To support the pre-commercialisation of leading edge technologies emerging from Northern Ireland's Research Institutes, the third phase of the Proof of Concept programme was launched in October 2015. This is a £7.4m programme with three calls for applications per annum. The final call for applications is scheduled to close in the Spring of 2018.</p> <p>Between 1<sup>st</sup> April 2016 and 30<sup>th</sup> September 2016 – five letters of offer were issued.</p>	Green
B8	<b>Develop a Foresight programme to identify new and emerging technologies and key future markets for NI companies.</b>	M	MATRIX / DfE	<p>Action ongoing.</p> <p>A foresight programme has been developed and will be delivered on behalf of the Department by the MATRIX panel.</p> <p>A Life &amp; Health Sciences Strategic Action Plan has been endorsed by the Steering Group and work will now start on implementation of the plan.</p> <p>An ICT/Digital foresight study was published in February 2016. An inter departmental working group was formed in June and work is ongoing to develop an implementation action plan. Bilateral meetings are ongoing to take this implementation plan forward.</p> <p>The Advanced Manufacturing, Materials and Engineering study has been completed and the report and case studies booklet were published in November 2016. The development of an action plan to address the recommendations of the report is underway and work to scope an overarching strategy for the sector will commence Jan 2017.</p>	Green



## KNOWLEDGE GENERATION

B9	<b>Develop further research excellence in sectors with high growth potential and also double the number of funded postgraduate places to 1000 by 2020, with these additional PhD places focussing on areas of economic relevance.</b>	M	DfE	<p>Action ongoing.</p> <p>The Department has allocated a total of £46.6 million in Quality-related Research (QR) funding to the universities for the 2016/17 academic year. This includes funding for mainstream QR, the QR Premium Pot (for STEM subjects and areas of economic relevance), the supervision costs of postgraduate awards, and support for charitable research. This money provides the underpinning infrastructure which enables our universities not only to perform research of the highest calibre, but also to access money from other funding streams.</p> <p>This funding will continue to build on the success of our universities in the 2014 UK-wide Research Excellence Framework.</p> <p>The Department continues to fund a baseline of 729 postgraduate awards (PGAs) The ability to fund 1000 postgraduate places by 2020 will be subject to available funding.</p> <p><u>Targets for 2016/17</u></p> <p>Continue to provide sufficient QR funding to develop and sustain an internationally excellent and world leading Higher Education research sector in Northern Ireland that can hold a strong position within the UK and beyond.</p> <p>Funding was secured to maintain levels of PGA funding at 729 awards in academic year 2016/17.</p>	Green
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## KNOWLEDGE GENERATION

<b>B10</b>	<b>Establish Competence Centres in strategically important areas.</b>	M	INVEST NI	<p>Action ongoing.</p> <p>The economic strategy target (for the period 2011/16) of 4 Competence Centres (CCs) was delivered with the approval in March 2015 of the Agri-Food Competence Centre; which officially commenced on 1<sup>st</sup> October 2015.</p> <p>All Competence Centres are aligned with the priority sectors identified through MATRIX and prioritised in the current NI Economic Strategy. The other CCs are in Connected Health, Sustainable Energy and Advanced Engineering.</p> <p>The Connected Health, Sustainable Energy and Advanced Engineering Centres have undergone a mid-term evaluation during the period 1<sup>st</sup> April 2016 to 30<sup>th</sup> September 2016. This encompassed an independent economic assessment and international peer review. Final evaluation reports are expected during Quarter 1 2017.</p>	Green
<b>B11</b>	<b>Lead efforts to have the UK Catapult in Precision Medicine located in Northern Ireland</b>	S	DfE / INVEST NI	<p>Action complete.</p> <p>The Precision Medicine Catapult, the UK's innovation centre for precision medicine, chose Belfast, along with Cardiff, Glasgow, Leeds, Manchester and Oxford, as one of the initial locations for its regional centres of excellence network.</p>	Green

## KNOWLEDGE GENERATION

B12	<b>Increase the capacity of Creative Learning Centres.</b>	S	DfC	<p>Action ongoing.</p> <p>In 2016-17 Nerve Belfast supported the community digital hubs in Belfast by delivering a five-day digital skills week in Sandy Row in August and organising a four-day Halloween digital programme for the three South Belfast hubs in Donegal Pass, the Markets and Sandy Row. The week-long summer programmes, <i>CodeCraft</i> and <i>I-Mad</i> provided opportunities for over 100 children and young people in Belfast to learn skills in coding, <i>Minecraft</i> and gaming. Vulnerable young people with special needs and autism participated in two five-day creative programmes in October and November learning skills in robotics, coding and 3D printing.</p> <p>Moving forward, the Department will continue to work with Northern Ireland Screen to further increase the capacity of the CLC's during the remainder of 2016/17.</p>	Green
B13	<b>Develop a Creative Northern Ireland Framework to nurture a culture of creativity across the public, private and third sector.</b>	M	DfC	<p>Action complete.</p> <p>A series of events have been supported to stimulate collaboration and the generation and sharing of new ideas and novel approaches to creativity.</p>	Green
B14	<b>Encourage more companies to incorporate design into their business planning processes.</b>	S	INVEST NI	<p>Action ongoing.</p> <p>The Design Service (DS) programme has been extended to encourage more companies to incorporate design into their business planning processes.</p> <p>Based on the EA findings, the format of support is being refined to provide support for:</p> <ul style="list-style-type: none"> <li>• Design advice and planning;</li> <li>• Design implementation; and,</li> <li>• Design strategy adoption.</li> </ul> <p>A new delivery agent has been appointed to take this forward on behalf of Invest NI with ERDF funding of €7.8 m.</p>	Green

## KNOWLEDGE GENERATION

<b>B15</b>	<b>Increase focus of the Employer Support Programme to provide targeted support to Small, Medium Enterprises (SMEs) and Micro Businesses for the skills required to engage in innovation, R&amp;D and entrepreneurship.</b>	S	DfE	<p>Action ongoing.</p> <p>InnovateUs – Employer Support Programme has continued to provide small businesses with the opportunity to acquire the skills necessary to engage in innovation and R&amp;D through engagement and participation in collaborative projects with colleges in the Further Education sector.</p> <p>In the 2016-2017 financial year to date colleges have undertaken 324 InnovateUs projects with small businesses.</p>	Green
<b>B16</b>	<b>Progress the implementation of the Northern Ireland Science, Technology, Engineering and Maths (STEM) Strategy, 'Success through STEM'</b>	M	DfE	<p>Action ongoing.</p> <p>Over 1,400 additional STEM placements have been funded to date, however, new STEM student enrolment figures will not be available until February 17.</p>	Green
<b>B17</b>	<b>Invest further in clinical research careers.</b>	S	DoH	<p>Action ongoing.</p> <p>NIHR Career Development awards - Ongoing awards continue to progress on target.</p> <p>The annual call opened in October 2016, for awards with start dates in early 2018. HSC R&amp;D Division is actively managing the number of applicants who can go forward alongside the Universities. The 2017-2021 budget bid includes a request for further funds to invest in this programme.</p> <p>A new Clinical Academic Fellowship scheme has been established by HSC R&amp;D Division. This jointly-funded scheme will provide the opportunity for Fellows from CCRCB in Queen's University to undertake a PhD training Fellowship in medical oncology at the Princess Margaret Hospital Cancer Centre, Toronto, Canada (PMHCC), returning to NI in the final year.</p> <p>The Doctoral Fellowships call for 2017 closed in mid-October. The response was reasonable with 13 applications received and Panel evaluation is scheduled for January/February 2017.</p>	Green

## KNOWLEDGE GENERATION

<b>B18</b>	<b>Work with industry to ensure that the necessary skills pipeline is in place to meet their needs.</b>	S	DfE / INVEST NI / DoH	<p>Action ongoing.</p> <p>Sector attractiveness campaigns have continued over the last six months, along with other initiatives such as scholarships in the Advanced Manufacturing and Engineering Services (AMES) sector, a fourth cohort of the public/private ICT apprenticeship scheme, and continued liaison with business through the Ministerial Working Groups (MWGs).</p>	Green
<b>B19</b>	<b>Examine how we can increase support offered to encourage entrepreneurial activity in schools.</b>	S	DE	<p>Action ongoing.</p> <p>Engaging with business stakeholders is key to the success of these initiatives and the business community has expressed its desire to engage with young people to ensure that they have the skills that the business sector requires. DE continues to encourage businesses to support schools in encouraging an entrepreneurial culture in pupils through engagement between local business and schools.</p> <p>DE funding for Young Enterprise Northern Ireland (YENI) has continued in 2016/17 with £550k available to ensure continued delivery of their entrepreneurship and employability programmes to primary and post-primary pupils.</p> <p>At 31 December 2016, 58,909 pupils had participated in YENI 2016/17 programmes.</p>	Green

## KNOWLEDGE EXCHANGE

No.	Action	Timeframe	Delivery organisation	Progress to 31 December 2016	Delivery Confidence RAG Status
C1	Introduce a new Open Innovation Service to support companies engage in innovation.	S	DfE / INVEST NI	<p>Action ongoing.</p> <p>The Department, through Invest NI and other delivery partners continue to promote the concept of open innovation. The new Investors in Innovation accreditation will support delivery of this.</p>	Green
C2	Increase investment in industry-led collaborative networks, particularly those focussed on market opportunities identified in the MATRIX priorities.	M	INVEST NI	<p>Action ongoing.</p> <p>Invest NI continue to support the needs of industry through the Collaborative Network Programme.</p> <p>Positive outcomes have been achieved at a number of levels. These include the submission of several collaborative Smart Cities funding applications (including two which have progressed to the second round of consideration); the securing of substantial Atlantic Philanthropies funding for Dementia related Connected Health activities; the launch of a dedicated portal promoting NI as a location of choice for IT career development; the awarding of a £900k project from Innovate UK to use US data to predict degenerative diseases and engagement at EU Ministerial level on Animal Feed testing.</p> <p>Future delivery options for the programme will be subject to the conclusions / recommendations of an evaluation and subsequent economic appraisal.</p>	Green

## KNOWLEDGE EXCHANGE

C3	<b>Provide increased funding for the latest rounds of the Higher Education Innovation Fund and Connected programme.</b>	S	DfE	<p>Action ongoing.</p> <p>Increased funding was maintained for the current round of NI HEIF funding which enabled the universities, <i>inter alia</i>, to undertake 832 knowledge exchange engagements with SMEs, lever £4.21m through consultancy projects, and secure £749k net income from Intellectual Property through the licensing to companies of new technologies and know-how.</p> <p>The Connected team achieved all its key targets for year ending March 2016 with over 100 projects having been undertaken with companies that had no previous engagement with universities or colleges (against a target of 25). An evaluation is planned for 2017/18.</p> <p>In terms of overall impact in the wider UK context, the most recent data from the Higher Education Statistics Agency show that Northern Ireland universities secured £121 million from business and community interaction in AY 2014/15 (representing 2.9% of the UK total). This is a strong performance considering the local economy represents 2.1% of UK economic output or Gross Value Added and accounts for only 1.9% of full time equivalent academics in the UK.</p>	Green
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## KNOWLEDGE EXCHANGE

C4	<b>Increase the scope of Knowledge Transfer Partnerships (KTPs).</b>	M	INVEST NI	<p>Action ongoing.</p> <p>Northern Ireland continues to out-perform other regions in the UK in terms of delivery of KTP projects with 53 live partnerships. QUB is the top knowledge base in the UK with 31 live partnerships and Ulster University is in 7th position with 17 active partnership projects out of a total of 108 knowledge bases. FE participation in NI in the KTP programme is growing with 3 current live partnerships with FE colleges in NI.</p> <p>23 KTP projects with NI companies and grant totalling £1.7m were supported in 2015-16 mainly in the manufacturing sector, the majority with SMEs. These projects were jointly funded by Invest NI and Innovate UK. Over 65% of the projects approved last year were first time KTP projects with 15 NI companies completely new to the KTP Programme.</p> <p>During the period 1<sup>st</sup> April to 30 September 2016 13 NI KTP projects, with grant totalling £1.25m, were approved.</p>	Green
C5	<b>Strengthen engagement in Knowledge Transfer Networks (KTNs) in Northern Ireland.</b>	S	INVEST NI	<p>Action complete.</p> <p>As a result of outreach activities by Invest NI, NI is now firmly on the map for all key KTN events.</p> <p>Agreement has also been reached for the appointment of a permanent Innovate UK presence in NI.</p>	Green
C6	<b>Seek to increase investment in the Innovation Voucher programme.</b>	M	INVEST NI	<p>Action complete.</p> <p>115 vouchers were awarded between 1st April 2016 and 30 September 2016.</p> <p>Approval has been secured for a further 5 years with a budget of £5.45M (limited by budget constraints).</p> <p>The vouchers are worth up to £5,000. Applicants may continue to be awarded 3 vouchers (with reducing contribution on each application).</p>	Green

## KNOWLEDGE EXCHANGE

C7	<b>Introduce a Creative Credit Voucher.</b>	S	DCAL	<p>Action complete.</p> <p>A Creative Credit Voucher was introduced in partnership with NORIBIC, CultureTECH, C-TRIC and Digital Circle. The project received 503 applications for support and provided around 80 traditional businesses with vouchers ranging between £3,000 and £10,000 to work with a creative business to revamp the organisation's image, prototype a new product or explore other creative ideas.</p>	Green
C8	<b>Explore the development of a sub-regional profile/map to indicate sectoral strengths across NI with local councils.</b>	M	NILGA	<p>Action complete.</p> <p>NILGA worked primarily with Invest NI to develop and produce council focussed, regional profiles and maps providing local authorities with an overview of key metrics to assist localised understanding of economic assets and innovation growth potential.</p>	Green
C9	<b>Encourage Further Education colleges to create and establish Specialist provisions for Industry using Colleges Expertise (SPICE) centres, in order to provide bespoke support for all businesses in Northern Ireland, which will help them innovate and grow.</b>	M	DfE	<p>Action ongoing.</p> <p>Colleges are continuing to work towards a comprehensive and full introduction of the concept of college specialisms.</p> <p>As a milestone under the Economic Development project of the new Further Education Strategy 'Further Education Means Success', the Department continues to support testing of the SPICE concept and in conjunction with the FE Economic Engagement Working Group, will develop a system to identify and subsequently externally validate those specialisms on an ongoing basis. The software and systems are installed in all six Colleges and the SPICE portal is operational.</p> <p>All six Further Education Colleges have the Customer Relationship Manager (CRM) software and systems installed. CRM is operational for both strands of the departments Employer Support Programme, and improvements to the system and training are ongoing across all colleges.</p>	Green

## KNOWLEDGE EXCHANGE

<b>C10</b>	<b>Encourage and incentivise clinicians and other Health and Social Care (HSC) staff to become more efficient innovators by providing routes to the implementation of new products or practices that emerge from R&amp;D, normally undertaken jointly with academics and / or businesses.</b>	S	DHSSPS	<p>Action complete.</p> <p>Staff from HSC Trusts continue to be involved in enabling the flow of research into clinical practice in several Knowledge Exchange projects funded by HSC R&amp;D Division.</p> <p>Two examples include a project to develop an online physical activity tool for people at risk of diabetes and one aimed at improving pregnancy planning for women with diabetes.</p>	Green
<b>C11</b>	<b>Forge strategic partnerships with emerging economies in areas where there are alignments with Northern Ireland's capabilities and future market opportunities.</b>	L	DfE/ INVEST NI	<p>Action ongoing.</p> <p>Work continues with delivery partners to identify and develop new strategic partnerships.</p>	Green

## KNOWLEDGE EXCHANGE

C12	<b>Support key research institutes to further develop international agreements.</b>	L	DfE / INVEST NI	<p>Action ongoing.</p> <p>Both Queen's University Belfast (QUB) and Ulster University (UU) have 'Internationalisation Strategies' in place which include the development of a growing portfolio of healthy and well managed overseas institutional partnerships. The strategies also include an emphasis on developing international partnerships within the research arena.</p> <p>There are many wide ranging partnerships aimed at increasing globalisation at institutional level.</p> <p>One example from QUB is the Pioneer Research Programme (PRP) in Sustainable Energy which aims to advance the application of innovative local and global technologies and management practices for the advancement of sustainable technologies in energy.</p> <p>It is focused on renewable energy conversion and storage, transportation, and sustainable chemical manufacturing and involves research collaboration amongst an international network of academic and industrial partners from the USA, Australia, China and Europe.</p> <p>An Ulster University Project – The Seychelles Child Development Nutrition Study is a research project that demonstrated the importance of fish oil to the health of expecting mothers and child development and how this outweighs any harm done by the consumption of Mercury from fish.</p> <p>This is in contrast to the advice often given to pregnant women which is to limit the consumption of fish due to the presence of heavy metals. This work was funded by National Institutes of Health (USA) and was carried out in collaboration with the University of Rochester, New York; the Ministry of Health in the Republic of Seychelles and the Karolinska Institute, Stockholm.</p>	Green
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## KNOWLEDGE EXCHANGE

<b>C13</b>	<b>Enhance support for researchers to engage in Horizon 2020.</b>	S	DfE / DAERA / INVEST NI	<p><b>Action complete</b></p> <p>The Northern Ireland Contact Point (NICP) network and other support interventions such as the The North South Competitive Partnerships Programme have been established to support applicants to the Horizon 2020 Programme.</p>	Green
<b>C14</b>	<b>Secure at least €145m from Horizon 2020</b>	L	DfE	<p>Action ongoing.</p> <p>Most recent EU statistics show that NI has secured €47.2m in Horizon 2020 funding.</p>	Green

## KNOWLEDGE EXPLOITATION

No.	Action	Timeframe	Delivery organisation	Progress to 31 December 2016	Delivery Confidence RAG Status
D1	Identify new ways to support companies to access finance.	S	INVEST NI / DfE	<p>Action ongoing.</p> <p>Through Invest NI's Access to Finance Initiatives, 51 SMEs were provided with £19.3m of debt and equity to help them commercialise and fund their growth during the six months ending 30<sup>th</sup> September 2016.</p> <p>Invest NI has presented at three Intertradelreland 'Funding for Growth' Workshops held in Omagh and Belfast during the period.</p> <p>Invest NI has supported two projects through the Sustainable Utilisation of Poultry Litter Scheme, whereby it invested c£18m alongside private sector funders on fully commercial terms. The second of these projects reached financial close in June 2016.</p> <p>Invest NI has also announced plans to stimulate the development of new Grade A office accommodation through the provision of mezzanine funding / equity to private sector developers. The initial stage was to test the market through a non-binding Expressions of Interest exercise. Invest NI continues to engage with developers on three eligible projects.</p>	Green
D2	Encourage greater uptake of HMRC's Patent Box	S	INVEST NI / HMRC	<p>Action ongoing.</p> <p>Invest NI ensures that information on Patent Box workshops (whether hosted by Invest NI, HMRC or private companies) is made available to our clients.</p> <p>Patent Box and R&amp;D tax credits are frequently discussed during visits by prospective FDI companies that specialise in the Knowledge and ICT areas of the economy. Indeed, these financial mechanisms form an important element of the Northern Ireland proposition for such companies when selling the region internationally.</p> <p>The impact of a reduced rate of Corporation Tax from 1 April 2018 will be factored into the sales propositions relating to Patent Box and R&amp;D Tax Credits.</p>	Green

## KNOWLEDGE EXPLOITATION

D3	<b>Fund a new world-class business accelerator to foster the growth of early stage high tech start-ups.</b>	S	INVEST NI	<p>Action ongoing.</p> <p>Invest NI has contributed £2.6 million toward establishing the seed accelerator programme, Start Planet NI, with a focus on attracting both international and indigenous businesses with technology based ideas in the Knowledge Economy sectors.</p> <p>StartPlanet NI, has successfully completed its first Cohort consisting of 8 Teams, 5 from Northern Ireland and 1 each from Russia, the Republic of Ireland and Scotland. The teams cover a range of disciplines including Fintech; SAAS; technology to assist the disabled and wearables. Of the 8 teams invited to join the initial programme, 50% of them secured offers of investment from third party organisations within 6 weeks of programme end.</p> <p>StartPlanet NI will commence recruitment for Cohort 2 with the aim to recruit 8 teams by the end of December 2016.</p> <p>Colman Equity, a specialist in start-up and angel investment funding has launched Northern Ireland's Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS) funds to support Northern Ireland's start-ups. The funds will primarily support NI's only private equity backed start-up accelerator programme, StartPlanetNI, and will also look to fund other NI based high growth start-ups. The <i>EIS / SEIS investment vehicle</i> is particularly suited to knowledge economy companies and will allow already successful entrepreneurs and investors to invest in start-ups in a tax efficient manner.</p>	Green
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## KNOWLEDGE EXPLOITATION

D4	Investigate the commercial exploitation of traffic data and public transport movement data.	M	DfI	<p>Action complete.</p> <p>DfI has agreed to share traffic data with other agencies.</p> <p>The Translink App for mobile devices using the Bus Trak real time information has proven very popular with users with around 70,000 “next bus” enquires per day.</p> <p>The use of the bus eco-driving locational data combined with the functionality in the Translink real time passenger information app is currently being developed as a source of real time passenger information for the Ulsterbus and Goldline services.</p> <p>All Translink static timetable data is now available on the Department of Finance open data portal. The NIR and metro real time information is also available.</p> <p>The rail and bus timetable data has been released to Google and is now available on the Google journey planner through Google Maps.</p>	Green
D5	Develop an Open Data Strategy and Action Plan for Northern Ireland.	S	DFP	<p>Action Complete.</p> <p>The NI Open Data Strategy and action plan were both agreed and published.</p>	Green
D6	Examine the feasibility of establishing an Open Data Node in Northern Ireland.	S	DETI /DFP	<p>Action Complete.</p> <p>NICVA, with the support of DETI and DFP launched ODI Belfast, the first ODI Node on the Island of Ireland. The Node aims to drive innovation, boosting transparency and bringing about social, economic and environmental change.</p>	Green

## KNOWLEDGE EXPLOITATION

<b>D7</b>	<b>Organise a number of open data competitions.</b>	M	DfE / DoF	<p>Action ongoing.</p> <p>The joint DoF and DfE led NI Open Data Challenge 2016/17 is currently in Phase 2. Applicants were asked to harness the power of public sector open data on <a href="#">OpenDataNI</a> in the development of new teaching resources for either primary or secondary level education.</p> <p>The proposal was left deliberately wide so that solutions could be pitched using open data to provide rich resources across a range of subjects within the NI curriculum. 2 projects were successful in winning £20k of Phase 2 funding to deliver the final product by March 17.</p>	Green
<b>D8</b>	<b>Conduct a study into the size and nature of the opportunity presented by big data for NI businesses.</b>	M	MATRIX / DfE	<p>Action complete.</p> <p>The MATRIX ICT/Digital report was published in early 2016. A cross-departmental steering group is now assessing the recommendations arising and will determine how best to take these forward.</p>	Green

## KNOWLEDGE EXPLOITATION

<b>D9</b>	<b>Increase the number of Small Business Research Initiative (SBRI) projects.</b>	M	DfE	<p>Action ongoing.</p> <p>Utilising the £1.1m SBRI fund, 5 projects were supported in 2016. These are:</p> <ul style="list-style-type: none"> <li>• The remediation of the illegal landfill site at Mobouy - Tender period has now closed and 5 contracts have been awarded.</li> <li>• A project to support domiciliary care services for the elderly - 5 phase 1 contracts awarded</li> <li>• The maximisation of non domestic rates in Belfast - Phase 1 reports have now been received from the contractors. Initial indications are that significant additional revenue may be retrieved through the use of data mining and machine learning.</li> <li>• An automated solution for deployment of pharmacy staff – Tendering has now closed</li> <li>• Real time tourist information - 3 contracts have been awarded.</li> </ul>	Green
<b>D10</b>	<b>Investigate the potential for the establishment of a central fund, for SBRI projects.</b>	S	DfE	<p><b>Action complete.</b></p> <p>The Executive Budget for 2016/17 included £1.1m for a pilot SBRI Challenge Fund, which was used to drive the uptake of SBRI across departments.</p>	Green
<b>D11</b>	<b>Support the expansion of Catalyst Inc.</b>	S	DfE	<p>Action ongoing.</p> <p>Catalyst Inc., formerly the Northern Ireland Science Park, are preparing detailed strategic plans for a £100m expansion to the Science Park. DfE will consider and appraise proposals and/or individual elements of the proposals.</p>	Green

## KNOWLEDGE EXPLOITATION

D12	<b>Produce a Health and Life Sciences Strategy.</b>	M	DfE / DoH	<p>Action complete.</p> <p>A draft Life &amp; Health Sciences Strategic Action plan has been agreed by the LHS steering group. It makes a broad range of recommendations for several stakeholders, including the creation of the single point of leadership for the LHS sector in NI.</p>	Green
D13	<b>Work with the Agri-Food Strategy Board and other stakeholders to take forward their recommendations to expand innovation and exploit global opportunities.</b>	S	DfE / DAERA	<p>Action ongoing.</p> <p>The Executive Response to the Agri-Food Strategy Board's report "<i>Going for Growth</i>", a strategic action plan for the agri-food sector, was published on 16<sup>th</sup> October 2014. <i>Going for Growth</i> contains seven major themes which cut across all areas of the industry, one of which is Innovation, Entrepreneurship and Skills.</p> <p>The Executive response contains a comprehensive action plan setting out how Departments will take forward the actions which fall to Government to deliver.</p> <p>The Government-led actions will be closely monitored by the Inter-Departmental Steering Group and Government actions have been integrated into Departmental Business Plans to ensure delivery.</p> <p>Work is underway to support the development of an industry-led marketing body for the sector, to maximise export potential and inform product development through market intelligence.</p>	Green

## KNOWLEDGE EXPLOITATION

D14	<b>Work with businesses to increase their e-capability.</b>	S	INVEST NI	<p>Action ongoing.</p> <p>1 April 2016 to 30 September 2016: Invest NI's ICT advisors have provided advice to 325 businesses. 100 export focused companies have been offered £805K of funding to support £2.5m of ICT investment projects within their businesses. 146 attendees at 3 ecommerce seminars.</p> <p>Projects typically support business to implement e-commerce solutions, accounts / order processing / stock control software, customer relationship management (CRM) software and other core business software. The support helps businesses improve their usage of ICT to help them be more productive, improve visibility of key business data and help them use the internet to increase sales / exports to other markets.</p> <p>In addition, 15 Seminars / awareness workshops have been delivered attracting a total of 516 attendees from a wide range of businesses. The seminars provided advice and best practice to help SMEs exploit online marketing techniques, online market places, e-commerce, online advertising, online sales conversion and analytics.</p>	Green
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