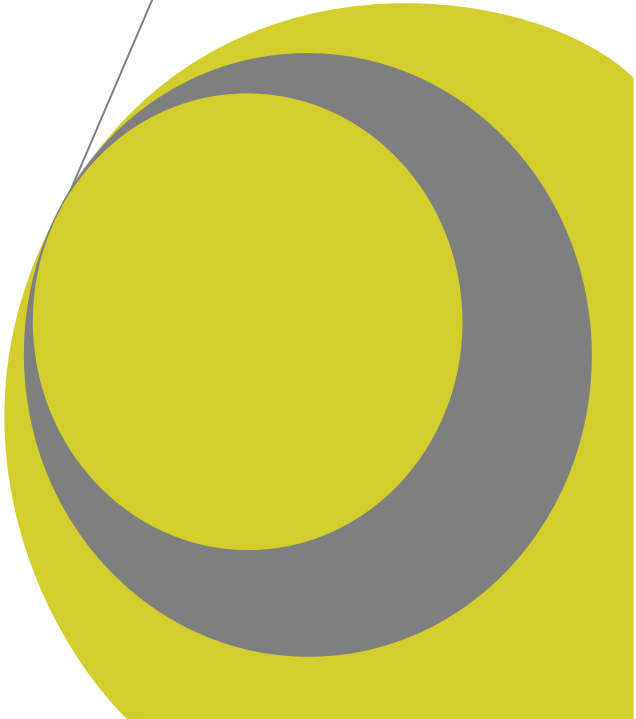


**KNOWLEDGE TRANSFER PARTNERSHIP PROGRAMME
INTERIM EVALUATION – FINAL REPORT**



26th January 2016



KNOWLEDGE TRANSFER PARTNERSHIP PROGRAMME

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EXECUTIVE SUMMARY

Introduction

Invest Northern Ireland (Invest NI) has commissioned Cogent Management Consulting LLP ('Cogent') to undertake an independent interim evaluation of the Knowledge Transfer Partnership (KTP) Programme, covering the period 1st October 2010 to 30th September 2014. Please note, for the purposes of this evaluation, and in agreement with Invest NI, it is considered that within the period of the evaluation there have been two discrete time periods, namely:

- **Period 1:** 1st October 2010 to 31st March 2012 (18 months); and
- **Period 2:** 1st April 2012 to 30th September 2014 (30 months).

The evaluation has been undertaken in line with national and regional requirements and is compliant with Central Government guidance including:

- "The Green Book: Appraisal and Evaluation in Central Government", HM Treasury 2003;
- "The Northern Ireland Guide to Expenditure Appraisal and Evaluation (NIGEAE), Current Edition", Department of Finance and Personnel;
- "The Magenta Book: Guidance for Evaluation"; and
- Invest NI Economic Appraisal Methodology (EAM) guidance.

The KTP Programme

The KTP Programme has been operating since 1975 (originally as the Teaching Company Scheme) as a UK wide intervention aimed at enabling businesses to improve their competitiveness, productivity and performance. The Programme aims to support businesses to access knowledge, technology and/ or skills that reside within the UK's knowledge base, which includes universities, further education colleges and research and technology organisations.

The Programme is led by Innovate UK¹ and is currently supported, at a UK level, by a number of other funding organisations (or sponsors), one of which is Invest NI, which is focused solely on the delivery of the Programme in Northern Ireland.

The KTP Programme develops and supports three way partnerships between:

- **Companies** - Private sector businesses (of any size and operating within any sector), public bodies or voluntary agencies.
- **Knowledge Bases (KBs)** - Third level institutes such as universities or other higher education institutions, research organisations or further education colleges.
- **Associates** - postgraduate researchers, university graduates, or individuals qualified to at least National Vocational Qualifications (NVQ) (Level 4) or equivalent.

As part of the Programme, a partnership is formed between a company and an academic or researcher within a Knowledge Base for the purposes of forming and delivering a collaborative project that will address a company need. Each KTP Project is managed and delivered by one or more recently qualified Associate(s), who works at the business premises and is closely supported by both an academic and a business supervisor.

Strategic Context and Rationale

A number of market failures (including asymmetric information and co-ordination failures) and non-market failure factors (e.g. absorptive incapacity of the private sector inhibiting successful uptake of innovation etc.)

¹ Pre August 2014 it was known as the Technology Strategy Board (TSB).

were preventing businesses from engaging in knowledge transfer or collaboration with Northern Ireland's knowledge base.

There was, and continues to be, clear alignment between the aims and objectives of the KTP Programme and the strategic imperatives of the Northern Ireland Government (including with the Department of Enterprise, Trade and Investment (DETI) and Invest NI's Corporate Plans). Specifically, in line with Government's strategic focus, the activities supported by the KTP Programme offer the potential to:

- Stimulate innovation, Research and Development (R&D) and creativity so that the private sector grows and the export base is widened and deepened.
- Encourage Small and Medium Sized Enterprises (SMEs) to undertake collaborative Research and Development and Innovation (R&D&I) activities for the first time, thereby increasing the proportion of innovation active firms and contributing to a step change in the culture, priority and performance of SMEs in respect of innovation. In keeping with the Draft Innovation Strategy for Northern Ireland 2013 – 2025, this would include activity that includes changes to products and processes, the introduction of new business models and organisational changes and as an outworking of this, entry into new markets.
- Contribute to skills development amongst associates and in turn their employability.
- Support a culture of collaboration across industry and academia, with businesses taking a leadership role and academia working to inspire innovation through high quality R&D, knowledge creation and workforce preparation.
- Help Northern Ireland to become more connected with regards to its research base and ensure the effective transfer of knowledge and technology.

Programme Marketing

It is understood that, whilst Innovate UK was (and continues to be) responsible for marketing the KTP Programme at a UK level, Invest NI, in close conjunction with the KTP Offices, undertook a range of activities e.g. facilitating seminars and events, press releases, PR plans, website updates etc. to raise awareness of, and to stimulate participation on, the Programme during the period under review (it is understood that Invest NI continues to undertake these activities). It is also understood that the KTP Programme Manager within Invest NI was (and is) responsible for ensuring that Client Executives are aware of, and promote, the Programme to Invest NI client companies, which was facilitated by way of internal awareness workshops.

Furthermore, it is understood that communications and stakeholder engagement was (and continues to be) coordinated through the Northern Ireland KTP Forum (comprising representatives from Queens University, Belfast (QUB), Ulster University (UU), Invest NI and the KTP Advisers). By way of example, this included ensuring that case studies of successful Northern Ireland KTP Projects are published on the knowledge base websites, thereby promoting the impact of the Programme. Furthermore, a range of mechanisms were utilised by the two principle KTP Offices in Northern Ireland (at QUB and UU) to raise awareness of the KTP Programme.

During consultation, representatives from the KTP Offices at QUB and UU expressed their views that there were often difficulties in identifying and recruiting KTP Associates with the requisite skills and expertise in key areas such as science, IT and engineering. This view was shared by the KTP Advisers during consultation. In response to this, it was reported that the KTP Office at QUB had most recently (i.e. 2014) focused its awareness raising activities at those students/ graduates with skills and expertise in science, information technology (IT) and engineering.

Profile of Northern Ireland KTP Projects

During consultation, Invest NI expressed its view that a 'funding crisis' arose in late 2010 at a UK level, which had a major impact on the ability of Innovate UK, and the various sponsors at that time, to provide funding in support of KTP Projects. The lack of funding was a result of a Spending Review which was implemented by the UK Government in 2010. It is understood that this essentially reduced Innovate UK's

allocated budget for the KTP Programme and had subsequent implications for the quantum of KTP Projects that could be approved by the Partnership Approvals Group (PAG).

Analysis of monitoring information provided by Invest NI indicates that, as of January 2015, there were 82 KTP Projects started (based on their formal start date) in Northern Ireland during the period under review, with circa 20 projects in a typical year (i.e. April to March). Discussion with Invest NI suggests that the number of KTP Projects that started in Northern Ireland was (and is) dependent on a number of factors, including the availability of funding from Innovate UK, the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.

During the period under review, QUB was the Knowledge Base partner responsible for the majority of the KTP Projects that started in Northern Ireland, which is reflective of its historical position over the last ten years as one of the top performers across the UK in terms of the number of new KTP partnerships started each year.

It is interesting to note that there were only six KTP Projects started by three (of the six) Further Education (FE) Colleges in Northern Ireland. Historically, the FE sector was actively involved in the Programme, although in recent times (specifically during the period under review) the FE Colleges, and the businesses that may potentially collaborate with, have found it increasingly difficult to develop projects that meet the eligibility criteria for the Programme.

Analysis of monitoring information indicates that, during the period 1st October 2010 to 31st March 2012 (18 months), a total of £1,921,428 was awarded towards KTP Projects in Northern Ireland, which equated to an average grant awarded of £76,857. Furthermore, during the period 1st April 2012 to 30th September 2014 (30 months), a total of £4,603,759 was awarded towards KTP Projects in Northern Ireland, which equated to an average grant awarded of £80,768.

Performance of the Northern Ireland KTP Projects versus other UK Regions

Discussion with Invest NI indicates that, as of October 2014, QUB is the most active knowledge base in the UK, with UU being ranked 8th. In terms of the total number of completed KTP Projects since 1982, a recently published report² states that QUB ranks first (with 322 completed projects) and UU ranks sixth (with 192 completed projects). Furthermore, in terms of illustrating the quality of those KTP Projects completed in Northern Ireland, it is notable that, since 2009, Innovate UK's flagship 'Best UK Partnership' National Award³ has been awarded to Northern Ireland partnerships on 4 out of a possible 6 occasions. It is also noteworthy that KTP Partnerships in Northern Ireland have historically had a higher proportion (vis-à-vis other UK regions) of Post Project Completion (PPC) reports graded A (being outstanding) or B (being very good).

From a national perspective, discussion with Invest NI suggests that, during the period under review (i.e. 1st October 2010 to 30th September 2014), £97m was awarded in the form of grant support (excluding company contributions) towards 1,131 KTP Projects across the UK. During the same period, the activity undertaken under the KTP Programme in Northern Ireland represented 7.25% of all new KTP Projects (82) and 6.7% of the total grant committed (circa £6.5m).

Based on the available monitoring information, the Evaluation Team would highlight that, as of January 2015, over a quarter (26%, N=82) of the KTP Projects withdrew at various stages and for a variety of reasons (e.g. change in the business' priorities, unable to recruit a suitable Associate etc.). This figure is marginally higher than those figures reported at a UK level, which illustrates an attrition rate (as of April 2015) of 22%. However, by comparison, the Northern Ireland figure is marginally lower than the corresponding figure for Wales (30%) and Scotland (27%).

² 'Impacts of KTP Associates and Knowledge Bases on the UK Economy' (Warwick Economics and Development, October 2015).

³ Which is awarded to the KTP Project which brought the greatest benefits to all three participants, and which best exemplifies innovation through collaboration.

Encouragingly, the findings from the Evaluation Team’s benchmarking analysis indicates that the uptake of KTP Projects amongst businesses in Northern Ireland is higher than other regions within the UK. For example, during the period under review, Northern Ireland had 40 current/ active KTP Partnerships per 50,000 VAT registered businesses. By comparison, this is higher than the corresponding figures for England, Scotland and Wales, which were 14, 26 and 21 respectively.

Operation and Delivery

Based upon the feedback from businesses (as per Section 4 of the report), it is the Evaluation Team’s view that the KTP Programme was managed and delivered in a proactive and efficient manner by the various ‘actors’ (including Innovate UK, Invest NI, the KTP Office and the KTP Advisers) with participants reporting high levels of satisfaction with the structure and delivery model. For example, there was reported to be high levels of satisfaction amongst business and academics with the support they received from the KTP Office in relation to: developing their Partnership; developing and submitting their KTP application; the application and approval process; recruiting a KTP Associate; a variety of administrative support etc.

Programme Finance

Over the 1st October 2010 to 31st March 2012 (18 months) period, there was £2.2m of expenditure associated with the delivery of the KTP Programme in Northern Ireland, which equates to an annual average cost per project of £57,304. These costs were funded as follows:

Actual total funding associated with delivering the KTP Programme in Northern Ireland		
Funder	Total funding: October 10 – March 12	
	(£)	(%)
Invest NI	£483,141	22%
Private sector	£676,412	31%
Total NI Funding	£1,159,553	54%
TSB	£937,308	44%
Other (e.g. Engineering and Physical Sciences Research Council (EPSRC), Department of Health)	£52,057	2%
Total Funding	£2,148,918	100%

In considering the costs presented in relation to the period 1st April 2012 to 31st September 2014, it should be noted that the ‘KTP Costs’ were provided to the Evaluation Team by Invest NI (which were sourced from Innovate UK), and that these costs are associated with a total of 57 KTP Projects that started during the 30 month period. However, 79% (N=57) of these KTP Projects are currently ‘live’ and have therefore yet to fully incur all of their associated delivery costs. As such, the costs presented reflect the current status in relation to the costs associated with this period of the KTP Programme.

During this period (30 months), there was circa £3.2m of expenditure associated with the delivery of the KTP Programme in Northern Ireland, which equates (at this point in time) to an annual average cost per project of £22,317⁴. These costs were funded as follows:

⁴ Please note, there are inherent difficulties in drawing any comparisons between this figure and the corresponding figures for period 1 (i.e. £57,304) on the basis that all of the projects in period 1 are completed/ finalised (and have fully incurred their respective costs), whereas 79% (N=57) of the KTP Projects are currently ‘live’ and have therefore yet to fully incur all of their associated delivery costs.

Actual total funding associated with delivering the KTP Programme in Northern Ireland		
Funder	Total funding: April 12 – September 14	
	(£)	(%)
Invest NI	£1,868,323	59%
Private sector	£759,769	24%
Total NI Funding	£2,628,091	83%
TSB	£502,049	16%
Other (e.g. Economic and Social Research Council (ESRC), Medical Research Council (MRC))	£50,024	2%
Total Funding	£3,180,165	100%

Performance and Impact

In considering the impact of the KTP Programme on its participants to date, the reader should be mindful that **this interim evaluation report represents only an intermediate position of the KTP Programme’s potential ultimate impact**. By way of illustration, at the time of being consulted for this evaluation report (March 2015), many of the Programme participants were either involved in ‘live’ or active KTP Projects, or had been involved in projects that had been withdrawn at various stages⁵. It is notable that, at this stage, those involved in ‘live’ or active KTP Projects have yet to experience the full range of impacts associated with the KTP Programme. Furthermore, given the timing of this interim evaluation, few KTP Projects (across period two in particular) have reached their formal end date (i.e. categorised as finished), resulting in a small cohort of businesses that could potentially report on quantifiable and/ or qualitative impacts as a result of the KTP Programme.

Based on the feedback from those businesses, academics and associates in receipt of support, the following key conclusions can be drawn in relation to the impact made by the KTP Programme during the period under review:

- Levels of activity (55% for businesses, 75% for academics and 54% for associates) and impact (69% for businesses, 90% for academics and 73% for associates) additionality should be viewed positively, indicating that the KTP Programme played a strong role in encouraging each of the partners to undertake collaborative projects with the aim of embedding knowledge and innovation from academics into businesses.
- Market failure, typically in the form of asymmetric information, has played a strong role in preventing businesses from taking forward the project (as proposed within their KTP application).
- The most common outputs derived amongst participants to date as a result of the support provided through the KTP Programme are:
 - The resolution of technical problems;
 - The adaption of existing processes; and
 - The development of new products and processes.

⁵ Please note, further details on the number of survey respondents (i.e. businesses, academics and associates) involved in those KTP Projects categorised as ‘active’, ‘finished’ and ‘withdrawn’ are included in Sections 4 and 5 of the report and Appendices IX to XII.

- From a quantitative perspective the analysis suggests that the KTP Programme, at an aggregate level, has:

<p><u>Businesses:</u></p> <ul style="list-style-type: none"> Contributed circa £1.5m (excluding anticipated benefits) or £5.3m (including anticipated benefits) in net additional GVA to the NI economy. Enabled businesses to achieve circa £3.7m in net additional sales and circa £424,000 in additional cost savings. Created 16 net additional FTE jobs. Safeguarded 10 net additional jobs. Encouraged businesses to undertake circa £165,000 in net additional R&D expenditure. <p><u>Academics:</u></p> <ul style="list-style-type: none"> Generated circa £270,270 in net additional income for the Knowledge Base. Contributed towards the publication of circa 14 net additional research papers. <p><u>Associates:</u></p> <ul style="list-style-type: none"> Contributed towards the publication of circa 13 net additional research papers.
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- On an overall basis, only 16% (N=44) of businesses, 17% (N=47) of academics and 9% (N=45) of associates indicated that, in the absence of the KTP Programme, they would be able to get the same or similar support elsewhere.
- It is the view of the Evaluation Team, and one shared by Invest NI and other stakeholders, that the KTP Programme (alongside other interventions such as the FUSION Programme) forms a vital component, at the top end of Invest NI’s ‘Innovation Escalator’, in the construction and development of Northern Ireland’s ‘Innovation Ecosystem’.
- Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. Over two thirds (67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.
- Importantly, the KTP Programme has contributed to providing the Northern Ireland economy with a number of other wider and regional benefits, including:

Contribution of the KTP Programme to wider and regional benefits	
<i>Wider benefits</i>	
Knowledge transfers	<p>The analysis suggests that the KTP Programme has supported the transfer of knowledge and expertise from the knowledge base partner (via the academic) to the company partner (via the associate). This is evidenced through analysis of the Evaluation Team’s survey results, which indicates that:</p> <ul style="list-style-type: none"> Nearly all (98%, N=43) of the business respondents and a similar proportion of the associate respondents (98%, N=45) indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic is/ was able to transfer knowledge and expertise appropriately to the business. All (100%, N=44) of the business respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic has/ had the appropriate level of expertise and technical knowledge to address their business’ needs. All (100%, N=41) of the business respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic is/ was able to identify appropriate solutions and priorities to address their business’ needs. Over four fifths (86%, N=42) of the business respondents and all (100%, N=45) of the academic respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Associate is/ was able to transfer knowledge and expertise appropriately to the business.

Contribution of the KTP Programme to wider and regional benefits	
	In support of the above finding, a recently published review ⁶ cited that “ <i>KTPs have proved to be highly valuable for facilitating knowledge transfer and seeding collaborations</i> ”.
University linkages with industry	By its very nature, the KTP Programme sought (and continues to seek) to develop and enhance university linkages with industry. This is evident in each and all of the KTP Partnerships that are established (involving academic and company partners) and the subsequent KTP Projects that are initiated. In this context, the KTP Offices and the KTP Advisers based in Northern Ireland played (and continue to play) an important role in <u>facilitating university linkages with industry</u> .
Skills development	<p>Similar to the above, the KTP Programme supported the development of skills amongst participant businesses, academics and associates. This is evidenced through analysis of the Evaluation Team’s survey results, which indicates that:</p> <ul style="list-style-type: none"> • All (100%, N=14) of the business respondents reporting impacts/ outcomes indicated that their business had increased their capacity to innovate and had improved the skills of their workforce. • Nearly all (94%, N=17) of the academic respondents reporting impacts/ outcomes stated that their KTP project had increased their understanding of how research is applied in a commercial setting (through the adoption of new skills and experiences). • Nearly all (90%, N=39) of the associate respondents reporting impacts/ outcomes indicated they had enhanced their skills as a result of their KTP Project. <p>Furthermore, an important aspect of the KTP Project for the associate is the opportunity to participate in, and avail of, various training modules/ courses, which ultimately enhances their skills and expertise. Indeed, a recently published review⁷ cited that KTPs “<i>have a role in delivering economic returns and supporting skills development both for graduates and within companies</i>”.</p>
Regional benefits	
Creation of high quality jobs	<p>Whilst not a direct aim of the KTP Programme across the period under review, it offered the potential to create high quality jobs, primarily through the retention of the KTP Associate post project completion. Analysis of the Evaluation Team’s survey results indicates that:</p> <ul style="list-style-type: none"> • Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. • Over two thirds (67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.
Innovative nature of the project	The KTP Programme, by its very nature, is a Programme that seeks to provide Northern Ireland businesses with the capability to engage in, and develop, innovative products, processes or services. Indeed, one of the key criterion against which KTP Projects are assessed relates to innovation, whereby each project “ <i>must permit the development of a new process, service or product</i> ”.

- At an overarching level, the Evaluation Team is of the view that the concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners. It is the Evaluation Team’s view that there are a number of learning points (as highlighted in Section 5.9.3) that could be factored into Innovate UK’s ongoing review of the PPC reports. This would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.
- Of note, there were three SMART (i.e. Specific, Measurable, Achievable, Relevant and Time-dependent) targets or objectives established for the KTP Programme by the previous Appraisers⁸, one of which was partly achieved, one not yet achieved (given the nature of this interim evaluation and the time period

⁶ Source: ‘The Dowling Review of Business-University Research Collaborations’ (July 2015).

⁷ Source: ‘The Dowling Review of Business-University Research Collaborations’ (July 2015).

⁸ ASM Horwath, January 2012.

required for it to be realised) and one which was not achieved (albeit discussion with Invest NI suggests that there were a number of contributing factors as to why this was the case).

Value for Money

Based on the analysis undertaken as part of this evaluation and being mindful of the timing of this interim evaluation exercise (given it only represents an intermediate position of the KTP Programme's potential ultimate impact), it is the Evaluation Team's view that the KTP Programme has, on balance and at this stage, provided Invest NI with value for money in respect of the investment it made across the two periods under review (i.e. circa £483k and £1.9m in periods 1 and 2 respectively).

This view has been informed by the fact that:

- There was, and continues to be, clear alignment between the aims and objectives of the KTP Programme and the strategic imperatives of the Northern Ireland Government (including with DETI and Invest NI's Corporate Plans).
- There have been a range of outputs and quantifiable impacts derived amongst business, academia, and associate participants to date as a result of the support provided through the KTP Programme (e.g. circa £1.5m (excluding anticipated benefits) or £5.3m (including anticipated benefits) in net additional GVA to the Northern Ireland economy, circa £3.7m in net additional sales, circa £424,000 in additional cost savings etc.).
- The KTP Programme has contributed to providing the Northern Ireland economy with a number of other wider (including knowledge transfers, university linkages with industry and skills development) and regional (including the creation of high quality jobs and innovative nature of the project) benefits. Indeed, a recently published review⁹ cited that KTPs "*have a role in delivering economic returns and supporting skills development both for graduates and within companies*" and that "*KTPs have proved to be highly valuable for facilitating knowledge transfer and seeding collaborations*".

Notwithstanding the above, it is the view of Invest NI and other key stakeholders (and one shared by the Evaluation Team) that the timing of this interim evaluation (i.e. two and a half years into the current 2012-2017 Programme period), the small number of finished KTP Projects (i.e. 13 in period 1 and 3 in period 2), and the smaller number of respondents being able to quantify Programme impacts at this juncture, all pose constraints in terms of assessing the impact of the KTP Programme, which in turn constrains a more comprehensive Value for Money and Return on Investment assessment being undertaken.

⁹ Source: 'The Dowling Review of Business-University Research Collaborations' (July 2015).

Recommendations

The Evaluation Team has set out below a number of recommendations for Invest NI's consideration:

1. Moving forward, Invest NI, in conjunction with Innovate UK, should implement a robust process to capture, and collate, details of those participants that withdraw (at various stages) from the Programme. This should include details on the rationale for their withdrawal e.g. identifying any issues encountered etc. This process should be undertaken in conjunction with the various stakeholders involved in the delivery of the Programme.
2. The concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners. Invest NI should liaise with Innovate UK about its ongoing review of the PPC reports and should explore the potential for the key learning points outlined in this evaluation (relating to the PPC reports) to be factored into any future amendments to these reports. This would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.
3. Linked to the above point, it is recommended that Invest NI (in conjunction with the 'actors' involved in the delivery of the Programme) should play a more active role in terms of 'sense checking' all those PPC reports that are completed by KTP Partnerships in Northern Ireland. This would contribute towards addressing some of the issues with the existing PPC reports (as identified as part of this evaluation).
4. Greater emphasis should be placed upon establishing a more appropriate mix of Specific, Measurable, Achievable, Realistic and Time-dependent (SMART) activity, output and outcome targets, which are more focused and linked with the overarching aims and anticipated outcomes of the KTP Programme.

Whilst the nature and quantification of any targets should be established within an independent Economic Appraisal for any potential future phase of the KTP Programme in Northern Ireland, the Evaluation Team has set out (as per Section 6.2) a high-level overview of the nature of targets that should be considered as part of any such Appraisal. Please note, any established targets should be aligned with Innovate UK's strategic direction, at that time, in relation to the delivery of the KTP Programme at a national level.

5. Whilst the marketing activity associated with the KTP Programme has regained momentum (following the funding crisis that arose in late 2010 at a UK level), based upon feedback from various programme participants and stakeholders, Invest NI should undertake more focused awareness raising activities with its Client Executives in order to ensure that they are actively working with their client companies to identify if the KTP Programme could address their business needs. Linked to this, Invest NI should ensure that any such activities are undertaken and aligned with Innovate UK's available funding and with the capacity of the two KTP Advisers in Northern Ireland.
6. Whilst some work has been undertaken by the KTP Offices in order to address the issues relating to associate recruitment and retention (particularly in relation to redressing the 'skills gap' and focusing awareness raising activities at those students/ graduates with skills and expertise in science, IT and engineering), Invest NI should seek to work with the KTP Offices throughout Northern Ireland to develop an Action Plan specifically looking at this issue. A key focus of the Action Plan should be to explore views on the salary levels for prospective associates and of the practical ways in which the 'skills gap' could be addressed. The findings from the National Forum Review on KTP Recruitment (2013) would serve as an important starting point in this regard, given that the issue of associate recruitment and retention is also a feature of the KTP Programme at a national level.

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

Invest Northern Ireland (Invest NI) has commissioned Cogent Management Consulting LLP ('Cogent') to undertake an independent interim evaluation of the Knowledge Transfer Partnership (KTP) Programme, covering the period 1st October 2010 to 30th September 2014.

The evaluation has been undertaken in line with national and regional requirements and is compliant with Central Government guidance including:

- "The Green Book: Appraisal and Evaluation in Central Government", HM Treasury 2003;
- "The Northern Ireland Guide to Expenditure Appraisal and Evaluation (NIGEAE), Current Edition", Department of Finance and Personnel;
- "The Magenta Book: Guidance for Evaluation"; and
- Invest NI Economic Appraisal Methodology (EAM) guidance.

1.2 The KTP Programme

1.2.1 Background to the KTP Programme

The KTP Programme has been operating since 1975 (originally as the Teaching Company Scheme) as a UK wide intervention aimed at enabling businesses to improve their competitiveness, productivity and performance. The Programme aims to support businesses to access knowledge, technology and/ or skills that reside within the UK's knowledge base, which includes universities, further education colleges and research and technology organisations.

The aim of KTP Programme is to:

"Strengthen the competitiveness, wealth creation and economic performance of the UK by the enhancement of knowledge and skills and the stimulation of innovation through collaborative projects between business (including social enterprises) and the knowledge base".

The Programme is led by Innovate UK¹⁰ and is currently supported, at a UK level, by a number of other funding organisations (or sponsors), one of which is Invest NI, which is focused solely on the delivery of the Programme in Northern Ireland.

In 2010, Invest NI commissioned an evaluation of the KTP Programme in Northern Ireland covering the period 1st April 2002 to 30th September 2010 (BDO, June 2011), which concluded that *"the KTP Programme should continue to be supported by Invest NI"*. In February 2012¹¹, Invest NI sought (and was subsequently granted) approval to continue to fund the KTP Programme in Northern Ireland for the period 1st April 2012 to 31st March 2017 (5 years)¹².

¹⁰ Pre August 2014 it was known as the Technology Strategy Board (TSB).

¹¹ Following completion of an Economic Appraisal of the KTP Programme in Northern Ireland (ASM Horwath, January 2012).

¹² Please note, Invest NI confirmed during consultation that there is no economic appraisal or casework documentation covering the activity that took place under the KTP Programme during the period 1st October 2010 to 31st March 2012 (18 month period). However, it is noted that the arrangements for the collaboration between Innovate UK and Invest NI were set out in a document entitled 'Agreement between Invest NI and the TSB relating to the costs of KTP Grants' covering the period 1st April 2008 to 31st March 2011 (further details of which are included in Appendix II).

1.2.2 Structure of the KTP Programme

The KTP Programme develops and supports three way partnerships between:

- **Companies** - Private sector businesses (of any size and operating within any sector), public bodies or voluntary agencies.
- **Knowledge Bases (KBs)** - Third level institutes such as universities or other higher education institutions, research organisations or further education colleges.
- **Associates** - postgraduate researchers, university graduates, or individuals qualified to at least National Vocational Qualifications (NVQ) (Level 4) or equivalent.

As part of the Programme, a partnership is formed between a company and an academic or researcher within a Knowledge Base for the purposes of forming and delivering a collaborative project that will address a company need. Each KTP Project is managed and delivered by one or more recently qualified Associate(s), who works at the business premises and is closely supported by both an academic and a business supervisor.

The focus of the KTP Programme is on increasing the capability of all three partners within the KTP partnership, which may provide the following:

- The company benefits by having access to academic research and the embedding of innovation through the provision of a specific resource (the Associate);
- The academic or researcher within the Knowledge Base benefits by increasing their awareness of the needs of business and how their research/ knowledge can be used in a commercial setting; and
- The Associate, who acts as the facilitator to embed the knowledge from academics into the business, obtains access to forward looking businesses seeking to innovate, whilst also receiving training during the implementation of their KTP project.

Appendix I provides further details on the typical benefits that each of the three project partners (i.e. companies, academia and associates) are anticipated to receive as a result of participation in a KTP Project.

1.2.3 Development and Delivery of a KTP Project

Within Northern Ireland, there are a number of different ‘actors’ involved in the development and delivery of a KTP Project. These include:

- Innovate UK;
- Invest NI;
- KTP Advisers;
- KTP Offices;
- Company Partners;
- Academics/ researchers from within the Knowledge Base Partners; and
- KTP Associates.

Further details on each of the above, including their roles and responsibilities, are included in Appendix II.

The objectives of an individual KTP Project are to:

- Facilitate the transfer of knowledge and the spread of technical and business skills;
- Provide business based training for graduates in order to enhance their commercial and specialist skills; and
- Stimulate and enhance business relevant research and teaching undertaken by the Academics/ researchers from within the knowledge base.

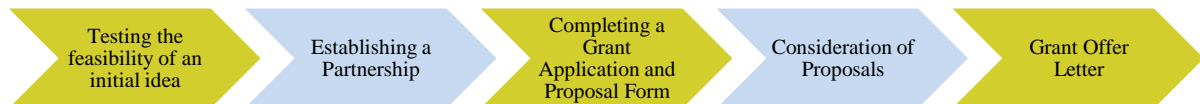
At an overarching level, individual KTP Project applications are assessed against the following criteria that have been established by Innovate UK:

- **Innovation:** the nature of the constraint facing the company. It must permit the development of a new process, service or product;
- **Impact:** this mainly relates to the economic impact on the company and/ or the wider economy; and
- **Challenge:** relates to the degree of scientific/ academic enquiry necessary to undertake the assignment.

KTP Projects can vary in length from six months to three years depending on the needs of the business and the desired outcomes, although it is understood that the average project duration is circa two years.

The key stages of the application and approval process for an individual KTP Project are depicted in the following diagram and briefly summarised in the table thereafter (please note, further details are included in Appendix III):

Key stages of the application and approval process



Testing the feasibility of an initial idea	<p>A business discusses and tests the feasibility of an initial idea about a possible KTP Project with a representative from one of the KTP Offices based in Northern Ireland or through one of the KTP Advisers. Typical projects considered by businesses may include:</p> <ul style="list-style-type: none"> • Improving existing products/ processes or developing new products/ processes; or • Developing new systems and frameworks to improve efficiencies in staff and processes.
Establishing a Partnership	<p>Central to a development of a KTP Project is the relationship between a business (that has a long-term strategic or short-term enabling need) and a knowledge base partner (with the expertise to help the business address that need). With guidance and support from the KTP Office and/ or the KTP Adviser, a business identifies an academic or researcher who has the right expertise to address their business needs. The outworking of this process is the establishment of a Partnership between the business and the academic/ researcher.</p>
Completing a Grant Application and Proposal Form	<p>The first stage in the process is that the knowledge base and business jointly prepare an Expression of Interest (EOI) form. The purpose of the EOI is to assess whether the project meets the overarching criteria for KTP support, and to confirm ‘in principle’ support from one or more of the public sector bodies that fund the KTP Programme (i.e. the sponsors). If the EOI is supported, a Partnership Grant Application and Proposal Form for a KTP Project is jointly completed by the knowledge base and business. The proposal provides information about the proposed participants and their objectives, and requires detail on the proposed work plan for the Associate. It must also demonstrate that both partners understand the implications of the KTP Project and are committed to it. When completed, the Partnership Grant Application and Proposal Form needs to be agreed by the KTP Adviser (in the first instance) and then submitted by the knowledge base partner, on behalf of the Partnership, to Innovate UK for consideration by the Regional Advisory Group (RAG) and then the Partnership Approvals Group (PAG).</p>
Consideration of Proposals	<p>Following the consideration of proposals by the PAG, draft minutes are produced which records the decision for each proposal submitted, which are then emailed to PAG members and all KTP Advisers. Grant Offer Letters may not be issued until Innovate UK has approved these minutes and, where appropriate, conditions have been addressed to the satisfaction of the KTP Programme Manager. At this juncture, three courses of action may follow:</p> <ol style="list-style-type: none"> 1. Application Not Supported – The KTP Adviser will contact Partnerships to provide them with detailed feedback and with the options available to them to facilitate further progress. A proposal that is ‘Not Supported’ may or may not be resubmitted on one further occasion. 2. Amendments required by the RAG and/ or PAG – The RAG and/ or PAG may have

	<p>supported the proposal but requested some amendments. These must be addressed to the satisfaction of the KTP Programme Manager before the grant offer can be made.</p> <p>3. No amendments required - KTP Programme Management staff will have identified these proposals and a Grant Offer Letter will be prepared for issue immediately after the PAG minutes are approved. The KTP Adviser or KTP Office at the Knowledge Base is not required to take any action.</p>
Grant Offer Letter	Innovate UK issues the relevant KTP Office with a Grant Offer Letter for the approved KTP Project. It sets out the maximum budget available for the KTP Project, along with the proposed contributions by government (e.g. Innovate UK and sponsors such as Invest NI) and the business partner contributions under each of the budget cost categories.

The acceptance of the terms and conditions of the Grant Offer Letter by the Knowledge Base Partner marks the point at which the Partnership can commence their KTP Project. The key aspects of a typical KTP Project are outlined below:

Local Management Committee Zero (LMC0)	<p>Once the Grant Offer Letter has been accepted by the Knowledge Base Partner, this instigates the Partnership’s first Local Management Commitment (LMC) meeting, known as LMC0. Attendees at this meeting include:</p> <ul style="list-style-type: none"> • Representatives from the company partner (i.e. the business supervisor and potentially another senior staff member acting in a ‘facilitator’ role); • The lead academic and the academic supervisor (from the Knowledge Base partner); and • The nominated KTP Adviser. <p>The meeting provides an opportunity to discuss their KTP Project and agree a way forward (e.g. suitable approach to recruiting their Associate). Prior to their KTP Project starting, both the business supervisor and the academic are required to attend a KTP supervisor workshop (a half-day interactive workshop). They both also receive a copy of the KTP Management Handbook for Supervisors (known as the Supervisors Handbook).</p>
Recruitment of KTP Associate	<p>The process of recruitment is undertaken jointly by both the company partner and the Knowledge Base Partner (in line with its recruitment procedures), although the Associate's contract of employment is with the Knowledge Base Partner. The objective is to recruit the most appropriate Associate for the work, with the KTP Advisers and/ or KTP Offices providing the relevant advice and guidance throughout the recruitment process. Typically, the following methods are used when advertising for the KTP Associate posts:</p> <ul style="list-style-type: none"> • Advertisement/ notification on the KTP website; • Prospective KTP Associates can post their details on the KTP website by submitting a ‘profile’, which can be viewed by Partnerships that are seeking to recruit for a KTP Project; and • Advertisements in local and national publications, trade journals (e.g. Prospects Today etc.) or various online mediums (e.g. Jobs.ac.uk, Monster, LinkedIn, Twitter etc.). <p>It is understood that the salary offered for the KTP Associate post is typically reflective of the market rate (at that time) for the particular post¹³. However, the company partner has the option to ‘top up’ the salary, as required, in order to attract a higher calibre of individual to the post, thereby potentially achieving higher quality outputs and outcomes. Once the KTP Associate has been recruited, the Partnership can commence, and deliver, its KTP Project.</p>
Local Management Committees	<p>Local Management Committees (LMC) are intended to oversee the work of a KTP Project and control its budget. Attendees at these meetings typically include:</p> <ul style="list-style-type: none"> • Representatives from the company partner (i.e. the business supervisor and potentially another senior staff member). • The lead academic and the academic supervisor (from the Knowledge Base partner). • The KTP Associate. • The nominated KTP Adviser.

¹³ During consultation, Invest NI indicated that Innovate UK has established national salary scales for prospective Associates e.g. £27k per annum for a prospective associate with a graduate degree, £31k per annum for one with a Masters and £35k per annum for one with a PhD qualification.

	<ul style="list-style-type: none"> • A representative from the KTP Office (as an observer and minute taker). <p>The LMCs are scheduled every four months in order to monitor progress against objectives and identify (and resolve) any potential issues arising. The purpose of the LMCs are to:</p> <ul style="list-style-type: none"> • Encourage all reports to be made in a timely manner and with a format and content appropriate to the meeting. • Review the project management arrangements being used by the Partnership and to consider their effectiveness and agree any necessary changes. • Discuss in detail the progress towards the target objectives, and if any variations are required (e.g. due to unforeseen problems, technical difficulties or opportunities such as emerging industry trends). • Agree the work plan for the upcoming four months. • Allocate the necessary resources to the Partnership, including agreement to any training needs and the involvement of additional specialist input. • Encourage the Associate to take ownership of the project (if relevant). • Explore possibilities to widen the collaboration. • Encourage ambitious but realistic targets. • Encourage a wide participation in KTP activities. • Encourage best practice. <p>The LMC is responsible for controlling the KTP project budget. At the LMC meetings, the KTP Adviser will approve the expenditure to be claimed through the online grant claim process. The LMC is permitted to make decisions about changes to the project budget without having to make a formal request to the KTP Programme Office (albeit the decision must be supported by the nominated KTP Adviser). Also, the KTP Adviser typically meets with the Associate immediately prior to, or after, each LMC meeting in order to provide any required mentoring or coaching.</p>
<p>Post Project Completion (PPC) report</p>	<p>It is understood that the Project Partners follow Innovate UK’s standard monitoring process on behalf of all Programme sponsors, which includes collating the following monitoring data:</p> <ul style="list-style-type: none"> • Upon project completion: monitoring data is to include each KTP company’s turnover, export sales, and business expenditure on research and development; and • One year post project completion: monitoring data is to include each KTP company’s turnover, export sales and business expenditure on research and development. <p>Once a KTP Project has been completed, the Partnership (with support and guidance from the KTP Adviser and/ or KTP Office) is required, in line with the stipulations outlined in the Grant Offer Letter¹⁴, to submit a PPC report within one month of project completion in order to, amongst other things, ascertain and document the outputs and impact of the project. Each Partner (i.e. company, academic and associate) is required to complete a PPC report. Once submitted, each PPC report is sent to a minimum of two external assessors for grading (it is understood that the external assessors are independent of the KTP stakeholder community and are drawn from a mixture of academic, public service and business backgrounds). The Assessors are also sent a copy of the KTP Advisers’ commentary, which is compiled from reports made throughout the lifetime of the KTP Project after each LMC. The grading process involves a five-point scale (i.e. A=Outstanding; B=Very good; C=Good; D=Satisfactory; and E=Unsatisfactory).</p> <p>The grading is based on both quantitative and qualitative information contained within the PPC report (e.g. financial results, impact of new knowledge/ skills, commercialisation of intellectual property (IP) etc.).</p>

As part of the KTP Programme, Innovate UK operates a restricted access, online portal (‘the KTP Portal’) to provide support, guidance and advice to those stakeholders who are involved in the delivery of live KTP Projects. Areas of interest for users include: details for the funding sponsors; PR and case

¹⁴ Of note, it is also understood that, as of January 2015, this has been stipulated in the ‘Joint Commitment Statement’ signed by the company partner.

study materials; information on new partnerships formed; the facility for partnerships to advertise potential vacancies.

1.2.4 KTP Programme Funding

Within Northern Ireland, there are a variety of funding options available for individual KTP Projects, including:

- Invest NI is the sole public sector funder (if it is considered to be of strategic importance to Invest NI);
- Innovate UK is the sole public sector funder;
- Another sponsor (e.g. a Research Council) is the sole public sector funder; or
- Invest NI match funds the contribution from Innovate UK and/ or another sponsor (e.g. a Research Council).

As a government part-funded programme, participating company partners are required to make a financial contribution towards the total cost of delivering a KTP Project. However, the cost for any individual KTP Project, and a businesses' contribution towards the same, depends on the specific nature of the individual project.

In addition, the grant rate depends upon whether or not the Knowledge Base Partner utilises a Full Economic Cost (FEC) or non FEC funding model. Under the KTP Programme, it is understood that Queens University, Belfast (QUB) is supported under a FEC model, whereas Ulster University (UU) and the Further Education (FE) Colleges are supported under non FEC costs (please note, further details on each of these models is included in Appendix IV).

Innovate UK stipulates that the following grant rates were (and are) applied to all projects of between 6 to 36 months:

Application of Grant Rates (as defined by Innovate UK)			
		FEC Funding Model	Non FEC Funding Model
A small to medium sized enterprise (SMEs) ¹⁵	1 st to 3 rd KTP Project	67%	60%
	4 th KTP Project	50%	45%
A large business or group ¹⁶	1 st KTP Project	50%	40%
	2 nd to 4 th KTP Project	30%	25%

1.3 Invest NI's Requirements

The overall objectives of the evaluation are as follows:

- Determine the extent to which the principle aims, objectives and targets of the KTP Programme over the period 1st October 2010 to 30th September 2014 have been met;
- Assess the extent to which the KTP Programme has, and is continuing to meet the needs and expectations of its participants;
- Assess the extent to which the intervention has, and is contributing to the strategic aims, objectives, targets and performance of Invest NI, Department of Enterprise, Trade and Investment (DETI) and the NI Programme for Government (PfG);
- Determine the economic and other wider and regional benefits that KTP partnership projects have achieved to date, recognising that some impacts are more long term in nature;
- Assess the management and operating structures currently in place to determine how effective Invest NI and Innovate UK have been in managing the intervention and identify any areas for improvement such as opportunities to rationalise or streamline delivery and/ or programme management and monitoring;
- Review the ability of Invest NI and Innovate UK to undertake these activities taking into account both

¹⁵ Defined as having fewer than 250 employees.

¹⁶ Defined as having more than 250 employees.

- financial resources and the experience and knowledge of Invest NI staff/ Innovate UK staff;
- g) Determine the extent to which the KTP Programme represents good Value for Money (VFM) and appropriate use of public funds during the evaluation period; and
 - h) Identify conclusions and recommendations to inform any future delivery of the KTP Programme, to include as appropriate an identification of areas for improvement.

The specific objectives of the evaluation are outlined in detail with Appendix V.

1.4 Methodology

In responding to Invest NI's Terms of Reference, the Evaluation Team's methodology has included:

- A robust desk-based analysis of pertinent materials relating to the KTP Programme during the period under review.
- Consultation with the Steering Group that was established for the evaluation. This included representation from Invest NI's Research and Development Division.
- Face-to-face consultations with representatives from the two principal KTP offices in Northern Ireland (based at QUB and UU).
- Face-to-face consultations with the two KTP Advisers that operate within Northern Ireland.
- In-depth telephone consultations with representatives from Innovate UK.
- In-depth telephone consultations with representatives from five of Northern Ireland's Further Education Colleges, namely Belfast Metropolitan College (BMC), South West College (SWC), Southern Regional College (SRC), North West Regional College (NWRC) and Northern Regional College (NRC)¹⁷.
- In-depth telephone consultation with the Head of Innovation Policy within the Department of Enterprise, Trade and Investment (DETI).
- Face-to-face consultation with a representative from Warwick Economics and Development (WECD).
- Telephone consultations with Academics, Businesses and Associates that were involved in KTP Projects during the period under review¹⁸. The following tables provide a summary of the Evaluation Team's response rates and confidence levels (please note, a full breakdown is detailed in Appendices IX to XII):

¹⁷ Please note, despite a number of attempts, the Evaluation Team was unable to consult with the relevant representative from South Eastern Regional College (SERC).

¹⁸ Please note, during the evaluation process, Invest NI advised the Evaluation Team that there were 10 shorter KTP Projects (i.e. with a duration of 10 to 40 weeks) supported by Invest NI in Northern Ireland between 2010 and 2013. However, Invest NI further advised that these KTP Projects were to be considered outside of the scope of this evaluation exercise.

Confidence Intervals Associated with Business Beneficiary Analysis					
Overall	Finished Partnership	Active Partnership	Withdrawn Early or Very Early	Withdrawn After Authorisation	Total
No. of Businesses	16	45	8	13	82
Total Completed Surveys	10	33	2	4	49
% of total	63%	73%	25%	31%	60%
Confidence interval	+/- 19.6%	+/- 8.91%	+/- 64.16%	+/- 42.44%	+/- 8.94%

Confidence Intervals Associated with Academic Beneficiary Analysis					
Overall	Finished Partnership	Active Partnership	Withdrawn Early or Very Early	Withdrawn After Authorisation	Total
No. of Academics	16	45	8	13	82
Total Completed Surveys	6	37	4	11	58
% of total	38%	82%	50%	85%	71%
Confidence interval	+/- 32.67%	+/- 6.87%	+/- 37.04%	+/- 12.06%	+/- 7%

Confidence Intervals Associated with Associate Beneficiary Analysis					
Overall	Finished Partnership	Active Partnership	Withdrawn Early or Very Early	Withdrawn After Authorisation	Total
No. of Associates	16	45	8	13	82
Total Completed Surveys	9	33	3	1	46
% of total	56%	73%	38%	8%	56%
Confidence interval	+/- 22.32%	+/- 8.91%	+/- 47.82%	+/- 98%	+/- 9.63%

- Telephone consultations with those businesses that did not receive support for their proposed KTP Project (N=13).

2. STRATEGIC CONTEXT & RATIONALE

2.1 Introduction

Section 2 provides a high-level summary of the rationale upon which the KTP Programme was supported during the period under review, along with reviewing the strategic context within which it operates.

2.2 Original Rationale

A review of the approval documentation¹⁹ provided by Invest NI suggests that a number of factors combined to provide a strong rationale for Government intervention. These included:

- **Continuing low levels of productivity associated with lack of investment in innovation** - At the time of approval, it was noted that there was a significant productivity gap with other UK regions, with the Northern Ireland Gross Value Added (GVA) per capita equating to circa 80% of the UK average. Research commissioned by DETI suggested that the productivity gap reflected both lower individual sector productivity (compared to the UK average) and also the structural composition of the Northern Ireland economy (which had a relatively higher share of low productivity sectors compared to the rest of the UK). The same research also suggested that Northern Ireland was dependent on a relatively small number of companies for a significant proportion of R&D expenditure, with the ten highest spending companies accounting for 57% of the total R&D spend in Northern Ireland in 2009 (which was higher than in 2008).
- **Low levels of knowledge transfer between Higher Education/ Further Education and the business sector** - The approval documentation cited research (commissioned by DEL) that suggested only 2.1% of enterprises in Northern Ireland view universities or other higher education institutions as being highly important in providing information for innovation. It was suggested that in Northern Ireland the challenge was not only to sustain, but to further increase, private sector R&D, including broadening out the base of companies that undertake any R&D (it was reported that only 6% of all firms responding to the Northern Ireland Annual Business Survey (at that time) were undertaking R&D).
- **Absorptive incapacity of the private sector inhibiting successful uptake of innovation** - At the time of approval, it was noted that the ability of companies to translate public assistance (including financial) into commercially successful R&D relates to the absorptive capacity of a particular company. It was further noted that the mode of knowledge transfer chosen has implications on addressing specific absorptive capacity and development constraints for the beneficiary company and respective knowledge provider. The approval documentation highlighted that inter individual learning (provided through a knowledge transfer partnership) within a company, not only permits enhanced buy-in of new ideas by management, but also encourages their earlier adoption and roll out into new processes, products and/ or services, whilst at the same time enhancing the skill sets of employees through their exposure to a new staff member. Research undertaken by NESTA highlighted that Northern Ireland was the region with the second lowest absorptive capacity in the UK (the lowest was the North East of England). It was reported that, as a consequence of low absorptive capacity (primarily amongst indigenous SMEs), Northern Ireland continued to exhibit low levels of innovation.
- **Twin market failures (asymmetric information and coordination and network barriers) necessitating knowledge transfer interventions** - It was noted that there were a number of market failures, including asymmetric information, co-ordination failures and network barriers (failures) that were inhibiting knowledge transfer and necessitating the need for intervention. It was highlighted that companies cannot readily identify what actions they need to take and

¹⁹ Economic Appraisal of the KTP Programme in Northern Ireland (ASM Horwath, January 2012) and Invest NI's Board Casework Documentation (February 2012).

secondly who is best placed to assist them. They need external assistance to overcome these coordination issues. It was suggested that coordination and network barriers (failures) related to developing collaborative working between businesses, and between business and knowledge base institutions, could be particularly high, especially where technology is at the early stage of development or in a ‘conservative business culture’ which has a degree of reticence to innovate or seek external assistance.

On the basis of these points, Invest NI highlighted the following (in its casework documentation):

The KTP Programme aims to address low levels of productivity by supporting investment in R&D&I. It uses an established method of knowledge exchange between business and academic institutions by identifying problems which can be addressed by applied research and development. It subsequently signposts companies to academic staff and thereafter embeds expertise within companies through Associates, thereby anchoring their benefits and enhancing absorptive capacity. Through these actions it addresses the twin market failures of asymmetric information and networking/ coordination failures.

As previously highlighted, whilst there is no economic appraisal or casework documentation covering the activity that took place under the KTP Programme during the period 1st October 2010 to 31st March 2012 (18 month period), the Evaluation Team has drawn on the findings from the previous evaluation (BDO, June 2011), which highlighted the following:

- Northern Ireland has long had a productivity gap with the rest of the UK, with economic conditions in 2002 (the start of that evaluation period) being characterised by lower Gross Domestic Product (GDP) in Northern Ireland (circa 80%) than in the rest of the UK.
- It was highlighted that there were a number of market failures, including information failures and coordination failures that were contributing towards businesses in Northern Ireland not accessing expertise within the knowledge base. Indeed, it was suggested that this is accentuated by the higher proportion of SMEs in Northern Ireland (vis-à-vis the rest of the UK).

The Evaluation Team is of the view that these findings support the rationale (including market failures) as set in the Economic Appraisal (2012).

2.3 Strategic Context

Subsection 2.3 provides an overview of the strategic context within which the KTP Programme operated during the period under review. In doing so, the subsection considers (amongst other things) the ‘fit’ of the Programme with the DETI and Invest NI Corporate Plans that operated at that time.

2.3.1 Northern Ireland Programme for Government (2008-2011)

The Programme for Government (PfG) 2008-11 set out the Northern Ireland Executive’s strategic priorities and key plans for the period 2008 - 2011. Under its ‘Growing a Dynamic Innovative Economy’ Priority (the top priority over the lifetime of the PfG), the Government acknowledged that “*our companies must become more innovative and invest more in research and development*”.

The key PSAs (under this priority) that the KTP Programme offered the potential to contribute to during the period under review included:

- PSA 1: Productivity Growth - Improve Northern Ireland’s manufacturing and private services productivity; and
- PSA 3: Increasing Employment - Subject to economic conditions, increase employment levels and reduce economic inactivity by addressing the barriers to employment and providing effective careers advice at all levels.

2.3.2 Northern Ireland Programme for Government (2011-2015)

The PfG 2011-2015 set out that the Executive has taken the important step of making the economy the top priority. The PfG contains 5 key priorities, one of which is: *“Growing a Sustainable Economy and Investing in the Future”*. The primary purpose of this Priority is to achieve long term economic growth by improving competitiveness and building a larger and more export-driven private sector. To do this, the PfG notes that we must *rebuild* the labour market in the wake of the global economic downturn and *rebalance* the economy to improve the wealth and living standards of everyone. Two specific PfG objectives that the KTP Programme offered the potential to contribute to during the period under review included:

- Encouraging innovation and R&D; and
- Growing the private sector.

Furthermore, in line with the PfG, it is the Evaluation Team’s view that the KTP Programme also offered the potential to engage in collaborative projects (with academia) in order to *“ensure that we stimulate action and interventions to increase productivity and competitiveness, and enable local companies to grasp opportunities”*.

2.3.3 Northern Ireland Economic Strategy (March 2012) - Priorities for Sustainable Growth and Prosperity²⁰

Within its Economic Strategy, the Northern Ireland Executive has established an overarching goal to improve the economic competitiveness²¹ of the Northern Ireland economy. In order to achieve this, the Executive is committed to strengthening our competitiveness through a focus on export led economic growth. The Strategy suggests that this can only be achieved by rebalancing and rebuilding our economy. In line with the strategic imperatives identified within the Economic Strategy, the KTP Programme offered (and continues to offer) the potential to contribute to the rebalancing of the Northern Ireland economy by delivering higher productivity as a result of stimulating greater levels of innovation, improving the skills and knowledge of the workforce, assisting Northern Ireland businesses to compete effectively within the global economy and encouraging business growth.

2.3.4 Regional Innovation Strategy for Northern Ireland – Action Plan 2008-2011 (April 2008)

The Regional Innovation Strategy Action Plan (2008 – 2011) sought to place greater focus on delivering change through key knowledge commercialisation and exploitation objectives. The Plan was founded on four Imperatives, and associated Strategic objectives, which must be taken forward for the development of the Northern Ireland innovation system and infrastructure. Relevant Strategic objectives (to the KTP Programme) include:

- Ensure that Northern Ireland is playing its full role in the UK, all-island, European and global innovation arenas.
- Enhance and promote the development of an innovation culture in Northern Ireland (across all sectors of business, government and academia/ education).
- Encourage Northern Ireland businesses and universities to be more outward focused and raise their profiles internationally.
- Promote an increased level of innovation and R&D activity within Northern Ireland businesses (including encouraging businesses to invest more in innovation and R&D).
- Encourage and support Northern Ireland businesses in building the capacity to take forward innovative ideas into new products, services and processes (with Invest NI supporting the technology transfer function of the two universities with the aim of securing 100 KTP Projects during 2008-2011).

²⁰ Please note, the NI Executive prepared a draft of the Economic Strategy in late 2010, which was subsequently issued for public consultation in January 2011 (with the final version published in March 2012).

²¹ Economic competitiveness is defined by the World Economic Forum as *“the set of institutions, policies and factors that determine the level of productivity of a country”*.

2.3.5 Draft Northern Ireland Innovation Strategy 2013 - 2025

The draft Innovation Strategy (which covered the period 2013-2014²²) suggested that if innovation is to play its full part in realising the vision of our Economic Strategy, then Northern Ireland needs a complete step change in its culture, priority and performance in respect of innovation. As such, the draft Strategy set out the key long term actions necessary to stimulate a step change in innovation, R&D and creativity across the economy and in doing so deliver a vision that *“Northern Ireland, by 2025, will be recognised as an innovation hub and will be one of the UK’s leading high-growth, knowledge-based regions which embraces creativity and innovation at all levels of society”*.

The Strategy argued that, within the innovation system, knowledge generation is the catalyst for future economic growth. Of relevance to the KTP Programme, the Strategy cited the importance of knowledge exchange, which relates to *“facilitating the exchange and access to quality information across all sectors in order to support economic growth”*. In an effort to increase business to academia collaboration, the Northern Ireland Executive stated that it would increase its investment in existing programmes (such as the KTP Programme) which support collaboration between Northern Ireland’s universities and colleges and companies.

2.3.6 DETI Corporate Plan 2008-2011

As part of the DETI’s 2008-2011 Corporate Plan, the Department’s goal was *“to grow a dynamic, innovative economy”*. As part of achieving this goal, DETI was committed to contributing to a number of relevant Public Service Agreements (PSAs), including PSAs 1 and 3, and had established a number of key objectives relating to these. Key objectives (relative to the KTP Programme) associated with these PSAs that DETI sought to achieve during the lifetime of the Corporate Plan included:

PSA 1
<ul style="list-style-type: none"> • DSO 2: Attract and support high quality investment, both foreign and locally-owned; • DSO 4: Promote higher value added activity through innovation and the commercial exploitation of R&D; • DSO 5: Develop and sustain a higher education research sector that holds a strong position within the UK and beyond and makes a major contribution to economic and social well-being; and • DSO 6: Increase the Level of Skills to aid Productivity Improvements in Manufacturing and Tradable Services.
PSA 2
<ul style="list-style-type: none"> • DSO 3: Increase employment opportunities by attracting high quality inward investment and supporting domestic investment; and • DSO 4: Promote business growth.

2.3.7 DETI Corporate Plan 2011-2015

In line with the Northern Ireland PfG and Economic Strategy, DETI’s current Corporate Plan places focus on creating wealth and employment through a focus on export-led economic growth. In reflection of this, the Department’s goal over the life of the Plan is to *“promote the growth of a competitive and export led economy”*.

The Plan highlights the need for the Northern Ireland Government to place focus on *rebalancing* and *rebuilding* the Northern Ireland economy, i.e. focusing on actions that will deliver the necessary rebalancing of the economy over the longer term, while taking immediate steps to rebuild the local labour market after the recession. Specifically, in line with the economic priorities established within DETI’s Corporate Plan, it is the Evaluation Team’s view that the KTP Programme offered the potential to contribute to stimulating R&D, innovation and creativity, helping Northern Ireland businesses compete in the global economy and encouraging business growth.

²² Please note, DETI published the ‘Innovate NI - Innovation Strategy for Northern Ireland 2014-2025’ in September 2014.

2.3.8 Invest NI Corporate Plan 2008-2011

Invest NI's Corporate Plan for the period 2008-2011 stated that the priority for Invest NI was to increase business productivity, the means by which wealth can be created for the benefit of the whole community. It was anticipated that this would be achieved by:

- Realising the potential of existing businesses - In realising this objective, the Corporate Plan suggested that this would require businesses to innovate at all levels. As such, Invest NI committed to promoting and embedding an innovation culture in its clients levels of their businesses;
- Shifting the sectoral focus towards higher value-added sectors; and
- Nurturing the development of frontier technologies in our companies and in universities.

The Invest NI Corporate Plan was developed within the strategic framework set out in DETI's Corporate Plan and the PfG for the same period. As such, the main actions, outputs and targets for the Corporate Plan have been developed in this context.

2.3.9 Invest NI Corporate Plan 2011-2015

In line with the Northern Ireland PfG and DETI's Corporate Plan, Invest NI's 2011-2015 Corporate Plan states that the organisation will contribute to the rebalancing and rebuilding of the Northern Ireland economy to increase the overall standard of living by driving productivity growth and increasing employment. The Plan states that the support provided will be fully aligned with the drivers of economic growth and its activities will be targeted to increase the size, productivity, competitiveness and value of the private sector by embedding innovation, growing our local companies to scale, increasing our export base and attracting inward investment.

Given the nature of support delivered by the KTP Programme, it is the Evaluation Team's view that the Programme offered the potential to contribute to the following strategic priorities:

- Stimulating innovation. R&D and creativity - The Plan highlights the need to put innovation at the core of enterprise in Northern Ireland by driving market led innovation within its business base, supporting research, product, process, market and organisational development for the earliest stages to the leading edge technologies;
- Enabling Northern Ireland businesses to compete in the global economy; and
- Encouraging business growth by addressing the real and perceived barriers to growth.

2.3.10 'First Report of MATRIX: The Northern Ireland Science Industry Panel'

MATRIX was established as a business-led, market-focused panel of experts to advise government on the development of an approach which, over time, will help Northern Ireland to become an internationally leading region in terms of the economic exploitation of science, technology and R&D.

The first MATRIX report identified four imperatives for Northern Ireland if it is to rise to the challenge of the 21st Century. Of particular relevance to the KTP Programme, Imperative 1 suggested that *"to compete more effectively as a modern knowledge and technology based economy, NI must develop a more innovative culture of collaboration across industry, government and academia. Business must take on an increased leadership role in the innovation agenda, with Government playing a support and facilitation role and with academia working to inspire innovation through high quality R&D, knowledge creation and workforce preparation"*.

2.3.11 Invest NI Commercialisation Study (May 2012)

Invest NI's Commercialisation Study 'Maximising the Commercial and Economic impact of the Northern Ireland Publicly funded Research Base' set out to understand how the commercialisation

activities of the Northern Ireland knowledge base – its universities, research institutes and further education institutions – could help to better contribute towards growth and prosperity in the region’s economy.

The study suggested that a weak critical mass of R&D and innovation in the Northern Ireland economy (and some of its key sectors) makes greater openness to global partnerships and collaborations vital for businesses, the knowledge base and institutions in Northern Ireland. It was argued that ensuring collaborative instinct and practice is firmly embedded and ensuring that the benefits gained are maximised for Northern Ireland will be critical. Of relevance to the KTP Programme, the study recommended that collaborative working should be at the heart of future commercialisation and innovation ecosystem activities.

Of specific relevance, the study acknowledged the role of QUB in the delivery of the KTP Programme, whereby it was suggested that it is *“an important mechanism to transfer knowledge and expertise from the University to companies to support strategic development”*.

2.4 Summary Conclusions

The preceding analysis suggests that:

- At the time of approval, there was a need for Government to provide support to encourage greater levels of innovation, knowledge transfer and collaboration between businesses and Northern Ireland’s knowledge base in order to facilitate business growth and reduce the productivity gap with other UK regions.
- A number of market failures (including asymmetric information and co-ordination failures) and non-market failure factors (e.g. absorptive incapacity of the private sector inhibiting successful uptake of innovation etc.) were preventing businesses from engaging in knowledge transfer or collaboration with Northern Ireland’s knowledge base.
- There was, and continues to be, clear alignment between the aims and objectives of the KTP Programme and the strategic imperatives of the Northern Ireland Government (including with DETI and Invest NI’s Corporate Plans). Specifically, in line with Government’s strategic focus, the activities supported by the KTP Programme offer the potential to:
 - Stimulate innovation, R&D and creativity so that the private sector grows and the export base is widened and deepened.
 - Encourage SMEs to undertake collaborative R&D&I activities for the first time, thereby increasing the proportion of innovation active firms and contributing to a step change in the culture, priority and performance of SMEs in respect of innovation. In keeping with the Draft Innovation Strategy for Northern Ireland 2013 – 2025, this would include activity that includes changes to products and processes, the introduction of new business models and organisational changes and as an outworking of this, entry into new markets.
 - Contribute to skills development amongst associates and in turn their employability.
 - Support a culture of collaboration across industry and academia, with businesses taking a leadership role and academia working to inspire innovation through high quality R&D, knowledge creation and workforce preparation.
 - Help Northern Ireland to become more connected with regards to its research base and ensure the effective transfer of knowledge and technology.

Please note, the Evaluation Team’s analysis of the degree to which there continues to be a need for Government intervention (including the nature and extent of market failure that currently exists) can be found in Sections 5 and 9.

3. PROGRAMME ACTIVITY

3.1 Introduction

Section 3 provides a summary of the activity that was supported through the KTP Programme during the period under review. Please note, for the purposes of this evaluation, and in agreement with Invest NI, it is considered that within the period of the evaluation there have been two discrete time periods, namely:

- **Period 1:** 1st October 2010 to 31st March 2012 (18 months); and
- **Period 2:** 1st April 2012 to 30th September 2014 (30 months).

Where possible, the Evaluation Team has presented Programme activity across these time periods.

3.2 KTP Programme Marketing

Discussion with Invest NI indicates that, whilst Innovate UK was (and continues to be) responsible for marketing the KTP Programme at a UK level, Invest NI, in close conjunction with the KTP Offices, undertook a range of activities e.g. facilitating seminars and events, press releases, PR plans, website updates etc. to raise awareness of, and to stimulate participation on, the Programme during the period under review (it is understood that Invest NI continues to undertake these activities). It is also understood that the KTP Programme Manager within Invest NI was (and is) responsible for ensuring that Client Executives are aware of, and promote, the Programme to Invest NI client companies, which was facilitated by way of internal awareness workshops. During consultation, representatives from the FE Colleges expressed their view that Invest NI has been ‘ramping up’ its marketing type activity within the FE sector, and whilst encouraging, this has only happened relatively recently.

During consultation, Invest NI expressed its view that a ‘funding crisis’ arose in late 2010 at a UK level, which had a major impact on the ability of Innovate UK, and the various sponsors at that time, to provide funding in support of KTP Projects. The lack of funding was a result of a Spending Review which was implemented by the UK Government in 2010. It is understood that this essentially reduced Innovate UK’s allocated budget for the KTP Programme and had subsequent implications for the quantum of KTP Projects that could be approved by the PAG. It is reported (as per Innovate UK’s annual report for the 2010-2011 period) that, at a UK level, there was a 22% decrease (from the previous year) in the number of KTP Projects supported as a direct result of the Innovate UK’s reduced core budget.

One of the many impacts of this ‘funding crisis’ was the fact that there was limited marketing undertaken by stakeholders (including Invest NI) during that period (which is reflected in the minimal marketing costs incurred during this period, as per Section 7.3.1), which subsequently contributed towards a lower number of KTP Projects being initiated (which is reflected in the figures presented in the following subsection). However, discussion with Invest NI and other key stakeholders indicates that the marketing activity associated with the KTP Programme has regained momentum, which is again reflected in the increased marketing costs incurred during period 2 vis-à-vis period 1 (as per Section 7.3.2).

Furthermore, it is understood that communications and stakeholder engagement was (and continues to be) coordinated through the Northern Ireland KTP Forum (comprising representatives from QUB, UU, Invest NI and the KTP Advisers). By way of example, this included ensuring that case studies of successful Northern Ireland KTP Projects are published on the knowledge base websites, thereby promoting the impact of the Programme.

During the period under review, a range of mechanisms were utilised by the two principle KTP Offices in Northern Ireland (at QUB and UU) to raise awareness of the KTP Programme. These included (but were not limited to):

- Creation and distribution of a leaflet for inclusion in Graduation packs for students;
- Attendance at Student Recruitment Fairs (e.g. event held in June 2014 at UU, Jordanstown);
- Presentations to Final Year students (e.g. presentation to Mechanical Engineering students in Sept 2014);
- Presentations to post graduates students;
- Case studies published on social media websites (e.g. Facebook etc.);
- Creation of a pop-up stand for use at Careers Fairs and other events; and
- Circulation and advertising of all KTP Programme jobs (e.g. via the Careers Service and to current students and previous graduates in appropriate Schools and Departments).

During consultation, representatives from the KTP Offices at QUB and UU expressed their views that there were often difficulties in identifying and recruiting KTP Associates with the requisite skills and expertise in key areas such science, IT and engineering. This view was shared by the KTP Advisers during consultation. In response to this, it was reported that the KTP Office at QUB had most recently (i.e. 2014) focused its awareness raising activities at those students/ graduates with skills and expertise in science, IT and engineering.

During consultation, a representative from an FE College indicated that, during the period under review, there was little awareness of the KTP Programme amongst businesses, and that the general perception was that it was more catered towards larger businesses working in collaboration with the universities. This consultee suggested that more promotion of the Programme to businesses could assist to re-address this perception. For example, it was suggested that the importance of the case studies, in demonstrating the benefits of company partners collaborating with FE Colleges, was (and should continue to be) a key way to promote the KTP Programme.

Interestingly, discussion with Innovate UK and Invest NI indicates that, during the period under review, the extent to which FE Colleges have been applying to, or participating on, the KTP Programme has gradually reduced, although it was highlighted that, at a UK level, the FE sector has not been specifically targeted in terms of promotional activity. It was further suggested that there have been a variety of factors that contributed towards this, including changes in personnel at individual colleges and a large number of applications/ proposals that were not aligned with the funding criteria established by Innovate UK (e.g. it is understood that there were a number of FE Colleges that were involved in prospective projects orientated towards marketing, including the development of marketing strategies, which were, as of 2011, no longer supported by Innovate UK under the Programme).

3.3 Profile of KTP Projects

3.3.1 Overview

Analysis of monitoring information provided by Invest NI indicates that, as of January 2015, there were 82 KTP Projects started (based on their formal start date) in Northern Ireland during the period under review:

Overview of KTP Projects started (as of January 2015)	
Period 1:	No.
1 st Oct 10 - 31 st Mar 11 (six months)	6
1 st Apr 11 - 31 st Mar 12	19
Total for Period 1	25
Period 2:	
1 st Apr 12 - 31 st Mar 13	21
1 st Apr 13 - 31 st Mar 14	23
1 st Apr 14 - 30 th Sept 14 (six months)	13
Total for Period 2	57
Overall total	82

The table above indicates that, during the period under review, in a typical year (i.e. April to March) circa 20 KTP Projects were started in Northern Ireland, with a total of 23 starting in the April 2013 to March 2014 period.

Discussion with Invest NI suggests that the number of KTP Projects that started in Northern Ireland was (and is) dependent on a number of factors, including the availability of funding from Innovate UK, the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates. Nonetheless, discussion with the representatives from the KTP Office at QUB expressed their view that there is capacity (there are currently four Full Time Equivalent (FTE) posts within the KTP Office at QUB), and a willingness, within the knowledge base to support a higher volume of KTP Projects per annum. In order to increase the volume of KTP Projects per annum, it was further suggested by representatives from the KTP Office at QUB that Invest NI's Client Executives could potentially be working with their client companies to identify if the KTP Programme would address their business needs. However, further discussion with Invest NI indicates that any such awareness raising activities need to be undertaken and aligned with Innovate UK's available funding, the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.

In addition to the above, discussion with Invest NI also indicates that one (of the two) KTP advisers based in Northern Ireland left their post in June 2014. This resulted in a four month period, from June to September 2014, when there was only one KTP adviser in post in Northern Ireland. It was suggested by Invest NI that this caused significant capacity constraints during that period, which had a resultant impact (and delays) on the number of KTP Projects being developed and subsequently started in Northern Ireland.

3.3.2 *KTP Projects by Status*

Discussion with Invest NI indicates that, at any given point in time, KTP Projects were categorised (as per Innovate UK classifications) as follows:

- **Current/ active partnership** - The KTP Project is currently 'live' or active.
- **Finished partnership** - The KTP Project reached its formal end date.
- **Withdrawn (finished early)** - A Grant Offer Letter was issued and the project started but the business partner withdrew early. In this instance, early was categorised as circa 6-8 months after the start date and 4 months before the end date.
- **Withdrawn (finished very early)** - A Grant Offer Letter was issued and the project started but the business partner withdrew very early. In this instance, very early was categorised as less than 6 months after the start date and no Final Report would be required.
- **Withdrawn (after authorisation but never started)** - In this instance, a KTP Project was approved by the PAG and a Grant Offer Letter was issued. However, before an Associate commenced work, the KTP Project was withdrawn.

The following table provides a breakdown of the 82 KTP Projects that started in Northern Ireland by status during the period under review (please note, each of the KTP Projects included a company representative, a lead academic, an academic supervisor, and an Associate²³):

KTP Projects by Status (as of January 2015)						
Status (as per Innovate UK classifications)	Time Period				Total	
	Period 1		Period 2			
	No.	%	No.	%	No.	%
Current/ active partnership	0	0%	45	79%	45	55%
Finished partnership	13	52%	3	5%	16	20%
Withdrawn (finished early)	2	8%	1	2%	3	4%
Withdrawn (finished very early)	4	16%	1	2%	5	6%
Withdrawn (after authorisation but never started)	6	24%	7	12%	13	16%
Total	25	100%	57	100%	82	100%

²³ Please note, those KTP Projects categorised as 'Withdrawn after authorisation but never started' may or may not (depending on the circumstances in each individual KTP Project) have recruited an Associate.

The previous table indicates that over half (55%, N=82) of the KTP Projects are currently ‘live’, with a further 20% (N=82) of the projects having reached their formal end date. Of note, the Evaluation Team would highlight that over a quarter (26%, N=82) of the KTP Projects withdrew at various stages and for a variety of reasons (e.g. change in the business’ priorities, unable to recruit a suitable Associate etc.). Further analysis of monitoring information provided by Invest NI indicates that this figure is marginally higher than those figures reported at a UK level, which illustrates an attrition rate (as of April 2015) of 22% (please note, this is discussed further in Section 3.4). In the Evaluation Team’s view, this would appear to be a high attrition rate, and one which could be compounded further if any of those ‘live’ or active KTP Projects in Northern Ireland withdraw as their project progresses.

On this point, discussion with the two principal KTP Offices in Northern Ireland and the KTP Advisers indicates that, in some instances, the withdrawal of KTP Projects is attributable to the company partner not attracting and recruiting a suitably qualified KTP Associate to take the project forward. It was further suggested that a contributory factor in this regard was a skills gap in key areas such science, IT and engineering.

Further analysis of monitoring information provided by Invest NI indicates that, during the period under review, there were 25 KTP Projects (representing 23% of the total applications submitted during the period under review²⁴) that were not supported at the PAG (for a variety of reasons), with no Grant Letter Offer subsequently being issued. At that juncture, there were two options available to partnerships:

- The PAG recommended that the Partnership should resubmit a revised proposal (although any resubmission would have a different KTP number to the original²⁵); or
- The PAG recommended that the Partnership should not resubmit a revised proposal.

An overview of those KTP Projects that were not supported by the PAG during the period under review are included in the table below (with further detailed analysis included in Appendix VI):

KTP Projects Not Supported by Knowledge Base (as of January 2015)					
Status	Knowledge Base				Total
	QUB	UU	BMC	SRC	
Period 1:					
Not supported - resubmission possible	3	1	1	0	5
Not supported - no resubmission recommended	5	4	3	2	14
Total for Period 1	8	5	4	2	19
Period 2:					
Not supported - resubmission possible	0	4	0	0	4
Not supported - no resubmission recommended	2	0	0	0	2
Total for Period 2	2	4	0	0	6
Overall total	10	9	4	2	25

The above analysis indicates that 19 (76%, N=25) of the KTP Projects that were not supported by the PAG involved either QUB or UU as the knowledge base partner. Of note, PAG recommended that a resubmission was possible for 9 (36%, N=25) of the KTP Projects. Interestingly, the Partnerships associated with three of these KTP Projects (33%, N=9) subsequently resubmitted a revised proposal for their Project (please note, these three projects featured within the 82 KTP Projects that started in Northern Ireland during the period under review).

²⁴ i.e. 25 KTP Project not supported (23%) + 82 KTP Project that were supported (77%) = 107 (100%).

²⁵ At the outset of the approval process, each KTP Project/ Proposal is allocated a unique six digit KTP reference number.

3.3.3 KTP Projects by Knowledge Base

During the period 1st October 2010 to 31st March 2012, QUB was the knowledge base partner responsible for nearly two thirds (64%, N=25) of the KTP Projects that started in Northern Ireland. Discussion with Invest NI indicates that this reflects QUB's historical position over the last ten years as one of the top performers across the UK in terms of the number of new KTP partnerships started each year. However, of note, just over two fifths (44%, N=16) of the KTP Projects started with QUB as the knowledge base partner, withdrew at various stages.

Furthermore, based on the figures in the table below, the attrition rate at an overall level during this period is nearly 50%. Again, in the Evaluation Team's view, this appears to be a high attrition rate. In considering this point, discussion with Innovate UK indicates that there is a requirement for KTP Associates to have been recruited, with a formal offer of employment, within six months from the date of the Grant Offer Letter. Furthermore, if the Associate has not started work full time within nine months of the date on the Grant Offer Letter, then the Grant Offer will lapse. It is understood that the scale of attrition during this period was, in part, due to the inability of company partners to recruit suitable KTP Associates within these stipulated timeframes, which correspondingly led to KTP Projects withdrawing.

KTP Projects by Knowledge Base: 1st October 2010 to 31st March 2012 (as of January 2015)						
Status	Knowledge Base					Total
	QUB	UU	BMC	University of Liverpool	SERC	
Current/ active partnership	0	0	0	0	0	0
Finished partnership	9	2	1	1	0	13
Withdrawn (finished early)	3	2	1	0	0	6
Withdrawn (finished very early)	1	0	1	0	0	2
Withdrawn (after authorisation but never started)	3	0	0	0	1	4
Total (no.)	16	4	3	1	1	25
Total (%)	64%	16%	12%	4%	4%	100%

Similar to the above, during the period 1st April 2012 to 30th September 2014, QUB was responsible for over two thirds (67%, N=57) of the KTP Projects that started in Northern Ireland. Of note, the Ulster University increased the number of KTP Projects that it was responsible for (from 4 in the first period, to 16 in the second). Discussion with Invest NI indicates that, as of October 2014, QUB is the most active knowledge base in the UK, with UU being ranked 8th. Furthermore, in terms of the total number of completed KTP Projects since 1982, a recently published report²⁶ states that QUB ranks first (322) and Ulster University ranks sixth (192).

KTP Projects by Knowledge Base: 1st April 2012 – 30th September 2014 (as of January 2015)						
Status	Knowledge Base					Total
	QUB	UU	BMC	Newcastle University	SWC	
Current/ active partnership	29	13	1	1	1	45
Finished partnership	2	1	0	0	0	3
Withdrawn (finished early)	5	2	0	0	0	7
Withdrawn (finished very early)	1	0	0	0	0	1
Withdrawn (after authorisation but never started)	1	0	0	0	0	1
Total (no.)	38	16	1	1	1	57
Total (%)	67%	28%	2%	2%	2%	100%

²⁶ 'Impacts of KTP Associates and Knowledge Bases on the UK Economy' (Warwick Economics and Development, October 2015).

In the Evaluation Team’s view, the findings detailed in the previous table also demonstrate the prevalence of withdrawn projects (16%, N=57). As previously highlighted, this will be compounded should any of those ‘live’ or active KTP Projects withdraw as their project progresses.

In considering the above, during the period under review it is interesting to note that there were only six KTP Projects started (with three of those withdrawing at various stages) by three (of the six) FE Colleges in Northern Ireland. Discussion with Invest NI and representatives from each of the FE Colleges indicates that the FE sector was historically involved in the Programme, although in recent times (specifically during the period under review) there has been a perception that the ‘innovation bar’ had been increased. It was suggested that the Colleges, and the businesses that they may potentially collaborate with, found it increasing difficult to develop projects that meet the eligibility criteria for the Programme (please note, it is understood that the eligibility criteria were not amended during the period under review, but rather the view shared by Colleges and other stakeholders was that applications were scrutinised in more detail than was previously the case). This view was shared by one of the KTP Advisers, although it was suggested that the FE Colleges could continue to have a role to play moving forward, particularly in niche areas where they have specialisms.

3.3.4 KTP Projects by Company Size

As part of the KTP Grant Application and Proposal Form, company partners are required to categorise the size of their company (as defined by EU guidelines).

KTP Projects by Company Size						
Company Size (as per Innovate UK database)	Time Period				Total	
	Period 1		Period 2			
	No.	%	No.	%	No.	%
Micro (under 10 employees)	4	16%	8	14%	12	15%
Small (10 to 49 employees)	12	48%	20	35%	32	39%
Medium (50 to 249 employees)	4	16%	22	39%	26	31%
Large (250 or more employees)	5	20%	7	12%	12	15%
Total	25	100%	57	100%	82	100%

Based on the above, nearly all (85%, N=82) of the company partners were categorised as having less than 249 employees. Analysis of Innovate UK’s Annual Reports for the period under review indicates that, at a UK level from 2010 to 2014, there was generally a higher proportion of company partners (vis-à-vis the figures for Northern Ireland) categorised as being large. This is perhaps not surprising as the findings at a Northern Ireland level reflect the composition of the Northern Ireland economy, which is predominately made up of SMEs (i.e. companies having less than 249 employees).

The Evaluation Team undertook further analysis across the period under review to ascertain if there was any correlation between those company partners that withdrew (at various stages) and the size of their respective organisation.

Comparison of KTP Projects by Company Size and Status					
Status	Size of Company				Total
	Micro	Small	Medium	Large	
Withdrawn (finished early)	-	4	1	-	5
Withdrawn (finished very early)	-	3	-	-	3
Withdrawn (after authorisation but never started)	1	4	4	4	13
Total (no.)	1	11	5	4	21
Total (%)	5%	52%	24%	19%	100%

Whilst over half (52%) of the company partners that withdrew were categorised as ‘small’, the above analysis does not indicate that there is any meaningful correlation between the stage at which company partners withdrew and the size of their respective business.

3.3.5 KTP Projects by Grant Size

The Grant Offer Letter issued by the PAG outlines details of the grant offered to KTP Partnerships (along with associated terms and conditions).

KTP Projects by Grant Size							
Company Size	Grant Size (as per Innovate UK database)	Time Period				Total	
		Period 1		Period 2			
		No.	%	No.	%	No.	%
Micro	£0 - £50,000	0	0%	1	2%	1	1%
	£50,001 - £100,000	3	12%	5	9%	8	10%
	£100,001 - £150,000	1	4%	2	4%	3	4%
	£150,001 - £200,000	0	0%	0	0%	0	0%
	£200,000 +	0	0%	0	0%	0	0%
Small	£0 - £50,000	0	0%	0	0%	0	0%
	£50,001 - £100,000	12	48%	19	33%	31	38%
	£100,001 - £150,000	0	0%	1	2%	1	1%
	£150,001 - £200,000	0	0%	0	0%	0	0%
	£200,000 +	0	0%	0	0%	0	0%
Medium	£0 - £50,000	0	0%	0	0%	0	0%
	£50,001 - £100,000	4	16%	20	35%	24	29%
	£100,001 - £150,000	0	0%	2	4%	2	2%
	£150,001 - £200,000	0	0%	0	0%	0	0%
	£200,000 +	0	0%	0	0%	0	0%
Large	£0 - £50,000	2	8%	1	2%	3	4%
	£50,001 - £100,000	3	12%	6	11%	9	11%
	£100,001 - £150,000	0	0%	0	0%	0	0%
	£150,001 - £200,000	0	0%	0	0%	0	0%
	£200,000 +	0	0%	0	0%	0	0%
Total		25	100%	57	100%	82	100%

In considering the above analysis, salient points to note include:

- Across both periods, nearly all (88%, N=82) of the grants awarded to KTP Partnerships were between £50,001 and £100,000.
- Further analysis of monitoring information indicates that, during the period 1st October 2010 to 31st March 2012 (18 months), a total of £1,921,428 was awarded towards KTP Projects in Northern Ireland, which equated to an average grant awarded of £76,857.
- In addition to the above, during the period 1st April 2012 to 30th September 2014 (30 months), a total of £4,603,759 was awarded towards KTP Projects in Northern Ireland, which equated to an average grant awarded of £80,768.
- From a national perspective, discussion with Invest NI suggests that, during the period under review (i.e. 1st October 2010 to 30th September 2014), £97m was awarded in the form of grant support (excluding company contributions) towards 1,131 KTP Projects across the UK. During the same period, the activity undertaken under the KTP Programme in Northern Ireland represented 7.25% of all new KTP Projects (82) and 6.7% of the total grant committed (circa £6.5m).

3.3.6 KTP Projects by Sector and Technology Area

Businesses operating within any sector are eligible to participate on the KTP Programme. As part of the KTP Grant Application and Proposal Form, company partners are required to include details on the sector within which they operate (as per their Companies House registration category).

KTP Projects by Sector						
Sector (as per company partners' Companies House registration category)	Time Period				Total	
	Period 1		Period 2			
	No.	%	No.	%	No.	%
Bricks/ Glass	-	-	4	7%	4	5%
Chemical Manufacturing	2	8%	5	9%	7	9%
Construction	-	-	3	5%	3	4%
Energy/ Water	-	-	1	2%	1	1%
Finance	1	4%	2	4%	3	4%
Food/ Drink	1	4%	2	4%	3	4%
Furniture/ Jewellery/ Games	-	-	3	5%	3	4%
Instrument/ Electrical Manufacturing	4	16%	2	4%	6	7%
IT/ Multimedia	4	16%	4	7%	8	10%
Medical	1	4%	-	-	1	1%
Metal Goods	3	12%	3	5%	6	7%
Metal Manufacturing	2	8%	7	12%	9	11%
Plastics/ Paper	1	4%	1	2%	2	2%
Service Industry (including distribution)	5	20%	10	18%	15	18%
Sustainability	-	-	2	4%	2	2%
Transport	1	4%	-	-	1	1%
Unknown	-	-	8	14%	8	10%
Total	25	100%	57	100%	82	100%

In considering the above, there were a wide range of different sectors which company partners stated that they operated within. Of note, companies operating in the service industry represented nearly a fifth (18%, N=82) of those KTP Projects during the period under review. Analysis of Innovate UK's Annual Reports for the period under review indicates that this finding is broadly in line with those reported at a UK level (e.g. from 2010 to 2014, the highest proportion of company partners involved in KTP Projects operated within the service industry).

The Evaluation Team is of the view that many of the highlighted sectors broadly align with the UK Standard Industrial Classification (SIC) codes (e.g. those subsectors under manufacturing, construction, professional services sectors etc.). Please note, discussion with Invest NI indicates that, in a number of instances, company partners were unable to categorise the sector within which they operate. It was suggested that there could be a number of reasons for this e.g. the company did not complete that specific part of the application form, the SIC code was not recognised or a newer/ older version of SIC code was used etc.

In addition to the above, KTP Advisers (as part of the RAG review) determine each KTP Project's alignment with specific 'technology areas' (as defined by Innovate UK).

KTP Projects by Technology Area						
Technology Areas (as defined by Innovate UK)	Time Period				Total	
	Period 1		Period 2			
	No.	%	No.	%	No.	%
Built Environment (BE)	2	8%	7	12%	9	11%
Bioscience (BIO)	-	-	4	7%	4	5%
Chemical Science (CHEM)	2	8%	1	2%	3	4%
Design (DES)	3	12%	6	11%	9	11%
Electronics, Photonics & Electrical Technologies (EPES)	2	8%	2	4%	4	5%
Food Processing (FOOD)	1	4%	3	5%	4	5%
Medicine and Healthcare (HLTH)	3	12%	1	2%	4	5%
High Value Manufacturing (HMF)	2	8%	7	12%	9	11%
Information and Communication Technologies (ICT)	6	24%	15	26%	21	26%
Advance Materials (MATS)	-	-	3	5%	3	4%
Metrology and Standards (MET)	-	-	1	2%	1	1%
Management Science (MSI)	3	12%	4	7%	7	9%
Environmental Sustainability/Sustainable Technologies (SUST)	-	-	3	5%	3	4%
Transport (TRAN)	1	4%	-	-	1	1%
Total	25	100%	57	100%	82	100%

The above table indicates that over a quarter (26%, N=82) of the KTP Projects during the period under review were categorised (in line with Innovate UK's technology areas) as ICT projects.

3.3.7 KTP Projects by Academic Department

The Academic partners within each KTP Partnership have specific expertise in certain subject areas. As part of the KTP Grant Application and Proposal Form, Academic partners are required to stipulate which academic department, within their respective knowledge base, they are based in.

KTP Projects by Academic Department						
Academic Department	Time Period				Total	
	Period 1		Period 2			
	No.	%	No.	%	No.	%
Biology, Biological Technology, Biological Chemistry (BIO)	-	-	3	5%	3	4%
Chemistry (CEM)	2	8%	-	-	2	2%
Chemical Engineering, Applied Chemistry, Process Engineering, Fuel Technology (CHE)		0%	1	2%	1	1%
IT, Computer Science, Computation, Computer Studies (COS)	2	8%	9	16%	11	13%
Civil Engineering, Transport, Construction Management Building (CVE)	2	8%	10	18%	12	15%
Design, Art and Design, Industrial Design (DES)	-	-	1	2%	1	1%
Electrical & Electronic Engineering, Microelectronics (ELE)	4	16%	5	9%	9	11%
Engineering Technology (ENG)	3	12%	8	14%	11	13%
Agriculture, Food Technology (MAF)	1	4%	3	5%	4	5%
Management, Marketing, Business Studies, Administration, Policy Studies (MAN)	5	20%	4	7%	9	11%
Medicine (MED)	3	12%	1	2%	4	5%
Maths, Statistics, Numerical Methods (MHS)	1	4%	1	2%	2	2%
Mechanical Engineering, Production Engineering, Manufacturing Engineering (MPE)	2	8%	11	19%	13	16%
Total	25	100%	57	100%	82	100%

In line with the findings reported at a UK level (as per Innovate UK’s Annual Reports), over half (56%, N=82) of the academic partners operated within departments that involve some form of engineering (e.g. civil, electrical and electronic, technology, manufacturing, mechanical and production engineering).

3.4 Profile of NI KTP Projects versus other UK Regions

Appendix VII provides a detailed profile of the KTP Projects started (based on their formal start date) in Northern Ireland during the period under review against those started (during the same time period) in other regions of the UK²⁷.

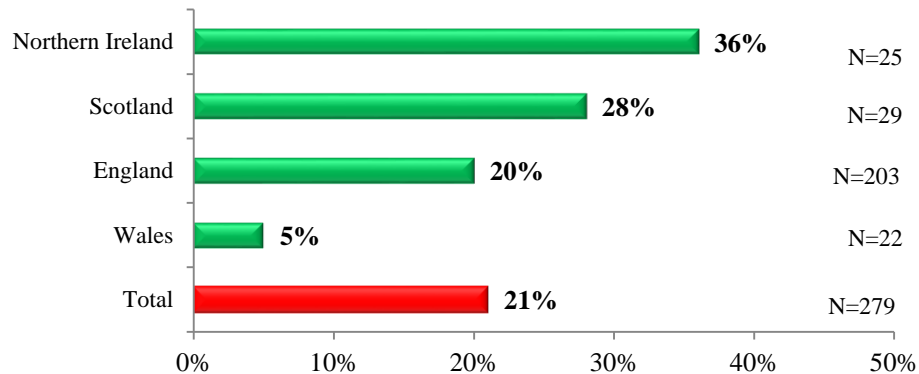
Analysis of monitoring information provided by Invest NI indicates that, at a UK level, there were 1,131 KTP Projects started as of April 2015. Drawing on the analysis included at Appendix VII, the following salient points are noted:

Salient Findings from the Evaluation Team’s Benchmarking Analysis
<ul style="list-style-type: none"> As of April 2015, circa 7% (N=82) of the UK KTP Projects that had started during the period under review commenced in Northern Ireland. By comparison, this figure is higher than the corresponding figure reported for Wales (6%, N=70), albeit lower than that reported for Scotland (13%, N=146). Over four fifths (85%, N=82) of the company partners in Northern Ireland were categorised as having less than 249 employees. By comparison, this figure was lower than the overall UK level, where there was generally a higher proportion (27%, N=1,131) of company partners (vis-à-vis the figures for Northern Ireland) categorised as being large. However, as previously highlighted, this is perhaps not surprising as the findings at a Northern Ireland level reflect the composition of the Northern Ireland economy, which is predominately made up of SMEs. Further analysis indicates that Northern Ireland had a higher proportion (15%) of company partners vis-a-vis the UK level (10%) that were categorised as being ‘micro’ business (i.e. under 10 employees). In the Evaluation Team’s view, this finding is again not surprising as it reflects the composition of the Northern Ireland economy. The analysis indicates that, as of January 2015, over half (55%, N=82) of the KTP Projects in Northern Ireland were categorised as being ‘live’, with a further 20% (N=82) of the projects having reached their formal end date. Interestingly, these findings are broadly in line with those reported at a UK level, whereby as of April 2015, 50% of the KTP Projects started during the period under review were categorised as being ‘live’, whilst 28% were categorised as being finished. Of note, the Evaluation Team would highlight that, as of January 2015, over a quarter (26%, N=82) of the KTP Projects in Northern Ireland withdrew at various stages and for a variety of reasons (e.g. change in the business’ priorities, unable to recruit a suitable Associate etc.). Further analysis indicates that this figure is marginally higher than those figures reported at a UK level, which generated an average attrition rate (as of April 2015) of 22%. However, by comparison, the Northern Ireland figure is marginally lower than Wales (30%) and Scotland (27%). As previously highlighted, as of January 2015, 23% of the total applications submitted in Northern Ireland during the period under review were not supported by the PAG i.e. 25 KTP Project not supported (23%) + 82 KTP Project that were supported (77%) = 107 (100%). By comparison, this figure is broadly in line with those figures reported for other regions of the UK (based on April 2015 data). For example, 31% (N=70) of the total applications submitted in Wales, and 20% (N=146) of the total applications submitted in Scotland during the period under review were not supported by the PAG. Encouragingly, the PAG recommended that a resubmission was possible for over a third (36%, N=25) of those KTP Projects that were not supported in Northern Ireland. By comparison, this is the joint highest (with North West region) across all of the UK regions and higher than the UK average (which equated to 21% of KTP Projects being recommended for resubmission). This is depicted in the graph overleaf.

²⁷ Please note, for the purposes of identifying and selecting appropriate UK regions, the Evaluation Team (as advised by Invest NI) has based its analysis on the region within which the company partner (as per the Innovate UK database) is located.

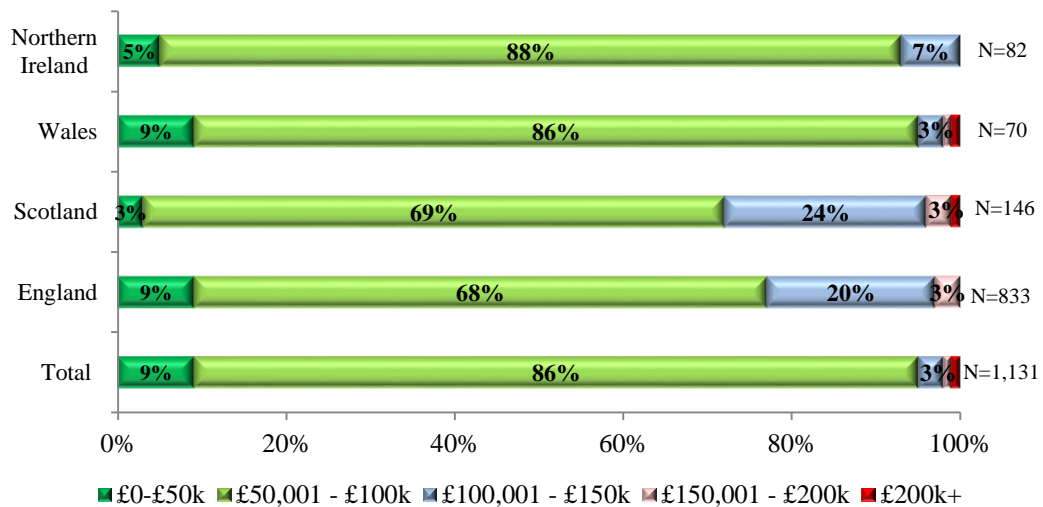
Salient Findings from the Evaluation Team's Benchmarking Analysis

Percentage of not supported KTP Projects that PAG recommended were possible for resubmission



- The analysis indicates that, as of January 2015, nearly all (88%, N=82) of the grants awarded to KTP Partnerships in Northern Ireland during the period under review were between £50,001 and £100,000. Interestingly, this percentage is higher than those figures reported at a UK level, which indicates that only 71% of the grants awarded during the period under review were between £50,001 and £100,000. Furthermore, only 7% of the grants awarded to KTP Projects in Northern Ireland during the period under review were between £100,001 - £150,000 (whereas 18% of grants being awarded at a UK level were within this award range²⁸). In essence, these findings could imply that the average grant awarded to a KTP Project in Northern Ireland during the period under review could have been lower than other regions within the UK. This is depicted in the following graph:

Percentage of UK KTP Projects by Grant Size



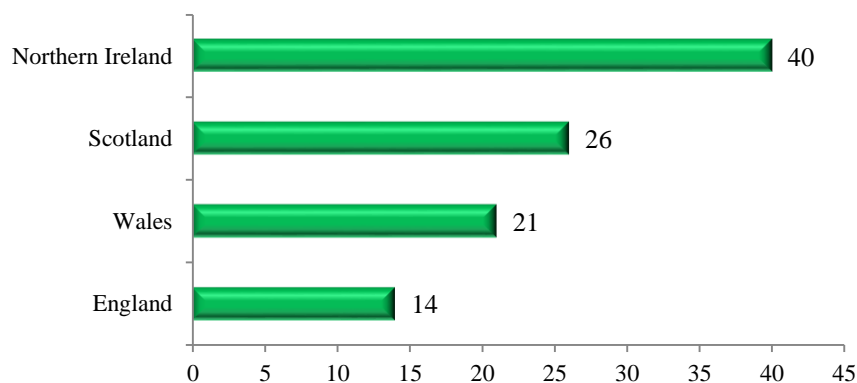
- Companies operating in the service industry represented nearly a fifth (18%, N=82) of those KTP Projects started during the period under review. Interestingly, this finding aligns with those reported at a UK level (e.g. the corresponding figures for England and Scotland were 18% and 16% respectively). Of note, within Northern Ireland there was a higher proportion of companies operating in the service industry vis-à-vis Wales (9%). Encouragingly, similar to other UK regions, Northern Ireland demonstrated its ability to attract companies from a wide range of different sectors (e.g. service industry, metal and chemical manufacturing, IT / Multimedia etc.).

²⁸ According to Invest NI, any grants awarded in range of £100,001 - £150,000 are typically to KTP Projects with multiple KTP Associates.

Salient Findings from the Evaluation Team’s Benchmarking Analysis

- Over a quarter (26%, N=82) of the KTP Projects started in Northern Ireland during the period under review were categorised (in line with Innovate UK’s technology areas) as ICT projects. Again, this finding aligns with those reported at a UK level (e.g. the corresponding figures for England and Scotland were 18% and 29% respectively). Of note, within Northern Ireland there is a higher proportion of KTP Projects categorised as ICT projects vis-à-vis Wales (9%).
- Encouragingly, the analysis indicates that the uptake of KTP Projects amongst businesses in Northern Ireland is higher than other regions within the UK. For example, during the period under review, Northern Ireland had 40 current/ active KTP Partnerships per 50,000 VAT registered businesses. By comparison, this is higher than the corresponding figures for England, Scotland and Wales, which were 14, 26 and 21 respectively.

Number of Current or Active KTP Projects / 50,000 VAT Registered Businesses



3.5 KTP Publications

As previously highlighted, once a KTP Project has been completed, the Partnership (with support and guidance from the KTP Adviser and/ or KTP Office) is required to submit a PPC report in order to, amongst other things, ascertain and document the outputs and impact of their project.

A review of completed PPCs for the 16 finished partnerships during the period under review indicates that 10 finished KTP partnerships published or prepared the following KTP related publications:

KTP related Publications (as per PPC reports)
No. of papers on the results of the KTP that have been published in, or submitted to, referred journals by: <ul style="list-style-type: none"> • KTP Supervisors = 3 • KTP Associates = 1 • Jointly = 8
No. of papers on the results of the KTP that are in preparation for submission to referred journals by: <ul style="list-style-type: none"> • KTP Supervisors = 1 • KTP Associates = 0 • Jointly = 10
No. of other publications that have arisen from the KTP Project, written by: <ul style="list-style-type: none"> • KTP Supervisors = 4 • KTP Associates = 5 • Jointly = 25²⁹
No. of other publications arising from the KTP Project that are being prepared by: <ul style="list-style-type: none"> • KTP Supervisors = 6 • KTP Associates = 0 • Jointly = 15

²⁹ Please note, one PPC report stated that 18 publications had arisen as a result of their KTP Project.

3.6 KTP Awards

As part of the KTP Programme, on an annual basis, Innovate UK administers five different national KTP Awards, which are “to celebrate the stand-out successes among the year’s KTP projects” and are aimed at recognising those KTP Partnerships that have demonstrated outstanding achievements.

During the period under review, a number of KTP Projects that were started in Northern Ireland were the recipients of the following national KTP Awards³⁰:

1. Best UK Partnership: the KTP Project which brought the greatest benefits to all three participants, and which best exemplifies innovation through collaboration	<ul style="list-style-type: none"> 2011 – Cherry Pipes, QUB, Paul Beaney and Justyna Grabowska 2013 - Bullivant Taranto Ltd, QUB and Richard Morton
2. Business Impact: awarded to a company/organisation in which the transformational effect of a past KTP Project can still be clearly seen.	<ul style="list-style-type: none"> 2013 - Seven Technologies Ltd.
3. Business Leaders of Tomorrow (5 individuals per annum): these awards recognise the achievements of Associates who, while working on their KTP project, have demonstrated the potential to become a future business leader.	<ul style="list-style-type: none"> 2012 - David Sandford (Hughes Insurance/ QUB) 2012 - David Quinn (Macrete Ireland Limited/ QUB) 2014 – Paul Callendar (McFarland Associates)
4. Engineering Excellence: sponsored by the Royal Academy of Engineering, this award recognises partnerships that have demonstrated excellence in the application of engineering skills.	<ul style="list-style-type: none"> 2012 - Seven Technologies Ltd. (<i>finalist</i>) 2013 - Bullivant Taranto Ltd, QUB and Richard Morton (<i>commendation</i>)
5. Academic Ambassador winner: this award recognises the outstanding contribution made to a KTP by a member of academic staff	<ul style="list-style-type: none"> 2014 - Professor Susan Taylor (QUB)

In addition to the above, in terms of illustrating the historical quality of those KTP Projects completed in Northern Ireland, it is notable that, since 2009, Innovate UK’s flagship ‘Best UK Partnership’ National Award has been awarded to Northern Ireland partnerships on 4 out of a possible 6 occasions.

3.7 KTP Associate Training³¹

As part of the KTP Programme, Associates can register as a candidate for an NVQ (Level 4) in Management or for a Diploma (Level 5) in Management. It is understood that this optional (rather than mandatory) aspect of the Programme is to encourage the personal development of the KTP Associate.

Analysis of monitoring information provided by Invest NI indicates that, since 2011, 111 KTP Associates in Northern Ireland registered for the following Chartered Management Institute (CMI)³² accredited qualifications in Management:

KTP Associate Training - Accredited qualifications in Management	
Qualification in Management	No. of KTP Associates registered (since 2011)
Award	18
Certificate	35
Diploma	58
Total	111

³⁰ Where available, further details on each of the individual projects are included in Appendix VIII.

³¹ Please note, based upon the information provided to the Evaluation Team, it is not possible to determine/ identify the unique number of associates achieving accreditations during the period under review.

³² The relevant Awarding Body.

It is understood that for each level of qualification, the Associate is required to complete the following:

- Award – one unit assignment;
- Certificate - two unit assignments; and
- Diploma - nine unit assignments.

Discussion with Invest NI indicates that, since 2011, there were 72 incidences of a KTP Associate achieving a pass across a range of units.

KTP Associate Training - Accredited qualifications in Management	
Unit Title	No. of KTP Associates that achieved a pass (since 2011)
Personal development as a manager and leader	25
Being a leader	10
Resource management	8
Information based decision making	4 (one assignment covering all three units)
Financial control	
Marketing planning	
Meeting stakeholder and quality needs	6
Conducting a management project	6
Project development and control	13
Total	72

3.8 **KTP Thematic Calls**

Discussion with Invest NI indicates that, in 2011, Innovate UK introduced the concept of ‘themed competition calls’ or ‘thematic calls’, with the aim of complementing the existing activity under the KTP Programme, which is targeted at supporting projects that address a specific business need (regardless of business sector or size), and to stimulate KTP projects within priority areas.

The first ‘themed call’ was launched in June 2011 and it related to ‘Parallel and MultiCore Processing’. Innovate UK provided additional funding from its innovation programme to support eight KTP Projects (from across the UK) that were selected as the initial cohort for the call.

Following this initial themed call, four additional calls were announced by Innovate UK in 2012/13, with a further five launched in 2013/14 across a diverse range of themes (e.g. from retail to modelling and simulation in the rail sector).

More recently, it is understood that an Agrifood themed call opened on 19 June 2014, with circa £2.3m of total funding available, thereby making it the largest thematic call launched up to that point. Furthermore, Innovate UK and Natural Environment Research Council (NERC) jointly invested up to £1.3m to establish new KTP Projects in, or related to, the Space sector, in order to assist UK companies to gain a greater share of the expanding global Space market.

Discussion with Invest NI and the two principal KTP Offices in Northern Ireland indicates that, in the majority of instances, the themed calls have had limited uptake and/ or relevance to businesses within Northern Ireland (with the exception of perhaps the recent Space and Agrifood calls). Furthermore, during consultation, Invest NI expressed its view that it can, and does, influence the nature of the themed calls through its role on the KTP Management Board. If considered of relevance, and of strategic importance, it is understood that Invest NI can launch its own ‘themed call’ throughout a typical year. Indeed, further discussion within Invest NI indicates that a review is currently being undertaken (which is being administrated through the KTP portal) in order to capture stakeholders’ views of the themed calls (e.g. ascertaining views on the benefits of themed calls, how the delivery of thematic calls might be improved etc.).

3.9 Risks

The Economic Appraisal of the KTP Programme in Northern Ireland (January 2012) identified five key risks that could potentially impact upon delivery. These included:

Risks identified as part of the Economic Appraisal of the KTP Programme in Northern Ireland	
Risk	Likelihood of risk occurring
Lack of demand: the activity undertaken is less than that specified in the economic appraisal (with the result that Northern Ireland as a region does not draw down sufficient match funding).	Medium
Delivery risk: the Promoter cannot meet the targets set for the Programme.	Medium
Budgetary risk: that TSB's budget is constrained and so cannot guarantee match funding across the Programme period.	Low
Operational risk due to proposed revisions to Programme delivery in Northern Ireland: that TSB does not recognise the validity of the revised approaches (including Northern Ireland specific calls within the existing KTP programme and Northern Ireland only programmes) and continues to support only those projects which address its national priorities.	Medium
Operational risk due to TSB's use of sectoral calls: that TSB places an increased percentage of funding support into sectoral calls which are not relevant to the Northern Ireland economy.	Medium

Based upon discussions with Invest NI and key stakeholders (e.g. Innovate UK, QUB and UU), along with the wider research findings, the Evaluation Team notes the following in relation to each of these risks:

- As previously highlighted, during consultation, Invest expressed its view that a 'funding crisis' arose in late 2010 at a UK level, which had a major impact on the ability of Innovate UK, and the various sponsors at that time, to provide funding in support of KTP Projects. The lack of funding was a result of a Spending Review which was implemented by the UK Government in 2010. It is understood that this essentially reduced Innovate UK's allocated budget for the KTP Programme and had subsequent implications for the quantum of KTP Projects that could be approved by the PAG. It is reported (as per Innovate UK's annual report for the 2010-2011 period) that, at a UK level, there was a 22% decrease (from the previous year) in the number of KTP Projects as a direct result of the Innovate UK's reduced core budget.
- In addition to the above, it was also reported by Innovate UK that the decrease in KTP partnerships in Northern Ireland (and Scotland) between 2010 and 2011 may have reflected delays in approvals, owing to budget uncertainties at that time. Indeed, it was noted that these uncertainties lasted longer in Northern Ireland and Scotland than in England, which impacted on the number of KTP Projects supported at a Northern Ireland level.
- Further discussion with Invest NI indicates that no issues were faced in relation to the 'thematic calls', with Invest NI suggesting (as previously highlighted) that it can influence the nature of the themed calls through its role on the KTP Management Board.

In summary, based on the above and programme participants high levels of satisfaction with the KTP Programme (as per Section 4), the Evaluation Team would suggest that Invest NI's overall approach to risk management was robust and proportionate.

3.10 Equality Considerations

Section 75 of the Northern Ireland Act 1998 requires that Invest NI shall, "in carrying out its function relating to Northern Ireland, have due regard to the need to promote equality of opportunity" between the following nine Section 75 groups:

- Persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation;

- Men and women generally;
- Persons with a disability and persons without; and
- Persons with dependents and persons without.

In addition and without prejudice to these obligations, in carrying out its functions, Invest NI is also committed to promote good relations between persons of different religious belief, political opinion or racial group.

The Evaluation Team's review of KTP Programme activity, monitoring information provided during the evaluation process and our discussions with KTP Programme participants (namely, academics, businesses and associates) has identified:

- No evidence of higher or lower participation or uptake of different groups;
- No evidence to indicate that different groups had different needs, experiences, issues and priorities in relation to KTP Programme activity;
- No opportunities to better promote equality of opportunity or better community relations by altering the work of the KTP Programme; and
- No accessibility issues that might run contrary to the Disability Discrimination Act 1995.

On this basis, the Evaluation Team would conclude that whilst the KTP Programme was not specifically targeted at any specific Section 75 categories, it does not appear to have had an adverse impact on any Section 75 group.

3.11 Summary Conclusions

Salient points to note in relation to the Evaluation Team's review of the KTP Programme activity include:

- It is understood that, whilst Innovate UK was (and continues to be) responsible for marketing the KTP Programme at a UK level, Invest NI, in close conjunction with the KTP Offices, undertook a range of activities e.g. facilitating seminars and events, press releases, PR plans, website updates etc. to raise awareness of, and to stimulate participation on, the Programme during the period under review. Furthermore, a range of mechanisms were utilised by the two principle KTP Offices in Northern Ireland (at QUB and UU) to raise awareness of the KTP Programme.
- During consultation, representatives from the KTP Offices at QUB and UU expressed their views that there were often difficulties in identifying and recruiting KTP Associates with the requisite skills and expertise in key areas such science, IT and engineering. This view was shared by the KTP Advisers during consultation.
- Analysis of monitoring information provided by Invest NI indicates that, as of January 2015, there were 82 KTP Projects started (based on their formal start date) in Northern Ireland during the period under review, with circa 20 projects in a typical year (i.e. April to March). Discussion with Invest NI suggests that the number of KTP Projects that started in Northern Ireland was (and is) dependent on a number of factors, including the availability of funding from Innovate UK, the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.
- Nonetheless, discussion with the representatives from the KTP Office at QUB expressed their view that there is capacity (there are currently four FTE posts within the KTP Office at QUB), and a willingness, within the knowledge base to support a higher volume of KTP Projects per annum. In order to increase the volume of KTP Projects per annum, it was further suggested by representatives from the KTP Office at QUB that Invest NI's Client Executives could potentially be working with their client companies to identify if the KTP Programme would address their business needs. However, further discussion with Invest NI indicates that any such awareness raising activities need to be undertaken and aligned with Innovate UK's available funding and the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.

- Interestingly, discussion with Innovate UK and Invest NI indicates that, during the period under review, the extent to which FE Colleges have been applying to, or participating on, the KTP Programme has gradually reduced, although it was highlighted that, at a UK level, the FE sector has not been specifically targeted in terms of promotional activity. It was further suggested that there have been a variety of factors that contributed towards this, including changes in personnel at individual Colleges and a large number of applications/ proposals that were not aligned with the funding criteria established by Innovate UK (e.g. it is understood that there were a number of FE Colleges that were involved in prospective projects orientated towards marketing, including the development of marketing strategies, which were, as of 2011, no longer supported by Innovate UK under the Programme).
- Based on the available monitoring information, the Evaluation Team would highlight that, as of January 2015, over a quarter (26%, N=82) of the KTP Projects withdrew at various stages and for a variety of reasons (e.g. change in the business' priorities, unable to recruit a suitable Associate etc.). This figure is marginally higher than those figures reported at a UK level, which generated an average attrition rate (as of April 2015) of 22%. However, by comparison, the Northern Ireland figure is marginally lower than Wales (30%) and Scotland (27%). In the Evaluation Team's view, this would appear to be a high attrition rate, and one which could be compounded further if any of those 'live' or active KTP Projects in Northern Ireland withdraw as their project progresses.
- Encouragingly, the findings from the Evaluation Team's benchmarking analysis indicates that the uptake of KTP Projects amongst businesses in Northern Ireland is higher than other regions within the UK. For example, during the period under review, Northern Ireland had 40 current/ active KTP Partnerships per 50,000 VAT registered businesses. By comparison, this is higher than the corresponding figures for England, Scotland and Wales, which were 14, 26 and 21 respectively.
- The Evaluation Team would conclude that whilst the KTP Programme was not specifically targeted at any specific Section 75 categories, it does not appear to have had an adverse impact on any Section 75 group.

4. STAKEHOLDERS' SATISFACTION WITH, & VIEWS OF, THE KTP PROGRAMME

4.1 Introduction

Section 4 provides analysis of the key findings emerging from the primary research with businesses, academics and associates, in terms of their satisfaction with, and views of the KTP Programme. Please note, detailed analysis relating to each individual stakeholder, along with relevant confidence intervals, are included in Appendices IX to XII.

Similar to the preceding Section of this report, where possible, the Evaluation Team has presented findings across the two time periods within the period of the evaluation.

Please note, the number of questions that respondents will have provided feedback on will have varied depending on the status of their KTP Project and on the nature of support that they have received to date. As such, the number of respondents (N) will differ between questions.

4.2 Prior involvement in the KTP Programme

Nearly three quarters 71% (N=48) of business respondents stated that this represented their first involvement with the KTP Programme, whilst just under one third (31%, N=58) of academic respondents stated that this was their first involvement.

First Involvement with the Programme		
	Businesses	Academics
Period 1	75% (N=8)	18% (N=11)
Period 2	70% (N=40)	34% (N=47)
Overall	71% (N=48)	31% (N=58)

4.3 Awareness of the KTP Programme

Over a quarter of business respondents (27%, N=48) became aware of the Programme following direct contact with Invest NI staff (e.g. their relevant Client Executive).

Just under half 48% (N=58) of academic respondents heard about the KTP Programme from other Academics, 42% (N=58) stated that a member of staff within their University/ College made them aware of the Programme, whilst 44% (N=58) heard through a representative from a KTP Office.

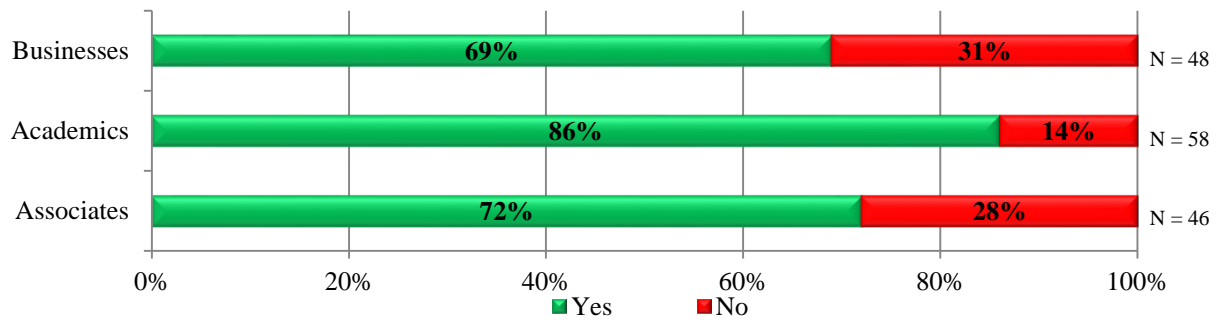
Associate awareness of the KTP Programme was split across a variety of sources, with word of mouth (24%, N=46) accounting for the greatest proportion.

4.4 Marketing and Promotion

Each of the three partners (i.e. businesses, academics and associates) expressed their view that the Programme was well marketed/ promoted to either businesses, academics or associates. However, of note, nearly two fifths (37%, N=40) of businesses during period 2 indicated that the Programme was not marketed/ promoted well.

KTP marketed/ promoted well to businesses, academics or associates			
	Businesses	Academics	Associates
Period 1	100% (N=8)	73% (N=11)	100% (N=8)
Period 2	63% (N=40)	89% (N=47)	71% (N=38)
Overall	69% (N=48)	86% (N=58)	72% (N=46)

Was the KTP Programme marketed/ promoted well to businesses, academics or associates (across both time periods)?



Of those respondents that indicated that the Programme was not marketed/ promoted well, the following was cited:

"I believe more needs to be done in terms of promoting the Programme."

"It is a well-known Programme but the benefits of engaging are not well known (e.g. what the Programme has done for businesses historically)."

"The Programme needs wider promotion as it is relatively unknown to businesses."

"Our business was not aware of the KTP Programme prior to being contacted by Invest NI."

"KTP is not particularly well promoted...we would not have participated had we not been approached by Invest NI."

"Our business would be more aware of the FUSION Programme than the KTP Programme."

"I think more could be done to promote the Programme to businesses."

KTP Business Respondents

"I believe that seminars would help the promotion of the KTP Programme."

"There is work to be done to market the Programme to new Academics instead of the same Academics undertaking multiple projects."

"Promotion could be better, especially to those Academics who have not participated in the Programme previously. It seems to be the same Academics applying every time."

"There is room for more work to promote the Programme to a wider audience."

KTP Academic Respondents

"I had never heard about the KTP Programme before I was told about it by chance by a lecturer."

"I had not heard of the KTP Programme before and only came across it through job searches."

"The university staff provided me with awareness of the KTP Programme but I feel there should be other avenues of marketing to make more graduates aware."

KTP Associate Respondents

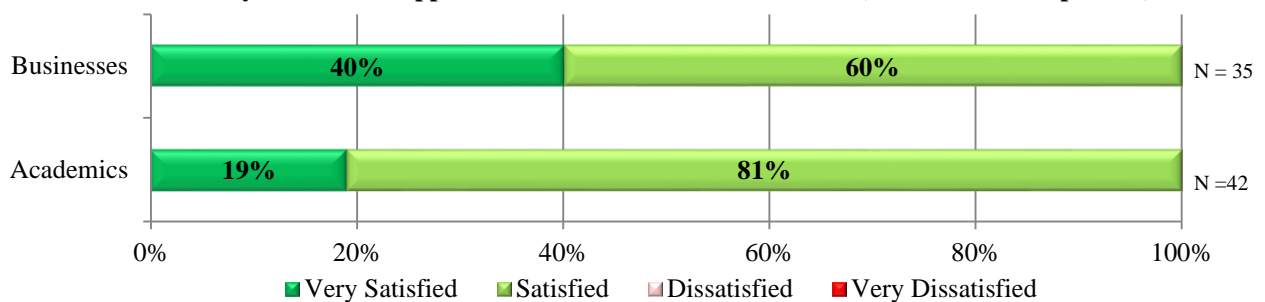
4.5 Support or advice received to develop the Partnership

4.5.1 Support from the KTP Adviser

Over three quarters (78%, N=45) of business respondents indicated that they had received support or advice from the KTP Adviser when developing a partnership with a KTP Academic. Encouragingly, all (100%, N=35) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

Nearly three quarters (72%, N=58) of academic respondents had received support from the KTP Adviser when developing a partnership with the business. Similar to the feedback from businesses, all (100%, N=42) of the academic respondents were either 'very satisfied' or 'satisfied' with the support received.

How satisfied were you with the support or advice from the KTP Adviser (across both time periods)?

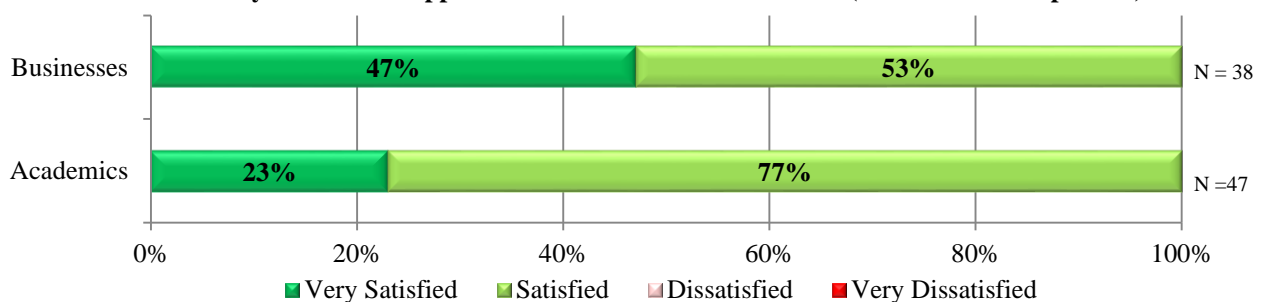


4.5.2 Support from the KTP Office

Over four fifths (84%, N=45) of business respondents indicated that they received support or advice from the KTP Office when developing a partnership with a KTP Academic. Encouragingly, all (100%, N=38) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

Over four fifths (81% (N=58) of the academic respondents indicated that they received support or advice from the KTP office when developing a partnership with the business. Similar to the feedback from businesses, all (100%, N=47) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

How satisfied were you with the support or advice from the KTP Office (across both time periods)?



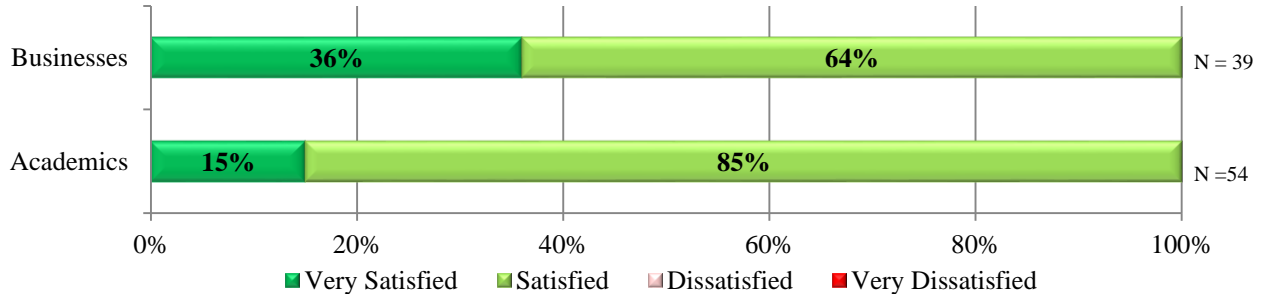
4.6 Advice or guidance when developing and submitting the application

4.6.1 Support from the KTP Adviser

Over four fifths (85%, N=46) of business respondents indicated they had received advice or guidance from the KTP Adviser when developing and submitting their application. Encouragingly, all (100%, N=39) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

Almost all (93%, N=58) of the academic respondents indicated that they received support or guidance from the KTP Adviser when developing and submitting the application. All (100%, N=54) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

How satisfied were you with the advice or guidance from the KTP Adviser (across both time periods)?

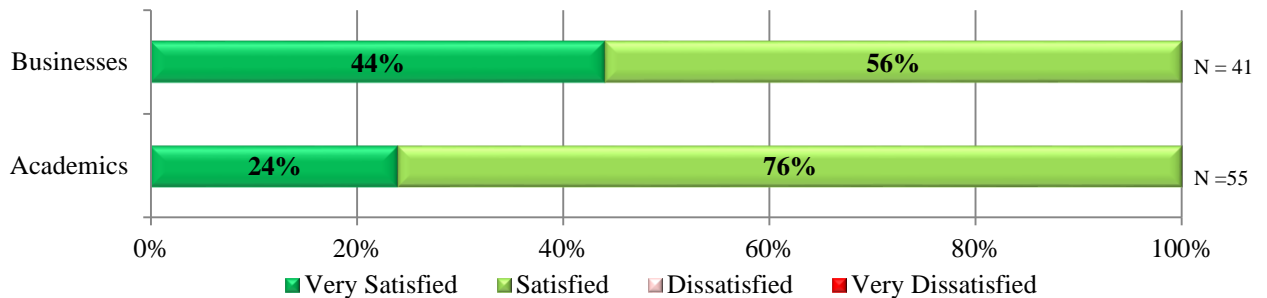


4.6.2 Support from the KTP Office

Over four fifths (89%, N=46) of the business respondents stated they had received advice or guidance from the KTP Office when developing and submitting their application. Encouraging, 100% (N=41) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Almost all (95%, N=58) respondents indicated they had received support from the KTP Office to develop and submit their application. Similar to the feedback from businesses, all (100%, N=55) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

How satisfied were you with the advice or guidance from the KTP Office (across both time periods)?



4.6.3 Support from the Business Supervisor or Academic

Overall, a high proportion of businesses (91%, N=46) indicated that they had received advice or guidance from the KTP Academic when developing and submitting their application. All (100%, N=42) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Almost all (91%, N=58) of academic respondents stated they had received advice and guidance from the Business Supervisor when developing and submitting their application. All (100%, N=53) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Respondents who had received advice or guidance cited the following:

“The three parties were able to provide excellent guidance on the steps to be taken when submitting our application.”

“The KTP Office supported us to update the application when changes had been made after submission.”

“The KTP Office and KTP Adviser were experts with the process and they guided us well through the application process.”

KTP Business Respondents

“The KTP Adviser, KTP Office and the Business Supervisor reviewed the project application before submission.”

“All parties provided great help in developing the application.”

“The partnership was always there for support regarding the application process.”

“I was unsure about how to fill out and complete the application and received a lot of help with doing so from both the KTP Adviser and the KTP Office.”

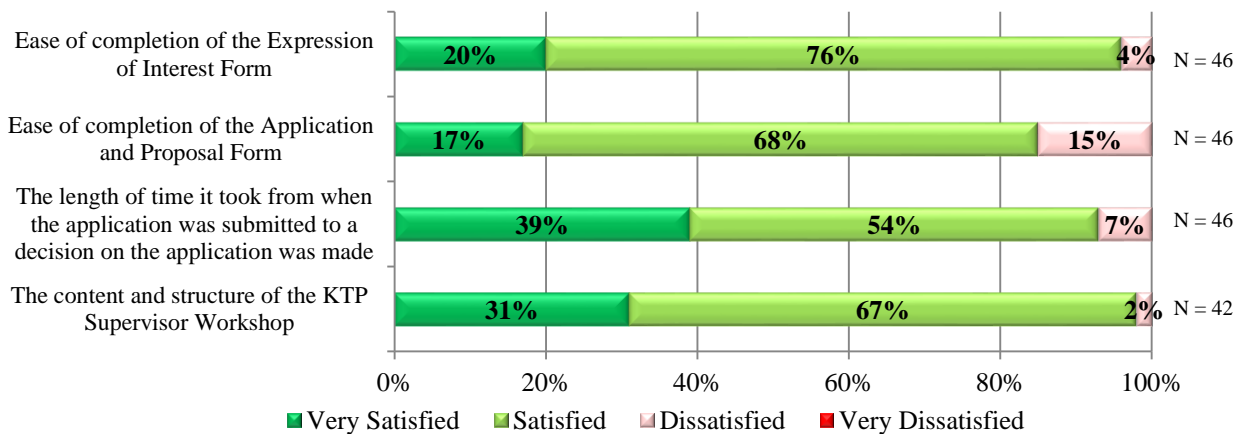
“The support provided by all was very good and a successful application was developed.”

KTP Academic Respondents

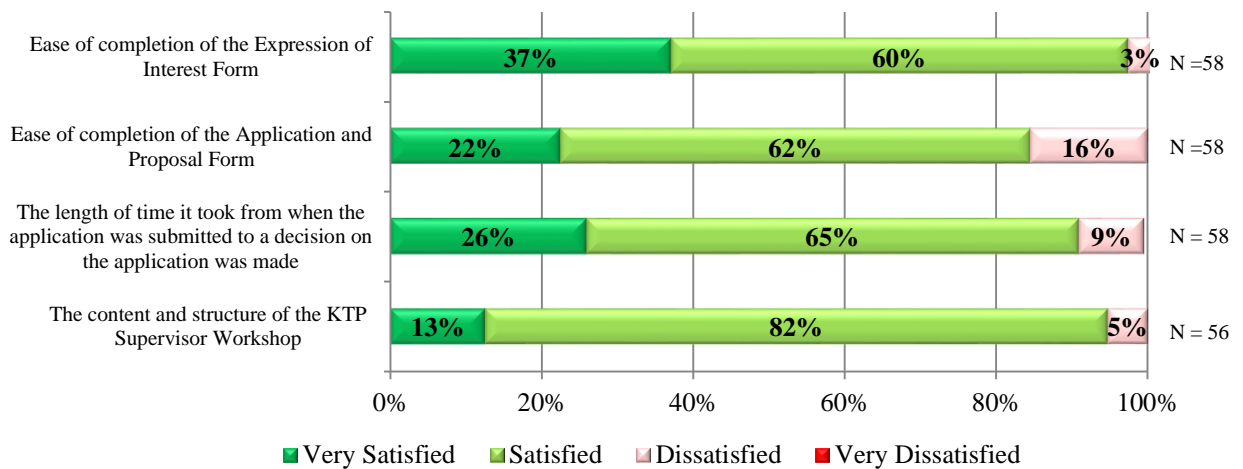
4.7 Satisfaction with various aspects of the KTP Programme application and approval process

Business and academic respondents expressed their views on the various aspects of the KTP Programme application and approval process. The following figures depict the high levels of satisfaction across the various aspects:

Businesses’ satisfaction with various aspects of the KTP application and approval process



Academics’ satisfaction with aspects of the KTP application and approval process



Of note, a small proportion (15%, N=46) of business respondents indicated they were dissatisfied with the application and proposal form, with the following comments cited:

“The portal needs to be fixed as it is very prone to crashing. It would also be useful to have more communication with the KTP Academic before the application process starts.”

“I found it very difficult to fill in the application and proposal form – it needs to be simplified more.”

“The web portal used to upload and submit applications needs to be improved as it was failing as I was submitting my application.”

“The application process is too long and needs to be simplified.”

“The wording requirements were very pedantic and unnecessary.”

“There is too much detail required in the application – it needs to be simplified.”

KTP Business Respondents

4.8 Support or advice when recruiting a KTP Associate

4.8.1 Support from the KTP Adviser

Three quarters (75%, N=48) of business respondents indicated they had received support or advice from the KTP Adviser when recruiting an Associate. All (100%, N=36) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Two thirds (66%, N=58) of academic respondents indicated they had received support or advice from the KTP Adviser when recruiting an Associate. Similar to the feedback from businesses, all (100%, N=38) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

4.8.2 Support from the KTP Office

Nearly three quarters (73%, N=48) of business respondents indicated they had received support or advice from the KTP Office when recruiting an Associate. All (100%, N=35) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Over four fifths (81%, N=58) of academic respondents received support or advice from the KTP Office when recruiting an Associate. All (100%, N=47) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Those business respondents who received support or advice from the KTP Adviser and/ or the KTP Office when recruiting an Associate cited the following:

“The KTP Adviser and KTP Office helped us to advertise the job vacancy, and also they sat on the interview panel to help shortlist the applicants.”

“The KTP Adviser and KTP Office helped us to shortlist applicants.”

“They both (i.e. KTP Adviser and KTP Office) created the listing to advertise the Associate job.”

“The KTP Adviser and the KTP Office provided us with help in identifying what calibre of Associate was needed in terms of experience and educational/ working background.”

“Both the KTP Adviser and KTP Office provided advice on how to recruit an appropriate Associate.”

“The recruitment process worked well and the Associate who is currently in the business is very appropriate for their job role.”

“The KTP Office managed the process entirely and the Associate proved to be of great benefit.”

“The KTP Office helped with paperwork in the recruitment process.”

KTP Business Respondents

4.9 Appropriateness of the funding provided towards Associate employment costs

The survey results indicate that over three quarters (78%, N=49) of business respondents suggested that the level of funding provided towards the KTP Associate employment costs was appropriate. Interestingly, of those KTP projects in the 2010-2012 period that were categorised as finished, four (57%, N=7) respondents indicated that the level of funding was not appropriate. Those respondents cited that the agreed salary for KTP Associate was not competitive enough to attract suitably qualified graduates, with businesses having to ‘top up’ the funding more than was anticipated.

“We had a low response to the advertisement for our KTP Associate post as a result of the low salary offered, which ultimately proved difficult when identifying a suitable candidate. The individual we ultimately recruited was not of a high enough calibre to meet our needs.”

“In my opinion, the KTP Programme needs to provide a higher level of funding for larger businesses.”

“We have had to top up the funding by circa £3,000 to date.”

“As a large business, we found the level of funding was a bit low.”

“We needed additional funding to cover the costs incurred when advertising for the Associate.”

“The level of funding was limited and required our business to provide more funding than anticipated to the project.”

“The level of funding provided did not allow us to offer a good Associate salary. We believe the salary level would not attract Associates with the ability to sufficiently complete the project.”

“I think the salaries should be higher in order to tempt a better calibre of graduates to undertake KTP projects.”

KTP Business Respondents

Furthermore, those academics who indicated the level of funding was not appropriate (7%, N=58) stated this was because the business had to ‘top up’ the funding considerably and that they did not believe the funding was in line with market conditions.

“The salary for the Associate could be better to meet market conditions.”

“The knowledge base has to subsidise the Associate’s salary substantially.”

“The business needed to provide a top up to the Associates salary.”

KTP Academic Respondents

4.10 Focus of the KTP project³³

Just under half (48%, N=48) of business respondents indicated that the focus of their KTP project was to develop new products, whilst two fifths (40%, N=48) was on introducing a new process/ way of doing things in their business.

Similar to the feedback from businesses, almost three fifths (59%, N=58) of academic respondents indicated that the focus of their KTP project was to develop new products, whilst over half (53%, N=58) was on introducing a new process/ way of doing things to the business.

³³ Please note, respondents were able to select more than one answer in relation to the focus of their KTP Project.

Half (50%, N=46) of the associate respondents indicated that the focus of their KTP project was to develop new products, whilst a third (33%, N=46) was on the introduction of new processes.

Focus of the KTP project			
	Businesses (N=48)	Academics (N=58)	Associates (N=46)
To develop new products	48%	59%	50%
To improve existing products	13%	29%	22%
To introduce a new process/ way of doing things into your business	40%	53%	33%
To improve an existing process	31%	28%	26%
To develop new services	25%	33%	22%
To improve existing services	4%	14%	11%

4.11 KTP Handbook for Supervisors and Associates

At the outset of a KTP Project, a business and its KTP Academic would have both received a KTP Management Handbook for Supervisors (better known as the Supervisors Handbook). Encouragingly, nearly all (91%, N=43) of the business, and a similar proportion (91%, N=47) of academic respondents, either strongly agreed or agreed that the handbook provided them with appropriate guidance on good practice in terms of managing their project.

“The handbook is very good and I initially used it a great deal.”

“I already knew everything in relation to how the KTP process works although it was useful to have the handbook there if I needed it.”

“I use the handbook a lot to see what is needed in regards to project monitoring.”

“In my view, the handbook is a good starting point for new Programme participants.”

“The handbook was invaluable as it explained the KTP process in great detail.”

“I do not use the handbook often but it was useful for any queries that I had.”

KTP Business Respondents

Likewise, an Associate would have received a KTP Associate Handbook. Encouragingly, nearly all (98%, N=45) of the respondents either strongly agreed or agreed that the handbook provided them with appropriate guidance on good practice in terms of managing their Project.

4.12 Support to address issues within the KTP project

When issues arose within their KTP Project, businesses may have availed of support (e.g. via email, telephone etc.) offered by the KTP Adviser and/ or the KTP Academic.

4.12.1 Support from the KTP Adviser

Just under two thirds (61%, N=44) of business respondents received support from their KTP Adviser to address issues within their KTP project. Positively, all (100%, N=27) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Just under three quarters (74%, N=47) of academic respondents received support from their KTP Adviser to address issues within their project. Similar to the feedback from businesses, all (100%, N=35) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

Almost two thirds (62%, N=45) of associate respondents indicated they had received support from the KTP Adviser to address issues relating to their KTP project. All (100%, N=28) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

4.12.2 Support from the Academic

Almost three quarters (73%, N=44) of the business respondents received support from the Academic to address issues within their KTP project. Positively, all (100%, N=32) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

“The Academic has provided us with technical help to address issues with our project.”

“The Academic was very useful for advice and guidance.”

“Our business was provided with good advice, especially from the Academics. They had a good focus on the project.”

“The Academic provided particularly good advice to address issues we were having.”

“The support we received was vitally important as it was way outside our skill set.”

“Regular support was provided on any issues we had.”

“The support and advice from our Academic helped us to address technical issues and provided them with a real world application of their knowledge.”

“All parties were always reachable if there was a problem with our project.”

“The partnership would discuss any issues after the LMC meetings. This was helpful.”

KTP Business Respondents

4.12.3 Support from the Business Supervisor

Most (83%, N=47) of the academic respondents received support from the Business Supervisor to address issues within the project. Positively, all (100%, N=39) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

“Any project issues were discussed at the LMC meetings to find a resolution.”

“The help that is available to resolve project issues - it the key benefit of the KTP Programme.”

“The partnership meets quarterly to address issues, but this can be more often if required.”

“The KTP Adviser helps with issues in the KTP process and the Business Supervisor helps with technical issues in the project.”

KTP Academic Respondents

4.13 Administrative support received from the KTP Office

Throughout the duration of a KTP Project, partners can avail of various types of administrative support (e.g. assistance with grant claims, HR Activities, payroll functions etc.) from the KTP Office.

Four fifths (80%, N=44) of business respondents and almost all (98%, N=47) of academic respondents indicated that they received support through this source. All (100%, N=81) of those respondents were either ‘very satisfied’ or ‘satisfied’ with the support received.

"The KTP Office has helped compile the minutes from the LMC meetings."

"The KTP Office has been great in helping us with the procurement of equipment."

"Both the KTP Adviser and KTP Office have helped with various documentation relating to our project budget."

"The KTP Adviser and KTP Office make sure we stay in budget for this project."

"Administrative activities such as training and support, transferring budget etc. were handled by both the KTP Adviser and the KTP Office."

"The KTP Office has taken control of the administration process."

"The KTP Office has sent us templates of the forms that needed to be completed."

"Our grant claim forms were handled by the KTP Adviser and KTP Office."

KTP Business & Academic Respondents

4.14 Support or advice received to review and modify an Associate work plan

During the early stages of their KTP Project, Associates would have been required to review and modify a work plan in conjunction with their KTP Adviser, their Business Supervisor and their designated KTP Academic.

4.14.1 Support from the KTP Adviser

The majority of Associates (80%, N=45) received support from the KTP Adviser when reviewing and modifying the work plan for the KTP project. Positively, all (100%, N=36) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

4.14.2 Support from the Business Supervisor

Nearly all (91%, N=45) of associates respondents indicated they had received support from the Business Supervisor within the company when reviewing and modifying a work plan for their KTP project. Similar to the findings relating to the support from the KTP Adviser, all (100%, N=41) respondents indicated they were either 'very satisfied' or 'satisfied' with the support.

4.14.3 Support from the Academic

Nearly all (89%, N=45) of respondents indicated they had received support from the Academic when reviewing and modifying a work plan for their KTP project. Positively, all (100%, N=40) of those respondents were either 'very satisfied' or 'satisfied' with the support received.

"I had regular meetings with the various parties and there was good support provided from each at those meetings to develop a work plan for the KTP project."

"The contacts were always readily available to provide support which was suitable and appropriate."

"We had meetings once a week with all parties until the work plan was developed. It was good to have that support and push there."

KTP Associate Respondents

4.15 Businesses' views on the Performance of the Academic and Associate

Appendix IX provides detailed analysis on businesses' reported views on the performance of the KTP Academic and Associate during their KTP Project. Having reviewed and analysed the feedback provided, the Evaluation Team is of the view that the performance of both the Academics and Associates was of a high standard during the period under review, although there are *some* notable points of recommendation. This is reflected in the comments below:

"The Academic promotes our business and is very enthusiastic about the project."

"There are 2 Academics who work on our project and they are both extremely experienced in this field of work."

"The Academic has helped to provide us with a strong link to the University."

"The Academic is very committed and dedicates time to the project. They are working very hard on the project."

"The support from the Academic was good and they opened up avenues to further collaboration with the University which was great."

"The academic was on-site a lot and it was good to have them present in the business. They spent a lot of time supporting the Associate, keeping the business up to date on progress and making sure everyone in partnership approves of any changes in the project."

"The Academic has a lot of new ideas and different approaches to processes in the business"

KTP Business Respondents

"Our Associate seems very experienced and eager to learn but they are still getting to grips with the commercial aspects."

"The Associate is essential to making improvements in the project and has developed the project above and beyond what we expected."

"The Associate has not looked at the wider business needs and to be honest we needed an Associate of a higher calibre."

"The Associate's previous real world work experience was very useful, and the fact that they are a mature student brought a lot to our business."

"Initially the Associate was 'OK' but it all went downhill. The Associate had a weak work ethic, did not try to resolve issues and had no drive to push forward."

"The Associate lacked industry knowledge and knowledge of business needs. Overall they were not very well suited to the project and there was a language barrier as the Associate's level of English was not satisfactory."

"More support is needed and is currently ongoing. The Associate has really taken the project on board with little supervision and does what is needed without interfering with the day-to-day business."

"At the interview, our Associate promoted himself to be of a very high standard but unfortunately this was not the case and he struggled to understand the project."

"The Associate is lacking knowledge and lacks the drive to push the project forward. They have not taken ownership of their project, and although the support has been provided to them, they are not paying attention or taking it on board."

KTP Business Respondents

Notwithstanding the above, the following is of note:

- Analysis of the survey results indicates that one respondent expressed their view that the Academic is unable to appropriately monitor progress towards any key performance indicators, milestone and priorities for growth, and that they were unable to transfer knowledge and expertise appropriately to their business. It was cited that *“the current KTP Academic is technically good but his business application is weak”*.
- Over a third (35%, N=31) of the respondents with ‘live’ KTP Projects indicated that the KTP Associates did not have a high level of commercial awareness. In many instances, it was suggested that this was due to the fact that the Associates were relatively new to the ‘world of work’ and, in certain circumstances, new to the specific sector or subject area within which the business operates. Encouragingly, it was suggested by business respondents that they were keen to provide assistance to their KTP Associate on this aspect throughout the duration of their project.

4.16 Academics’ views on the Performance of the Business Supervisor and Associate

Appendix X provides detailed analysis on academics’ reported views on the performance of the KTP Business Supervisor and Associate during their KTP Project. Having reviewed and analysed the feedback provided, the Evaluation Team is of the view that the performance of both the Business Supervisor and Associates was of a high standard during the period under review. This is reflected in the comments below:

“The Business Supervisor was very committed to the project.”

“The Business Supervisor is a perfectionist and expected that level of finish and detail with the project.”

“They were very knowledgeable about product development which proved to be of great benefit.”

“The supervisor had previous experience in another role which was extremely beneficial.”

“The supervisor helped with non-engineering advice and helped to push the Associate in the right direction.”

“The Business Supervisor is very focused on the business’ needs and requirements.”

“The Supervisor has previous experience with KTP projects which has helped greatly.”

“The Business Supervisor’s commitment to the Associate is outstanding.”

“The Business Supervisor is customer focused and driven to innovate.”

“The Business Supervisor has a great working relationship with the partnership which is sustained through regular meetings.”

“The Business Supervisor has been great and recognised that their small business needs help from myself and other Academics.”

“They are great overall and he shares non-commercial business information with me and the other Academics involved aiding our research.”

“The business supervisor’s vision of the project was paramount to the success so far.”

“Business supervisor is very experienced but does not have time to dedicate to the project.”

“The business supervisor’s patience has been key to the success of the project.”

KTP Academic Respondents

“The Associate’s expertise as a geologist has been greatly beneficial to the project.”

“The Associate has a wealth of expertise and the partnership has progress meetings weekly to identify areas for improvement and provide feedback to progress.”

“The Associate was recruited after the establishment of the KPIs and progress meetings are attended weekly.”

“The Associate has a specific skill set which is very appropriate to the project.”

“The Associate was very shy when he started but has been building his confidence ever since.”

“The Associate is of a very high calibre and has been a great asset to the business.”

“The Associate produced and presented a PowerPoint on the business needs to the project Academics and it was brilliant.”

“Delivery of outputs on behalf of the Associate has been crucial to the success of the project.”

“The Associate won an award for Young Business Associate of the Year at the KTP Awards in London.”

“The Associate had an engineering background and had adapted well. They gained a lot of knowledge throughout their experience in the business.”

KTP Academic Respondents

Notwithstanding the above, the following is of note:

- Analysis of the survey results indicates that the three respondents (8%, N=37) with ‘live’ KTP Projects expressed their views that the Business Supervisor was unable to ensure the Associate’s time was dedicated to the KTP Project (rather than non KTP Project work). One respondent cited that *“the Business Supervisor has provided advice and guidance on the industry which has helped with this project and other KTP projects although though he does make the Associate work on non-KTP projects quite a lot”*.
- Similar to the feedback provided by businesses, 17% (N=36) of respondents with ‘live’ KTP Projects noted that the Associates did not have a high level of commercial awareness.

4.17 Associates’ views on the Performance of the Business Supervisor and Academic

Appendix XI provides detailed analysis on associates’ reported views on the performance of the KTP Business Supervisor and Academic during their KTP Project. Having reviewed and analysed the feedback provided, the Evaluation Team is of the view that the performance of both the Business Supervisor and Associates was of a high standard during the period under review. This is reflected in the comments below:

“The business is very small and the weekly meetings proved beneficial. The Business Supervisor is very enthusiastic about the KTP project.”

“The Business Supervisor pushed me to spend 50% of my time on the KTP project and 50% on other business work.”

“The Business Supervisor ensured that 100% of my time was dedicated to the KTP project and this was key to the project’s success.”

“The Business Supervisor was co-operative, informative and helpful all around. They pushed me in the right direction in regards to project targets and my own development.”

“The Business Supervisor has accepted that the KTP project may change the businesses priorities and that has been a big step for the business.”

KTP Associate Respondents

Those respondents who indicated levels of dissatisfaction with the various statements about the Business Supervisor suggested the following reasons:

“The Business Supervisor did not seem invested in the project, as it was not actively making the business money and I found myself working more on non-KTP work.”

“The Business Supervisor had a disjointed focus on the daily work and the KTP project. They had no interest in the KTP project.”

“The work environment was fast paced and ever changing, and the focus on the KTP project was lost at times as day-to-day work took over.”

KTP Associate Respondents

“The Academic is a very good specialist, has a great scientific knowledge, is always available and is ready to help.”

“The Academic had provided me with a lot of help in regards to technical knowledge and what training courses to attend to make the most of the experience.”

“The Academic has very good contacts within the knowledge base and is at the forefront of his field.”

“The Academic was involved, optimistic and flexible in the approach to the project.”

“He (the Academic) was very good for technical help and was dedicated to helping me with the project. He pointed out new avenues for skills development and provided me with training opportunities.”

KTP Associate Respondents

Those respondents who indicated levels of dissatisfaction with the various statements about the Academic suggested the following reasons:

“The Academic had a good technical knowledge but was lacking in real world experience in regards to what the business needed.”

“The Academic only visited the project once every few months and was not available by phone.”

“The Academic did not spend a lot of time on the project or with me.”

KTP Associate Respondents

4.18 Readiness of the KTP Associate

In terms of the readiness of the KTP Associate, the following indicated that the Associate was able to ‘hit the ground running’ in terms of implementing their project within the business:

- Just over half (52%, N=44) of business respondents;
- Just over two thirds (68%, N=47) of academic respondents; and
- Just over half (56%, N=45) of associates respondents.

“It took some time but this was appropriate given it was a very unique project.”

“Their high level of expertise helped the Associate get started straight away.”

“It took a couple of weeks to implement the project but this is what we had expected.”

“Due to the complexity of the project it took them a few weeks but this was acceptable.”

“Four weeks were required but this was not the Associates fault as we had other priorities.”

“Our project was in a new field for both ourselves and the Associate and as result it took around a month to

get started.”

“The process took around 6 weeks as the Associate had to learn about both the product and the company.”

“Around 3 months were required for the Associate to get used to the business.”

“The Associate ‘hit the ground running’ in most aspects of the project.”

“They (the Associate) adapted very quickly to the project and the business.”

“It took a couple of weeks for the Associate to settle in as he was trying to understand the language.”

“It took 2 weeks as the Associate was held up by a trial period for the product/service which had been ongoing.”

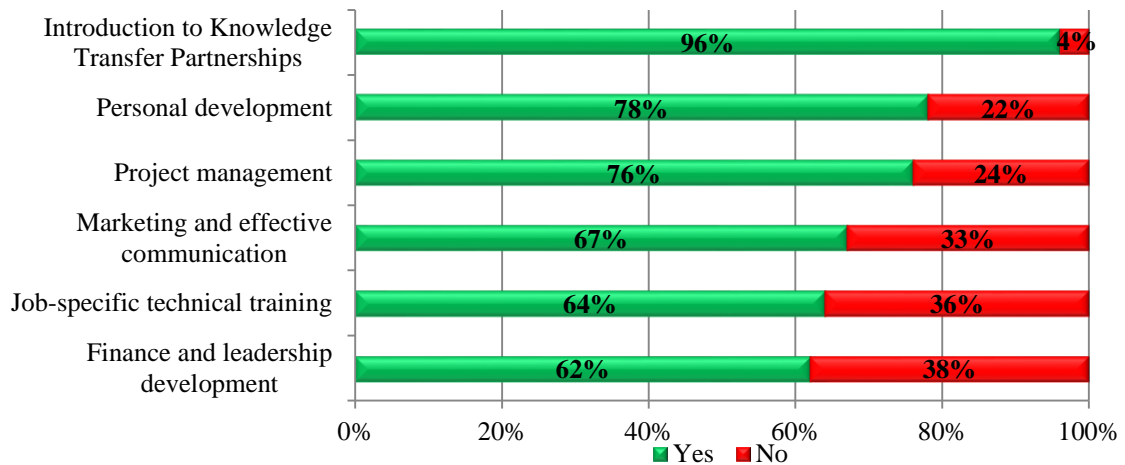
“It took 2 weeks due to the Associate having no previous work experience in a similar field.”

KTP Business & Academic Respondents

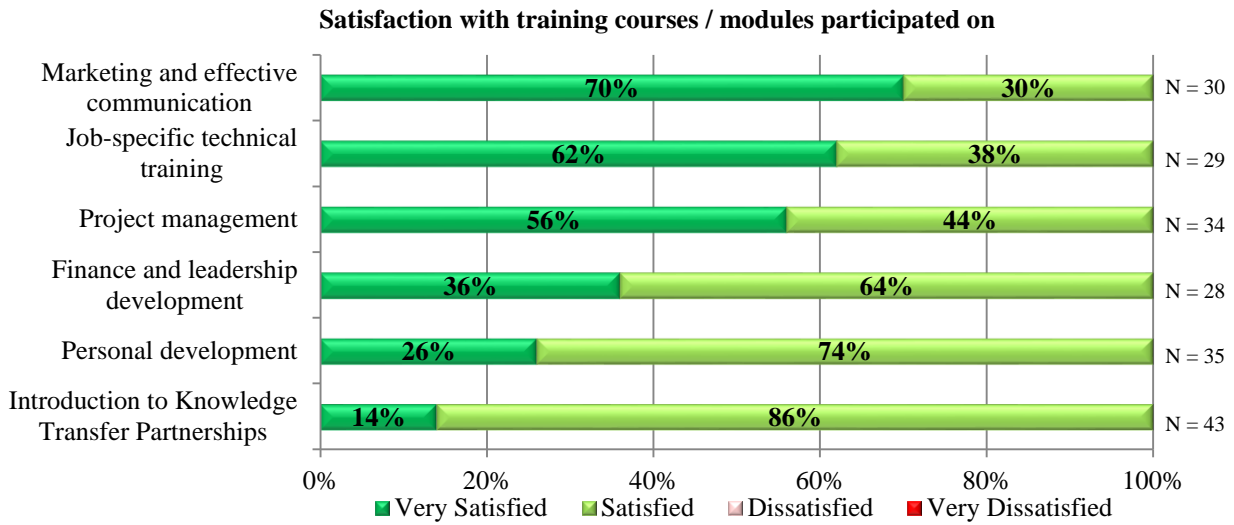
4.19 Associate Training

During the early stages of their KTP Project, the Associate undertakes a number of training courses/ modules. In addition, the Associate has access to a wide range of management topics through an online based learning support system. The following diagrams depict the overall level of participation amongst associates in the various training courses/ modules that were available under the KTP Programme.

Participation in training courses / modules (N=45)



Positively, all of the Associates that participated in the various training courses/ modules indicated they were either ‘very satisfied’ or ‘satisfied’ with that course/ module.



Of those respondents who had completed any aspect of the training, the following was cited:

“The courses were pretty effective and useful – even though the website crashed while trying to complete online modules.”

“I completed the online modules but no job specific training as I am very focused on the project itself rather than personal development.”

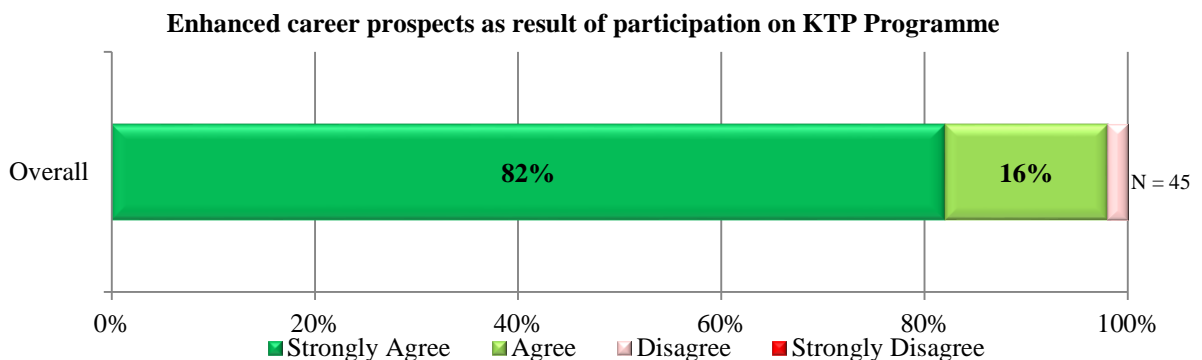
“The training provided offered a good base of knowledge in a variety of areas. The management residential was also fantastic and the facilities were great.”

KTP Associate Respondents

Of note, almost all (94%, N=45) of the associate respondents agreed that there was/ is sufficient training and development provided to them as part of their KTP Project. Furthermore, all (100%, N=45) of the associate respondents indicated that the KTP project provided them with a challenging learning experience appropriate to their background and aspirations, with most (89%, N=45) indicating they agreed that a clear training and development plan was developed that was appropriate to the requirements of the KTP project.

4.20 Associates’ enhanced career prospects

Positively, almost all (98%, N=45) of the associate respondents indicated that their participation on the KTP Programme has enhanced their future employment prospects.



“The KTP Programme has 100% improved my employment prospects.”

“I was provided with lots of personal development, management skills and technical training which are useful for advancing my career.”

“New skills, personal development etc. The structured scheme really enabled rapid growth.”

“My skills and technical awareness have been raised along with gaining general industry experience.”

“The Programme has provided me with a good basis and stepping stone for my career.”

“The Programme is very good for linking academia to industry and providing the necessary support to do so.”

KTP Associate Respondents

4.21 Views on the effectiveness of the support provided through the KTP Programme

Almost all (96%, N=44) of the business respondents and all (100%, N=47) of the academic respondents suggested that the support provided through the KTP Programme was either ‘very effective’ or ‘effective’ in terms of addressing the knowledge, technology and skills gaps within the business.

Almost all (96%, N=45) of the associate respondents suggested that the support provided through the KTP Programme was either ‘very effective’ or ‘effective’ in terms of enabling them to complete their KTP Project.

How effective was the support in terms of addressing your needs?				
	Very Effective	Effective	Not Very Effective	Not At All Effective
Businesses (N=44)	46%	48%	4%	2%
Academics (N=47)	55%	45%	0%	0%
Associates (N=45)	47%	49%	4%	0%

“The Programme helped us to push forward with business development.”

“We acquired new expertise to fill the skills gaps within our business.”

“Overall, there was good support provided and appropriate knowledge was transferred from the various parties.”

“The support has expanded and improved our employee skill base, and more employees will continue to be up skilled from this indirectly.”

“We could not have carried out this project without the KTP Programme. We did not have the engineering or IT skills and the support provided allowed us to plug those skills gaps.”

“The support addressed the knowledge gaps within the business very well”

KTP Business Respondents

“The support helped the research Programme gain more insight into industry.”

“The Programme helped our University develop increased and improved links to industrial contacts.”

“KTP has helped Academics keep up to date with industry advances.”

“Overall, there was effective support as it helped to develop industry experience of the department in our University.”

“The support and engagement overall has helped to improve our research into industry needs.”

“There has already been discussion regarding the implementation of the project research to teaching plans.”

“Links to Industry are important in Academia and the KTP Programme provides an opportunity for this.”

KTP Academic Respondents

4.22 Reasons for Project Withdrawing

4.22.1 Views from Businesses

Six of the business respondents stated that their business had withdrawn their KTP Project. One of those business respondents indicated that their project was withdrawn due to a change in their business priorities, whilst the remaining five respondents suggested various ‘other’ reasons:

“Our Associate decided he could not do the project so we had to withdraw the project.”

“We had to cancel the project as our business went into administration.”

“We realised after we got approval for our application that there was no market for the product we proposed to build.”

“Our product was being developed for a specific facility which ultimately was not constructed. Our project was solely reliant on the development of this facility and it therefore had to be withdrawn.”

“Our business was bought over by another business and the project was subsequently shelved.”

KTP Business Respondents

Overall, five of the respondents stated that they had not taken forward/ completed their project (as proposed in the application) in any form, with these businesses suggesting that the project idea was no longer of strategic importance to their business and that they had other business priorities.

4.22.2 Views from Academics³⁴

Eleven of the academic respondents stated that their project had been withdrawn after authorisation, whilst a further four respondents withdrew either in the early or very early stages of their KTP Project. Four respondents stated that their project was withdrawn as they were unable to recruit an Associate, whilst two stated their projects were withdrawn due to a change in the business’ priorities. Those respondents who indicated that there was an ‘other’ reason for withdrawing their project cited the following:

³⁴ Please note, the views expressed by academics relating to why their KTP Project was withdrawn may differ to those views expressed by businesses as per above (given that the business and academic respondents’ to the Evaluation Team’s survey were not necessarily discussing the same projects, and in turn expressing the same views on why their project was withdrawn).

“The business suggested that the KTP Programme was too restrictive and subsequently withdrew.”

“The project was solely reliant on the provision of a new facility. For a variety of reasons this facility was scrapped and so there was no need to take the project forward.”

“The owner passed away and the business split into several different businesses.”

“The business was taken over by another company and the project was shelved.”

“The business was sold to a larger company and priorities changed.”

“The business hired an external consultant to undertake the work.”

“It was recognised that the project idea was no longer feasible and the project ceased.”

“The Associate left 6 months into the project and the business did not want to recruit another.”

“The Associate left 3 months into the project and was not replaced. The business did not want to go through that process.”

KTP Academic Respondents

4.23 Overall satisfaction with the KTP Programme

At an overall level, there were reported to be high levels of satisfaction amongst businesses, academics and associates. Encouragingly, the following is noted:

- Almost all (96%, N=48) of the business respondents indicated that they would recommend the KTP Programme to other businesses who are in need of external knowledge, technology and skills to address a specific issues within their business.
- All (100%, N=58) of academic respondents indicated that they would recommend the KTP Programme to other academics who are in interested in applying their knowledge and expertise to address an issue within a business.
- All (100%, N=45) of associate respondents would recommend the KTP Programme to other graduates.

“The Programme is very useful for developing links with academia.”

“The project runs alongside daily business activities with no disruption to day-to-day work.”

“The overall package is great, and the networking has opened up the market for us.”

“Founding partnerships with academia proved to be the best part of the Programme.”

“The Programme gives a good grounding to find new skills. Also, having the knowledge base backing up the business is beneficial.”

“The Programme provides a good method of transferring knowledge and the Associates can contribute to the business a great deal.”

“The support addresses a business’s specific skill shortages and is particularly helpful regarding technical business roles.”

“It (the Programme) gives businesses the chance to gain an employee with good expertise in a particular field.”

KTP Business Respondents

4.24 Recommendations

Notwithstanding the high levels of satisfaction, respondents made the following recommendations:

“The Programme can be too much of an administrative burden and this could be reduced.”

“There is a need to attract higher calibre Associates from Northern Ireland, as most candidates seem to come from England or further afield.”

“Funding applications should be reviewed for larger businesses with more funding provided to them.”

“In regards to the Final report - the Academic has final say on the report but I believe the industrial supervisor should have had the control. Also, if the business has completed more than 3 KTP projects, funding is reduced which is a deterrent to businesses’ seeking this support.”

“We are involved in fast software development projects and needs change constantly which did not sit easily with the fixed term nature of the KTP Programme. At most stages throughout the project, I did not feel the knowledge base was offering much insight into things we did not already know about and certainly did not understand what sort of product is required in a consulting environment.”

“If the marketing materials contained more details of the Programme, it would assist businesses to understand it more in terms of what it entails and how it can be of benefit.”

“The Associate roles need to be advertised as an industry role (as opposed to an Academic) as the Associates become confused at the interview stage for the job.”

“The application was quite cumbersome and there are few local Associates applying. Also, a wider audience could be achieved through greater promotion and the FE Colleges would be better suited as a knowledge base rather than the Universities.”

“Only advertise KTP to SMEs as it is not suitable for larger businesses. Also, the KTP structure needs to be less restrictive and there is too much paperwork required to complete a project.”

KTP Business Respondents

Please note, further details on the recommendations highlighted by Academics and Associates are included in Appendices IX to XII.

5. IMPACT OF THE KTP PROGRAMME

5.1 Introduction

Section 5 considers the impact to date of the KTP Programme on businesses, academics and associates (please note, further detailed analysis is included in Appendices IX to XII)³⁵. This section also provides high-level details of, and commentary on, the impacts and outturns reported by Innovate UK, which is based on those results reported by KTP Partnerships' in their Post Project Completion (PPC) reports. This section also presents a high-level analysis of PPC reports for those KTP projects that have been completed in Northern Ireland during the period under review.

Similar to the preceding Sections of this report, where possible, the Evaluation Team has presented impacts across the two time periods within the period of the evaluation.

In considering the impact of the KTP Programme on its participants, as featured in this section of the report, the reader should be mindful that **this interim evaluation report represents only an intermediate position of the KTP Programme's potential ultimate impact**. By way of illustration, at the time of being consulted for this evaluation report (March 2015), many of the Programme participants were either involved in 'live' or active KTP Projects, or had been involved in projects that had been withdrawn at various stages³⁶. It is notable that, at this stage, those involved in 'live' or active KTP Projects have yet to experience the full range of impacts associated with the KTP Programme. Furthermore, given the timing of this interim evaluation, few KTP Projects (across the period two in particular) have reached their formal end date (i.e. categorised as finished), resulting in a small cohort of businesses that could potentially report on quantifiable and/ or qualitative impacts as a result of the KTP Programme.

5.2 Activity Deadweight/ Additionality

The net impact of the KTP Programme (i.e. its additionality) relates to:

- **Businesses'** decision to proceed with their project (as proposed within their KTP application);
- **Academics'** decision to engage in similar activities to improve the development of their Knowledge Base's teaching capabilities, its research programme and contribute to knowledge transfer between academia and industry;
- **Associates'** decision to engage in similar activities to develop their specialist skills and to enhance their career aspirations; or
- Where relevant, to undertake these activities to a similar scale and/or within a similar timescale.

The above can only be measured after making allowances for what would have happened in the absence of the support. That is, the support must allow for deadweight. 'Deadweight' refers to activity that would have occurred without the intervention i.e. the KTP Programme.

Appendices IX to XII provide a detailed overview of the Evaluation Team's deadweight/ additionality calculations for each of the KTP Programme participants (i.e. businesses, academics and associates). However, in summary, the Evaluation Team has calculated levels of activity deadweight using a 'participant self-assessment' methodology. The methodology utilises a series of questions³⁷ within the

³⁵ The number of questions that respondents will have provided feedback on will have varied depending on the status of their KTP Project and on the nature of support that they have received to date. As such, the number of respondents (N) will differ between questions.

³⁶ Please note, further details on the number of survey respondents (i.e. businesses, academics and associates) involved in those KTP Projects categorised as 'active', 'finished' and 'withdrawn' are included in Appendices IX to XII.

³⁷ In-line with DETI guidance, these questions focused on identifying the likelihood that the business would have undertaken the project as proposed within their KTP application, what scale of activities would have been undertaken in the absence of support (if relevant) and how much later would the activities would be undertaken (if relevant).

participant survey and assigns weightings (agreed in conjunction with DETI’s Economist Team) to the individual responses.

The questions sought to ascertain respondents’ views on the impact that the receipt of the support received through the KTP Programme had on their decision to take forward their project (as proposed within their KTP application) or to engage in similar activities. Options included:

- Whether they would have taken forward the project/ activities at all;
- Whether they would have taken forward the project/ activities but on a reduced scale;
- Whether they would have taken forward the project/ activities, but at a later date;
- Whether they would have taken forward the project/ activities but on a reduced scale and at a later date; and
- Whether they would have taken forward the project/ activities at the same scale and within the timescale regardless of the KTP Programme.

Depending on the response provided, a level of additionality/ deadweight was applied. For example, a respondent who indicated that they definitely would not have taken forward their project/ activities in the absence of the KTP Programme would have been assigned a level of 100% additionality (i.e. full additionality). Conversely, a respondent who indicated that they definitely would have taken forward their project/ activities within the same timescale regardless of the KTP Programme would have been assigned a level of 100% deadweight (i.e. no additionality). Other responses were given a weighting somewhere between these two extremes (i.e. a level of partial additionality/ deadweight).

The outcomes of the analysis are provided below:

Activity Additionality/ deadweight³⁸		
	Deadweight	Additionality
Businesses (N=45)	45%	55%
Academics (N=47)	25%	75%
Associates (N=45)	46%	54%

It is the Evaluation Team’s view that the calculated levels of activity additionality should be viewed positively.

5.3 Nature and Extent of Market Failure

This section examines the factors that would have prevented businesses from proceeding with their project (as proposed within their KTP application) or proceeding with it in the same manner (i.e. at the same scale or in the same timescale) independent of the support provided through the KTP Programme. In doing so the analysis utilises a methodology agreed in conjunction with DETI and Invest NI to quantify the nature and extent of market failure³⁹.

Based on the survey responses, the factors that would have prevented businesses from proceeding with their project or undertaking it within the same manner (in terms of scale or timescale) included:

³⁸ By way of maintaining the validity of responses, this question was only asked to businesses, academics and associates that took part in the telephone consultations.

³⁹ Given the fact that the analysis seeks to examine the factors that would have prevented businesses from undertaking their project (as proposed within their KTP application) or undertaking them in the same manner (i.e. at the same scale or in the same timescale) independent of the support provided through the KTP Programme, the analysis is intrinsically linked to the activity additionality/deadweight analysis detailed previously.

Factors preventing businesses from undertaking their project that was supported by the KTP Programme, or undertaking them in the same manner⁴⁰			
	10-12 (N=6)	12-14 (N=30)	Overall (N=36)
Project was perceived to be too complex/ difficult to take on without support	-	43%	36%
Project was too risky to take on without support	-	27%	22%
Without knowing more about the potential benefits, you would not have considered undertaking the project as proposed in your application	17%	13%	14%
You lacked the knowledge, technology or skills that would be required to develop and implement the project	67%	77%	75%
You were not aware of external expertise that could offer the support required to address your needs	67%	50%	53%
You could not have afforded the external expertise to provide the support required	67%	60%	61%
You would have been unwilling to fully fund the external expertise to provide the support required	17%	20%	19%

Based on these findings, the Evaluation Team was able to undertake an analysis of the degree to which market failure played a role in a business' decision not to undertake the project (as proposed within the KTP application) independently of receiving support through the KTP Programme. This analysis involved categorising businesses' motives for participation based on:

- **No Market failure** - The business felt that they 'would have undertaken their project anyway' or stated that they would not have undertaken the activity in the absence of the KTP Programme due to the fact that the business would not have been able to afford to undertake the activities without financial support.
- **Partial Market failure** - The businesses' decision to participate was due to **both** non-market failure and market failure factors. That is to say, they would not have engaged in the activities, or would have engaged in them in a different manner, because they:

- Could not afford to undertake their project activities without financial support (not a market failure); **and**
- Project was perceived to be too complex/ difficult to take on without support (market failure – risk aversion due to asymmetric information); and/ or
- Project was too risky to take on without financial support (market failure – risk aversion due to asymmetric information); and/ or
- Without knowing more about the potential benefits, businesses would not have considered undertaking the project as proposed in their application (market failure – asymmetric information); and/ or
- The business lacked the knowledge, technology or skills that would be required to develop and implement the project (market failure – asymmetric information); and/ or
- The business was not aware of external expertise that could offer the support required to address their needs (market failure – asymmetric information).

- **Full Market Failure** - The businesses' decision to participate was solely due to market failure factors (asymmetric information) i.e.:

- Project was perceived to be too complex/ difficult to take on without support (market failure – risk aversion due to asymmetric information); and/ or
- Project was too risky to take on without financial support (market failure – risk aversion due to asymmetric information); and/ or
- Without knowing more about the potential benefits, businesses would not have considered

⁴⁰ Please note, 9 of the respondents (20%, N=45) suggested that they would have undertaken the activity without the support provided through the KTP Programme (i.e. not additional and therefore no market failure). As such, the sample size for the market failure analysis is N=36.

- undertaking the project as proposed in their application (market failure – asymmetric information); and/ or
- The business lacked the knowledge, technology or skills that would be required to develop and implement the project (market failure – asymmetric information); and/ or
- The business was not aware of external expertise that could offer the support required to address their needs (market failure – asymmetric information).

The results of this analysis are presented in the table below:

Impact of Market Failure			
	10-12 (N=9)	12-14 (N=36)	Overall (N=45)
Full Market Failure	22%	28%	27%
Partial Market Failure	22%	47%	42%
No Market Failure	56%	25%	31% ⁴¹

In summary, the analysis indicates that over two thirds (69%, N=45) of the respondents indicated that they would not have proceeded with their project, or would not have undertaken their project to the same scale and/or within the same timescale, due to either ‘full’ (27%) or ‘partial’ (42%) market failure factors primarily relating to asymmetric information.

⁴¹ Please note, this includes those 9 individuals that stated they would have undertaken the activity without the support provided through the KTP Programme (i.e. not additional and therefore no market failure).

5.4 Outputs Derived

The following table provides details of the reported outputs derived by businesses, academics and associates (across both time periods) as a result of the support provided through the KTP Programme:

Outputs derived as a result of the support provided through the KTP Programme									
	Businesses ⁴²			Academics ⁴³			Associates ⁴⁴		
	10-12 (N=7)	12-14 (N=36)	10-14 (N=43)	10-12 (N=6)	12-14 (N=41)	10-14 (N=47)	10-12 (N=8)	12-14 (N=37)	10-14 (N=45)
Development of new processes	43%	31%	33%	67%	46%	49%	63%	32%	38%
Development of new services	14%	6%	7%	-	29%	26%	-	30%	24%
Development of new products	71%	42%	47%	33%	49%	47%	50%	35%	38%
Establishment of an Intellectual Property Rights (IPR) Agreement	86%	14%	26%	17%	24%	23%	50%	24%	29%
Re-organised production facilities	29%	33%	33%	50%	51%	51%	75%	35%	42%
Resolution of technical problems	43%	56%	53%	83%	83%	83%	100%	81%	84%
Adaption of existing products or services	86%	31%	40%	33%	63%	60%	38%	46%	44%
Adaption of existing processes	43%	50%	49%	67%	46%	49%	63%	41%	44%
Development and implementation of a marketing strategy to enter new markets	57%	22%	28%	67%	37%	40%	50%	43%	44%
Other	-	8%	7%	-	-	-	-	-	-

The most common outputs derived to date as a result of the support provided through the KTP Programme are:

- **Businesses:** Resolution of technical problems (53%, N=43); adaption of existing processes (49%, N=43); and the development of new products (47%, N=43).
- **Academics:** Resolution of technical problems (83%, N=47); and the adaption of existing products or services (60%, N=47).
- **Associates:** Resolution of technical problems (84%, N=45); and the adaption of existing processes, products or services (44%, N=45).

⁴² Please note, 4 out of 49 respondent's projects were categorised as 'withdrawn after authorisation' and therefore did not respond to this question. Also, 1 respondent was unable to comment on the project outputs, whilst 1 respondent (of the 2 projects which were withdrawn early or very early) had withdrawn before any outputs could be derived.

⁴³ Please note, 11 out of 58 respondent's projects were categorised as 'withdrawn after authorisation' and therefore did not respond to this question.

⁴⁴ Please note, 1 out of 46 respondents' projects were categorised as 'withdrawn after authorisation' and therefore did not respond to this question.

5.5 Achievement of Impacts

5.5.1 Overview

The following table provides details on whether businesses, academics and associates have, to date, derived any impacts/ outcomes as a result of the outputs delivered by their KTP project⁴⁵:

Achievement of impacts/ outcomes as a result of the outputs delivered by the KTP project									
	Businesses ⁴⁶			Academics ⁴⁷			Associates ⁴⁸		
	10-12 (N=9)	12-14 (N=36)	Overall (N=45)	10-12 (N=6)	12-14 (N=41)	Overall (N=47)	10-12 (N=8)	12-14 (N=37)	Overall (N=45)
Yes	6	8	14	4	13	17	8	31	39
No – although there is potential for your business to derive impacts/ benefits in the future	-	28	28	-	26	26	-	6	6
No – there is no possibility for your business to any derive impacts/ benefits in the future	3	-	3	2	2	4	-	-	-

- **Businesses:** Not surprisingly, given the number of ‘live’ KTP Projects that were surveyed (73%, N=45), 28 respondents (62%, N=45) suggested that they are yet to derive impacts as a result of the outputs delivered by their KTP Project. Encouragingly though, they reported that there is potential for them to derive impacts/ benefits in the future. Of the 28 respondents, 21 (75%, N=28) stated that it was too early to quantify, three (11%, N=28) expect some tangible benefits, whilst four (14%, N=28) expect significant benefits in the future. Of note, only three respondents (7%, N=45) indicated that they did not achieve impacts and there was no possibility of them deriving any impacts or benefits in the future. However, it should be noted that two (of the three) respondents to this aspect of the question were involved in KTP Projects that were withdrawn.
- **Academics:** Similar to the findings from businesses, nearly two thirds (55%, N=47) of the respondents suggested that they are yet to derive impacts as a result of the outputs delivered by their KTP Project (and that it was too early for them to quantify any anticipated future benefits). Of note, only four respondents (9%, N=47) indicated that they did not achieve impacts and there was no possibility of them deriving any impacts or benefits in the future. However, it should be noted the respondents to this aspect of the question were all involved in KTP Projects that were withdrawn.
- **Associates:** Encouragingly, nearly all (87%, N=45) of the respondents reported impacts as a result of the outputs delivered by their KTP Project, with six (13%, N=45) suggesting that whilst they are yet to derive impacts, there is potential for them to be derived in the future.

⁴⁵ Please note, given the small sample sizes presented in the following table, Invest NI requested that the figures be presented (in this table only) in absolute terms rather than percentages.

⁴⁶ Please note, 4 out of 49 respondent’s projects were categorised as ‘withdrawn after authorisation’.

⁴⁷ Please note, 11 out of 58 respondent’s projects were categorised as ‘withdrawn after authorisation’.

⁴⁸ Please note, 1 out of the 46 respondent’s projects were categorised as ‘withdrawn after authorisation’.

The following subsections provide details on the impacts/ outcomes derived from businesses, academics and associates as a result of the outputs delivered by their KTP project.

5.5.2 Businesses

The following table outlines the businesses' impacts achieved as result of the KTP Programme:

Businesses' impacts achieved as result of the KTP Programme		
Impact/Outcome	2010-2014 (N=14)	
	No.	%
Improved the skills of your workforce	14	100%
Increased your capacity to innovate	14	100%
Increased competitiveness	13	93%
Created new collaborations/ working relationships (e.g. with the Knowledge Base, other companies etc.)	9	64%
Increased expenditure on R&D	9	64%
Reduction in costs	9	64%
Increased employment (FTEs) within your business	8	57%
Impact on your business' survival	7	50%
Employment Safeguarded/Retained	5	36%
Entry into new geographic markets	4	29%
Increased turnover/ sales in NI market	4	29%
Increased turnover/ sales in GB market	4	29%
Increased turnover/ sales in export markets (outside UK)	4	29%

The salient findings from this analysis are as follows:

- On an overall basis, all (100%, N=14) of the respondents indicated their business had increased their capacity to innovate and had improved the skills of their workforce.
- Nearly all (93%, N=14) of the business respondents stated that the project had increased their business' competitiveness.
- Just under two thirds (64%, N=14) of respondents indicated they had increased their expenditure on R&D, had a reduction in costs and created new collaborations/ working relationships (e.g. with the Knowledge Base, other companies etc.).

A summary of the quantifiable impacts reported by business respondents is provided in the following subsections.

Turnover/ Sales

Of the 4 businesses that stated that they had derived an increase in turnover/ sales in each of the NI and export markets to date, 3 businesses stated that they were willing and able to quantify the impact on their annual revenue. Of the 4 businesses that stated that they had derived an increase in turnover/ sales in GB markets to date, 4 businesses stated that they were willing and able to quantify the impact on their annual revenue.

Based upon the feedback from businesses that reported that they had achieved additional turnover/ sales to date, the Evaluation Team's analysis suggests that circa £540,000 (or 12%) of the sales impacts were achieved in NI markets, circa £3.1m (or 67%) were achieved in GB markets and circa £940,000 (or 21%) were achieved in export markets (as presented in the tables overleaf). However, it should be noted that these figures are heavily skewed by one business that reported increasing their turnover/ sales (in GB markets) by circa £2.8m.

The Evaluation Team has sought to ‘gross up’⁴⁹ the derived quantified impacts associated with businesses participating on the KTP Programme by sales derived in Northern Ireland, Great Britain and Elsewhere as follows. Please note, there are inherent limitations associated with the grossing up exercise, given the small number of respondents that were able to quantify the impact of the Programme on their business. The reader should be mindful of this when interpreting the resulting findings.

‘Grossed up’ Increased Turnover/ Sales derived by participating businesses - NI Sales				
Sample	Finished 10-12	Finished 12-14	Active 12-14	Total
Number of businesses in sample	7	3	33	43
Number of businesses achieving the impact	3 (42.86%)	0	1 (3.03%)	4
Number of businesses able to quantify sales increase	2	-	1	3
Total increase in sales of those who could quantify	£260,000	-	£280,000	£540,000
Mean in sales increase	£130,000	-	£280,000	-
Median in sales increase	£130,000	-	£280,000	-
Population				
Total unique businesses	13	3	45	61
No. achieving impact	5.57 (42.86%)	0	1.36 (3.03%)	7
Total revenue	£724,100	-	£380,800	£1,104,900

‘Grossed up’ Increased Turnover/ Sales derived by participating businesses - GB Sales				
Sample	Finished 10-12	Finished 12-14	Active 12-14	Total
Number of businesses in sample	7	3	33	43
Number of businesses achieving the impact	2 (28.57%)	1 (33.33%)	1 (3.03%)	4
Number of businesses able to quantify sales increase	2	1	1	4
Total increase in sales of those who could quantify	£195,000	£2,753,000	£100,000	£3,048,000
Mean in sales increase	£97,500	£2,753,000	£100,000	-
Median in sales increase	£97,500	£2,753,000	£100,000	-
Population				
Total unique businesses	13	3	45	61
No. achieving impact	3.71 (28.57%)	1 (33.33%)	1.36 (3.03%)	6
Total revenue	£361,725	£2,753,000	£136,000	£3,250,725

‘Grossed up’ Increased Turnover/ Sales derived by participating businesses - Export Sales				
Sample	Finished 10-12	Finished 12-14	Active 12-14	Total
Number of businesses in sample	7	3	33	43
Number of businesses achieving the impact	3 (42.86%)	1 (33.33%)	0	4
Number of businesses able to quantify sales increase	2	1	0	3
Total increase in sales of those who could quantify	£210,000	£729,000	-	£939,000
Mean in sales increase	£105,000	£729,000	-	£469,500
Median in sales increase	£105,000	£729,000	-	£469,500
Population				
Total unique businesses	13	3	45	61
No. achieving impact	5.57 (42.86%)	1 (33.33%)	0	7
Total revenue	£584,850	£729,000	-	£1,313,850

⁴⁹ Analysis involving dividing the value of sales by the number of businesses able to quantify the impact and multiplying this by the total number of businesses reporting deriving further sales. Please note, in agreement with Invest NI, this ‘grossing up’ exercise has been applied to turnover/ sales and cost reductions only (considered to be the most relevant impact metrics).

'Grossed up' Increased Turnover/ Sales derived by participating businesses - Total Sales				
Sample	Finished 10-12	Finished 12-14	Active 12-14	Total
Number of businesses in sample	7	3	33	43
Total increase in sales of those who could quantify	£665,000	£3,482,000	£380,000	£4,527,000
Population				
Total unique businesses	13	3	45	61
Total revenue	£1,670,675	£3,482,000	£516,800	£5,669,475

The above analysis indicates that the KTP Programme may have contributed to the 61 (out of the 82) businesses deriving circa £5,669,475 in turnover/ sales.

Costs

Of the 9 businesses that stated they had reduced their costs to date, 8 were willing and able to quantify the impact on their annual costs. These businesses suggested that their annual costs to date had decreased by a total of circa £360,000 since receiving support through the KTP Programme (as per table below).

'Grossed up' Cost Reduction derived by participating businesses				
Sample	Finished 10-12	Finished 12-14	Active 12-14	Total
Number of businesses in sample	7	3	33	43
Number of businesses achieving the impact	3 (42.86%)	2 (66.6%)	4 (12.12%)	9
Number of businesses able to quantify cost reduction	2	2	4	8
Total cost reduction of those who could quantify	£130,000	£60,000	£170,000	£360,000
Mean in cost reduction	£65,000	£30,000	£42,500	-
Median in cost reduction	£65,000	£30,000	£25,000	-
Population				
Total unique businesses	13	3	45	61
No. achieving impact	5.57 (42.86%)	2 (66.6%)	5.45 (12.12%)	13
Total cost reduction	£362,050	£60,000	£231,625	£653,675

The Evaluation Team has sought to 'gross up' the previous results, with the resultant analysis indicating that the KTP Programme may have contributed to the 61 (out of the 82) businesses deriving circa £653,675 in cost reductions.

Expenditure on R&D

Of the 9 businesses that stated they had increased their expenditure on R&D, 8 were willing and able to quantify this impact. These businesses suggested that their expenditure on R&D had increased by a total of circa £254,000 since receiving support through the KTP Programme.

Employment

Of those respondents that have finished their KTP Project and derived impacts/ outcomes (N=9), 8 (89%, N=9) of the respondents reported that their businesses had increased their employment by a total 25 FTE employees since receiving support through the KTP Programme. The feedback from businesses indicated that 24 of these jobs (96%) had salaries in excess of the Northern Ireland median (of £18,954 during the period under review). Furthermore, 5 (56%, N=9) of those respondents that have finished their KTP Project and derived impacts/ outcomes had safeguarded/ retained 16 posts with their businesses.

Please note, the employment figures featured within this section exclude those KTP Associates that are currently completing their KTP Project and are employed by the Knowledge Base. However, the

figures do include those KTP Associates that have been offered permanent employment by the business following their participating on the KTP Programme.

Anticipated impacts

For those businesses that reported actual impacts achieved to date, they also provided an indication of the aggregate anticipated turnover/ sales, costs savings and R&D expenditure impacts that they anticipate occurring over the next four years as a result of the KTP Programme support. This is depicted in the following table (further detailed analysis on anticipated impacts across the various cohorts are included in Appendix IX). Please note, the following anticipated impacts are only captured for those businesses that reported actual impacts achieved to date⁵⁰. Encouragingly then, this does not reflect the full range of impacts/ benefits that may be derived by participants in the future.

Anticipated tangible business benefits over next four years (N=14)					
	No. of Businesses anticipating benefit		No. of Businesses able to quantify		Anticipated impact
	No.	%	No.	%	
Increased Sales:					
- Of which are NI sales	8	57%	6	75%	£2,335,400
- Of which are GB sales	8	57%	7	88%	£10,227,600
- Of which are in the export market	7	50%	5	71%	£4,867,000
Total increased sales					£17,430,000
Reduction in Costs	9	64%	7	78%	£580,000
Increased Expenditure on R&D	10	71%	9	90%	£2,725,000

The Evaluation Team notes that the above figures are skewed by two businesses that anticipated achieving significant turnover/ sales (in NI, GB and export markets) within the next four years. Whilst caution should be taken in terms of placing reliance on the figures presented (given their speculative nature), any positive change in the following metrics will reflect positively on the return-on-investment and associated VFM provided by the KTP Programme during the period under review.

Gross GVA impacts

By way of calculating the gross GVA impacts associated with the KTP Programme, the Evaluation Team applied the current average Northern Ireland sectoral GVA (of 30.0%⁵¹) to the calculated increase in turnover/ sales (and anticipated increase in turnover sales) and added the calculated decrease in costs (and anticipated decrease in costs) that were potentially derived by businesses.

Calculation of Gross GVA					
	Monetary Impact		Conversion ratio	Gross GVA	
	2010-2012	2012-2014		2010-2012	2012-2014
Increase in turnover/ costs	£1,670,675	£3,998,800	30.00%	£501,203	£1,199,640
Decrease in costs	£362,050	£291,625	N/A	£362,050	£291,625
Subtotal	£2,032,725	£4,290,425		£863,253	£1,491,265
Anticipated increase in turnover/ costs	£5,435,000	£11,995,000	30.00%	£1,630,500	£3,598,500
Anticipated decrease in costs	£70,000	£510,000	N/A	£70,000	£510,000
Subtotal	£5,505,000	£12,505,000		£1,700,500	£4,108,500
Total	£7,537,725	£16,795,425		£2,563,753	£5,599,765

⁵⁰ As previously highlighted, of the 28 respondents (62%, N=45) that expect, but are yet to derive impacts as a result of the outputs delivered by their KTP Project, three quarters (75%, N=28) stated that it was too early to quantify those future benefits.

⁵¹ Source: Northern Ireland Annual Business Inquiry 2014 (December 2015).

Based on the preceding findings, the Evaluation Team’s analysis suggests that the support delivered by the KTP Programme may have contributed circa £2.4m in gross GVA (excluding anticipated benefits) and £8.2m in gross GVA (including anticipated benefits) to the Northern Ireland economy across the two periods.

5.5.3 Academics

The following table outlines the academics’ impacts achieved as result of the KTP Programme, which is based upon those respondents that reported that they have, to date, derived any impacts/ outcomes as a result of the outputs delivered by their KTP project (36%, N=47). Please note, as per Section 5.5.1, two thirds (55%, N=47) of the respondents suggested that they are yet to derive impacts as a result of the outputs delivered by their KTP Project (and that it was too early for them to quantify any anticipated future benefits).

Academics’ impacts achieved as result of the KTP Programme		
Impact/Outcome	2010-2014 (N=17)	
	No.	%
Enhanced the reputation of Knowledge Base	17	100%
Increased understanding of how research is applied in a commercial setting	16	94%
Created opportunities for future consultancy work	14	82%
Stimulated business relevant research and training undertaken by the Knowledge Base	13	76%
Increased ability to use existing research findings (e.g. in terms of curriculum development, case studies material)	13	76%
Generated income for the Knowledge Base	6	35%
Contributed towards the Research Exercise Framework (REF)	5	29%
Published research papers	4	24%

The salient findings from this analysis are as follows:

- On an overall basis, all (100%, N=17) of the respondents indicated that their KTP project had enhanced the reputation of the knowledge base.
- Nearly all (94%, N=17) of the respondents stated that the project had increased their understanding of how research is applied in a commercial setting.
- Over four fifths (82%, N=17) of respondents suggested that they had created opportunities for future consultancy work as a result of their KTP Project.
- Of note, less than a quarter (24%, N=17) of respondents indicated that they had published research papers as a result of their participation on the KTP Programme.

In terms of quantifiable impacts, just over a third (35%, N=17) of respondents reported that their KTP Project had generated income for their respective knowledge base. Of note, four respondents (67%, N=6) that were willing and able to quantify the income generated as a result of the KTP Project (which equated to a total of £300,300 over the period under review) stated that it was a ‘one-off occurrence’ and that there is no possibility of it taking place again in the future⁵².

Similarly, of those academics (24%, N=17) that were able to quantify the number of research papers published as a result of their KTP Project (equating to a total of 16 over the period under review), it was suggested that this was also a ‘one-off occurrence’.

⁵² Given the fact that respondents reported that these impacts were considered to be a ‘one-off occurrence’ and potentially specific to the individual KTP Project, coupled with the small sample sizes, the Evaluation Team has, as agreed with Invest NI, not ‘grossed up’ these impacts.

5.5.4 Associates

Those respondents who indicated they had derived impacts/ outcomes to date as result of the outputs delivered by their KTP project (87%, N=45) stated they had achieved the following:

- 100% (N=39) of respondents indicated they had obtained paid employment for the duration of the KTP project;
- Almost all (97%, N=39) indicated that participation on the KTP Programme had enhanced their career prospects;
- Nearly all (90%, N=39) of respondents indicated they had enhanced their skills; and
- Almost four fifths (79%, N=39) indicated they had obtained management and technical experience.

In addition, a small proportion (7%, N=39) of associate respondents suggested that they were able to publish research papers as a result of their KTP Project (equating to 18 research papers in total across the period under review), although it was suggested that it was a ‘one-off occurrence’.

5.5.5 Calculation of Net Additional Impacts

Impact Additionality

The net impact of the KTP Programme (i.e. its additionality) on recipients’ impacts/ outturns can only be measured after making allowances for what would have happened in the absence of the intervention. That is, the impact must allow for deadweight. ‘Deadweight’ refers to outcomes that would have occurred without the intervention.

The analysis of individual survey responses and application of the same ‘participant self-assessment’ methodology used to assess ‘activity additionality’, results in the following levels of ‘impact deadweight and additionality’⁵³:

Impact Additionality/ deadweight		
	Deadweight	Additionality
Businesses (N=14)	31%	69%
Academics (N=17)	10%	90%
Associates (N=39)	27%	73%

Similar to the activity additionality, it is the Evaluation Team’s view that the calculated levels of impact additionality should be viewed positively.

Encouragingly, the results of this analysis suggests that between 69% (businesses) and 90% (academics) of the impacts/ outcomes that were ultimately derived by businesses, academics and associates would not have been achieved (or would not have been achieved in the same timescale and/or at the same scale) without the support provided through the KTP Programme. The remainder of the impacts/outcomes (ranging from 10% to 31%) would have been achieved or would have been achieved in a different timescale and/ or to a different scale.

Displacement (applicable to business only)

The Evaluation Team has also considered the potential displacement that might be created by the impact of the KTP Programme. To assess this, a series of questions have again been utilised⁵⁴, the answers to which are assigned a ‘displacement factor’ in both the NI market and the broader UK market.

⁵³ See Appendix XIII for further details.

⁵⁴ Developed in conjunction with DETI’s Economists.

Displacement has been calculated based on two factors:

1. The proportions of the businesses that participants compete with that are based in NI/GB, keeping in mind the markets which their company sells into; and
2. Whether, in the participants' area of business, market conditions have improved over the period since receiving support.

An overall level, the Evaluation Team's analysis (further detailed in Appendix XIII) suggests that the displacement factor at the Northern Ireland level is 6%, whilst at the GB level it is 2%.

Summary

The application of the calculated levels of impact additionality and displacement (applicable to business impacts only) to the previous gross outcomes suggests that, to date, the KTP Programme directly:

Businesses:

- Contributed circa £1.5m (excluding anticipated benefits) or £5.3m (including anticipated benefits) in net additional GVA to the NI economy.
- Enabled businesses to achieve circa £3.7m in net additional sales and circa £424,000 in additional cost savings.
- Created 16 net additional FTE jobs.
- Safeguarded 10 net additional jobs.
- Encouraged businesses to undertake circa £165,000 in net additional R&D expenditure.

Academics:

- Generated circa £270,270 in net additional income for the Knowledge Base.
- Contributed towards the publication of circa 14 net additional research papers⁵⁵.

Associates:

- Contributed towards the publication of circa 13 net additional research papers⁵⁶.

Further details of the net additional tangible business benefits are outlined below⁵⁷:

Summary of net additional tangible business benefits				
Metric	Gross business benefits	Removal of Impacts Deadweight (31%)	Removal of NI Displacement (6%)	Net Additional business benefits
GVA (excluding anticipated benefits):				
Phase 1	£863,253	£267,608	£35,739	£559,906
Phase 2	£1,491,265	£462,292	£61,738	£967,235
Total	£2,354,518	£729,900	£97,477	£1,527,141
GVA (including anticipated benefits):				
Phase 1	£2,563,753	£794,763	£106,139	£1,662,851
Phase 2	£5,599,765	£1,735,927	£231,830	£3,632,008
Total	£8,163,518	£2,530,690	£337,969	£5,294,859
Increased turnover/ sales in NI market	£1,104,900	£342,519	£45,743	£716,638
Increased turnover/ sales in GB market	£3,250,725	£1,007,725	£134,580	£2,108,420
Increased turnover/ sales in export markets (outside UK)	£1,313,850	£407,294	£54,393	£852,163
Reduction in costs	£653,675	£202,639	£27,062	£423,974
Increased expenditure on R&D	£254,000	£78,740	£10,516	£164,744
Increased employment (FTEs) within your business	25	8	1	16
Employment Safeguarded/Retained	16	5	1	10

⁵⁵ i.e. 16 research papers completed in gross terms, with an additionality factor of 90%.

⁵⁶ i.e. 18 research papers completed in gross terms, with an additionality factor of 73%.

⁵⁷ Please note, Appendix IX provides a detailed breakdown of each metric across the two time periods within the period of the evaluation.

5.6 Duplication and Complementarity

On an overall basis, only 16% (N=44) of businesses, 17% (N=47) of academics and 9% (N=45) of associates indicated that, in the absence of the KTP Programme, they would be able to get the same or similar support elsewhere, which included the following:

Businesses cited:

- The FUSION Programme (managed by InterTradeIreland); or
- Support provided by private consultancy firms.

Academics cited:

- Other Innovate UK Programmes;
- Invest NI's R&D Programme;
- Invest NI's Innovation Vouchers;
- Marie Curie Research Programme; or
- Through the Competence Centres.

Associates cited:

- Support from Academic supervisors within the Knowledge Base (although it was noted that this would not be to the same extent);
- Internships through businesses in the relevant industry; or
- Other postgraduate research programmes.

In line with the Terms of Reference, the Evaluation Team has examined the degree of complementarity with Invest NI and other public sector interventions available during the period under review. The overall 'fit' of the KTP Programme with other programmes/ initiatives has been considered in the context of Invest NI's 'Innovation Escalator', which is depicted in Appendix XV.

The 'Innovation Escalator' provides a diagrammatic depiction of the five different levels of support that were (and continue to be) available to businesses to support their innovation and knowledge transfer needs. Typically, support at the bottom end of the escalator is for those businesses with little or no experience in adopting innovation practices within their business. The support is focused on encouraging these businesses to take the first steps in undertaking innovation solutions to address technical and business challenges and, in doing, raise their awareness of the benefits that innovation can bring.

The application of measures of support at the top end of the escalator encourage businesses to engage in a process of 'open' (rather than 'closed') innovation to generate ideas and bring them to market. In such a situation, Northern Ireland businesses have a greater willingness to collaborate in order to commercialise both their own ideas/ Intellectual Property (IP) as well as those of others, and seek ways to bring its in-house ideas to market by deploying pathways outside its current business.

In considering the above, it is noteworthy that a small number of businesses (surveyed by Evaluation Team) cited that, in the absence of the KTP Programme, they would be able to get the same or similar support from the FUSION Programme (which is managed by InterTradeIreland). Whilst a brief synopsis of this intervention is included in Appendix XV, the following pertinent points are of relevance to the continued delivery of the KTP Programme:

- Similar to the KTP Programme, as part of the FUSION Programme a three-way partnership is established, whereby the partners work collectively to develop and implement a solution to a 'technology need' within a company.
- Unlike the KTP Programme, as part of the FUSION Programme each partnership that is established requires that the company partner and the knowledge centre be based in different jurisdictions - one in Northern Ireland and the other in the Republic of Ireland. Importantly, the implications of this model mean that the benefits of any individual KTP Project are split between the Northern Ireland and Republic of Ireland economies (with the split varying depending on the

composition of the individual partnership and the nature of the project). Conversely, in the majority of cases, the benefits arising from a KTP Project are fully realised within the Northern Ireland and wider UK economy.

- Whilst the KTP and FUSION Programme have similar structures and delivery models, a typical FUSION Project is circa six months shorter than a typical KTP Project (18 versus 24 months).
- In reviewing the objectives that were established by InterTradeIreland (in conjunction with Invest NI and other key stakeholders) for the FUSION Programme, it is apparent that there have been mechanisms built into the Programme to ensure that it complements (rather than duplicates) other similar Programme offerings (e.g. the KTP Programme). For example, one specific SMART (i.e. Specific, Measurable, Achievable, Relevant and Time-dependent) objective states that InterTradeIreland will “ensure that a minimum of 40% of business participants have not participated on other Public Sector funded R&D Programmes or initiatives with academia on a cross-border basis”.
- Unlike the KTP Programme, repeat projects are not eligible under the FUSION Programme, although companies are eligible to reapply after three years post completion of their FUSION project.
- Similar to the KTP Programme, the support provided through the FUSION Programme includes ongoing academic expertise, tailored training and development of a graduate.
- As part of the FUSION Programme, eligible costs include graduate employment costs, ongoing academic expertise, tailored training, development for the graduate and project equipment.
- Unlike the KTP Programme, graduates on the FUSION Programme are employed by the participating business.
- As part of the FUSION Programme, the average graduate salary is £22,000 (€26,000), whereas on the KTP Programme the average graduate salary is higher at £27k per annum for a prospective associate with a graduate degree, £31k per annum for one with a Masters and £35k per annum for one with a PhD qualification.
- Over a five year delivery period, the total cost associated with the delivery of the FUSION Programme was circa £10.8m.

It is the view of the Evaluation Team, and one shared by Invest NI and other stakeholders, that the KTP Programme (alongside other interventions such as the FUSION Programme) forms a vital component, at the top end of the escalator, in the construction and development of Northern Ireland’s ‘Innovation Ecosystem’.

In terms of the support that is available at this end of the Innovation Escalator, during the period under review there appears to have been (and there continues to be) a demarcation in the nature and levels of support that were (and are) available to businesses. On this basis, it is the Evaluation Team’s view that the KTP Programme appropriately complemented other public sector interventions available across the period under review.

5.7 Views on the likelihood of retaining the KTP Associate

Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. Of those who did not retain the Associate as an employee (30%, N=10), the following was cited:

“The Associate joined public sector but, on occasion, they still work in collaboration with our business.”

“In our view, the Associate was not of an adequate standard.”

“The Associate took a job in London as we did not have enough hours for him, but hopefully he is coming back in the very near future to join the business again.”

KTP Business Respondents

Over two thirds (67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised. Of note, only a

small proportion (6%, N=33) of the respondents suggested that they would be unlikely to employ the Associate after the project has been completed, which was primarily on the basis that, in their view, their Associate is not of sufficient standard to be retained within their business.

On an overall basis, the following was cited in relation to retaining the KTP Associate:

“Our associate is competent and their expertise is needed in our business. It is likely they will be kept on after the project.”

“The Associate wants to move on to another company and we had no intentions of keeping the Associate anyway.”

“This is dependent on the Associate’s technical ability and it is still too early in project to tell.”

“The business needs the Associate’s expertise to fill in the skills gaps. It is very likely they will be kept on.”

“The Associate already left as they were not up to the standard the project needed.”

“We will likely retain the Associate as we need their skills for the current project. We have a high level of satisfaction with the Associate overall.”

KTP Business Respondents

5.8 Wider and Regional Benefits

Based on the feedback from KTP Programme participants, the table below provides an overview of the contribution of the Programme to delivering wider and regional benefits:

Contribution of the KTP Programme to wider and regional benefits	
Wider benefits	
Knowledge transfers	<p>The analysis suggests that the KTP Programme has supported the transfer of knowledge and expertise from the knowledge base partner (via the academic) to the company partner (via the associate). This is evidenced through analysis of the Evaluation Team’s survey results, which indicates that:</p> <ul style="list-style-type: none"> • Nearly all (98%, N=43) of the business respondents and a similar proportion of the associate respondents (98%, N=45) indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic is/ was able to transfer knowledge and expertise appropriately to the business. • All (100%, N=44) of the business respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic has/ had the appropriate level of expertise and technical knowledge to address their business’ needs. • All (100%, N=41) of the business respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Academic is/ was able to identify appropriate solutions and priorities to address their business’ needs. • Over four fifths (86%, N=42) of the business respondents and all (100%, N=45) of the academic respondents indicated that they either ‘strongly agreed’ or ‘agreed’ that the Associate is/ was able to transfer knowledge and expertise appropriately to the business. <p>In support of the above finding, a recently published review⁵⁸ cited that “KTPs have proved to be highly valuable for facilitating knowledge transfer and seeding collaborations”.</p>

⁵⁸ Source: ‘The Dowling Review of Business-University Research Collaborations’ (July 2015).

Contribution of the KTP Programme to wider and regional benefits	
University linkages with industry	By its very nature, the KTP Programme sought (and continues to seek) to develop and enhance university linkages with industry. This is evident in each and all of the KTP Partnerships that are established (involving academic and company partners) and the subsequent KTP Projects that are initiated. In this context, the KTP Offices and the KTP Advisers based in Northern Ireland played (and continue to play) an important role in facilitating university linkages with industry.
Skills development	<p>Similar to the above, the KTP Programme supported the development of skills amongst participant businesses, academics and associates. This is evidenced through analysis of the Evaluation Team’s survey results, which indicates that:</p> <ul style="list-style-type: none"> • All (100%, N=14) of the business respondents reporting impacts/ outcomes indicated that their business had increased their capacity to innovate and had improved the skills of their workforce. • Nearly all (94%, N=17) of the academic respondents reporting impacts/ outcomes stated that their KTP project had increased their understanding of how research is applied in a commercial setting (through the adoption of new skills and experiences). • Nearly all (90%, N=39) of the associate respondents reporting impacts/ outcomes indicated they had enhanced their skills as a result of their KTP Project. <p>Furthermore, an important aspect of the KTP Project for the associate is the opportunity to participate in, and avail of, various training modules/ courses, which ultimately enhances their skills and expertise. Indeed, a recently published review⁵⁹ cited that KTPs “<i>have a role in delivering economic returns and supporting skills development both for graduates and within companies</i>”.</p>
Regional benefits	
Creation of high quality jobs	<p>Whilst not a direct aim of the KTP Programme across the period under review, it offered the potential to create high quality jobs, primarily through the retention of the KTP Associate post project completion. Analysis of the Evaluation Team’s survey results indicates that:</p> <ul style="list-style-type: none"> • Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. • Over two thirds (67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.
Innovative nature of the project	The KTP Programme, by its very nature, is a Programme that seeks to provide Northern Ireland businesses with the capability to engage in, and develop, innovative products, processes or services. Indeed, one of the key criterion against which KTP Projects are assessed relates to innovation, whereby each project “ <i>must permit the development of a new process, service or product</i> ”.

5.9 Supplementary Analysis relating to Impacts

5.9.1 Introduction

Given the nature of the KTP Programme, forming part as it does of a wider national Programme, discussion with Invest NI indicates that there is merit in supplementing the impacts reported to date by businesses, academics and associates within Northern Ireland (as captured through the Evaluation Team’s survey and presented in Section 5.5) with those impacts that are reported at a UK level by Innovate UK.

⁵⁹ Source: ‘The Dowling Review of Business-University Research Collaborations’ (July 2015).

In line with the Terms of Reference and at the request of Invest NI, the following subsections present:

1. High-level details of those impacts reported at a UK level by Innovate UK (through its published annual reports).
2. High-level analysis of PPC reports for those KTP projects that have been completed in Northern Ireland during the period under review.
3. A high-level review of those methodologies implemented as part of:
 - a. The UK KTP Strategic Review (Regeneris Consulting, February 2010); and
 - b. The Impacts of KTP Associates and Knowledge Bases on the UK Economy (Warwick Economics and Development, published in October 2015).

5.9.2 High-level details of those impacts reported at a UK level by Innovate UK

In order to understand the effectiveness of the KTP Programme, and of its contribution to improving the productivity of UK businesses and the overall UK Economy, it is understood that much of the information contained within the PPC reports that are completed by KTP Partnerships is collated by Innovate UK at a UK level and is subsequently used to inform its publically available annual reports.

The Evaluation Team has, at the request of Invest NI, presented high-level details of those impacts reported by Innovate UK as per its annual reports for the period 2010/11 to 2013/14 (i.e. the period under review). It should be noted that, whilst there is a variety of information published by Innovate UK in its annual reports, the information presented in this subsection is considered by Invest NI to be of most relevant to this evaluation exercise.

Please note, the information presented in the following tables has been sourced, where available, and collated by Evaluation Team from Innovate UK's annual reports and has been presented for illustrative purposes only. That is, the Evaluation Team (as agreed with Invest NI) has not undertaken a detailed examination of the figures as presented in the annual reports⁶⁰. Furthermore, the information as compiled within Innovate UK's publically available annual reports does not provide a regional breakdown of the reported impacts associated with the KTP Programme⁶¹.

The following table provides an overview of the reported benefits for company partners (for every £1m of Government funding invested) as per Innovate UK's annual reports:

Benefits for company partners (For every £1m of government money invested)						
Source: Innovate UK's Annual Reports						
Metric	2010/11	2011/12	2012/13	2013/14	Total	Average⁶²
Number of jobs created	23	39	32	25	119	30
Number of company staff trained	196	279	269	353	1,097	274
One-off increase in pre-tax profit	£900,000	-	£780,000	£1,300,000	£2,980,000	£993,333
Anticipated increase in annual profit before tax after partnership completion	£3,080,000	£4,790,000	£3,460,000	£11,650,000	£22,980,000	£5,745,000
Investment in plant and machinery	£1,350,000	£1,530,000	£840,000	£2,200,000	£5,920,000	£1,480,000
Investment in R&D activity	-	£1,200,000	£1,150,000	£3,060,000	£5,410,000	£1,803,333

⁶⁰ Please note, Section 5.9.3 provides high level analysis of, and the Evaluation Team's commentary on, those PPC reports that have been completed for finished KTP Projects in Northern Ireland during the period under review.

⁶¹ For instance, in its annual reports, Innovate UK did not provide specific details on the impacts reported at a Northern Ireland level.

⁶² For each metric, the average is based upon the number of years that there is data available for e.g. if there are four years of data, the average is taken over four years, whereas if there are three years of data, the average is taken over three years and so on.

The following table provides an overview of the reported benefits for company partners per individual KTP project (as per Innovate UK's annual reports):

Benefits for company partners per individual KTP project						
Source: Innovate UK's Annual Reports						
Metric	2010/11	2011/12	2012/13	2013/14	Total	Average ⁶³
Number of jobs created	-	3	3	3	9	3
Number of company staff trained	-	21	20	31	72	24
Investment in R&D activity	-	£92,000	£86,000	£265,000	£443,000	£147,667
Increase in annual exports	-	-	£266,000	£967,000	£1,233,000	£616,500
One-off increase in profit before tax	£70,429	£37,000	£33,000	£113,000	£253,429	£63,357
Anticipated increase in annual profit before tax after partnership completion	£240,211	£366,000	£261,000	£1,012,000	£1,879,211	£469,803
Investment in plant and machinery	£105,519	£117,000	£63,000	£194,000	£479,519	£119,880

Given that Innovate UK's publically available annual reports do not provide a regional perspective on the impacts associated with the KTP Programme, Invest NI provided the Evaluation Team with the information presented in the following two tables (which was sourced from Innovate UK). As before, this information has been presented for illustrative purposes only.

The following table provides an overview of the reported benefits for company partners for a three year period up until 2014 (for every £1m of Government funding invested):

Benefits by Region (as per Innovate UK) - 3 years to 2014 ⁶⁴						
Source: Innovate UK						
Region	Actual One off Profit Earned During Partnership	Anticipated Change In Sales Turnover in 3 Years	Anticipated Change In Profit before tax Per Annum in 3 Years	Anticipated Investment in Plant & Machinery	Anticipated Investment in New Staff	Anticipated Investment in Staff Training
England	£64,653,000	£616,063,000	£502,905,000	£125,154,000	2,598	28,036
Northern Ireland	£4,632,000	£18,180,000	£27,130,000	£8,819,000	197	826
Scotland	£5,683,000	£60,305,000	£84,316,000	£28,776,000	216	3,213
Wales	£6,579,000	£51,392,000	£36,633,000	£15,525,000	284	1,971
Total	£81,547,000	£745,940,000	£650,984,000	£178,274,000	3,295	34,046
<i>NI percentage</i>	<i>6%</i>	<i>2%</i>	<i>4%</i>	<i>5%</i>	<i>6%</i>	<i>2%</i>

The following table provides an overview of the reported benefits for company partners per individual KTP project for a three year period up until 2014:

Benefits by Region (as per Innovate UK) - 3 years to 2014 ⁶⁵						
Source: Innovate UK						
Region	Actual One off Profit Earned During Partnership	Anticipated Change In Sales Turnover in 3 Years	Anticipated Change In Profit before tax Per Annum in 3 Years	Anticipated Investment in Plant & Machinery	Anticipated Investment in New Staff	Anticipated Investment in Staff Training
England	£68,634	£653,995	£533,869	£132,860	3	30
Northern Ireland	£60,947	£239,211	£356,974	£116,039	3	11
Scotland	£41,181	£436,993	£610,986	£208,522	2	23
Wales	£65,790	£513,920	£366,330	£155,250	3	20
Total	£236,552	£1,844,118	£1,868,159	£612,671	10	84
<i>NI percentage</i>	<i>26%</i>	<i>13%</i>	<i>19%</i>	<i>19%</i>	<i>30%</i>	<i>13%</i>

⁶³ See preceding fn.

⁶⁴ For clarity, Invest NI advised that the data relates to financial years 2011/12, 2012/13 and 2013/14.

⁶⁵ See preceding fn.

Please note, in considering the preceding figures, the information under each heading is largely based on anticipated (rather than actual) results, albeit the heading entitled ‘actual one off profit earned during partnership’ is reported by Innovate UK to have occurred as a direct result of the KTP Programme.

In summation, whilst the information collated and provided by Innovate UK (as per its annual reports) provides a useful reference point when considering how Northern Ireland performs vis-à-vis other regions in terms of generating impacts for those involved in KTP Projects, it is not directly comparable to those impacts reported to date by businesses, academics and associates within Northern Ireland (as captured through the Evaluation Team’s survey and presented in Section 5.5). For instance, for the purposes of this evaluation exercise, the Evaluation Team (as advised by Invest NI) based its analysis on the 82 KTP Projects that started (based on their formal start date) in Northern Ireland during the period under review. However, discussion with Invest NI indicates that the Innovate UK reports are unlikely to be capturing impacts under the same sampling criteria (e.g. specific time period, inclusion of projects based on their formal start date etc.). In addition, the Evaluation Team has highlighted its views on the PPC reports (which are discussed in further detail in Section 5.9.3), which are understood to be the primary source of data when Innovate UK develops its annual reports. On this basis, the Evaluation Team would urge caution in drawing any direct comparison between the two sets of figures/ results relating to KTP Programme impacts.

5.9.3 High Level Analysis of Post Project Completion Reports

As previously highlighted, once a KTP Project has been completed, the Partnership (with support and guidance from the KTP Adviser and/ or KTP Office) is required to submit a PPC report in order to, amongst other things, ascertain and document the outputs and impact of their project. Within each report, there are separate sections for the company and academic partners to each describe and outline the results of their KTP Project.

In line with the conditions of the grant letter offer and as per the KTP Guidebook, each PPC report is sent to a minimum of two external assessors for grading, with grades ranging from A (being outstanding) to E (being unsatisfactory). It is understood that the external assessors are independent of the KTP stakeholder community and are drawn from a mixture of academic, public service and business backgrounds.

Whilst it is notable that KTP Partnerships in Northern Ireland have historically had a higher proportion (vis-à-vis other UK regions) of PPC reports graded A or B, unfortunately, given the timing of this interim evaluation, Invest NI has advised the Evaluation Team that none of those projects that have officially finished during the period under review (N=16) have had their PPC report graded.

Nonetheless, the Evaluation Team has, at the request of Invest NI, presented high-level details of relevant business impacts and outturns outlined in the PPC reports (for those that have been completed for the 16 finished partnerships during the period under review⁶⁶) and compared them, in the tables overleaf, with the impacts/ outturns reported by businesses surveyed as part of this evaluation. Please note, the individual PPC reports contained a variety of metrics, so the Evaluation Team (as agreed with Invest NI) has drawn comparison with only those that allowed for comparable read across e.g. metrics such as reported and anticipated turnover and sales.

⁶⁶ Please note, business names have been removed from the following analysis in order to preserve their anonymity.

Comparison of Reported Impacts						
Business No.	Evaluation Team Consultation Completed	PPC Report Results ⁶⁷		Evaluation Team Results ⁶⁸		Evaluation Team's Commentary
		Reported turnover per annum attributable to the KTP Programme (£)	Reported anticipated turnover over 3 years attributable to the KTP Programme (£)	Reported turnover/ sales achieved to date attributable to the KTP Programme (£)	Reported anticipated turnover/ sales attributable to the KTP Programme (£)	
Finished projects in the 2010-2012 period						
1	✓	£100,000	£2,000,000	£520,000	£820,000	During consultation, the respondent indicated that the reported anticipated turnover/ sales attributable to the KTP Programme (as per the PPC report) was overestimated and that the figures provided to the Evaluation Team reflect a more accurate/ up to date position.
2	✓	£0	£2,500,000	£0	Unable to Quantify	During consultation, the respondent was unable to quantify the anticipated sales/ turnover attributable to the KTP Programme.
3	✓	£50,000	£150,000	£145,000	£285,000	During consultation, the respondent indicated that both the achieved and the reported anticipated turnover/ sales attributable to the KTP Programme (as per the PPC report) were underestimated and that the figures provided to the Evaluation Team reflect a more accurate/ up to date position (e.g. additional sales in GB and export markets have been achieved since the PPC report).
4	✓	£585,000	£1,200,000	Unable to Quantify	Unable to Quantify	During consultation, the respondent was unable to quantify the any achieved or anticipated turnover/ sales figures attributable to the KTP Programme (the respondent cited that the PPC report was completed a long time ago).
5	✓	£0	£100,000	£0	£150,000	During consultation, the respondent was able to provide the Evaluation Team with a more accurate/ up to date position.
6	✓	£0	£6,000,000	£0	£4,400,000	During consultation, the respondent was able to provide the Evaluation Team with a more accurate/ up to date position. Those reported anticipated turnover/ sales attributable to the KTP Programme provided to the Evaluation Team are lower than those stated in the PPC report as there were delays in getting the product ready for market.
7	✓	£0	£75,000	£0	£0	During consultation, the respondent indicated that they have derived no impacts as a result of KTP and they do not anticipate doing so in the future (primarily due to the nature of their business not necessarily the KTP Programme ⁶⁹).
8	×	£0	£600,000	-	-	Relevant contact left the business.
9	×	£0	£750,000	-	-	Did not wish to be contacted.
10	×	£40,000	£100,000	-	-	Did not wish to be contacted.
11	×	£15,000	£300,000	-	-	The relevant individual was contacted on at least 3 separate occasions and was unavailable on each.
12	×	£600,000	£1,400,000	-	-	The relevant individual was contacted on at least 3 separate occasions and was unavailable on each.
13	×	£50,000,000	£250,000,000	-	-	The relevant individual was contacted on at least 3 separate occasions and was unavailable on each.
		£51,390,000	£265,175,000	£665,000	£5,655,000	

⁶⁷ Please note, these figures are reported by Innovate UK to be net rather than gross figures (please note, the Evaluation Team's view on how company partners are attributing benefits/ impacts to the KTP Programme is considered in more detail in the following subsection).

⁶⁸ Please note, these figures are net rather than gross figures.

⁶⁹ Provided via email.

Comparison of Reported Impacts						
Business No.	Evaluation Team Consultation Completed	PPC Report Results		Evaluation Team Results		Evaluation Team's Commentary
		Reported turnover per annum attributable to the KTP Programme (£)	Reported anticipated turnover over 3 years attributable to the KTP Programme (£)	Reported turnover/ sales achieved to date attributable to the KTP Programme (£)	Reported anticipated turnover/ sales attributable to the KTP Programme (£)	
Finished projects in the 2012-2014 period						
14	✓	£250,000	£1,000,000	£0	Unable to Quantify	During consultation, the respondent indicated that it was too early to quantify any anticipated additional turnover/ sales and has reported no achieved sales to date.
15	✓	£2,753,000	£7,500,000	£3,482,000	£9,687,000	During consultation, the respondent indicated that they achieved additional sales in the GB market and that the anticipated sales reflect a more accurate/ up to date position (e.g. additional sales in GB and export markets have been anticipated since the PPC report).
16	✓	£0	£22,000	£0	Unable to Quantify	During consultation, the respondent indicated that it was too early to quantify any anticipated additional turnover/ sales and has reported no achieved sales to date.
		£3,003,000	£8,522,000	£3,482,000	£9,687,000	

At an overarching level, the Evaluation Team is of the view that the concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners.

However, in considering the above and having reviewed each of the PPC reports, the Evaluation Team would highlight the following salient points⁷⁰:

- Many of the questions contained within the PPC reports, particularly those seeking to ascertain quantifiable impacts (e.g. turnover, sales, profits etc.), reference a number of metrics, without providing the reader with a definition of the same. For example, company partners are asked to quantify the change in their current annual exports that are directly attributable to their KTP Project. However, without defining what an export market is (at least for the purposes of the PPC report), there could be uncertainty and/ or inconsistency amongst PPC reports once they are collated and subsequent analysis is undertaken.
- Many of the questions allowed for ‘open ended’ answers, when in many cases, providing the respondents with a range of preselected answers may have gathered more specific and meaningful information (and subsequently aided any future analysis and aggregation of results).
- The preceding comparative analysis illustrated that in many instances the reported anticipated turnover/ sales were overestimated by the company partner, which in turn overstated the impact of the KTP Programme. Conversely (although from a positive perspective), some of the business respondents involved in the Evaluation Team’s survey indicated that they had underestimated both the actual and anticipated sales/ turnover in their PPC report, which in turn understated the impact of the KTP Programme. On this point, it is the Evaluation Team’s view that the timing of the completion of the PPC reports (i.e. one month after project completion) may not allow for benefits to be fully known and/ or realised by company partners. According to Innovate UK, in addition to the PPC reports, there is a requirement for partners to complete follow up post project monitoring (which is an online process) one and three years after the end of an individual project (these are known as Post Completion Monitoring reports). Unfortunately, given the timing of this interim evaluation, Invest NI has advised the Evaluation Team that none of those projects that have officially finished during the period under review (N=16) have completed any such follow up post project monitoring materials.
- Interestingly, the comparative analysis undertaken by the Evaluation Team suggests that the person completing the PPC report may be different to the individual closest to the implementation of the KTP Project within the business (e.g. the business supervisor). An example of this arose when, during the Evaluation Team’s survey, a respondent was unable to quantify the anticipated increase in sales/ turnover, despite the PPC report having a figure stated for the same metric (which was shared with the respondent by the Evaluation Team during the consultation).
- The robustness of how company partners are attributing benefits/ impacts to the KTP Programme is subject to ‘respondents’ effect’. That is, company partners may purposely exaggerate (in either an upwards or downwards direction) the impact of the support received through the KTP Programme. More precisely, they may exaggerate the impact of assistance for fear that they may reduce their chances of receiving repeat assistance. On the other hand, other recipients may be likely to play down the impact of assistance, attributing the realisation of the impacts/ benefits to themselves and/ or their business. Furthermore, the fact that company partners are completing the PPC reports themselves does not allow for independence or robustness when assessing impact additionality/ deadweight.
- As previously highlighted, in line with the conditions of the grant letter offer and as per the KTP Guidebook, each PPC report is sent to a minimum of two external assessors for grading. However, having reviewed each of the PPC reports for the period under review, it is unclear whether all of the reports have been independently reviewed or ‘sense checked’. For example, in one particular PPC report, the company partner stated that the reported turnover per annum attributable to the KTP Programme was £50,000,000, whilst the reported anticipated turnover over

⁷⁰ Please note, many of these points were highlighted as part of the previous evaluation (dated 2011).

three years was £250,000,000⁷¹. On this specific point, Innovate UK advised the Evaluation Team that this was an input error and suggested that the PPC report asks for figures in thousands of pounds but on occasion, partners put in absolute figures (in essence it was suggested that this adds three zeros to the figures resulting in larger numbers than the company partner originally desired). It was further advised that for the purposes of compiling its published annual reports, Innovate UK excludes figures that are “*apparently erroneous*”.

Discussion with Invest NI indicates that, at a national level, Innovate UK is currently undertaking a review of the content and structure of the existing PPC reports. It is understood that the purpose of this exercise is to ascertain if there are alternative ways/ mechanisms to capture data relating to the impact of the KTP Programme on each of the individual partners. It is the Evaluation Team’s view that, if the above learning points were factored into any future amendments to these reports, this would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.

5.9.4 High-level review of ‘other’ methodologies

In line with the Terms of Reference, the Evaluation Team has undertaken a high-level review of those methodologies implemented as part of:

1. The ‘UK KTP Strategic Review’ (Regeneris Consulting, February 2010); and
2. The ‘Impacts of KTP Associates and Knowledge Bases on the UK Economy’ (Warwick Economics and Development, published in October 2015).

Salient points relating to each of the above studies are presented in the following table:

UK KTP Strategic Review
<p>Having reviewed the UK KTP Strategic Review, the Evaluation Team notes that, in terms of presenting the economic impact and return on investment of the KTP Programme at a national level (rather than on a regional basis), Regeneris Consulting calculated the following:</p> <ul style="list-style-type: none"> • Approach A: Impact on partnerships completing PPC reports (covering partnerships started between 2001/02 and 2007/08); • Approach B: Weighted total programme impact based on all projects started between 2001/02 and 2007/08 (using Approach A or ‘the PPC sample’ as a base); and • Approach C: Impact of all projects started between 2001/02 and 2007/08 using an emulation of the impact methodology outlined in the national Regional Development Agency evaluation⁷². <p>Further details and commentary on each of these approaches is included in Appendix XIV. In the Evaluation Team’s view, many of the assumptions that have been applied by Regeneris Consulting, in terms of calculating economic impact and return on investment, have been suitably articulated within the report and, where possible, appropriately sourced and evidence based. Encouragingly, Regeneris Consulting attempted to replicate a methodology that was applied as part of a national evaluation (on the basis that it was cited as being commonly used as a benchmark for calculating economic impact and returns on investment for a range of projects and programmes), albeit there were many methodological difficulties cited that inhibited the completion of this exercise.</p> <p>However, and most importantly, given the fact that Regeneris Consulting’s analysis is primarily based on the information/ data contained within a sample of KTP Projects’ PPC reports, and on the basis of the Evaluation Team’s views on these reports (as per Section 5.9.3), there is the potential that the subsequent results may be inherently over or under stated. By way of example, the methodology applied excludes deadweight on the basis that Regeneris Consulting was of the view that the PPC already accounts for this. However, as previously highlighted, the robustness of how company partners are attributing benefits/ impacts to the KTP Programme is</p>

⁷¹ Please note, the Evaluation Team was unable to corroborate these figures (the relevant individual was contacted on more than 3 separate occasions and was unavailable on each).

⁷² Source: Department for Business Enterprise and Regulatory Reform (2007) Impact of RDA spending – National Report Volume 1.

UK KTP Strategic Review

subject to ‘respondents’ effect’ (previously discussed in Section 5.9.3). In particular, given that company partners are completing the PPC reports themselves, this does not allow for independence or robustness when assessing impact additionality/ deadweight. Also, as demonstrated as part of the comparative analysis undertaken to inform this evaluation (as per Section 5.9.3), in many instances the reported anticipated turnover/ sales included within the PPC reports are being over or under estimated by the company partner. Again, this has the potential to over or under state the overall impact of the KTP Programme.

Impacts of KTP Associates and Knowledge Bases on the UK Economy

Officially published on the 13th October 2015, this report presents the findings of a study commissioned by Innovate UK to evaluate the economic impacts and other benefits arising within the UK economy from the participation of the KTP Associate and Knowledge Base partner on the KTP Programme.

Further details and commentary on the methodology adopted by Warwick Economics and Development (WECD), and of the findings emanating from the study, are included in Appendix XIV. At the outset, the Evaluation Team notes that this study was solely focused on capturing the economic and wider impacts arising from Associates and Knowledge Bases participating on the KTP Programme. It is understood that the findings from this study would therefore complement earlier reviews/ studies (such as the previously discussed UK KTP Strategic Review) which only captured the impact of the KTP Programme on the company partners and which reported on the benefits that were attributable to the UK economy as a result of improvements in key business indicators.

Importantly, the focus of the study (and its analysis) is on the KTP Programme at a national level (rather than on a regional basis) and is based on a much longer time period (i.e. it sought to measure the impact of the KTP Programme over a 30 year period, from 1984 to 2014).

Of relevance to this evaluation exercise, the report provides an estimation of impact additionality for both KTP Associates and Knowledge Bases (albeit based on a wider geographical area and a longer time period). Encouragingly, the findings presented by WECD are broadly in line with the findings emerging from the Evaluation Team’s survey with Associates and Knowledge Bases (as per Sections 5.2 and 5.5.5 of this report). This is summarised as follows:

Impact Additionality/ deadweight				
	Evaluation Team’s Results		WECD’s Results	
	Deadweight	Additionality	Deadweight	Additionality
Academics	10%	90%	6%	94%
Associates	27%	73%	25%	75%

As previously highlighted, it is the Evaluation Team’s view that the calculated levels of impact additionality should be viewed positively.

Of note, in terms of estimating the impacts arising within the UK economy through the Associates and Knowledge Bases participation on the KTP Programme, WECD also included multiplier effects and persistence factors (the latter of which only featured when considering the impacts attributable to KTP Associates).

Interestingly, the report concludes that *“although the KTP Programme needs to be beneficial to all partners involved, this is clearly a programme that seeks to improve business competitiveness and productivity over the long term through the better use of higher knowledge, technology and skills that reside within knowledge base organisations rather than a programme specifically designed to enhance the skills of individuals or improve their employability and/or support knowledge base organisations in demonstrating and achieving impact”*.

It also concludes that *“the extensive consultations undertaken as part of this study with a wide range of stakeholders, but mainly with knowledge base partners and KTP Associates, have shown that both groups can clearly identify and attribute wider benefits arising from the programme for them personally and professionally and for their organisations”*.

5.10 Summary Conclusions

Based on the feedback from those businesses, academics and associates in receipt of support, the following key conclusions can be drawn in relation to the impact made by the KTP Programme during the period under review:

- In considering the impact of the KTP Programme on its participants to date, the reader should be mindful that **this interim evaluation report represents only an intermediate position of the KTP Programme’s potential ultimate impact.**
- Levels of activity (55% for businesses, 75% for academics and 54% for associates) and impact (69% for businesses, 90% for academics and 73% for associates) additionality should be viewed positively, indicating that the KTP Programme played a strong role in encouraging each of the partners to undertake collaborative projects with the aim of embedding knowledge and innovation from academics into businesses.
- Market failure, typically in the form of asymmetric information, has played a strong role in preventing businesses from taking forward the project (as proposed within their KTP application).
- The most common outputs derived amongst participants to date as a result of the support provided through the KTP Programme are:
 - The resolution of technical problems;
 - The adaption of existing processes; and
 - The development of new products and processes.
- From a quantitative perspective the analysis suggests that the KTP Programme has:

Businesses:

- Contributed circa £1.5m (excluding anticipated benefits) or £5.3m (including anticipated benefits) in net additional GVA to the NI economy.
- Enabled businesses to achieve circa £3.7m in net additional sales and circa £424,000 in additional cost savings.
- Created 16 net additional FTE jobs.
- Safeguarded 10 net additional jobs.
- Encouraged businesses to undertake circa £165,000 in net additional R&D expenditure.

Academics:

- Generated circa £270,270 in net additional income for the Knowledge Base.
- Contributed towards the publication of circa 14 net additional research papers.

Associates:

- Contributed towards the publication of circa 13 net additional research papers.

- On an overall basis, only 16% (N=44) of businesses, 17% (N=47) of academics and 9% (N=45) of associates indicated that, in the absence of the KTP Programme, they would be able to get the same or similar support elsewhere.
- It is the view of the Evaluation Team, and one shared by Invest NI and other stakeholders, that the KTP Programme (alongside other interventions such as the FUSION Programme) forms a vital component, at the top end of Invest NI’s ‘Innovation Escalator’, in the construction and development of Northern Ireland’s ‘Innovation Ecosystem’.
- Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. Over two thirds

(67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.

- Importantly, the KTP Programme has contributed to providing the Northern Ireland economy with a number of other **wider (including knowledge transfers, university linkages with industry and skills development) and regional (including the creation of high quality jobs and innovative nature of the project) benefits**. Indeed, a recently published review⁷³ cited that KTPs “*have a role in delivering economic returns and supporting skills development both for graduates and within companies*”.
- At an overarching level, the Evaluation Team is of the view that the concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners. It is the Evaluation Team’s view that there are a number of learning points (as previously highlighted) that could be factored into Innovate UK’s ongoing review of the PPC reports. This would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.

⁷³ Source: ‘The Dowling Review of Business-University Research Collaborations’ (July 2015).

6. ACHIEVEMENT OF OBJECTIVES

6.1 Introduction

This section of the report considers the extent to which the principle aims, objectives and targets of the KTP Programme have been met for the period under review. Please note, in the absence of any economic appraisal or casework documentation setting out aims, targets and objectives for the KTP Programme for the period 1st October 2010 to 31st March 2012 (18 month period), the Evaluation Team has been unable to undertake any comparative analysis for that period.

The following table provides an overview of the Evaluation Team’s conclusions in relation to the objectives that were established for the KTP Programme for the period 1st April 2012 to 31st March 2017 (as per the Economic Appraisal completed in 2012).

SMART Target (as per EA)	Evaluation Team’s Commentary on Achievement to date
<p>Knowledge transfer indicators - 30 KTPs successfully initiated in one year and completed within two years.</p>	<p>Not achieved. The target equates to 30 KTP Projects started in one year. This was not be achieved. Instead (as per Section 3.3) the following was achieved:</p> <ul style="list-style-type: none"> • 1st Apr 2012 - 31st March 2013 = 21 • 1st April 2013 - 31st March 2014 = 23 • 1st April 2014 - 30th September 2014 (six months) = 13 <p>Discussion with Invest NI indicates that one (of the two) KTP advisers based in Northern Ireland left their post in June 2014. This resulted in a four month period, from June to September 2014, when there was only one KTP adviser in post in Northern Ireland. It was suggested by Invest NI that this caused significant capacity constraints during that period, which had a resultant impact (and delays) on the number of KTP Projects being developed and subsequently started in Northern Ireland during that period.</p> <p>In addition to the above, Invest NI expressed its view that the targets included as part of the economic appraisal process (in circa 2011/12) were developed at a time when the typical length a KTP Project was 18 months. However, discussion with Invest NI indicates that, since 2013, the average length of a KTP Project has typically been 24 months. It was suggested by Invest NI that this increase in average project duration impacted upon the available capacity of the various ‘actors’ to develop and subsequently commence new KTP Projects in Northern Ireland during the period under review.</p> <p>Notwithstanding the above, Invest NI expressed its view that the number of new projects being developed and started as part of the KTP Programme is beginning to regain momentum. Indeed, it is understood that between 1st April 2014 – 31st March 2015, 28 KTP Projects started in Northern Ireland.</p>

SMART Target (as per EA)	Evaluation Team's Commentary on Achievement to date
Improvements in research quality - 15 accredited research papers developed each year.	<p>Partly Achieved. As part of this evaluation, Innovate UK advised the Evaluation Team that an accredited research paper is defined as “<i>any paper prepared by the members of the partnership and published in appropriate journals</i>”.</p> <p>Looking specifically at period 2, the Evaluation Team notes that only three KTP Projects were categorised as having reached their formal end date. Based on the Evaluation Team’s review of the PPC reports for these three projects, it was identified that supervisors and associates (independently or jointly) prepared 18 ‘papers’ for various journals etc.</p> <p>Given the previously highlighted pertinent points relating to the PPC reports (as per Section 5.9.3), the Evaluation Team notes that it was unable to determine if there were 18 papers developed per annum (as per the original objective outlined in the economic appraisal).</p>
Annual wages and salaries secured - 25 associates sustained in employment each year 1 year after the end of funding.	<p>Not yet achieved. Requires more time to elapse in order for KTP Projects to finish/ reach their formal end, given that only a total of 3 projects were categorised as finished during period 2 (and 16 during the entire period under review i.e. periods 1 and 2).</p> <p>Encouragingly, based on findings from the Evaluation Team’s survey, of those businesses that have finished their KTP Project (across the two periods), over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. Furthermore, over two thirds (67%, N=33) of those business respondents with ‘live’ or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.</p>

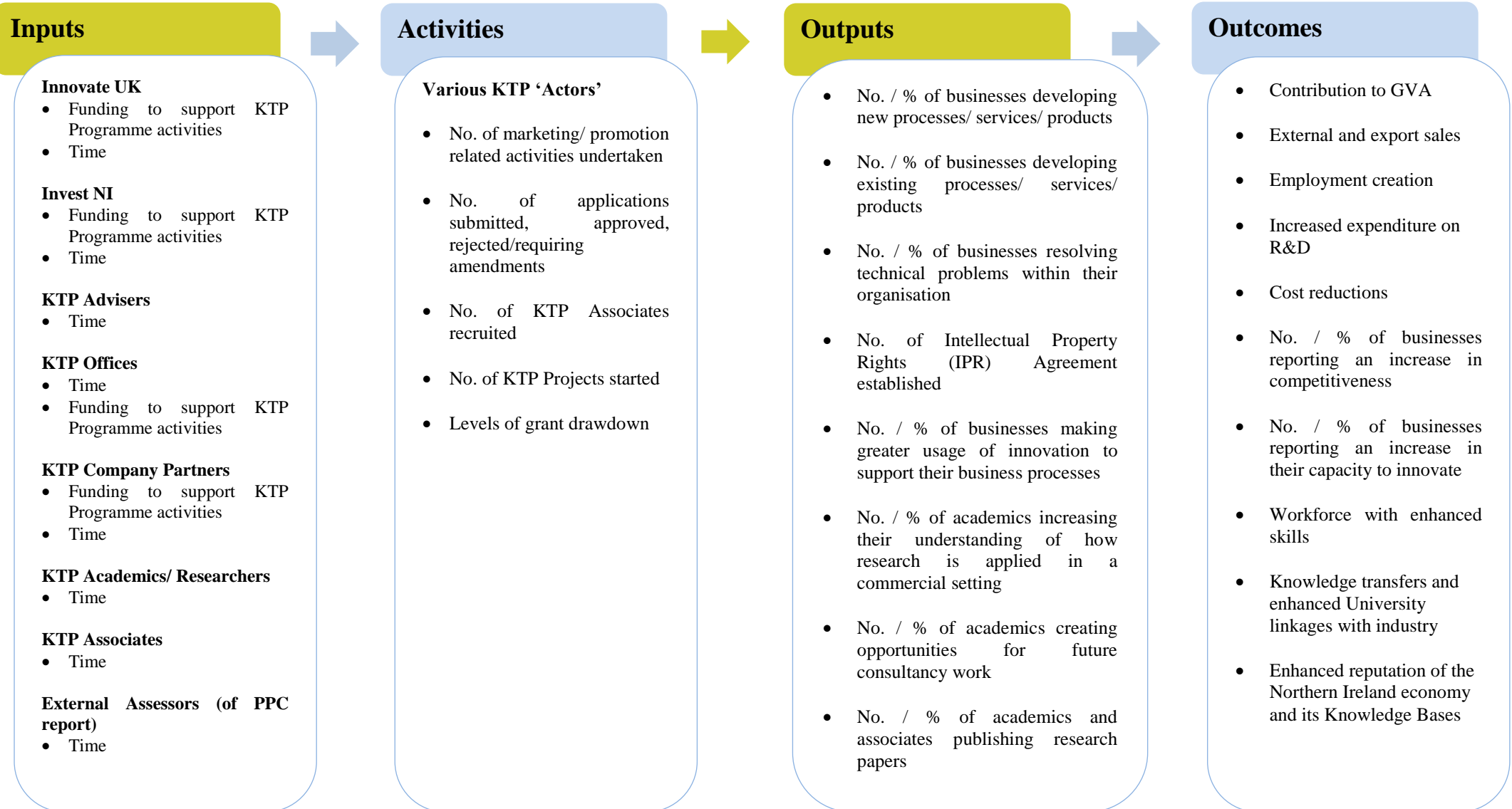
In summary, there were three SMART targets or objectives established for the KTP Programme by the previous Appraisers, one of which was partly achieved, one not yet achieved (given the nature of this interim evaluation and the time period required for it to be realised) and one which was not achieved (albeit discussion with Invest NI suggests that there were a number of contributing factors as to why this was the case).

6.2 Reasonableness of Targets established

In considering the progress that has been made towards achieving those targets that were established for the period 1st April 2012 to 31st March 2017 (as per the Economic Appraisal completed in 2012), the Evaluation Team recommends that, in order to support potential future delivery of the Programme in Northern Ireland, any future Economic Appraisal should focus upon establishing a more appropriate mix of Specific, Measurable, Achievable, Realistic and Time-dependent (SMART) activity, output and outcome targets, which are more focused and linked with the overarching aims and anticipated outcomes of the KTP Programme.

Whilst the nature and quantification of any targets should be established within an independent Economic Appraisal for any potential future phase of the KTP Programme in Northern Ireland, the logic chain overleaf provides a high-level overview of the nature of targets that could be considered as part of any such Appraisal. Please note, any established targets should be aligned with Innovate UK’s strategic direction, at that time, in relation to the delivery of the KTP Programme at a national level.

Aligning SMART objectives to the KTP Programme logic chain



7. PROGRAMME FINANCE

7.1 Introduction

Section 7 examines the costs associated with administering the KTP Programme during the period under review. Please note, in the absence of any economic appraisal or casework documentation setting out anticipated monetary costs associated with the KTP Programme for the period 1st October 2010 to 31st March 2012 (18 month period), the Evaluation Team has been unable to undertake any comparative (forecast versus actual) cost analysis for that period.

7.2 Forecast Costs

7.2.1 Period 2: 1st April 2012 to 31st September 2014 (as set out in the 2012 Economic Appraisal)

As part of the Economic Appraisal of the KTP Programme in Northern Ireland (January 2012), five ‘do something’ options were shortlisted for in-depth appraisal, with Option 6 being identified as the preferred option. The costs associated with this option were:

Anticipated total costs of delivering the KTP Programme in NI (as per EA)								
	Year 1 (£)	Year 2 (£)	Year 3 (£)	Year 4 (£)	Year 5 (£)	Year 6 (£)	Year 7 (£)	Total (£)
Direct Costs								
KTP Costs	£1,171,494	£2,928,735	£3,514,482	£3,514,482	£3,514,482	£2,342,988	£585,747	£17,572,410
Administrative Costs								
TSB administration charge	£165,000	£165,000	£165,000	£165,000	£165,000	-	-	£825,000
Marketing/ publicity	£30,000	£30,000	£30,000	£30,000	£30,000	-	-	£150,000
Evaluation	-	-	-	£15,000	-	-	-	£15,000
Invest NI administrative cost	£76,416	£76,416	£76,416	£76,416	£76,416	£9,634	£3,211	£394,925
Subtotal	£271,416	£271,416	£271,416	£286,416	£271,416	£9,634	£3,211	£1,384,925
Overall total	£1,442,910	£3,200,151	£3,785,898	£3,800,898	£3,785,898	£2,352,622	£588,958	£18,957,335

According to the Economic Appraisal, it was anticipated that the costs would be met from a number of sources including TSB, Invest NI and financial contributions from participating private sector company partners, as detailed in the following table:

Anticipated total funding associated with delivering the KTP Programme in NI (as per EA)								
Funder	Year 1 (£)	Year 2 (£)	Year 3 (£)	Year 4 (£)	Year 5 (£)	Year 6 (£)	Year 7 (£)	Total (£)
Invest NI	£655,432	£1,231,455	£1,423,463	£1,438,463	£1,423,463	£777,665	£195,219	£7,145,160
Private sector	£403,463	£1,008,656	£1,210,388	£1,210,388	£1,210,388	£806,925	£201,731	£6,051,939
Total NI Funding	£1,058,895	£2,240,111	£2,633,851	£2,648,851	£2,633,851	£1,584,590	£396,950	£13,197,099
TSB	£384,016	£960,039	£1,152,047	£1,152,047	£1,152,047	£768,031	£192,008	£5,760,235
Total Funding	£1,442,911	£3,200,150	£3,785,898	£3,800,898	£3,785,898	£2,352,621	£588,958	£18,957,334

The following is noted in relation to the Economic Appraisal's monetary assumptions:

- It was anticipated that the period in which the approval of a KTP Project took place would differ from the period in which any cash impacts would arise. It was suggested that this was due to the fact that a KTP Project has an average lifespan of 18 months. On this basis, the Economic Appraisal indicated that KTP Projects approved in the latter part of year 5 would not complete until year 7.
- The Economic Appraisal set out the following assumptions relating to direct costs and associated funding:
 - **Number of KTPs:** as per the objectives set out in the Economic Appraisal, it was assumed that there would be 30 KTP Projects initiated per annum. It was also assumed that each KTP Project would have an average lifespan of 18 months.
 - **Annual cost per KTP:** the economic appraisal assumed that the average annual cost of each KTP Project was £78,100. It was indicated that this was based on comparable figures included within the 2011 Evaluation, which had subsequently been uplifted to 2011/12 costs using DETI's GDP deflator.
 - **Private sector funding of KTPs:** it was noted that the level of private sector funding varied depending on the size of the organisation undertaking the KTP Project (varying between 33% for an SME to 50% for a large company). Based on data from the 2011 Evaluation, the economic appraisal assumed that the average private sector funding rate was 34.4%.
 - **Public sector funding of KTPs:** it was noted that KTP Projects can be funded either by TSB solely, by Invest NI solely, or jointly by the two. Based on historical data, the Economic Appraisal assumed that the public sector funding of KTP Projects was split on a 50/50 basis between TSB and Invest NI.
- The Economic Appraisal set out the following assumptions relating to administration costs:
 - **TSB administration costs:** based on historical trends, it was assumed that TSB charge Invest NI £5,500 per KTP Project per annum in order to cover the administration cost associated with operating the approval and claims process on behalf of Invest NI. It was highlighted that this cost also contributed towards promotional activities undertaken by TSB.
 - **Marketing/ publicity costs:** the economic appraisal assumed an annual cost of £30,000, which included the printing of KTP brochures, Invest NI sponsorship of the KTP annual awards, four regional events per annum and a contribution towards corporate marketing costs (e.g. event organisation/ communications plan/ PR plan/ press releases/ website updates etc.).
 - **Invest NI staff time:** It was assumed there would be one DP post, operating on a full time basis (214 days per annum in years 1-5), and one Grade 7 post (20 days per annum in years 1-5) associated with the delivery of the KTP Programme in Northern Ireland.

7.3 Actual Costs

7.3.1 Period 1: 1st October 2010 to 31st March 2012

Analysis of monitoring information provided by Invest NI indicates that the following costs were incurred during the period 1st October 2010 to 31st March 2012 (18 months):

Actual costs associated with delivering the KTP Programme in NI (Period 1)	
	Total actual costs: Oct 10 – Mar 12 (£)
Direct Costs	
KTP Costs	£1,763,973
Administrative Costs	
TSB administration charge	£223,925
VAT payable on TSB administration charge	£35,680
Marketing/ publicity	£5,000
Evaluation	£18,800
Invest NI staff time	£101,540
Subtotal	£384,945
Overall total	£2,148,918

Further analysis indicates that the KTP costs incurred during the period 1st October 2010 to 31st March 2012 (as illustrated above) were funded as follows:

Actual total funding associated with delivering the KTP Programme in NI (Period 1)		
Funder	Total funding: Oct 10 – Mar 12	
	(£)	(%)
Invest NI	£483,141	22%
Private sector	£676,412	31%
Total NI Funding	£1,159,553	54%
TSB	£937,308	44%
Other (e.g. EPSRC, Department of Health)	£52,057	2%
Total Funding	£2,148,918	100%

Salient points to note include:

- Over the 18 month period, there were £2.2m of costs (primarily funded via Invest NI, TSB and the private sector) associated with the delivery of the KTP Programme in Northern Ireland, which equates to an annual average cost per project of £57,304.
- The administrative costs (£384,945) across the period were fully funded by Invest NI, and represent an annual average cost per project of £10,265.
- The ‘KTP Costs’ were provided to the Evaluation Team by Invest NI (which were sourced from Innovate UK). These costs are associated with a total of 25 KTP Projects that started during the 18 month period, which equates to an average annual cost per project (excluding the administrative costs) of £47,039.
- The Evaluation Team would highlight that VAT was payable by Invest NI on the TSB administration charge (although this was not featured in the costs included in 2012 Economic Appraisal).
- In terms of the marketing/ publicity costs incurred during this period, discussion with Invest NI indicates that Invest NI’s CCMU and R&D division incurred expenditure that was related to promoting the KTP Programme in Northern Ireland. For example, this included costs associated with general R&D events/ literature etc., where the KTP Programme was specifically referenced and promoted.

- In terms of Invest NI staff, the following is noted:
 - During the six month period (October 2010 – March 2011) there were 107 days of a DP and 10 days of a Grade 7 post involved in the delivery of the KTP Programme in Northern Ireland. During the period April 2011 – March 2012, there was 214 days of a DP and 25 days of a Grade 7 post. Discussion with Invest NI indicates that there were also 3 days of a Director’s time incurred during the April 2011 – March 2012 period. Please note, the Invest NI staff costs are based on information provided by Invest NI and are reflective of the full economic costs of staff time including ERNI plus Superannuation, and loadings⁷⁴.
- In terms of funding contribution, it is noteworthy that Invest NI contributed £483,141 to the total KTP Programme costs of £2.2m during the period, of which £384,945 related to administrative costs and £98,196 related to ‘KTP costs’. Analysis of monitoring information provided by Invest NI indicates that the £98,196 of KTP costs related to four KTP Projects that it part funded during the period (on a 50%/ 50% basis with Innovate UK).

⁷⁴ The Evaluation Team utilised DETI’s Ready Reckoner of Staff Costs for the 2009/10 period, which has been uplifted for the periods under consideration (ERNI has been uplifted by the relevant percentage points and the superannuation and loadings have been uplifted using HMT’s GDP deflators).

7.3.2 Period 2: 1st April 2012 to 31st September 2014

Analysis of monitoring information provided by Invest NI indicates that the following costs were incurred during the period 1st April 2012 to 31st September 2014 (30 months):

Comparison of costs associated with delivering the KTP Programme in NI (Period 2)			
	Projected ⁷⁵ (£)		Variance (£)
Direct Costs		Actual (£)	
KTP Costs	£5,857,470	£2,808,115	-£3,049,355
Administrative Costs			
TSB administration charge	£412,500	£132,000	-£280,500
VAT payable on TSB administration charge	£0	£40,400	£40,400
Marketing/ publicity	£75,000	£39,894	-£35,106
Invest NI staff time	£191,040	£159,756	-£31,284
Subtotal	£678,540	£372,050	-£306,490
Overall total	£6,536,010	£3,180,165	-£3,355,845

Further analysis indicates that the KTP costs incurred during the period 1st April 2012 to 31st September 2014 (as illustrated above) were funded as follows:

Comparison of funding associated with delivering the KTP Programme in NI (Period 2)						
Funder	Projected ⁷⁶ (£)		Actual (£)		Variance (£)	
	(£)	(%)	(£)	(%)	(£)	(%)
Invest NI	£2,598,619	40%	£1,868,323	59%	-£730,296	19%
Private sector	£2,017,313	31%	£759,769	24%	-£1,257,544	-7%
Total NI Funding	£4,615,932	71%	£2,628,091	83%	-£1,987,840	12%
TSB	£1,920,079	29%	£502,049	16%	-£1,418,029	-14%
Other (e.g. ESRC, BBSRC, MRC)	£0	0%	£50,024	2%	£50,024	2%
Total Funding	£6,536,010	100%	£3,180,165	100%	-£3,355,845	

⁷⁵ Please note, to allow for meaningful comparable analysis, given the projected figures outlined in the economic appraisal were based on full years, and given that Period 2 only covered 30 months/ 2.5 years (up until 30th September 2014), the Evaluation Team has proportionately reduced (by 50%) the projected costs associated with Year 3.

⁷⁶ See preceding fn.

Salient points to note include:

- In considering the costs presented in relation to the period 1st April 2012 to 31st September 2014, it should be noted that the ‘KTP Costs’ were provided to the Evaluation Team by Invest NI (which were sourced from Innovate UK), and that these costs are associated with a total of 57 KTP Projects that started during the 30 month period. However, 79% (N=57) of these KTP Projects are currently ‘live’ and have therefore yet to fully incur all of their associated delivery costs. As such, the costs presented only reflect the expenditure incurred during this period of the KTP Programme. Please note, this total is likely to increase as the projects come to completion in the future, at which point all project related costs will be fully incurred. Notwithstanding this, a summary of the actual cost information available to that Evaluation Team at this juncture is presented in this subsection.
- During this period (30 months), there was circa £3.2m of costs (primarily funded via Invest NI, TSB and the private sector) associated with the delivery of the KTP Programme in Northern Ireland, which equates (at this point in time) to an annual average cost per project of £22,317⁷⁷.
- The administrative costs (£372,050) across the period were fully funded by Invest NI, and equate to an average annual cost per project of £2,611.
- The ‘KTP Costs’ were provided to the Evaluation Team by Invest NI (which were sourced from Innovate UK). These costs are associated with a total of 57 KTP Projects that started during the 30 month period, which equates to an average annual cost per project (excluding the administrative costs) of £19,706.
- The total Programme cost represents a circa £3.4m variance in what was anticipated, as per the Economic Appraisal, during the same time period. Discussion with Invest NI indicates that this is largely attributable to the number of KTP Projects starting in Northern Ireland during the period being lower than that which was anticipated in the Economic Appraisal (which was projecting 30 KTP Projects initiated per annum compared to the actual number of 23). Also, as noted above, a proportion of the total costs associated with the number of projects commenced in period 2 have yet to be incurred.
- Discussion with Invest NI indicates that, for the 2012/13 and 2013/14 financial years, the TSB/ Innovate UK administration charge was agreed as £4,000 (versus £5,500 included in the Economic Appraisal) per KTP Project per annum. This accounts for part of the underspend during the period. The Evaluation Team would also highlight that VAT was payable by Invest NI on the TSB administration charge (this was not featured in the costs included in 2012 Economic Appraisal).
- Further discussion with Invest NI indicates that the staffing complement associated with the delivery of the KTP Programme in Northern Ireland increased compared to that profiled within the Economic Appraisal. In this context, the following is understood:
 - The inclusion of Director level time (Grade 5) related to attendance at the national KTP Programme awards and various management meetings in Swindon.
 - In order to assist with vouching claims relating to KTP Projects, from 2013/14 onwards there was a necessity for additional time input from an EO2.
 - It had been estimated in the economic appraisal that there would be one DP post, operating on a full time basis (214 days per annum). However, according to Invest NI, this time input was lower in 2012/13 (at 200 days) due to the fact that the Programme Manager had responsibility

⁷⁷ Please note, there are inherent difficulties in drawing any comparisons between this figure and the corresponding figure for period 1 (i.e. £57,304) on the basis that all of the projects in period 1 are completed/ finalised (and have fully incurred their respective costs), whereas 79% (N=57) of the KTP Projects in period 2 are currently ‘live’ and have therefore yet to fully incur all of their associated delivery costs.

for other tasks beyond the KTP Programme (which were not factored into the analysis undertaken as part of the economic appraisal). Furthermore, due to an internal reorganisation within Invest NI, there was no DP post associated with the KTP Programme from mid-January 2014 to April 2014 (please note, a DP post was in place again from April 2014 onwards).

- Furthermore, according to Invest NI there was additional time input across the period at Grade 7 level, which was largely related to securing Ministerial and DFP approval for the new round of funding.
 - Of note, the cost associated with Invest NI staff time was circa £32,000 lower than that projected (as per the EA).
- The actual staff input, across each of the staff grades, is outlined as follows:

Staff Input disaggregated across the period under review (Period 2)			
Staff Grade	No. of days		
	Apr 12 – Mar 13	Apr 13 – Mar 14	Apr 14 – 31st Sept 14
Grade 5	3	3	1
Grade 7	25	25	10
DP	200	180	80
EO2	-	5	2

Please note, the Invest NI staff costs included in the preceding analysis were based on information provided by Invest NI and are reflective of the full economic costs of staff time including ERNI plus Superannuation, and loadings⁷⁸.

- Interestingly, the costs associated with any marketing/ publicity associated with promoting the KTP Programme were lower than those anticipated within the Economic Appraisal. Similar to the marketing/ publicity activity undertaken during Period 1, discussion with Invest NI indicates that Invest NI’s CCMU and R&D division incurred expenditure that was related to promoting the KTP Programme in Northern Ireland. For example, this included costs associated with general R&D events/ literature etc., where the KTP Programme was specifically referenced and promoted. The Evaluation Team would highlight that had Invest NI undertaken the level of marketing activity proposed, as per the Economic Appraisal, this may have generated more awareness of the Programme and in turn contributed towards more KTP Projects being supported.
- In terms of funding, it is notable that Invest NI contributed £1,868,323 during the period, of which £372,050 related to administrative costs and £1,496,273 related to ‘KTP costs’. Analysis of monitoring information provided by Invest NI indicates that the circa £1.5m of KTP costs funded by Invest NI related to 48 (of the 57) KTP Projects that it part funded or fully funded (at 100%) during the period.
- It is notable that, during this period, Invest NI contributed towards 59% of the total costs, versus a projected figure of 40% (as per the Economic Appraisal). In considering the greater proportion funded by Invest NI, it is understood that 17 of the 48 KTP Projects were funded by Invest NI at 100%, whereas the Economic Appraisal assumed that each KTP Projects would be funded on a 50/50 basis between TSB and Invest NI.

In addition to the above, it is also understood that the increase in ‘KTP costs’ during this period (from £98,196 in period 1 to £1,496,273 in period 2) was in part due to delays in approvals that were experienced during period 1, owing to budget uncertainties at that time, which had corresponding implications for the number of KTP Projects being funded. It is also understood that these uncertainties lasted longer in Northern Ireland and Scotland than in England, which impacted on the number of KTP Projects supported at a Northern Ireland level during period 1.

⁷⁸ The Evaluation Team utilised DETI’s Ready Reckoner of Staff Costs for the 2009/10 period, which has been uplifted for the periods under consideration (ERNI has been uplifted by the relevant percentage points and the superannuation and loadings have been uplifted using HMT’s GDP deflators).

8. CONCLUSIONS & RECOMMENDATIONS

The section presents the Evaluation Team's key conclusions and recommendations arising from the evaluation process.

8.1 Conclusions

8.1.1 *Strategic Context and Rationale*

At the time of approval, there was a need for Government intervention to provide support to encourage greater levels of innovation, knowledge transfer and collaboration between businesses and Northern Ireland's knowledge base in order to facilitate business growth and reduce the productivity gap with other UK regions.

A number of market failures (including asymmetric information and co-ordination failures) and non-market failure factors (e.g. absorptive incapacity of the private sector inhibiting successful uptake of innovation etc.) were preventing businesses from engaging in knowledge transfer or collaboration with Northern Ireland's knowledge base.

There was, and continues to be, clear alignment between the aims and objectives of the KTP Programme and the strategic imperatives of the Northern Ireland Government (including with DETI and Invest NI's Corporate Plans). Specifically, in line with Government's strategic focus, the activities supported by the KTP Programme offer the potential to:

- Stimulate innovation, R&D and creativity so that the private sector grows and the export base is widened and deepened.
- Encourage SMEs to undertake collaborative R&D&I activities for the first time, thereby increasing the proportion of innovation active firms and contributing to a step change in the culture, priority and performance of SMEs in respect of innovation. In keeping with the Draft Innovation Strategy for Northern Ireland 2013 – 2025, this would include activity that includes changes to products and processes, the introduction of new business models and organisational changes and as an outworking of this, entry into new markets.
- Contribute to skills development amongst associates and in turn their employability.
- Support a culture of collaboration across industry and academia, with businesses taking a leadership role and academia working to inspire innovation through high quality R&D, knowledge creation and workforce preparation.
- Help Northern Ireland to become more connected with regards its research base and ensure the effective transfer of knowledge and technology.

8.1.2 *Operation and Delivery*

It is understood that, whilst Innovate UK was (and continues to be) responsible for marketing the KTP Programme at a UK level, Invest NI, in close conjunction with the KTP Offices, undertook a range of activities e.g. facilitating seminars and events, press releases, PR plans, website updates etc. to raise awareness of, and to stimulate participation on, the Programme during the period under review (indeed, it is understood that Invest NI continues to undertake these activities). Furthermore, a range of mechanisms were utilised by the two principle KTP Offices in Northern Ireland (at QUB and UU) to raise awareness of the KTP Programme.

During consultation, representatives from the KTP Offices at QUB and UU expressed their views that there were often difficulties in identifying and recruiting KTP Associates with the requisite skills and expertise in key areas such science, IT and engineering. This view was shared by the KTP Advisers during consultation. In response to this, it was reported that the KTP Office at QUB had most recently (i.e. 2014) focused its awareness raising activities at those students/ graduates with skills and expertise in science, IT and engineering.

During consultation, Invest NI expressed its view that a ‘funding crisis’ arose in late 2010 at a UK level, which had a major impact on the ability of Innovate UK, and the various sponsors at that time, to provide funding in support of KTP Projects. The lack of funding was a result of a Spending Review which was implemented by the UK Government in 2010. It is understood that this essentially reduced Innovate UK’s allocated budget for the KTP Programme and had subsequent implications for the quantum of KTP Projects that could be approved by the PAG.

Analysis of monitoring information provided by Invest NI indicates that, as of January 2015, there were 82 KTP Projects started (based on their formal start date) in Northern Ireland during the period under review, with circa 20 projects in a typical year (i.e. April to March). Discussion with Invest NI suggests that the number of KTP Projects that started in Northern Ireland was (and is) dependent on a number of factors, including the availability of funding from Innovate UK, the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.

Nonetheless, discussion with the representatives from the KTP Office at QUB expressed their view that there is capacity (there are currently four FTE posts within the KTP Office at QUB), and a willingness, within the knowledge base to support a higher volume of KTP Projects per annum. In order to increase the volume of KTP Projects per annum, it was further suggested by representatives from the KTP Office at QUB that Invest NI’s Client Executives could potentially be working with their client companies to identify if the KTP Programme would address their business needs. However, further discussion with Invest NI indicates that any such awareness raising activities need to be undertaken and aligned with Innovate UK’s available funding and with the capacity of the two KTP Advisers in Northern Ireland and the availability of prospective KTP associates.

During the period under review, QUB was the Knowledge Base partner responsible for the majority of the KTP Projects that started in Northern Ireland, which is reflective of its historical position over the last ten years as one of the top performers across the UK in terms of the number of new KTP partnerships started each year. Discussion with Invest NI indicates that, as of October 2014, QUB is the most active knowledge base in the UK, with UU being ranked 8th. Furthermore, in terms of the total number of completed KTP Projects since 1982, a recently published report⁷⁹ states that QUB ranks first (322) and Ulster University ranks sixth (192).

From a national perspective, discussion with Invest NI suggests that, during the period under review (i.e. 1st October 2010 to 30th September 2014), £97m was awarded in the form of grant support (excluding company contributions) towards 1,131 KTP Projects across the UK. During the same period, the activity undertaken under the KTP Programme in Northern Ireland represented 7.25% of all new KTP Projects (82) and 6.7% of the total grant committed (circa £6.5m).

Based on the available monitoring information, the Evaluation Team would highlight that, as of January 2015, over a quarter (26%, N=82) of the KTP Projects withdrew at various stages and for a variety of reasons (e.g. change in the business’ priorities, unable to recruit a suitable Associate etc.). This figure is marginally higher than those figures reported at a UK level, which illustrates an attrition rate (as of April 2015) of 22%. However, by comparison, the Northern Ireland figure is marginally lower than the corresponding figure for Wales (30%) and Scotland (27%). In the Evaluation Team’s view, this would appear to be a high attrition rate, and one which could be compounded further if any of those ‘live’ or active KTP Projects in Northern Ireland withdraw as their project progresses.

During the period under review it is interesting to note that there were only six KTP Projects started by three (of the six) FE Colleges in Northern Ireland. Discussion with Invest NI and representatives from each of the FE Colleges indicates that the FE sector was historically involved in the Programme, although in recent times (specifically during the period under review) there was a perception that the ‘innovation bar’ had been increased, whereby the Colleges, and the businesses that may potentially collaborate with, found it increasing difficult to develop projects that meet the eligibility criteria for

⁷⁹ ‘Impacts of KTP Associates and Knowledge Bases on the UK Economy’ (Warwick Economics and Development, October 2015).

the Programme (please note, it is understood that the eligibility criteria were not amended during the period under review, but rather the view shared by Colleges and other stakeholders was that applications were scrutinised in more detail than was previously the case). This view was shared by one of the KTP Advisers, although it was suggested that the FE Colleges could continue to have a role to play moving forward, particularly in niche areas where they have specialisms.

Encouragingly, the findings from the Evaluation Team's benchmarking analysis indicates that the uptake of KTP Projects amongst businesses in Northern Ireland is higher than other regions within the UK. For example, during the period under review, Northern Ireland had 40 current/ active KTP Partnerships per 50,000 VAT registered businesses. By comparison, this is higher than the corresponding figures for England, Scotland and Wales, which were 14, 26 and 21 respectively.

Based upon the feedback from businesses (as per Section 4), it is the Evaluation Team's view that the KTP Programme was, in general, managed and delivered in a proactive and efficient manner by the various 'actors' (including Innovate UK, Invest NI, the KTP Office and the KTP Advisers) with participants reporting high levels of satisfaction with the structure and delivery model. For example, there was reported to be high levels of satisfaction amongst business and academics with the support they received from the KTP Office in relation to: developing their Partnership; developing and submitting their KTP application; the application and approval process; recruiting a KTP Associate; a variety of administrative support etc.

Over the 1st October 2010 to 31st March 2012 (18 months) period, there was £2.2m of costs (funded via Invest NI, TSB and the private sector) associated with the delivery of the KTP Programme in Northern Ireland, which equates to an annual average cost per project of £57,304.

In considering the expenditure presented in relation to the period 1st April 2012 to 31st September 2014, it should be noted that the 'KTP Costs' were provided to the Evaluation Team by Invest NI (which were sourced from Innovate UK), and that these costs are associated with a total of 57 KTP Projects that started during the 30 month period. However, 79% (N=57) of these KTP Projects are currently 'live' and have therefore yet to fully incur all of their associated delivery costs. As such, the costs presented reflect the current status in relation to the costs associated with this period of the KTP Programme.

During this period (30 months), there was circa £3.2m of costs (primarily funded via Invest NI, TSB and the private sector) associated with the delivery of the KTP Programme in Northern Ireland, which equates (at this point in time) to an annual average cost per project of £22,317⁸⁰.

8.1.3 Performance and Impact

Based on the feedback from those businesses, academics and associates in receipt of support, the following key conclusions can be drawn in relation to the impact made by the KTP Programme during the period under review:

- In considering the impact of the KTP Programme on its participants to date, the reader should be mindful that **this interim evaluation report represents only an intermediate position of the KTP Programme's potential ultimate impact.**
- Levels of activity (55% for businesses, 75% for academics and 54% for associates) and impact (69% for businesses, 90% for academics and 73% for associates) additionality should be viewed positively, indicating that the KTP Programme played a strong role in encouraging each of the

⁸⁰ Please note, there are inherent difficulties in drawing any comparisons between this figure and the corresponding figures for period 1 (i.e. £57,304) on the basis that all of the projects in period 1 are completed/ finalised (and have fully incurred their respective costs), whereas 79% (N=57) of the KTP Projects are currently 'live' and have therefore yet to fully incur all of their associated delivery costs.

partners to undertake collaborative projects with the aim of embedding knowledge and innovation from academics into businesses.

- Market failure, typically in the form of asymmetric information, has played a strong role in preventing businesses from taking forward the project (as proposed within their KTP application).
- The most common outputs derived amongst participants to date as a result of the support provided through the KTP Programme are:
 - The resolution of technical problems;
 - The adaption of existing processes; and
 - The development of new products and processes.
- From a quantitative perspective the analysis suggests that the KTP Programme has:

Businesses:

- Contributed circa £1.5m (excluding anticipated benefits) or £5.3m (including anticipated benefits) in net additional GVA to the NI economy.
- Enabled businesses to achieve circa £3.7m in net additional sales and circa £424,000 in additional cost savings.
- Created 16 net additional FTE jobs.
- Safeguarded 10 net additional jobs.
- Encouraged businesses to undertake circa £165,000 in net additional R&D expenditure.

Academics:

- Generated circa £270,270 in net additional income for the Knowledge Base.
- Contributed towards the publication of circa 14 net additional research papers.

Associates:

- Contributed towards the publication of circa 13 net additional research papers.

- On an overall basis, only 16% (N=44) of businesses, 17% (N=47) of academics and 9% (N=45) of associates indicated that, in the absence of the KTP Programme, they would be able to get the same or similar support elsewhere.
- It is the view of the Evaluation Team, and one shared by Invest NI and other stakeholders, that the KTP Programme (alongside other interventions such as the FUSION Programme) forms a vital component, at the top end of Invest NI's 'Innovation Escalator', in the construction and development of Northern Ireland's 'Innovation Ecosystem'.
- Of those businesses that have finished their KTP Project, over two thirds (70%, N=10) of respondents indicated that they had employed the Associate on a full time basis. Over two thirds (67%, N=33) of those business respondents with 'live' or active KTP Projects stated that it is likely they will employ their KTP Associate when the project is finalised.
- Importantly, the KTP Programme has contributed to providing the Northern Ireland economy with a number of other **wider (including knowledge transfers, university linkages with industry and skills development) and regional (including the creation of high quality jobs and innovative nature of the project) benefits**. Indeed, a recently published review⁸¹ cited that KTPs "have a role in delivering economic returns and supporting skills development both for graduates and within companies".

⁸¹ Source: 'The Dowling Review of Business-University Research Collaborations' (July 2015).

- At an overarching level, the Evaluation Team is of the view that the concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners. It is the Evaluation Team's view that there are a number of learning points (as previously highlighted) that could be factored into Innovate UK's ongoing review of the PPC reports. This would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.
- Of note, there were three SMART targets or objectives established for the KTP Programme by the previous Appraisers, one of which was partly achieved, one not yet achieved (given the nature of this interim evaluation and the time period required for it to be realised) and one which was not achieved (albeit discussion with Invest NI suggests that there were a number of contributing factors as to why this was the case).

8.1.4 Value for Money

Based on the preceding analysis and being mindful of the timing of this interim evaluation exercise (given it only represents an intermediate position of the KTP Programme's potential ultimate impact), it is the Evaluation Team's view that the KTP Programme has, on balance and at this stage, provided Invest NI with Value for Money in respect of the investment it made across the two periods under review (i.e. circa £483k and £1.9m in periods 1 and 2 respectively).

This view has been informed by the fact that:

- There was, and continues to be, clear alignment between the aims and objectives of the KTP Programme and the strategic imperatives of the Northern Ireland Government (including with DETI and Invest NI's Corporate Plans).
- There have been a range of outputs and quantifiable impacts derived amongst business, academia, and associate participants to date as a result of the support provided through the KTP Programme (e.g. circa £1.5m excluding anticipated benefits or £5.3m including anticipated benefits in net additional GVA to the NI economy, circa £3.7m in net additional sales, circa £424,000 in additional cost savings etc.).
- The KTP Programme has contributed to providing the Northern Ireland economy with a number of other wider (including knowledge transfers, university linkages with industry and skills development) and regional (including the creation of high quality jobs and innovative nature of the project) benefits. Indeed, a recently published review⁸² cited that KTPs "*have a role in delivering economic returns and supporting skills development both for graduates and within companies*" and that "*KTPs have proved to be highly valuable for facilitating knowledge transfer and seeding collaborations*".

Notwithstanding the above, it is the view of Invest NI and other key stakeholders (and one shared by the Evaluation Team) that the timing of this interim evaluation (i.e. two and a half years into the current 2012-2017 Programme period), the small number of finished KTP Projects (i.e. 13 in period 1 and 3 in period 2), and the smaller number of respondents being able to quantify Programme impacts, all pose constraints in terms of assessing the impact of the KTP Programme at this juncture, which in turn constrains a more comprehensive Value for Money and Return on Investment assessment being undertaken.

⁸² Source: 'The Dowling Review of Business-University Research Collaborations' (July 2015).

8.2 Recommendations

The Evaluation Team has set out below a number of recommendations for Invest NI's consideration:

1. Moving forward, Invest NI, in conjunction with Innovate UK, should implement a robust process to capture, and collate, details of those participants that withdraw (at various stages) from the Programme. This should include details on the rationale for their withdrawal e.g. identifying any issues encountered etc. This process should be undertaken in conjunction with the various stakeholders involved in the delivery of the Programme.
2. The concept of PPC reports are considered to be a useful mechanism to capture post project specific information, which could in turn inform views on the success and impact of the KTP Programme on each of the individual partners. Invest NI should liaise with Innovate UK about its ongoing review of the PPC reports and should explore the potential for the key learning points outlined in this evaluation (relating to the PPC reports) to be factored into any future amendments to these reports. This would serve to enable a more robust and meaningful assessment to be made at a UK level on the impact of the KTP Programme.
3. Linked to the above point, it is recommended that Invest NI (in conjunction with the 'actors' involved in the delivery of the Programme) should play a more active role in terms of 'sense checking' all those PPC reports that are completed by KTP Partnerships in Northern Ireland. This would contribute towards addressing some of the issues with the existing PPC reports (as identified as part of this evaluation).
4. Greater emphasis should be placed upon establishing a more appropriate mix of Specific, Measurable, Achievable, Realistic and Time-dependent (SMART) activity, output and outcome targets, which are more focused and linked with the overarching aims and anticipated outcomes of the KTP Programme.

Whilst the nature and quantification of any targets should be established within an independent Economic Appraisal for any potential future phase of the KTP Programme in Northern Ireland, the Evaluation Team has set out (as per Section 6.2) a high-level overview of the nature of targets that should be considered as part of any such Appraisal. Please note, any established targets should be aligned with Innovate UK's strategic direction, at that time, in relation to the delivery of the KTP Programme at a national level.

5. Whilst the marketing activity associated with the KTP Programme has regained momentum (following the funding crisis that arose in late 2010 at a UK level), based upon feedback from various programme participants and stakeholders, Invest NI should undertake more focused awareness raising activities with its Client Executives in order to ensure that they are actively working with their client companies to identify if the KTP Programme could address their business needs. Linked to this, Invest NI should ensure that any such activities are undertaken and aligned with Innovate UK's available funding and with the capacity of the two KTP Advisers in Northern Ireland.
6. Whilst some work has been undertaken by the KTP Offices in order to address the issues relating to associate recruitment and retention (particularly in relation to redressing the 'skills gap' and focusing awareness raising activities at those students/ graduates with skills and expertise in science, IT and engineering), Invest NI should seek to work with the KTP Offices throughout Northern Ireland to develop an Action Plan specifically looking at this issue. A key focus of the Action Plan should be to explore views on the salary levels for prospective associates and of the practical ways in which the 'skills gap' could be addressed. The findings from the National Forum Review on KTP Recruitment (2013) would serve as an important starting point in this regard, given that the issue of associate recruitment and retention is also a feature of the KTP Programme at a national level.