Evaluation of the Innovation Vouchers Programme

Report to Invest Northern Ireland

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SQW

Contents

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Executive Summary

1. SQW Ltd, working with QA Research, was appointed by Invest Northern Ireland in June 2019 to undertake an evaluation of the Innovation Vouchers Programme. The evaluation comprises a final evaluation of Phase II (2012-2015), and an interim evaluation of Phase III (2015-March 2019).

2. Innovation Vouchers is a longstanding intervention which began in 2008. The Programme aims to help Small and Medium Enterprises (SMEs) in Northern Ireland to engage with Knowledge Providers on innovation projects. It provides SMEs with a voucher - worth up to a maximum of £4,000 (plus a 30% contribution to overheads) in Phase II and £5,000 in Phase III - to purchase practical advice and expertise from universities, colleges, and other publicly funded research bodies in Northern Ireland and the Republic of Ireland. This operating model was largely consistent across both Phases, with key alterations to Phase III including: a reduction in Invest NI's contribution to follow-on vouchers; the introduction of an online application form; and a modest change in voucher value.

3. The evaluation adopted a logic model approach to test the rationale and objectives for the intervention, the inputs, activities and outputs delivered, and the resulting outcomes and impacts. The evaluation also assessed the Programme's delivery processes. The study included an analysis of monitoring data and documents, a telephone survey of 256 participants, an online survey of 70 academics involved in project delivery, and consultations with Knowledge Provider co-ordinators, Invest NI staff and wider stakeholders.

Context, rationale and objectives

4. Over the period from the approval of Phase II in 2012, the strategic policy agenda has emphasised consistently the importance of improving Northern Ireland's relatively low levels of innovation compared to other UK nations and regions. This provides a sound and consistent headline rationale for intervention. Further, the evaluation's business survey indicated that many beneficiaries had not innovated previously and had no links to Knowledge Providers before engaging with the Programme. This aligns with the stated market failure arguments for the Programme, focused on information and co-ordination failures.

5. That said, the Programme has also commonly supported businesses, especially Invest NI Client Managed businesses, that had innovated previously and had existing links to Knowledge Providers. For these businesses, the Programme is encouraging and de-risking further innovation activity, rather than addressing the stated market failures. Given the overarching strategic imperative to raise levels of innovation in Northern Ireland's economy, and the barriers faced by businesses in investing in innovation, this is considered to be a valid rationale for intervention. However, going forward, this distinction should be recognised explicitly, and the balance in focus between supporting 'new to innovation' and 'existing innovator' businesses should be considered in the planning for Phase IV.

6. The overarching objective for the Programme is to encourage greater levels of innovation activity amongst NI's business base, by supporting SMEs to develop innovative solutions to enhance their growth and competitiveness. The Programme objectives evolved over the

period covered by the evaluation: Phase III includes an explicit focus on intangible outcomes related to innovation behaviours and attitudes, alongside targets for direct economic impact. This is an encouraging development, reflecting more fully the strategic and policy objectives of the Programme.

7. The survey evidence shows that for businesses, Innovation Vouchers is principally about developing new products and services as the direct and immediate effects of the Programme. Whilst there is a difference between what the Programme is seeking to achieve formally and what businesses are looking to achieve, this is not unexpected and highlights the variation between macro-level policy objectives, and business-level business objectives.

Inputs and activities

8. Taking into account the costs of voucher projects and wider delivery costs such as marketing, the total expenditure of Phase II is estimated at c.£3.4m, a slight underspend on the approved £3.7m budget. Expenditure for Phase III to March 2019 is estimated at £2.7m, roughly in line with budget at this interim stage. Demand has not reached a level where it became necessary to seek approval for an expanded £9.65m budget that was contained within the approval of Phase III.

9. Some 674 projects were initiated in Phase II, with 704 projects initiated at this interim stage of Phase III. The evidence suggests that the quantity and quality of demand from eligible applicants has been largely maintained over the evaluation period, although there has been a general reduction in the number of applications which should be considered in thinking through the demand for any future Phases.

10. The vast majority (at least 90% over the evaluation period) of Voucher projects have been delivered by Knowledge Providers based in Northern Ireland. In both Phases covered by the evaluation, the two universities and the College of Agriculture, Food and Rural Enterprise (CAFRE) were the most common providers, with South West College also active since the outset. However, other Further Education Colleges became more prominent over time: for example, North West Regional College, Southern Regional College and Belfast Metropolitan College collectively accounted for 8% of initiated projects in Phase II, and 23% in Phase III. This is encouraging, managing the risks associated with the capacity and interest in the Programme if it was reliant on a small number of providers.

11. Knowledge Providers have tailored and institution-specific delivery models. For example, the frequency of academic engagement with businesses during a project varies as does the number of days spent on a project. However, in a third of cases, academics involved in the delivery of Voucher projects that responded to the online survey reported spending more time on the project than initially agreed. This should be addressed going forward, to ensure that there is no detrimental impact on the Value for Money and sustainability of the Programme.

12. In terms of beneficiaries, the majority of vouchers awarded have been single vouchers (i.e. awarded to businesses that have not received a previous voucher), and their spatial distribution broadly reflects the distribution of the NI business base. Notably, the vast majority of beneficiary businesses employ less than 10 people, and 30-40% had no turnover at the time of application. The Programme is therefore supporting large numbers of small, and often pre-start, businesses that are not eligible for other Invest NI supports.

Outputs and outcomes

13. Monitoring data indicates that over 650 projects were completed in Phase II, and over 600 Phase III projects had been completed by March 2019. The level of project non-completion has remained very low in both Phases suggesting that the Invest NI selection process is robust, and that projects are meeting business needs.

14. The survey evidence suggests that the 'output' from a Voucher project for two-thirds of supported businesses is a technical report or other written output. However, over a third of businesses surveyed were provided with a prototype and a notable proportion (14% in the survey sample) a product ready for market. Therefore, and despite the modest value of the voucher, it can lead directly to market outcomes for businesses.

15. In terms of outcomes, the Programme has led to:

- positive effects on innovation perspectives and relationships for at least two-thirds of surveyed businesses
- market and business capacity outcomes, including a new or significantly improved product for half of surveyed businesses
- increased investment by SMEs in innovation, which aligns strongly to the strategic case for Innovation Vouchers
- new or increased exports for around a fifth of surveyed businesses – an encouraging finding given that this is not a core Programme objective.

16. Turnover increases as a result of the Programme were identified by 38% of surveyed businesses, with employment increases for 17%. Where quantified, the mean increases (in gross terms) were around £250k and 2.6 FTEs respectively, although there was considerable variation across respondents. Looking forward, over half of Phase III respondents expect to achieve turnover and/or employment benefits in the next three years.

17. Amongst the survey sample, the results of two sub-sets of businesses stand out. First, agri-food businesses were more likely than those from other sectors to report launching a new product/service as a result of Innovation Vouchers, and to generate turnover benefits at this point. This highlights the importance of agri-food businesses to the overall outcomes of the Programme, and is likely to reflect the nature of the sector and the time-paths required for innovations to reach the market. Second, businesses that were Client Managed by Invest NI when they approached the Programme were also more likely to report some outcomes, relative to those that were not. This is likely to reflect the capacity of these businesses to secure the benefits from the innovation activity supported by the Programme.

18. The evidence suggests that the volume of businesses 'moving-on' to other Invest NI innovation and R&D supports is substantial: of the 616 businesses offered an Innovation Voucher in Phase II, some 45% secured subsequent Invest NI support. The equivalent figure for Phase III is lower at 29%, but this is to be expected given both the passage of time between supports and on-going delivery of Phase III.

19. Further, 50% of businesses surveyed remained in contact with a Knowledge Provider following project completion. This suggests the Programme is commonly delivering against

the objective of being a 'first step' on an innovation journey, and that its long-term effects may be significant, as businesses continue to invest in innovation.

20. Whilst primarily aimed at businesses, the Programme has also generated benefits on the 'delivery side.' For example, the financial contributions made by the Programme were highlighted as an important benefit by most academics and Knowledge Provider co-ordinators. The majority of academics also reported a range of qualitative benefits including enhanced applied knowledge and skills, improved relationships with businesses, and benefits to their wider teaching activity, including through a greater insight into business needs.

Additionality and other contributory factors

21. The Programme delivered additionality, either fully (c.50%) or in part for the majority of survey respondents, and there was limited evidence of Deadweight or Substitution – these are positive findings.

22. The additionality of the Programme (over both Phases covered by the evaluation) is estimated to be 45% for job creation, and 41% for turnover generation, based on applying participant-level additionality ratios to gross outcomes. The overall additionality picture is influenced heavily by Displacement effects because many of the beneficiaries operate principally in NI markets.

23. Whilst the Programme has delivered additional outcomes, it is important to recognise that other internal and external factors may have influenced the effects of the Voucher activity: around half of the surveyed businesses had implemented a new business plan during the project or after its completion, and a third had purchased new equipment. Further, a sizeable proportion of businesses also reported that additional investment was required to generate benefits (36-47% depending on the outcome), although it is notable that further investment was *not* required in most cases.

Impact and value for money

Phase II

24. The net impacts of Phase II are estimated to be: between 80 and 104 net jobs created, with a mid-point of 92 jobs created; and a net GVA contribution (including an outlier) of between £5.7m and £6.5m, with a mid-point of £6.1m. Comparing the GVA impacts to the cost of delivery, provides a positive Return on Investment (RoI) of between £1.7 and £1.9 of GVA impact generated for every £1 invested by Invest NI. Phase II therefore outperformed its RoI target and the RoI calculated in the 2014 evaluation.

25. Positively, Phase II also met its output and outcome targets. Whilst the achievement of some of the GVA targets are dependent on inclusion of a major outlier, this is not unreasonable as past evidence shows that the benefits from innovation support projects are not evenly distributed amongst beneficiaries. Overall, considering the full range of evidence relating to Economy, Efficiency and Effectiveness in the round, the evaluation makes a positive assessment of Phase II's value for money.

Phase III

26. It is estimated at this interim evaluation stage, that businesses with completed Phase III projects will create approximately 420 net jobs, and generate net GVA of over £11m by mid-2022. Whilst this is a positive finding, it is important to note that the majority of this impact is expected rather than realised (82% for employment, and 72% for GVA). Linked with the findings above, the ability of the Programme to deliver against these impacts will rely on other factors, including potentially significant levels of investment by or on behalf of the supported businesses.

27. Considering achieved impacts only, Phase III's RoI at this interim stage is positive, with £1.25 of impact generated for every £1 of investment by Invest NI. The Programme is broadly on course to meet the RoI target of £1.66 even at the interim evaluation stage. The target is likely to be met – and potentially out-performed – if the expected turnover effects are realised.

28. Encouragingly, Phase III is also broadly in line with wider output and outcome targets. However, the survey suggests that a lower proportion of businesses have enhanced their relationship with a Knowledge Provider as a result of their Innovation Voucher project than anticipated (67% in the survey, against a target of 80%). This may reflect the proportion of businesses supported with an existing relationship, and the target definition.

29. Overall, at this interim stage, considering the full range of evidence relating to Economy, Efficiency and Effectiveness in the round, the evaluation makes a positive assessment of Phase III's value for money.

Process and operation perspectives

30. The consultations provided consistently positive feedback regarding the effectiveness of programme management and operation by Invest NI. This applied to the personnel managing the Programme, as well as the established systems and processes in place.

31. From the delivery side, setting clear objectives at the outset of a project is a key enabler to success. Conversely, unrealistic expectations, a lack of communication and company disengagement all hindered project delivery, but these factors reflect business attitudes rather than a systemic issue with Programme design. From an institutional perspective, the issue of VAT non-payment by some businesses was raised.

32. Encouragingly, academics and businesses reported high levels of satisfaction with the Programme. For businesses, this applied to Programme processes, support received from the Knowledge Provider and their overall impression of Innovation Vouchers.

33. Looking forwards, the overall weight of the feedback and any suggested changes were generally focused on the margins of the Programme, rather than the 'core offer'. The current voucher model and broad value was still seen generally as the most appropriate form of intervention, although there is a case to consider some voucher parameters for any subsequent phase, drawing on the evaluation evidence.

Recommendations

34. The evaluation findings are positive in terms of Programme performance against intended aims and objectives in both Phase II and Phase III, and wider contribution to the development of the level of innovation within the business base in Northern Ireland. Overall there has been continued demand from the business base, although there is some evidence that the scale of this has reduced over time.

35. In this context, subject to standard appraisal, casework, and approval processes, Invest NI should continue to fund the Innovation Vouchers Programme. The fundamental purpose of the Programme should remain as increasing the level of innovation activity in NI. Further, the balance between supporting businesses that are genuinely ‘new to innovation’, and ‘existing innovators’ should be considered in the Economic Appraisal of Phase IV; this is a policy question which will have implications for the nature and scale of outcomes and impacts.

36. Several more detailed recommendations are also made, including potential alterations to voucher parameters to consider in the Economic Appraisal of Phase IV, alterations to the SMART targets for Phase IV, and ways of working with the Knowledge Provider base.

1. Introduction

1.1 SQW Ltd (SQW), working with QA Research (QA), was appointed by Invest Northern Ireland (Invest NI) in June 2019 to undertake an evaluation of the Innovation Vouchers Programme (the Programme). This report comprises the final evaluation of Phase II (2012-2015) and an interim evaluation of Phase III (2015-March 2019).

About the Programme

1.2 Innovation Vouchers is a longstanding intervention which began with a pilot in 2008. The Programme is now in its third phase and aims to help Small and Medium Enterprises (SMEs) in Northern Ireland engage with Knowledge Providers on innovation projects. It provides SMEs with a voucher, valued at up to a maximum of £4,000 (plus a 30% contribution to overheads) in Phase II and £5,000 in Phase III, which can be used to purchase practical advice and expertise from universities, colleges, and other publicly funded research bodies in Northern Ireland and the Republic of Ireland. The Programme is open to all SMEs[1], and is not restricted to firms that are Client Managed by Invest NI.

Evaluation purpose and coverage

1.3 The purpose of this evaluation, as set out in the original Terms of Reference, was to provide a robust evaluation of the operation, outcomes and final impact of Phase II of the Programme, as well as a mid-term assessment of the performance of Phase III. The study was also to determine whether the strategic context and market demand exists for the Programme to continue into Phase IV, and if so recommend any necessary changes, for example, in relation to the scale of the voucher, the number of vouchers available to firms and the Knowledge Provider base available for the delivery of Voucher projects.

1.4 In meeting these objectives, the evaluation was to be compliant with relevant government guidance on evaluation, including HM Treasury's 'Green Book'. Key elements of this assessment included characterising fully the following aspects of the Programme:

- **Rationale for intervention**: testing the extent to which the Programme met (and continues to meet) a genuine need over the evaluation period in terms of market or other failures, and its alignment with the economic and strategic contexts in play.
- **Additionality**: the effects of Innovation Vouchers over and above what would have occurred in any case, taking into account Deadweight, Displacement, and Substitution Effects.
- **Net economic impact**: assessing as far as practical the employment and Gross Value Added (GVA) effects delivered, and the overall contribution of the Programme to the Northern Ireland economy over the evaluation period.

[1] There are two exceptions: transport and primary agricultural sectors are ineligible in line with State Aid Guidelines; and medium enterprises must *not* have received assistance through Invest NI's R&D programme in the past 5 years to be eligible

- **Value for Money**: in terms of the Programme's Economy, Efficiency, and Effectiveness and overall return on publicly–funded investment.

Approach and method

1.5 Reflecting its objectives, the study adopted a logic chain approach, designed to enable a robust assessment of the rationale for intervention, the objectives that emerge, the inputs, activities and outputs delivered, and the resulting outcomes and impacts. The study comprised a mix of primary research and desk-based analyses:

- **Analysis of Programme monitoring data** – covering monitoring data on applications, approvals, and completed projects, and follow-on assistance from other Invest NI supports.
- **Review of key Programme and strategic documents** – including Innovation Vouchers casework materials, previous appraisal and evaluation reports, relevant institutional corporate plans, and wider economic policy documents/statements.
- **Telephone surveys of Programme participants** – the population for the survey covered participants that had completed at least one Innovation Voucher project in either Phase II or Phase III. Businesses with Phase III projects not completed by the time of the evaluation were not included in the telephone survey. Overall, 256 surveys were completed, providing an overall confidence interval for the survey findings of approximately +/- 5.4% at a 95% confidence level for participants with completed Phase II or Phase III projects.
  - Surveys were completed with 112 Phase II beneficiaries (22% response rate), providing an overall confidence interval for the survey findings of approximately +/- 8.3% at a 95% confidence level.
  - Surveys were completed with 144 Phase III beneficiaries (26% response rate), providing an overall confidence interval for the survey findings of approximately +/- 7% at a 95% confidence level.
- **Consultations with co-ordinators at organisations involved in delivering Innovation Voucher projects** – consultations were completed with co-ordinators of the Programme at eight Knowledge Providers in Northern Ireland and two in the Republic of Ireland. Consultations focused on the strategic fit of the Programme, experience from the delivery side, and any potential changes required going forward.
- **E-survey of academics involved in delivering Innovation Voucher projects** – 70 responses were received from academics who had delivered collectively an estimated c.600 projects in total across Phase II and Phase III; the e-survey therefore represents indicatively academics that have been involved with over 40% of all Voucher projects initiated over the evaluation period. The distribution of academics was broadly in line with the distribution of Voucher projects between the participating institutions. The survey covered topics including motivation for engagement, benefits resulting from the Programme, and key lessons learned.

- **Consultations with Invest NI staff** – consultations were completed with Client Executives/Advisors, staff involved with linked/related programmes, and with senior (Director-level) staff. The focus of these consultations was to understand the role and position of Innovation Vouchers both absolutely, and relatively, within the wider Invest NI support landscape, and how this might be optimised for the future.

- **Consultations with external strategic stakeholders** – this included two groups: consultations with innovation and enterprise stakeholders in Northern Ireland; and consultations with representatives of the parallel innovation voucher programmes in the Republic of Ireland and Scotland.

Approach to analysis

1.6 The quantitative and qualitative perspectives have been brought together to provide the synthesised assessment of delivery and impact as required by the Terms of Reference. A number of points are highlighted regarding the analysis:

- Qualitative feedback and quantitative data for Phase II and Phase III are presented separately where relevant, e.g. on outputs. However, where there was no statistically significant difference in responses, survey data for Phase II and Phase III are presented in aggregate to avoid repetition. Any statistically significant differences in responses from business who were Client Managed by Invest NI at the time of application and those who were not are also highlighted[2]. This reflected the qualitative feedback from consultations that highlighted the potential variation in the issues faced by these two distinct cohorts, and their ability to realise the benefits from the Innovation Voucher activity.

- The survey sample of businesses was well matched to the population, with no statistical differences in terms of characteristics captured in monitoring data. This limits to some extent the potential for systematic 'response bias' in results (i.e. that the survey sample was substantively different to the wider population), although it should be recognised that there remains a risk that those businesses that responded to the survey had a 'better' experience than those that did not.

- Comparing the monitoring data to the survey responses, Phase II and Phase III respondents were also quite well matched. However, two statistical differences which may influence responses should be noted:
  - Phase II respondents were more likely to be client-managed at application (49% vs 32% respectively)
  - Phase II respondents were more likely to have their first voucher with QUB/UU/CAFRE relative to 'other' KPs (78% vs 58% respectively)

Context and Challenges

1.7 It is important to consider the following caveats in reviewing the evidence in this report:

[2] Note that throughout the report where we refer to 'Client Managed' businesses, we mean those businesses that were Client Managed at the point they applied for a Voucher.

- **Time-paths to impact.** The monetary value of an individual Voucher is relatively modest. As such, businesses may need to invest further resource before a new product/service can be launched. Even after this, there will be a further lag before turnover/employment benefits are observed. This is a particular issue for Phase III as there may not yet have been time for the full beneficial economic effects of individual Vouchers to have been observed. This needs to be factored into the overall assessment of the impact and Value for Money of the Programme at this stage.
- **Memory Decay**. The evaluation required consultees to think as far back as 2012 when Phase II was launched, and provide information about changes which have occurred over the following seven years. Whilst the evaluators are confident in the integrity of the material gathered, the generic risk of memory decay, and the specific risk of more recent experience being the more roundly reported, should be noted. It is also noted that in many cases it was hard for consultees (including Knowledge Provider co-ordinations) to comment on differences between Phase II and Phase III, given the overall consistency in the model and continuity in the delivery of the Programme. In most cases, qualitative perspectives therefore relate to the full evaluation period.
- The assessment of net additionality is based on **self-reported survey data.** This may be inaccurate if respondents have difficulty recalling the information, if they are overly optimistic or pessimistic about how the Programme benefitted them, or if they misunderstand the question. Whilst there are concerns about how robust such self-reported additionality evidence is, methods to develop an empirical counterfactual were not considered practical. For example, a survey of unsuccessful applicants was not progressed because of the potentially low sample size.

Structure

1.8 The remainder of this report is structured as follows:

- Section 2: Context, rationale and objectives
- Section 3: Inputs and activities
- Section 4: Outputs and outcomes
- Section 5: Additionality and other contributory factors
- Section 6: Impact and value for money - Phase II
- Section 7: Impact and value for money – Phase III
- Section 8: Process and operation perspectives
- Section 9: Conclusions and recommendations.

2. Context, rationale and objectives

Context

Economic context

2.1 Research papers and policy documents highlight the significance of innovation as one of the primary drivers of economic growth.[3] However, compared to other regions of the UK, innovation levels in Northern Ireland have been historically, and remain, low.

2.2 The recent publication by NISRA of the results of the UK Innovation Survey 2017[4] identified that 39% of enterprises in Northern Ireland were innovation active during 2014-16 making **Northern Ireland the least innovation active region in the UK** on this measure.[5] As set out below, both the percentage of innovation active businesses in Northern Ireland and its relative ranking in the UK's regions has remained relatively consistent since the 2010-12 survey.

Table 2-1: Innovation active enterprises

	2010-12	2012-14	2014-16
Northern Ireland	40%	45%	39%
UK	45%	53%	49%
Northern Ireland rank out of 12 (1 = top)	12	11	12

Source: UK Innovation Survey 2013, 2015, and 2017

2.3 The 2017 survey also identified that broader innovating enterprises[6] in Northern Ireland were less likely to report innovation co-operation than equivalent enterprises in the UK as a whole, at 51% compared to 58% respectively. Some 83% of Northern Ireland's broader innovators collaborated with suppliers of equipment, materials, services or software - similar to the overall UK picture.[7] However, just 38% of 'broader innovators' collaborated with government or public research institutes, (the least likely collaboration from Northern Ireland respondents) and 39% with universities or other HE institutions. Whilst these proportions are similar to the UK level, they do demonstrate the modest levels of engagement with the research base amongst Northern Ireland's businesses.

2.4 Although the UK Innovation Survey does not include microbusinesses and may therefore underestimate true levels of innovation, the data indicate that in headline terms, the economic case for intervention to promote innovative activity amongst businesses in the region is therefore sound, and seeking to address a long-standing issue for Northern Ireland.

[3] See for example NI Executive (2014) Innovation Strategy for Northern Ireland 2014-2025
[4] See NISRA (2019) UK Innovation Survey 2017: Northern Ireland Results 2014 - 2016
[5] To be defined as innovation active, a business must: introduce a new or significantly improved product or process; engage in innovation projects not yet complete or abandoned; and/or have implemented new/significantly improved forms of organisation, business structures or practices and marketing concepts or strategies
[6] Businesses which meet the definition above and/or engage in activities in areas such as internal R&D, training, acquisition of external knowledge or machinery and equipment linked to innovation activities
[7] See BEIS (2018) The UK Innovation Survey: Headline Findings 2014 to 2016

Policy context

2.5 As may be expected, the policy context has evolved over the eight-year period covered by the evaluation. This considered in the paragraphs that follow.

Policy context for Phase II

2.6 The 2014 Evaluation of the Programme[8] reviewed in some detail the policy backdrop before and during Phase II (to 2014). The review noted the increasing emphasis on the core role of innovation in Northern Ireland's economic development strategies. The policy context when Phase II was approved was characterised by a policy agenda focused on addressing:

- the continuing productivity gap between Northern Ireland and the rest of the UK
- low levels of spending on R&D by the private sector
- low levels of knowledge transfer/commercialisation and the absorptive incapacity of firms (SMEs in particular) inhibiting successful uptake of innovation.

2.7 Specifically, the key policy statements that provided the strategic backdrop at the time of the approval of Phase II included:

- The **Programme for Government 2011-2015**[9] committed to achieving sustainable economic growth by improving competitiveness and encouraging a stronger and more export-driven private sector, including through encouraging innovation.
- The goal of the **DETI Corporate Plan 2011-2015** was "*to promote the growth of a competitive and export led economy*"[10]. The Plan highlighted stimulating innovation and creativity as an underpinning theme for increased private sector productivity which in turn will lead to export led economic growth.
- The **Corporate Plan for Invest NI 2011-2015** promoted the growth of the business base and states that "*activities will be targeted to increase the size, competitiveness and value of our private sector by embedding innovation"* as well as growing local companies, increasing exports and attracting inward investment.[11]
- The **Northern Ireland Economic Strategy 2012**[12] set the overarching goal of improving economic competitiveness. It identified the need to stimulate innovation, R&D, and creativity, partly through building links between business and HE/FE.

2.8 Therefore, the Programme was well aligned to the policy and strategic context in Northern Ireland at the time of the Phase II approval, with a clear strategic emphasis on encouraging innovation and knowledge exchange to develop an innovation-led economy.

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[8] See SQW (2014) An Evaluation of the Invest NI Innovation Vouchers Programme
[9] See NI Executive (2011) Programme for Government 2011-2015
[10] See DETI (2012) Corporate Plan 2011-2015
[11] See Invest NI (2012) Corporate Plan 2011-2015
[12] See NI Executive (2012) Northern Ireland Economic Strategy – Priorities for Sustainable Growth and Prosperity

Policy context for Phase III

2.9 Consistent with Phase II – and reflecting the general stability and evolution, rather than revolution in the policy landscape in this space – the policy context in 2015 at the point of the Phase III approval was characterised by a focus on innovation as a driver of economic growth. The key policy statements included:

- The **Innovation Strategy for Northern Ireland**[13] published in 2014 recognises Northern Ireland's poor levels of innovation compared to the rest of the UK, highlighting innovation as essential for driving economic growth. The Strategy explicitly mentions Innovation Vouchers as a critical scheme to encouraging firms to engage in innovation, and that investment in the Programme should increase.

- The **Northern Ireland Framework for Smart Specialisation**[14] outlined Northern Ireland's innovation and research priorities, and the strategies identified to deliver them. Sectors which the Programme contributes to are identified as key market opportunities, these include Agri-Food, ICT and Telecommunications, Life and Health Sciences, Advanced Manufacturing & Materials and Sustainable Energy.

2.10 Considering the duration of some of the strategies mentioned above, Phase III of the Programme remained well aligned to the policy context at the time of approval in 2015. Crucially, while the policy had developed further, this did not alter substantially the potential role of the Programme in meeting the long-standing strategic imperative to raise levels of innovation as a key driver of productivity and economic growth.

The policy context now

2.11 Some four years on from the approval of Phase III, the evaluation suggests that the Programme has continued to operate in a supportive policy context. The focus on driving-up levels of innovation among Northern Ireland's SMEs has remained, and arguably strengthened over time. Current strategies of particular relevance to the Programme include:

- The **Draft Programme for Government Framework 2016-2021** highlights the importance of innovation as a key driver of the economy. The framework identifies 14 societal outcomes to be achieved, including "*a strong, competitive, regionally balanced economy*" and "*an innovative, creative society, where people can fulfil their potential*". The outcomes are to be achieved through indicators that include "*increase innovation in our economy*".[15]

- **The Export Matters Action Plan**[16] was developed with the key goals of growing the value of exports and external sales outside Northern Ireland, and increasing the number of businesses engaged in sales outside Northern Ireland. The Plan notes that innovation is one way to drive the competitiveness necessary for businesses to export.

- The Further Education Strategy, **Further Education Means Success**, highlights colleges' high quality and economically relevant education and training provision.

[13] See NI Executive (2014) Innovation Strategy for Northern Ireland 2014-2025
[14] See Department of Enterprise, Trade and Investment (2014) Northern Ireland Framework for Smart Specialisation
[15] See NI Executive (2016) Draft Programme for Government Framework 2016-2021
[16] See Department of Enterprise, Trade and Investment (2016) Export Matters

One of the Strategy's policy commitments is that "*Colleges will be at the forefront of providing support to employers to enable them to innovate, grow, operate more effectively and efficiently, develop new products and to identify new markets*"[17].

- The Department for the Economy's **draft Industrial Strategy 'Economy 2030'** outlines a plan to build "*a globally competitive economy*" based around five priority pillars for growth, including "*accelerating innovation and research*".[18] This includes the ambition that '*Innovation is embedded in the DNA of every company*' and a set of activities that are aligned directly with the underpinning case for the Programme, including increasing efforts to support non-innovative companies to engage in innovation, and strengthen the linkages between the research base and businesses.

- Innovation is one of the key priorities in the **Invest NI Business Strategy 2017-2021**. Included within this is a commitment to "*Help more companies to start to innovate by simplifying the innovation landscape, increasing awareness of sources of innovation and deepen capacity, capability and activity, particularly amongst locally owned SMEs and current non-exporters.*"[19]

Other interventions

2.12 Given the supportive policy context for innovation support discussed above, a range of other interventions are evident that also seek to address the core issue of raising levels of productivity amongst the business base. One of the research issues identified in the evaluation's Terms of Reference, was to consider whether there is any duplication, and assess the extent to which the Programme addresses a specific need not covered by other interventions. This issue was particularly important for Phase III given the extension of economic development functions to Councils in recent years, leading an increasingly complex business support landscape across Northern Ireland.

2.13 This issue was covered in consultations with partners and stakeholders across the innovation support landscape. The consistent feedback was that owing to differences in delivery mechanisms, target groups, and objectives, other interventions were generally complementary to the Programme, rather than duplicating or acting in competition.

2.14 Arguably the most similar intervention is the Department for the Economy, **InnovateUs** (IU) programme. This "*offers tailored training for small businesses to undertake innovation activity.*"[20] It provides between 10-60 hours of fully funded training to companies with fewer than 50 employees. There are some clear over-laps to Innovation Vouchers in terms of the target group and core purpose. However, important differences were highlighted by consultees, notably that InnovateUs is focused fundamentally on skills and capacity development of supported businesses, rather than focused on a particular innovation idea/concept. In addition, the two interventions have slightly different target populations as only existing businesses with fewer than 50 employees are eligible for IU support, whilst IVP can support businesses with up to 249 employees as well as pre-start businesses. In this

[17] See Department for Employment and Learning (2016) Further Education Means Success: The Northern Ireland Strategy for Further Education
[18] See Department for the Economy (2017) Economy 2030: A consultation on an Industrial Strategy for Northern Ireland
[19] See Invest NI (2017) Business Strategy 2017-2021
[20] https://www.nibusinessinfo.co.uk/business-support/innovateus

context, consultees reported that InnovateUs support was expected to come before the Vouchers programme, and potentially act as a source of demand for it.

2.15 Other supports considered to be complementary to Innovation Vouchers because they use a variety of different, non-voucher mechanisms to support innovation and wider business growth included:

- Mentoring interventions such as Intertrade Ireland's Challenge Programme; Armagh, Banbridge and Craigavon Council's Growth Driver; and Mid Ulster Council's Engineering Innovation etc.
- Knowledge transfer via graduates through Knowledge Transfer Partnerships and Intertrade Ireland's Fusion Programme.
- Grants such as the DAERA Technical Assistance Grant.

2.16 Within this context, Invest NI's new **Innovation Accreditation Scheme** was launched in late-2019. This draws on a mapping of the innovation support programmes in Northern Ireland (including non-Invest NI supports) completed by Invest NI. The Scheme involves assigning each support a level between bronze and platinum, and businesses supported will be recognised as participants e.g. businesses participating in an Innovation Voucher project will be identified as having completed a 'bronze' level scheme. Firms that reach the platinum level will undergo a diagnostic to identify actions to further enhance their innovation capacity.

2.17 This new Scheme will be important for Innovation Vouchers going forward, providing a clear depiction of its role in the innovation landscape, and helping to identify the potential pathways and follow-on routes for further support, as well as potential referral mechanisms to the Programme from other schemes. Leveraging fully this insight and intelligence potential should be a priority for the Programme going forward.

Summary conclusions

- Phases II and III were approved in a policy context that reflects the Programme's overarching aim of increasing the level of innovation amongst SMEs in Northern Ireland. The Programme contributes to multiple strategies through directly increasing innovation and R&D activity and facilitating knowledge exchange between industry and the knowledge base.
- Given the strategic priority of increasing levels of innovation, and the extension of economic development functions to Councils, there are a range of complementary interventions that share this overall intent with the Programme. The evidence suggests limited duplication; while there are some potential over-laps with InnovateUs, it focusses on capacity development rather a particular innovation project
- In this context, going forward, maximising linkages with and through the Innovation Accreditation Scheme will be particularly important. Invest NI should consider developing an 'action plan' (or similar strategic document) to ensure that this opportunity can be maximised for Innovation Vouchers and the wider innovation support landscape.

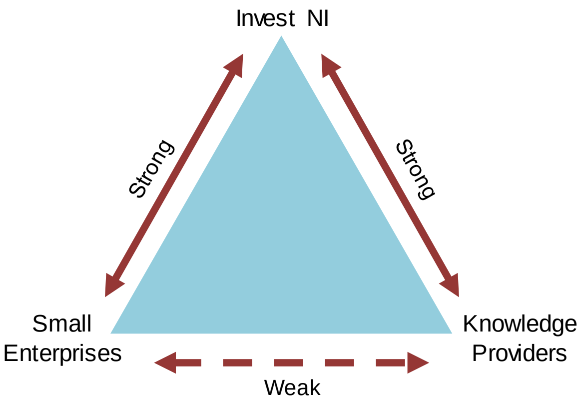
Rationale

The case made

2.18 In justifying public sector investment, the casework and appraisal documents for Phase II and III consistently refer to two market failures:

- **Information failures:** SMEs are unaware of the contribution that academic and research institutions can make to innovation activities. The consequence of this asymmetric information is sub-optimal levels of investment in collaborative innovation amongst SMEs.

- **Networking/Co-ordination failures:** firms are unaware of how to access the external expertise they need for undertaking innovation activities, and/or they lack the necessary links to research institutions – a graphical depiction developed by Invest NI on the nature of co-ordination failures underpinning the Programme is set out opposite.



2.19 The 2014 evaluation outlined two further market failures associated with investment in innovation which are implied by, but not formally set out, in the Programme documentation:

- **Risk aversion:** SMEs are risk averse in general and in relation to innovation and R&D in particular because the outcome and return on investment are uncertain.

- **Positive externalities** associated with investing in innovation activities discourages firms to invest in these activities as they cannot capture the full benefit. For example, the benefits of (costly) innovation undertaken by one business may later be obtained by others at no, or greatly reduced, cost.

2.20 The Economic Appraisal of Phase III further mentions that asymmetric information and moral hazard may create difficulties for firms in accessing finance to support innovation, thus providing a rationale for intervention to supply finance and ensure that innovation activity is progressed. Asymmetric information occurs as the firm (the borrower) knows more about the probability of project success than the lender, and moral hazard occurs as once funding is approved borrowers may take risky actions that the lender is unable to monitor – these issues can affect access to finance for SMEs. These market failures were not mentioned in other documentation, nor discussed by consultees. Given the relatively modest monetary value of a voucher, neither are they seen by the evaluators as a key part of the Programme's rationale.

Perspectives from the delivery side …

2.21 The rationale for the Programme was consistently recognised across consultations on the 'delivery-side' (i.e. Invest NI, Knowledge Provider Co-ordinators, participating academics, and strategic stakeholders). Five key themes emerged from the consultations:

- **Northern Ireland's underperformance on innovation metrics compared to other UK regions**, and the ambitious targets in the Innovation Strategy to address this, was commonly referenced by consultees. The Programme was seen as one of the key interventions to help tackle this issue; essentially this refers to the strategic case for intervention discussed above.
- Consultees accepted the **information and co-ordination market failures as the basis for intervention by Invest NI**. This included a perceived lack of awareness of the benefits of innovation amongst the business base, as well as difficulties in knowing which Knowledge Providers have the relevant technology expertise and/or how to approach the Knowledge Providers to access this – the Programme aims to *"bridge the gap for companies that have an innovative idea but don't have the skills and expertise themselves to see it through to the end."*
- The rationale for intervention was seen as particularly strong where **businesses lack time, financial resource and in-house expertise to innovate**. This applies particularly for those seeking to undertake innovation activity for the first time and/or new/small firms. The 'open' nature of the Programme was seen as particularly important in addressing these issues because, unlike other Invest NI supports, vouchers are not just for client-managed firms so are open to the wider business base – "*it's absolutely vital for Northern Ireland as companies are small and need a push to be innovative.*"
    - ➢ In support of this consultee feedback, quantitative feedback from amongst the 70 respondents to the academic e-survey who answered the question shows that 20-25% reported that the most important challenges facing firms were: lack of finance within the organisation, lack of time to undertake innovation activity, and lack of qualified personnel
- As noted above there are complementary innovation support offers to the Programme, but none which seek explicitly to make initial connections between businesses and the knowledge base at an early stage of the innovation process to develop new products and services. In the absence of **equivalent offers in the market or support landscape**, the Programme was seen to meet a particular need.
- Some **specific market issues were also identified**. For example, consultees reported that voucher projects help agri-food businesses in particular to meet their need for rapid product innovation given the ever-changing nature of customer demand. Given the scale of the agri-food sector in Northern Ireland, and its nature – with a large number of small businesses operating in a fragmented sector landscape – this was regarded as an important element of the case for the Programme, particularly its status as an 'open' form of assistance that is not available only to Invest NI Client Managed businesses.

2.22 The issues above were regarded as long-standing in the Northern Ireland economy, with little material change between Phases II and III. As such, the rationale for the Programme was considered to have remained relevant over the full period covered by the evaluation, and to remain at this evaluation stage.

. . . and supported businesses

2.23 The demand-side evidence aligns broadly with the delivery side perspectives. However, the survey evidence presents a nuanced picture, particularly in relation to the diverse nature of the businesses supported by the Programme. Reflecting the case made by the Programme in its casework, the key question was whether the arguments around addressing low levels of engagement in innovation, and a lack of engagement with the Knowledge Base, are evident amongst the businesses supported by the Programme. Put simply, if the Programme is working with businesses that are innovating and engaging with Knowledge Providers already, the underpinning case would not apply. Four key points are noted.

2.24 First, it is notable that over 50% of businesses surveyed reported that they had undertaken innovation before their involvement with the Programme, principally product/service innovation. The evaluators note that this finding contrasts with the Programme's monitoring data which indicates that around a third of Vouchers in both Phases (28%) were awarded to firms with 'Previous Innovation', as reported at the application stage. A similar contrast was found in the 2014 Evaluation so is not entirely unexpected. For example, there may be a perceived incentive for firms to under-report previous innovation experience in order to secure support from the Programme, or firms may mis-report previous activity because of memory decay. Given the scale of the Programme – with on average around 140-150 applications received in each call – addressing this issue is challenging, as a more detailed assessment of potential previous innovation activity is not viable. However, both the survey and monitoring data indicate that the Programme is regularly supporting businesses with a track-record of innovation activity, suggesting that the information failures may be less pronounced than anticipated.

2.25 Second, the survey evidence does suggest that most businesses had no links with Knowledge Providers before engaging with the Programme; with 72% reporting no links. Further, where pre-existing links with Knowledge Providers were evident, this was often involvement in education/training (for 40% of cases), although collaborative innovation was the most common type of engagement (50%). The evidence therefore suggests that, consistent with its remit, the Programme is building new links and new *types* of links between SMEs and Knowledge Providers in most cases.

2.26 Third, the data above cover the supported business base as a whole. However, the survey data suggest that arguably the Programme is dealing with quite different cohorts of businesses. Notably, as demonstrated in Table 2-2, businesses that were Client Managed at the point of their application were more likely to have undertaken previous innovation and have had existing links with Knowledge Providers before engagement with the Programme (the differences were highly significant in both cases). This makes intuitive sense, given the relatively larger size and sophistication of client managed firms. However, it does have implications for the underpinning case and focus of the Programme as it suggests there may be a different rationale for supporting client managed firms; we return to this issue below.

Table 2-2: Pre-IVP innovation activity

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Undertaken innovation before IVP	**54%**	55%	53%	-	68%	45%	***
… product or service innovation	***86%***	*82%*	*88%*	-	*87%*	*84%*	-
Existing links with KP before IVP	**28%**	32%	25%	-	44%	18%	***

** denotes significance at 10%; ** at 5%; *** at 1%*

Source: SQW analysis of business survey Overall n=256; PII n=112=; PIII n=144; CM n=101; N-CM n=155

2.27 Fourth, for the 46% of survey respondents that had *not* undertaken innovation pre-IVP, the reasons align strongly with supply-side rationale perspectives with issues around finance, skills and lack of information commonly raised. This picture was consistent across Phases and by Client Managed status.

Table 2-3: Reasons for not innovating prior to IVP

	Proportion (n=117)
Lack of finance within the business	66%
Innovation costs too high relative to other priorities	53%
Lack of qualified personnel	48%
Lack of information on technology	43%
Lack of information on markets	27%
Difficulty in finding cooperation partners for innovation	31%
Uncertain of benefits from innovation activity	30%
Other	15%

Source: SQW analysis of business survey

Assessment of the original and on-going rationale

2.28 The evidence presented above demonstrates that there is a clear economic and strategic rationale for the Programme. This was true at the outset of Phase II and remains so at the mid-point of Phase III, with strategies continuing to promote innovation and complementary supports also being delivered. Similarly, the market failure rationales for public sector intervention are clearly articulated in Programme documentation and recognised by consultees.

2.29 Survey data present a more nuanced picture however and suggests the Programme is supporting two – broadly cast – different groups:

- firms without pre-existing links with the knowledge base, who have not undertaken innovation, and who are more likely to be non-client managed
- firms with existing links to Knowledge Providers, who have undertaken previous innovation activity, and are more likely to be client managed at the time of application.

2.30 The rationale for intervention to support the first group is consistent fully with the rationale set out in Programme documentation, i.e. to build connections with the knowledge base and encouraging innovative activity. However, the case for supporting the second group is arguably somewhat different. Here, the emphasis is on encouraging and de-risking further innovation by firms who are already innovation active and potentially enhancing their links with the Knowledge Providers network. The cases for intervening to support both groups are valid given the overall strategic need to drive-up innovation activity in Northern Ireland, and the well-recognised issues around investment in innovation.

2.31 However, the balance between them will need to be carefully considered and clearly articulated going forwards, which may have implications for the Programme strategy and operation. Fundamentally, the question is whether the Programme is seeking to address the barriers preventing firms from innovating collaboratively for the first time, or the barriers preventing higher levels of collaborative innovation. The two are not mutually exclusive, but the balance between them may mean different things in terms of Programme targeting, outcomes, and strategic positioning in the evolving innovation support landscape.

Summary conclusions

- There is a clear economic and strategic rationale for the Programme, both at the outset of Phase II and at the mid-point of Phase III. Similarly, the market failure rationales for public sector intervention are clearly articulated and remain relevant.
- Survey evidence suggests that the Programme is supporting two different types of firm: those with and without previous experience of innovation and links with the knowledge base. The cases for intervening to support both groups are valid but the balance between them will need to be carefully considered and clearly articulated going forward.

Objectives

The stated objectives

2.32 The overarching aim of Phase III is to 'encourage greater levels of innovation activity amongst NI's business base by supporting SMEs to develop innovative solutions to enhance their growth and competitiveness with the support of public sector Knowledge Providers.'[21]

2.33 Against this, Phases II and III included broadly consistent although slightly different SMART targets/objectives as set-out in the tables below. The changes result in part from the recommendations of the 2014 Evaluation to move away from assessing the Programme in terms of net additional job creation (as employment creation is not a core part of the Programme rationale) and towards an explicit focus on more intangible outcomes, for example an increased understanding of the role of innovation, a greater commitment to innovation and enhancing relationships with Knowledge Providers.

Table 2-4: Phase II SMART targets (2012-2015)

Output/Activity Targets
• Complete 647 Innovation Voucher projects which are, at a minimum, 'New to the Firm' by March 2016. Each project must include at least one of the following types of innovation: product or service innovation, process innovation, marketing innovation and/or organisational innovation

[21] There was no equivalent overarching aim stated for Phase II

• A minimum of 70% of SME participants will not have previously engaged with the same Knowledge Provider as part of a knowledge transfer project (as at March 2016) • A minimum of 30% of SME participants will not have previously engaged with any Knowledge Provider or undertaken an R&D project (as at March 2016)
Outcome Targets
• Generate a minimum of £10.7m in gross GVA within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest) • Generate a minimum of £5.1m in net additional GVA within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest) • Generate a minimum return on investment of £1.39 in undiscounted net additional GVA for every £1 in direct NI investment within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest) • Create a minimum of 169 gross FTE jobs within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest) • Create a minimum of 46 net additional FTE jobs within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest) • A minimum of 40% of participating SMEs to have engaged in an innovation project on a higher stage of the 'Innovation Escalator' within 2 years of completing their respective Innovation Voucher project (as at March 2018)

Source: Invest NI

Table 2-5: Phase III SMART objectives (2015-2020)

Activity/Output Targets
• Complete 920 Innovation Voucher projects which are, at a minimum, 'New to the Firm' by March 2021. Each project must include at least one of the following types of innovation: product or service innovation, process innovation, marketing innovation and/or organisational innovation • A minimum of 75% of SME participants will not have previously engaged with the same Knowledge Provider as part of a knowledge transfer project (as at March 2021) • A minimum of 50% of SME participants will not have previously undertaken a R&D project (as at March 2021)
Outcome Targets
• A minimum of 70% of businesses reporting that they have an increased understanding of the role of innovation in contributing to business growth and development (as at March 2021) • A minimum of 60% of businesses reporting that they have a greater commitment to undertaking innovation activities as a result of their Innovation Voucher project (as at March 2021) • A minimum of 80% of businesses reporting that they have enhanced their relationship with a Knowledge Provider as a result of their Innovation Voucher project (as at March 2021) • Generate a minimum of £19.3m in gross GVA within 4 years of the final Innovation project being completed (i.e. by March 2025 at latest) • Generate a minimum of £9.1m in net additional GVA within 4 years of the final Innovation project being completed (i.e. by March 2025 at latest) • Generate a minimum return on investment of £1.66 in undiscounted net additional GVA for every £1 in direct NI investment within 4 years of the final Innovation project being completed (i.e. by March 2025 at latest) • A minimum of 50% of participating SMEs to have engaged in an innovation project on a higher stage of the 'Innovation Escalator' within 2 years of completing their respective Innovation Voucher project (as at March 2023)

Source: Invest NI

Perspectives from the Delivery side …

2.34 The delivery side – both Invest NI staff and those at Knowledge Providers – recognised the consistency and clarity of the Programme's objectives since its launch in 2008. The stability in the offer was welcomed by consultees, with a recognition that the Innovation Vouchers brand is relatively well known in the Northern Ireland innovation ecosystem.

2.35 There was regular reference to the importance of the Programme as a "*foot in the door*" or a "*first step on the journey*" on the innovation escalator – consultees stated that businesses often start with a voucher project and then graduate to other Invest NI innovation supports. This issue is returned to in Section 4.

2.36 However, and similar to the 2014 Evaluation, consultations indicate a variation in views over whether the Programme is at its core about long-term '*behaviour change'* (i.e. building links with Knowledge Providers and encouraging firms to innovate for the first time), or shorter-term '*market impact'* through new/improved products and services and resulting increases in turnover and employment. This may reflect the wide scope and 'open' nature of the Programme, as well as variation in the experience of consultees which ranged from high level policy development through to detailed day-to-day engagement with businesses. Whilst 'behaviour change' and 'market impact' are not mutually exclusive, the relative emphasis placed on these two areas by the Programme needs to be communicated clearly.

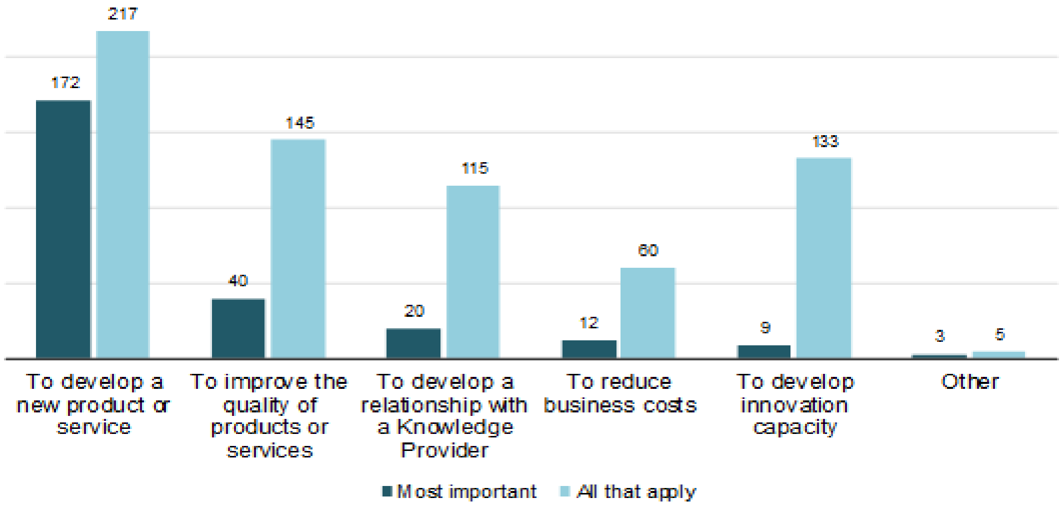
. . . and supported businesses

2.37 Product/service development and improvement was the principal driver for the majority of respondents to engage with the Programme as shown in Figure 2-1; these two categories were seen as the most important motivation for engagement by some 83% of respondents. This is not unexpected; if businesses are to invest time and money (including the VAT contribution) in a Voucher project, they will expect to generate tangible benefits.

2.38 Whilst businesses nominated a range of factors as relevant to their engagement, only 11% identified developing innovation capacity or links with a Knowledge Provider as the most important. This means that there are differences between what the Programme seeks to achieve formally – new connections between businesses and the knowledge base – and what businesses want to achieve – new or improved products and services. However, this variation between macro-level policy objectives and business-level objectives is not unexpected.

2.39 Business motivations are consistent across the two Phases and by client-managed status with one exception. Developing a relationship with a Knowledge Provider as the 'most important' factor was higher for non-client managed firms than client-managed firms (albeit weakly significant at the 10% level).

Figure 2-1: Motivation for engaging with the Innovation Vouchers Programme



Source: SQW analysis of business survey (n=256)

Assessment of objectives

2.40 Stated Programme objectives shifted towards an explicit focus on intangible outcomes in Phase III compared to Phase II, and this was generally recognised by consultees. However, other consultees spoke in terms of generating new products/business growth and, importantly, businesses were also likely to prioritise 'market effects' (i.e. developing new products and services as the direct and immediate effects of the Programme), rather than less tangible network and behavioural outcomes.

2.41 The stated objectives for Phase III are considered appropriate but, moving forwards, clearer communication of them to the delivery and demand sides will be important. Importantly, this issue links back to the discussion above regarding rationale, and the balance between working with new or existing innovators. Clarity on the underpinning issues being addressed should inform directly the objectives set for any future phases of the Programme.

Summary conclusions

- Stated Programme objectives shifted between Phase II and Phase III towards an explicit focus on intangible outcomes e.g. building links with knowledge providers and encouraging firms to innovate for the first time. This was a positive development, reflecting the underpinning rationale as articulated in Programme casework and by consultees engaged in the evaluation.
- For businesses, the Programme is principally about developing new products and services as the direct and immediate effects of the voucher activity. This does raise the risk of some misalignment between what the Programme is seeking to achieve formally – new connections between businesses and the knowledge base – and what businesses are looking to achieve – new or improved products and services. Clarity on objectives should be a priority going forward.

3. Inputs and activities

Overview of the Innovation Voucher Model and Customer Journey

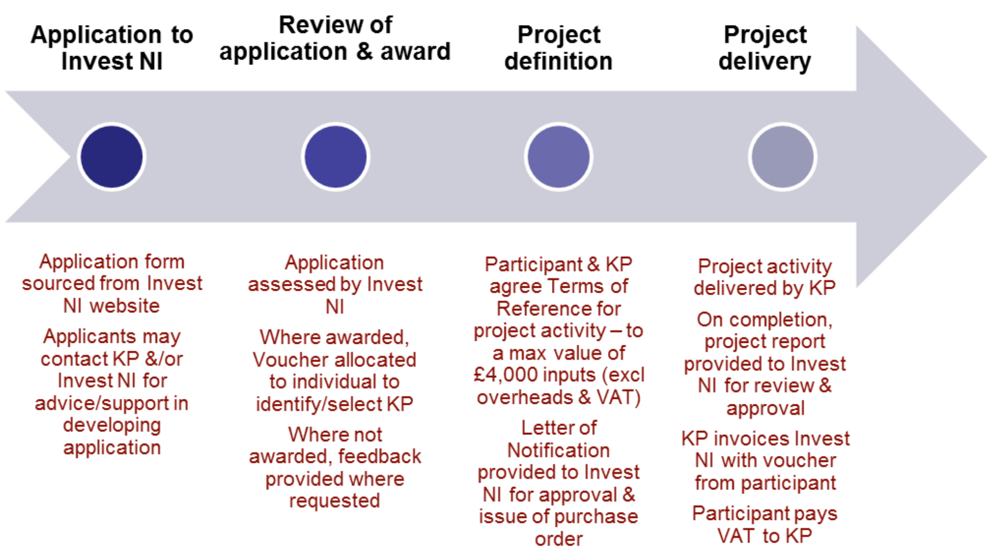
3.1 Since its inception in 2008, the Programme has been managed by Invest Northern Ireland, and delivered by a network of 39 Knowledge Providers, with SMEs as the target beneficiaries.

3.2 Two full time staff (Programme Manager and Officer) within Invest NI's Innovation, Research and Development Division are responsible for day-to-day operations including managing calls for applications, assessing applications and awarding vouchers, co-ordination with the Knowledge Providers, reviewing individual project information, and co-ordinating payment. They are supported by Technical Advisers and Sector Experts at Invest NI for project appraisal and selection. These staff as well as Client Executives help to promote the Programme, and a central team within Invest NI also market the Programme.

3.3 Individual voucher projects are delivered by academics at Knowledge Providers – covering all higher and further education institutions in Northern Ireland, and universities/institutes of technology in the Republic of Ireland. A co-ordinator at each institution formally overseas the 'matching' of academics to individual projects, although in practice many academics approach businesses directly. Of the 61 respondents to this question in the e-survey of academics, almost half (27) reported that the most common mechanism for becoming involved in projects was their own promotion of the Programme and encouragement to businesses to participate. A further 24 academics most commonly had projects allocated to them by the co-ordinator, with the remaining ten most commonly being approached by businesses directly.

3.4 There are four calls for application per year. Once awarded, each Voucher is 'valid' for up to nine months. Each business is allowed a maximum of three vouchers, although only one voucher can be 'live' at a time. The customer journey for Phase II is summarised in the graphic below.

Figure 3-1: Overview of the Innovation Voucher customer journey – Phase II



Source: SQW (2014) An Evaluation of the Invest NI Innovation Vouchers Programme

3.5 The operating model and customer journey for Phase III is largely consistent with Phase II. However, there have been some modifications as the Programme has matured and evolved:

- **Modest change in voucher value.** In Phase II, each voucher was worth up to £4,000, plus overheads of 30% giving a maximum total of £5,200. In Phase III, the funding structure was simplified to a maximum of £5,000 (including overheads) – the implications of this are discussed below. Note that this has not impacted on the requirement for businesses to cover the VAT costs.
- **Change in Invest NI contribution levels to follow-on vouchers.** In Phase II, Invest NI contributed 100% of funding to a business' first voucher 1, 90% to a second voucher and 80% to a third voucher. In Phase III, contributions were reduced to 100%, 80%, and 70% respectively to encourage businesses to invest more of their own resources in innovation.
- Introduction of an **online application form** during Phase III (in April 2017).

Inputs

Phase II - Invest NI expenditure

3.6 A budget of £3.7m was approved in June 2012 for Phase II of the IVP. The Programme was de-minimus funding prior to September 2015 when it changed to GBER Innovation Aid. Data on actual expenditure from Invest NI shows a total expenditure of c.£3.4m over the duration of Phase II – a slight underspend compared to the approved budget. In addition, it is estimated that staff costs (not included in the approved budget) were around £480k in total.[22]

Table 3-1: Actual expenditure on Phase II

Vouchers	£3,322,000
Marketing	£106,746
Total	£3,428,746
Total including staff costs	£3,908,746

Source: Invest NI

Phase III - Invest NI expenditure

3.7 For Phase III, a budget of £5.4m was approved in August 2015. The approval also gave the option that should sufficient demand emerge, approval could be sought from the Invest NI Executive Leadership Team for an increased budget of up to £9.65m. At the time of writing demand had not reached a level where it has been necessary for the Programme team to seek approval for the expanded budget.

3.8 Data from Invest NI shows a total expenditure of c.£2.7m to March 2019. Dividing the approved £5.4m budget over the five years of delivery plus one tail year for project completion (and invoice payment) suggests that £3.6m should have been committed to Phase III by March 2019. At this mid-term stage, Phase III is therefore arguably below budget, although this

[22] Staff costs assumed to be c. £160k per annum

assumes a consistent level of annual expenditure which may not in practice be evident. In addition to the approved costs, it is estimated that staff costs to March 2019 are around £640k.

Table 3-2: Actual expenditure on Phase III to March 2019

Vouchers	£2,636,000
Marketing	£98,386
Total	£2,734,386
Total including staff costs	£3,374,386

Source: Invest NI

3.9 Consultations with Invest NI staff indicate that at the time the monitoring data were provided, there were 72 Phase III projects with 'live' Letters of Notification (LoN). Assuming each project successfully completes and uses the full £5k available, this equates to a potential Invest NI expenditure of £360k. In addition, it was reported by Invest NI staff that a further 59 projects progressed to LoN stage after the provision of the monitoring data, equivalent to an additional anticipated maximum spend of £295k.

Knowledge Provider inputs

3.10 As noted above, the costs covered by Invest NI and paid to Knowledge Providers in Phase II covered direct staffing and other costs in the delivery of Voucher projects such as the purchase of materials, as well as overheads at a maximum of 30%. In Phase III, this was simplified to a single all-inclusive payment. This meant an effective reduction in the maximum amount received by the Knowledge Providers from £5,200 to £5,000. This issue was acknowledged by all 10 co-ordinators consulted, although it was not seen to have impacted substantively on the Programme in terms of demand or delivery.

3.11 The level of staff time allocated to the management of the Programme varied across the delivery network. Of the co-ordinators consulted, three spent less than a day a week on the Programme, six spent between 20-40% of their time on the Programme (equivalent to one to two days per week), and one spent 50% of their time on the Programme. There was no clear pattern to whether this had changed over time – some reported no change, some reported a decrease as they had taken on additional responsibilities, and some reported an increase as they had been promoted into the co-ordinator role. The variation in the time allocation reflects the different models employed by Knowledge Providers in the management of the Programme, consistent with differences in their wider business and operating models. Linked with the variation in time allocation, co-ordinator responsibilities also varied but generally included support at the pre-application stage, allocating projects to specific research/teaching staff within the institution, drafting/overseeing the project terms of reference, and engagement with Invest NI.

Motivations for academic engagement with the Programme

"Personal interest in the individual projects, especially those related to research projects"

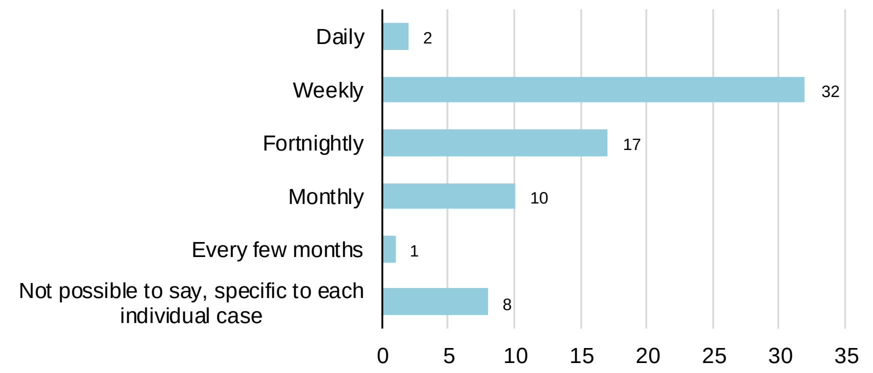
"Organisational mission and targets to grow business engagement"

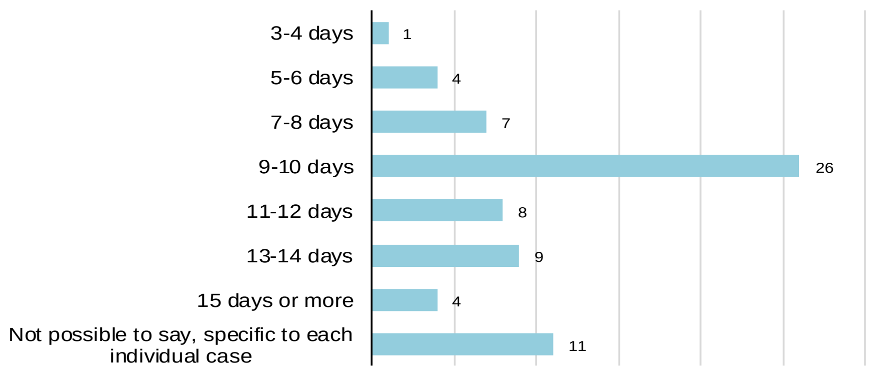
"I like the challenge of applying theoretical knowledge, and it is certainly within the remit of my university to support local industry. Funds generated…are also useful in pump-priming some of my own academic research that can then go forward for bigger grant funding"

3.12 There was also variation in the delivery model. Some Knowledge Providers have had a dedicated team for the delivery of voucher projects from the outset whilst other institutions draw on the wider academic base to deliver projects – see paragraph 3.19 for a discussion on how this has changed over time, and paragraph 8.12 for common challenges faced by institutions that do not have a dedicated team. Invest NI and DfE may wish to monitor the different practices and challenges faced by the Knowledge Provider base to ensure a consistent level of delivery.

3.13 Co-ordinators and individual academics are involved in the promotion and marketing of the Programme. Some 56 of the 70 e-survey respondents have promoted the Programme to businesses and encouraged them to apply, whilst 47 respondents provided pre-application support to businesses. To contextualise this, 71 of the surveyed business had received advice/support in developing their application from a Knowledge Provider, a similar number to those receiving support from Invest NI staff (81 respondents) and much higher than the 28 who received support from a private provider. Other inputs provided by academics are summarised below.

Table 3-3: Academic inputs

<table>
<tr><td>Frequency of engagement with businesses during a project varies…</td><td>

Overall, whatever the frequency of engagement reported by an individual academic, this was considered appropriate. The frequency of engagement varied depending on the company's needs and the stage of the project (engagement tended to be more frequent during the early stages).</td></tr>
<tr><td>…as does the number of days spent by academics on a project…</td><td>
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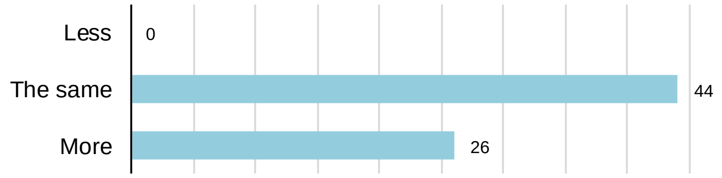
… but this is never less than originally expected	 The main reason for spending more time on a project than originally expected was to allow the academic to meet the expectations of the business – sometimes these had been underestimated in the Letter of Notification, and sometimes they changed during the course of a project. Linkages with their research interests were also a factor.

Source: SQW analysis of academic e-survey

3.14 Reflecting on the data above, it is important to note that in a third of cases, academics reported spending more time on the project than initially agreed. This 'over-delivery' was raised in the 2014 Evaluation based on a smaller number of qualitative consultations. The larger sample of the academic e-survey for the current evaluation shows that 'over-delivery' remains an issue. This has two implications: firstly, it suggests that the true costs of delivery may be underestimated with implications for the Value for Money of the Programme; secondly, there is a risk to Programme sustainability if academics are not (financially) compensated for their 'over-delivery.' Set against this, none of the Knowledge Provider co-ordinators consulted raised 'over-delivery' as an issue, and it is likely that at least some of the academics are content to over-deliver because of their interest in the projects. Nevertheless, it is recommended that the central team monitor this issue to ensure that it does not have a detrimental impact on engagement with, and therefore the sustainability of, the Programme in the future.

Summary conclusions

- Taking into account the costs of voucher projects and wider delivery costs such as marketing, the total expenditure of Phase II is estimated at approximately £3.4m, a slight underspend on the approved £3.7m budget.
- Expenditure for Phase III to March 2019 is estimated at £2.7m which is below estimated budget expenditure at this interim stage. It is estimated that around £360k is committed to projects which have reached Letter of Notification stage, and that this figure will rise as projects with Vouchers awarded in the most recent calls progress to LoN stage. Overall however, demand has not reached a level where it is necessary to seek approval for the expanded £9.65m budget.
- Knowledge Providers deliver individual voucher projects, with tailored and institution-specific delivery models. For example, the frequency of academic engagement with businesses during a project varies as does the number of days spent on a project. However, in a third of cases, academics reported spending more time on the project than initially agreed. This should be addressed going forward, to ensure that there is no detrimental impact on the Value for Money and sustainability of the Programme.

Activities

Details of Phase II

3.15 An overview of Phase II activity is set out below covering the number of applications received, vouchers awarded, and projects initiated. Around 1,800 applications were received in Phase II, resulting in 883 vouchers awarded and 674 projects initiated. The number of applications fluctuated over the period, whilst the application success rate declined from 63% in the first year down to 40%, perhaps indicating that the scoring became more rigorous or that there was a deterioration in the eligibility/quality of applications. The project initiation rate remained fairly consistent throughout Phase II at 72-80%.

Table 3-4: Overview of Phase II activities

Year	Applications received	Awarded	Projects initiated
2012/13	549	345 (63%)	250 (72%)
2013/14	730	328 (45%)	256 (78%)
2014/15	520	210 (40%)	168 (80%)
Phase II total	**1,799**	**883 (49%)**	**674 (76%)**

Source: Invest NI monitoring data

Details of Phase III

3.16 Phase III is expected to conclude in 2020 so the data below provides an overview of activities at this interim stage using the latest available monitoring data as at March 2019. Around 2,000 applications have been received at that point, resulting in 988 vouchers awarded and 704 projects initiated. The number of applications declined over the evaluation period, indicating a slight fall in demand for the Programme. However, the number of vouchers awarded per year has remained fairly consistent over the period because the application success rate has increased. The project initiation rate remained generally consistent between 2015/16 and 2017/18. The initiation rate is lower in 2018/19, but this may in part reflect the time lag between a voucher being awarded and a project being initiated.

Table 3-5: Overview of Phase III activities

Year	Applications received	Awarded	Projects initiated
2015/16	678	268 (40%)	201 (75%)
2016/17	519	248 (48%)	195 (79%)
2017/18	439	249 (57%)	173 (69%)
2018/19	366	223 (61%)	135 (61%)
Phase III total	**2,002**	**988 (49%)**	**704 (71%)**

Source: Invest NI monitoring data

Programme profile over the evaluation period

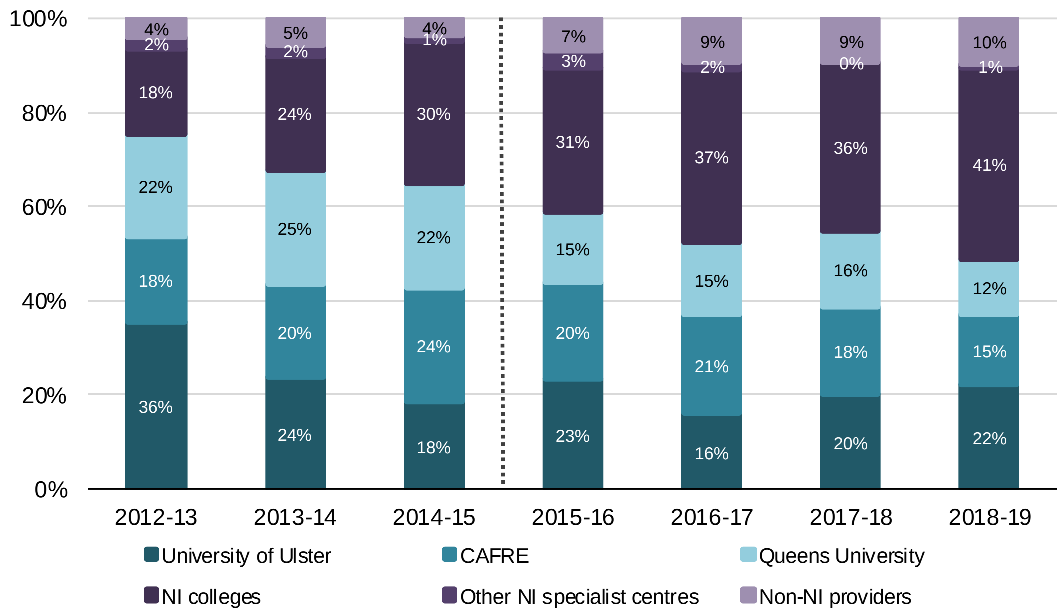
3.17 As well as presenting data specifically on Phase II and Phase III, the evaluation has also examined the full evaluation period to provide some perspective on how the Programme has evolved since 2012/13.

3.18 The proportion of projects initiated by institution type over the evaluation period is illustrated in the chart below. Three Knowledge Providers – University of Ulster, CAFRE, and Queens University Belfast – accounted for 70% of initiated Phase II projects and 54% of initiated Phase III projects.

3.19 This relative fall in delivery amongst the largest providers reflects that NI Colleges became more prominent over time. South West College has been active since the outset with a dedicated team of business engagement specialists, and other Colleges are now moving towards adopting this model and increasing their engagement, notably North West Regional College, Southern Regional College and Belfast Metropolitan College. These three Colleges accounted for just 8% of initiated Phase II projects but 23% of initiated Phase III projects. This is potentially encouraging, because a broader Knowledge Provider base should make the Programme more resilient as it is not dependent on a small number of providers and any potential changes in their appetite for engagement or other issues that may impact on their ability to delivery Voucher activity.

3.20 Other NI specialist centres and non-NI providers (e.g. Letterkenny Institute of Technology) only accounted for a small proportion of projects initiated, and this was generally consistent over the evaluation period.

Figure 3-2: Proportion of projects initiated by the three most used KPs (UU, CAFRE, QUB) and other institutions

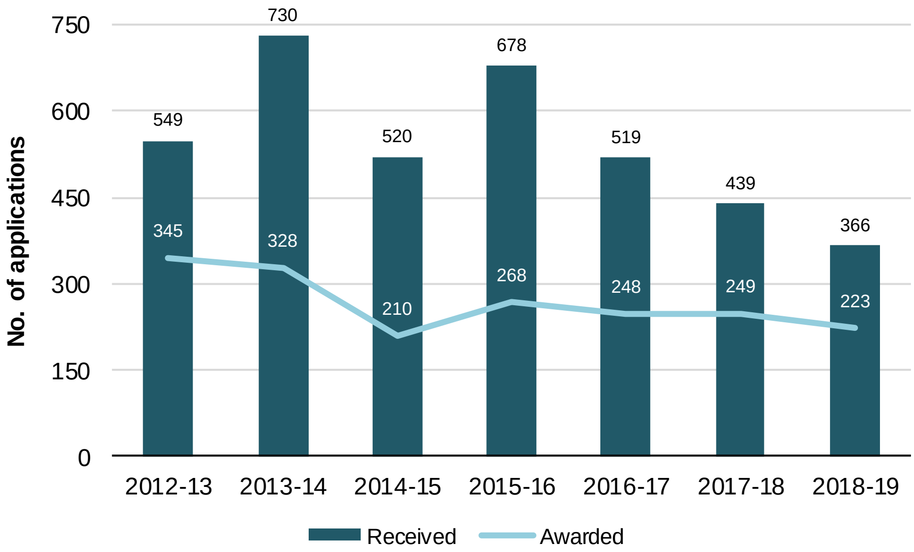


Source: SQW analysis of monitoring data

3.21 The sub-sections above considered demand for Phase II and Phase III individually. When demand (measured by number of applications) for the Programme over the evaluation period as a whole is considered, the overall trend appears to be a general reduction over time.

However, this is impacted particularly by a very high number of applications in 2013/14 and 2015/16. There has been much less variation in the number of vouchers awarded although this exhibits a slight downward trend over the period. It is also notable that the application success rate overall, and for each year, is higher for Client Managed businesses than Non-Client Managed businesses (62% compared to 42% for the evaluation period as a whole).

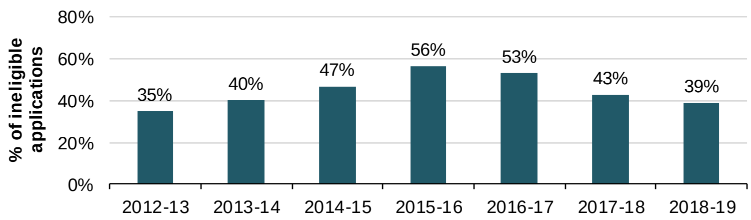
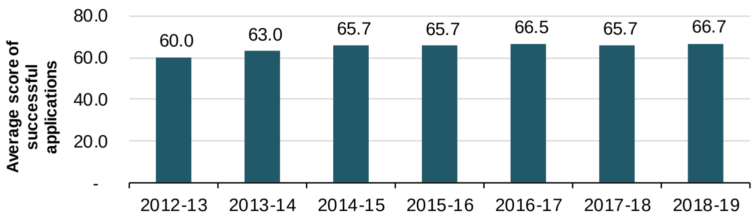
Figure 3-3: Number of applications received and approved over the evaluation period



Source: SQW analysis of monitoring data

3.22 Further analysis of demand reveals two broadly encouraging messages for the Programme as shown below. Taken in the round, the evidence suggests that the quantity and quality of demand from *eligible* applicants has been largely maintained throughout the evaluation period.

Table 3-6: Analysis of ineligible applications and score of successful applications

The percentage of ineligible applications has reduced by 17 percentage points since the start of Phase III – this suggests that the Programme has become better targeted and is now better understood by the SME base. The reduced ineligibility rate also offsets the reduction in the total number of applications	
The average score of successful applications has remained largely consistent over time. When combined with the relative stability in the number of applications awarded, this suggests that the quality of *eligible* applications has remained stable	

Source: SQW analysis of monitoring data

3.23 This said, it is worth highlighting that the number of eligible applications was lower by the later years of Phase III than at the start of Phase II. This may in part reflect simply the volume of eligible businesses in Northern Ireland given the Programme parameters around the number of vouchers available to each business and the need for businesses to make a financial contribution for second and third vouchers. Other external factors suggested by consultees included uncertainty around Brexit holding back R&D activity in businesses, and the gradual slowing of the NI economy also reducing innovation activity. The NI Year of Food and Drink was cited as a contributor to a rise in applications from agri-food businesses in 2016.[23]

3.24 Participants are eligible for a maximum of three vouchers. As shown below, **the vast majority of vouchers awarded have been single vouchers**. The proportion of second vouchers has increased in Phase III compared to Phase II (16% and 10% respectively) but only a small proportion of firms have third vouchers awarded, 2% in Phase II and 5% in Phase III.

Table 3-7: Number of single, second, and third vouchers awarded

	Phase II	Phase III
Single voucher	776 (88%)	781 (79%)
Second voucher	91 (10%)	162 (16%)
Third voucher	16 (2%)	45 (5%)
Total	**883**	**988**

Source: Invest NI monitoring data

Business profile over the evaluation period

3.25 The spatial distribution of businesses with initiated projects was fairly consistent over both phases. In addition, **the distribution of vouchers broadly reflected the distribution of the underlying business base**.[24] Newry Mourne and Down was slightly overrepresented in Phase II - 14% of initiated projects but only 11% of the business base – but the proportions in other Council areas only differed by one or two percentage points. Further data on the profile of participants is set out in Annex D.

3.26 Characteristics of supported businesses did not vary significantly over the evaluation period:

- The average proportion of Invest NI client managed firms (at the time of application) over the period was 39%.
- The size of participating businesses in employment terms was consistent over the evaluation period. The majority of firms, 84%, were start-ups or micro businesses with 0-9 employees. Some 13% were small businesses with 10-49 employees, and only 3% were medium sized businesses with 50-249 employees.
- Linked to this, the majority of firms had an annual turnover of £50k or less. Notably, the proportion that had no turnover increased from Phase II to Phase III (33% and 42% of all beneficiaries). Around a tenth had a turnover between £50-100k, and a fifth had an annual turnover between £100-500k.

[23] Monitoring data show that the highest number (86) of applications from food businesses was received in 2015-16
[24] Primary agriculture and transport businesses have been excluded as they are not eligible for support

- Almost half of the survey respondents were in either the Agri-Food (27%) or the Advanced Engineering and Manufacturing sectors (22%). The remaining respondents were spread across different sectors.

3.27 The data indicate that the Programme is supporting large numbers of pre-start and micro-businesses that would not be eligible for other Invest NI supports.

Nature of innovation activity

3.28 Data on the type of innovation activity delivered was collected through the survey of beneficiaries. The table below shows that **product/service innovation was by far the most common type of activity supported by the Programme**, with 236 businesses (92% of respondents) indicating that at least one of their vouchers involved product/service innovation. Forty respondents (16%) indicated that one of their vouchers involved process innovation. Marketing innovation and organisational innovation were only recorded by 13 and three respondents respectively. The nature of activity delivered was fairly consistent across the two phases and did not vary statistically by client managed status.

Table 3-8: Beneficiary survey responses on type of innovation activity delivered

Type of innovation	No. and proportion of businesses
Product or service Innovation i.e. testing or introducing new products or services	236 (92%)
Process Innovation i.e. testing or implementing a new or significantly improved production or delivery method	40 (16%)
Marketing Innovation i.e. testing or implementing a new marketing method	13 (5%)
Organisational Innovation i.e. testing or implementing new practices, workplace organisation or external relations	3 (1%)

Source: SQW analysis of survey of beneficiaries (n=256)

Summary conclusions

- The operating model and customer journey was largely consistent across both Phases. Key changes to Phase III included: a reduction in Invest NI's contribution to follow-on vouchers; the introduction of an online application form; and a modest change in voucher value. The effective reduction in value does not appear to have impacted on demand or delivery, from the perspective of Knowledge Provider Co-Ordinators.
- Around 1,800 applications were received in Phase II, with 883 vouchers awarded and 674 initiated. In Phase III to March 2019, around 2,000 applications had been received, with 988 vouchers awarded and 704 projects initiated.
- Taking into account the fall in the volume of ineligible applications and the consistency in scores of successful applications, the evidence suggests the quantity and quality of demand from eligible applicants has been largely maintained over the evaluation period, although the number of eligible applications has decreased to some extent.

- Whilst the University of Ulster, CAFRE, and Queens University Belfast were the main providers in each phase, NI colleges have become more prominent over time. A broader Provider base should make the Programme more resilient.
- The majority of vouchers are single vouchers, and their distribution broadly reflects the distribution of the NI business base. The vast majority of beneficiary firms employ <10 people, and 30-40% had no turnover at the time of application. The Programme has therefore supported many pre-start and micro-businesses not eligible for other Invest NI support.

4. Outputs and outcomes

Outputs

4.1 Outputs refer to the direct and countable effects of an intervention, that are (or should be) monitored by (or on behalf of) the delivery agency. For Innovation Vouchers, formal outputs are limited owing to the nature of the intervention which focuses on the provision of research and advice/support through the medium of an innovation project. For example, jobs and turnover generated are outcomes of these activities, rather than direct outputs.

4.2 The principal output of the Programme is the number of Voucher projects completed. The business survey also gathered evidence on the direct outputs that have been generated for supported businesses at the completion of their project.

Details of Phase II

4.3 Data provided by Invest NI indicates that 659 Voucher projects were completed in Phase II, from the 674 initiated. The flow of annual and cumulative project completions is set out in Table 4-1. The level of project non-completion was very low in Phase II; just 15 of the 674 projects were initiated but did not complete (a non-completion rate of slightly over 2%). Given the scale of the Programme, this is a very positive finding, suggesting that project activity is meeting business expectations and needs, which is discussed in more detail in Section 7.

Table 4-1: Projects completed in Phase II (final)

Year	Projects Completed p.a.	Projects completed cumulative
2012-13	246	246
2013-14	248	494
2014-15	165	659

Source: Invest NI

4.4 The 659 Voucher project completions includes businesses with two/three vouchers. The Invest NI monitoring data suggests that the Programme supported 618 individual businesses in Phase II (that completed projects).[25]

Details of Phase III

4.5 At this interim evaluation stage, the data provided by Invest NI indicates that 632 Voucher projects have been completed at this point, from the 704 initiated. Over 70 projects initiated in the evaluation period remained on-going at the time of writing, meaning that the non-completion rate for the period as a whole is not yet known. However, the data suggests that non-completion remains very low, with 546 of the 569 projects initiated in the first three years of Phase III (i.e. 2015-16 to 2017-18) completed by the point of the evaluation.

[25] The monitoring data lists 626 businesses with completed projects. However, a review of the data indicated a small number of duplications.

Table 4-2: Projects completed in Phase III (interim)

Year	Projects Completed p.a.	Projects completed cumulative
2015-16	193	193
2016-17	188	381
2017-18	165	546
2018-19	58	604

Source: Invest NI

4.6 Taking into account businesses with multiple vouchers, Phase III has supported 548 businesses to date (that completed projects).[26]

Voucher outputs

4.7 The business survey indicates that the 'output' from a Voucher project is most commonly a technical report or other form of written output. However, the survey suggests that over a third of businesses also receive prototypes from Voucher projects, and a notable minority (14% in the survey sample), a product ready for market. The nature of the output from survey respondents' first Voucher project is summarised below. Although a small sample, the survey suggests that the outputs from second/third Vouchers are similar.

Table 4-3: Output of (first) Voucher project (multi-code allowed)

Output of (first) Voucher project	Proportion (n=256)
Technical report or other written output/drawing	64%
Rough product or process prototype	39%
Product ready for market	14%
Results of specific analysis/research/testing	3%
Other	13%

Source: Business survey, 2019

4.8 The proportion of businesses reporting a product ready for market as the direct output did not vary by Phase or client-managed status. However, **Agri-food business were statistically more likely to report this output than other businesses**. The survey suggests that around a quarter of Voucher projects with agri-food businesses lead directly to the development of a new product; considering the modest scale of the Voucher, this is a notable achievement.

Summary conclusions

- Monitoring data indicates that 659 projects were completed in Phase II and 604 Phase III projects had been completed by March 2019. The level of project non-completion is very low which is a very positive finding, suggesting that project activity is meeting business expectations and needs.
- The 'output' from a Voucher project for two-thirds of supported businesses is most commonly a technical report or other form of written output. However, around half of respondents received prototypes or a product ready for market.

[26] The monitoring data lists 562 businesses with completed projects. However, a review of the data indicated a small number of duplications.

Business outcomes from Voucher activity

4.9 Following outputs, outcomes are the resultant effects of an intervention on the performance and behaviour of participants. The principal focus here is outcomes for businesses, covering a range of different outcome types, described in detail below. The evaluation has also captured evidence on the outcomes of the Programme for individual academics/technicians involved in the delivery of Voucher projects, and Knowledge Providers.

Coverage

4.10 Given the nature of the Programme and time-paths to impacts, outcome data has not been monitored by Invest NI. As such, the paragraphs below draw on the business survey. The outcomes have been categorised into four outcome-types:

- Effects on innovation perspectives and relationships
- Market and business capacity outcomes
- Innovation measures and behaviours
- Effects on turnover and employment

4.11 It should be re-emphasised that the survey captured the perspectives of businesses that had *completed* at least one Innovation Voucher project in Phase II or Phase III. Outcome data for those participants that had a project approved and then did not take it forward, those participants that started but did not finish an Innovation Voucher project, and those participants in Phase III with on-going projects are not captured.[27]

4.12 To avoid duplication, the findings below are set out for the full survey sample covering both Phase II and Phase III, with any significant differences highlighted where appropriate. The data is also presented for client-managed and non-client managed respondents.

Innovation perspectives and relationships

4.13 The business survey indicates that the Programme has led to changes in terms of perspectives on innovation and relationships with the knowledge base for most participants, which has the potential to have implications for their longer-term engagement in innovation. As set out in Table 4-4, 70% of the survey sample reported that the Programme had led to an increased understanding of the role of innovation in contributing to business growth and development and approaching two-thirds a greater commitment to undertaking innovation and/or an enhanced relationship with a Knowledge Provider.

4.14 The outcomes were generally consistent by Phase and client-managed status, with two exceptions:

- Phase III respondents were more likely to report an increased understanding of the role of innovation in contributing to business growth and development (at 5% level)

[27] Outcomes for this final group will need to be identified in the final evaluation of Phase III.

- Client-Managed respondents were more likely to report a greater commitment to undertaking innovation activities as a result of Innovation Vouchers.

Table 4-4: Innovation perspectives and relationships outcomes (PII = Phase II, PIII = Phase III; CM = Client Managed, Non-CM = Non-Client Managed)

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Increased understanding of the role of innovation in contributing to business growth and development	70%	63%	76%	**	73%	68%	
Greater commitment to undertaking innovation activities	64%	63%	66%		74%	58%	**
Enhanced relationship with the Knowledge Provider	63%	57%	67%		68%	59%	

** denotes significance at 10%; ** at 5%; *** at 1%*

Source: Business survey, 2019 Overall n=256; PII n=112=; PIII n=144; CM n=101; N-CM n=155

4.15 Drawing on the recommendation from the previous evaluation of the Programme regarding the stated objectives and indicators of success, Phase III included targets against the three outcomes set out above. The targets and interim performance based on the survey findings are set out in the table below. At this interim stage, the evidence indicates that the Programme is performing well against the targets for understanding of, and commitment to, innovation, with the proportion of respondents indicating these outcomes had been experienced above the target level. However, at this stage the target for enhanced relationship with Knowledge Providers is not being met and would still be slightly under-target even taking into account those respondents that reported 'expected' effects in the future. Nevertheless, it is encouraging that 75% of respondents to the academic e-survey reported that businesses had enhanced their relationships with Knowledge Providers.

Table 4-5: Innovation perspectives and relationships outcomes performance against targets for Phase III (n=144)

	Target	Experienced	Expect to experience*	Have not and will not experience
Increased understanding of the role of innovation in contributing to business growth and development	70%	76%	6%	18%
Greater commitment to undertaking innovation activities	60%	66%	11%	22%
Enhanced relationship with the Knowledge Provider	80%	67%	8%	24%

*Source: Business survey, 2019 * Respondents were able to select both 'Experienced' and 'Expect to experience' – this data excludes those who also indicated 'Experienced'*

4.16 There may be a case for Invest NI to consider setting equal targets for these outcomes in future phases of the Programme; the performance on 'Enhanced relationship with the Knowledge Provider' was broadly consistent to the other two outcomes, however, the target looks like it may not be met, and the case for a higher target on this outcome is not clear to the evaluators. Further, there should be clarity on the definition, to ensure this captures 'new' as well as 'enhanced' relationships.

Market and business capacity outcomes

4.17 Data from the survey on market and business capacity outcomes are set out in Table 4-6, showing the range of positive outcomes for businesses in terms of direct market effects. Notably, approaching half (48%) of respondents indicated that they had introduced a new or significantly improved product as a result of Innovation Vouchers. Further, around a third reported that they had introduced a new or significantly improved service or process.

4.18 The data are also encouraging in terms of wider business capacity, with 70% reporting improved technical capability or understanding as a result of Innovation Vouchers. The Programme also appears to be delivering wider effects which are not core to the rationale but reflect the benefits of engagement, including 15% reporting the introduction of new or significantly improved management practices, and around a quarter reporting effects on exports and/or profitability.

4.19 It is notable that in nearly all cases, there was no statistical variation in the proportion of respondents indicating that outcomes of this type had been realised between Phase II and Phase III at this point. The one (weakly) significant difference, with respondents in Phase II more likely to reported achieved outcomes for new or increased exports is likely to reflect in part the time-paths to impact to exports, following market-entry in the domestic market.

4.20 By contrast, respondents that were Client-Managed at the point of application were statistically more likely to report a range of achieved outcomes including in relation to new/improved products, services and processes (all at 5% significance), and new or increased exports (at 1% significance). This likely reflects the capacity of these businesses (which were on average larger) to realise benefits from the Voucher project. Interestingly, 'expected' benefits on these outcomes were *not* more common for Non-Client Managed respondents (with no statistical variation between the groups), which suggests this variation is not owing to time-paths to impact.

Table 4-6: Market and business capacity outcomes (PII = Phase II, PIII = Phase III; CM = Client Managed, Non-CM = Non-Client Managed)

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Introduction of new or significantly improved products	48%	48%	48%		56%	43%	**
Introduction of new or significantly improved services	28%	28%	28%		36%	23%	**
Introduction of new or significantly improved processes	35%	33%	37%		44%	30%	**
Introduction of new or significantly improved management practices	15%	16%	15%		20%	12%	
Improved technical capability or understanding	70%	69%	72%		80%	64%	**
Improved profitability	26%	27%	26%		32%	23%	

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Reduced environmental impact	18%	18%	17%		21%	15%	
New or increased exports	22%	27%	17%	*	34%	13%	***
Reduced business costs	15%	18%	14%		22%	11%	**

** denotes significance at 10%; ** at 5%; *** at 1%*

Source: Business survey, 2019 Overall = 256; PII n112=; PIII n=144; CM n=101 ; N-CM n=155

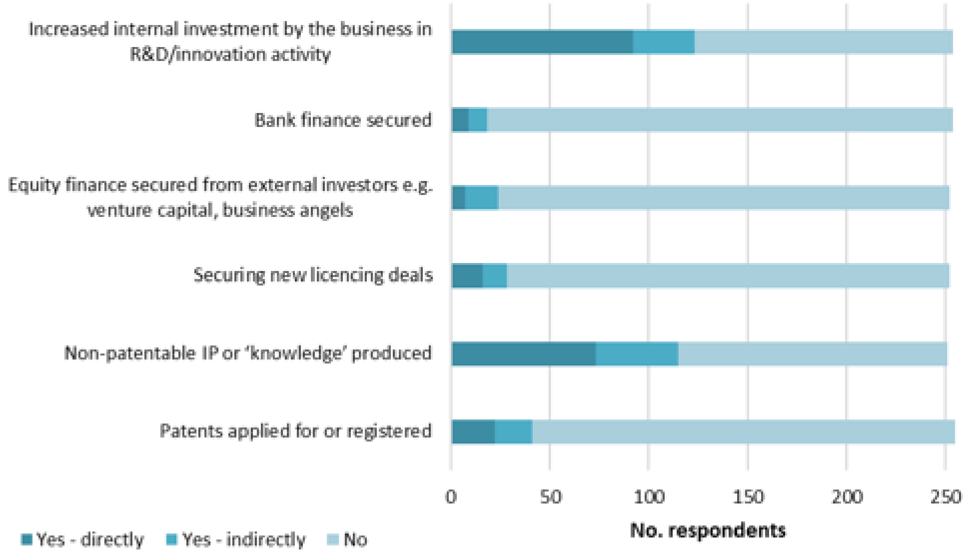
4.21 It is also noted that the proportion of respondents that indicated they had introduced a new or significantly improved product as a result of Innovation Vouchers was significantly higher for businesses in the Agri-food sector (at 61%), compared to other sectors (at 43%), significant to the 5% level. This is consistent with the data set out above regarding the direct output of the project.

Innovation and finance measures

4.22 Businesses surveyed were also asked to identify whether Innovation Vouchers had led (directly or indirectly), to a range of wider, and potentially longer-term measures related to innovation and finance. As set out in Figure 4-1, outcomes to this point are most evident in leading to an increased internal investment by the business in R&D/innovation activity, with 92 of the respondents (around a third of the sample) reporting this as a 'direct' effect. Businesses who reported increased internal investment in R&D/innovation activity as a direct or indirect result of Innovation Vouchers were more likely to have undertaken R&D prior to their Voucher project (significant at 5%).

4.23 Owing to the limitations of the survey timing it was not possible to gather quantitative data on the scale of this internal investment. However, the survey provided strong evidence that the Programme has led to increased investment activity by the SME base in R&D and innovation, which aligns strongly to the strategic case, and the role of the Programme in supporting businesses to undertake early-stage innovation activity in advance of more substantive and significant forms of innovation over the longer-term. Effects on other innovation and finance measures appears to be more modest, although approaching half of the survey sample reported Vouchers had led directly or indirectly to non-patentable IP or knowledge. There is also evidence in a small number of cases of the Programme supporting businesses to secure equity and bank finance, which is encouraging given the wider challenges faced by NI-based firms in accessing external finance.

Figure 4-1: Innovation and final measures for the full survey sample



Source: Business survey, 2019

4.24 The data for direct and indirect effects were combined (owing to sample size) to test for any variation by Phase or client managed status. There was no significant variation by Phase. However, when considering client-managed status there was some variation, with respondents that were Client Managed more likely to report effects on securing equity finance, non-patentable IP or 'knowledge' produced and increased internal investment by the business in R&D/innovation activity. Notably, approaching a fifth (17%) of client-managed businesses indicated that their project(s) had led to securing equity finance.

Turnover and employment

Achieved for Phase II and Phase III

4.25 Businesses supported in both Phase II and Phase III were asked to indicate whether the Programme had led to changes in their turnover and employment by the point of the survey. This data needs to be considered in light of the outcomes reported above, with around half of the survey sample reporting that they had introduced a new product to the market by the point of the survey. Note that effects were considered only for those businesses that were trading at the point of the survey (186 of the 256). The summary data are set out in Table 4-7.

4.26 Turnover benefits were more common than employment benefits; this is to be expected given the nature of innovation activity, and is consistent with the overall rationale for the Programme which is not fundamentally a job creation intervention. However, the survey data indicates that the Programme has led to turnover and employment effects at this point. Interestingly, there was no statistical variation between Phase II and Phase III, and only a weakly significant variation between Client Managed and Non-Client Managed businesses in terms of turnover. Likely linked with the greater likelihood of launching new products, Agri-food businesses were also statistically more likely to report turnover increases than businesses from other sectors. However, there was no difference on employment outcomes.

Table 4-7: Turnover and employment outcomes (PII = Phase II, PIII = Phase III; CM = Client Managed, Non-CM = Non-Client Managed)

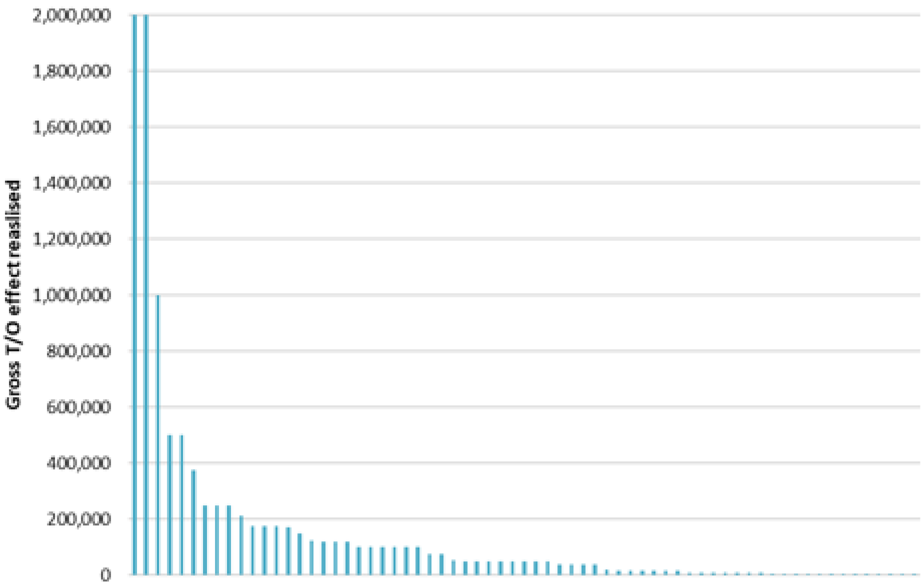
	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Increase in T/O	38%	41%	36%		45%	32%	*
Increase in employment	17%	15%	19%		22%	13%	

** denotes significance at 10%; ** at 5%; *** at 1%*

Source: Business survey, 2019 Overall = 186; PII n=80, PIII n=104; CM n=86 ; N-CM n=98

4.27 For those respondents that reported an increase in turnover (n=67), the mean was £253k. However, as may be expected from innovation projects the range of effects was wide, with the median effect of £50k, a small number reporting very significant effects, and the majority reporting effects of less that £100k. Given the characteristics of supported businesses, this is not unexpected. The range of effects is set out below: each bar represents an individual survey respondent.

Figure 4-2: Gross turnover effects (where realised)



Source: Business survey, 2019 Note: the Figure excludes one business that reported gross turnover effects of £9m

4.28 The average (mean) increase in employment for those businesses that reported effects was 2.6 FTEs (based on data from 32 businesses), with a median increase of 2.0.

Expected for Phase III

4.29 Businesses supported in Phase III were also asked whether they expect that the Programme will lead to changes in their turnover and employment in the next three years. This included respondents that were at the 'pre-trading' stage (providing a total sample of 134). The survey suggests that substantial effects are expected:

- 63% expect to realise increased turnover in the next three years
- 53% expect to realise increased employment in the next three years.

4.30 There was no significant variation by client managed status on expected turnover or employment effects.

4.31 The evaluators note that there is no statistically significant difference between the proportion of respondents in Phase II and Phase III reporting *achieved* turnover and employment benefits. Phase II projects had been complete for c.4 years at the time of the survey. This suggests that the expected benefits reported by Phase III beneficiaries over the next three years may prove to be overly optimistic – it will be important for the final evaluation of Phase III to test this.

Follow-on support and innovation activity

4.32 An important element of the underpinning case for the Programme is that Vouchers are often a 'first step' in an innovation process, with the intention that businesses will engage in further innovation activity following the Voucher project, including via other Invest NI supports on the 'innovation escalator'. Evidence on the scale of this follow-on support and innovation activity, and the Programme's potential contribution, has been captured through both monitoring data (for the full population), and survey evidence (for the survey sample).

Monitoring data

4.33 Data provided by Invest NI indicate that the scale of businesses 'moving-on' to other Invest NI innovation and R&D supports is significant:

- Of the 616 businesses offered an Innovation Voucher in Phase II, 45% secured some form of follow-on Invest NI support (c. 280 businesses). In total, the value of this support was around £24.5m.
- Of the 717 businesses offered an Innovation Voucher in Phase III (by March 2019), 29% secured some form of follow-on Invest NI support (c. 210 businesses), with the lower proportion than Phase II expected given both the passage of time between supports, and on-going delivery. The total value of this support was around £14.0m.

4.34 The follow-on Invest NI support covered the full range of Invest NI's assistance types: Creating Jobs, Developing Innovation & Technology, Developing Overseas Trade Capability, Developing Skills, Investing in R&D, Loan Fund, and Other. The proportion of the total *value* of the support by assistance type provided to businesses that secured an Innovation Voucher in Phase II and Phase III is set out in Table 4-8. The scale of follow-on support under 'Developing Innovation & Technology' and 'Investing in R&D' – that is, directly innovation focused assistance – is significant collectively, accounting for 44% of the value for Phase II businesses, and 38% for Phase III businesses.

Table 4-8: Proportion of value of assistance type for business that secured an Innovation Voucher

Assistance type	Phase II (2012-13 to 2018-19)	Phase III (2015-16 to 2018-19)
Creating Jobs	27%	28%
Developing Innovation & Technology	13%	12%
Developing Overseas Trade Capability	6%	7%

Developing Skills	7%	6%
Investing in R&D	31%	26%
Loan Fund	9%	15%
Other	7%	6%

Source: Invest NI

4.35 Reflecting the relevance of the 'Developing Innovation & Technology' and 'Investing in R&D' assistance to Innovation Vouchers, Invest NI provided more detailed information on these forms of assistance to the evaluators. The table below therefore sets out the number of businesses within each Phase of the Programme that were provided with follow-on support of each assistance type. Note that some businesses received both types of follow-on assistance; the number of unique businesses that received either/both types of support was 220 in Phase II, and 140 in Phase III.

Table 4-9: Number of business receiving innovation related follow-on support

	Phase II	Phase III
Investing in R&D	75	35
Developing Innovation & Technology	203	126

Source: Invest NI

4.36 To put this data in context, around 630 businesses were awarded Vouchers in Phase II, and 570 businesses had been awarded Vouchers in Phase III by January 2019. As such, around 35% of businesses awarded Vouchers in Phase II, and 25% of businesses awarded Vouchers in Phase III (to date) have secured follow-on support focused specifically in innovation/R&D activity. The lower rate for Phase III is to be expected at this stage, given that projects have been completed more recently and follow-on support may not have yet been applied for/awarded in all cases where possible.

4.37 The most common form of follow-on support for both Phase II and Phase III was Technical Development Incentive (TDI) assistance, which accounted for approaching half of all offers of assistance to businesses in both Phases. However, Grant for R&D assistance accounted for the majority of offer *value*, around 60% of value related to both Phase II and Phase III. This level of follow-on support to relevant innovation support schemes is encouraging.

Survey evidence

Invest NI support

4.38 The survey evidence on follow-on support is consistent broadly with the monitoring data for the population as a whole, with 29% of the survey sample reporting they had secured follow-on support from Invest NI (with no significant difference between Phase II and Phase III). Grant for R&D and TDI were also the most common forms of follow-on support secured by the survey sample. As may be expected, businesses that were Client Managed at the point of approaching Innovation Vouchers were more likely to secure follow-on support (at 41%).

4.39 Further to the scale of follow-on assistance, the survey also sought to provide evidence on the potential contribution and influence of the experience of Innovation Vouchers in relation to this follow-on activity. Of the 74 businesses that reported follow-on support:

- 25 (34%) reported that the subsequent project activity directly followed the technical work undertaken in the Voucher project(s)
- 13 (28%) reported that the subsequent project activity used innovation management skills acquired in the Voucher project(s)
- 17 (22%) reported that the Voucher projects influenced the subsequent project activity in other ways.

4.40 Taken together, over half (49 of the 74) reported that the Innovation Voucher project influenced in some way the follow-on support. It is also notable that Non-Client Managed businesses were more likely to report an influence of the Programme on follow-on support (79%), relative to Client Managed businesses (56%), a difference significant at the 5% level. This is not unexpected: businesses that were Client Managed when they approached the Programme may be involved in several assistance types, with the relative influence of Innovation Vouchers therefore more limited, compared to businesses that have more recently become Client Managed following the Voucher activity.

4.41 Overall these are positive findings, highlighting the wider contribution of the Programme to the development of supported business over the longer-term.

Engagement with the Knowledge Provider

4.42 Around half of the businesses surveyed (52%) indicated that they had remained in contact with a Knowledge Provider following project completion (including for those with multiple Vouchers at least one of the Knowledge Providers). This suggests that the Programme is helping to support the development of sustainable and potentially long-term relationships between SMEs and the knowledge base in Northern Ireland, for a large proportion of those supported. As may be expected, the proportion of businesses that reported they had remained in contact with a Knowledge Provider was higher for those that had existing links with Knowledge Providers when they approached the Programme than those that did not, at 69% and 45% respectively (a significant difference at 1%). However, it is notable that 45% of businesses that did *not* have an existing relationship with a Knowledge Provider before the Voucher project remained in contact with a Knowledge Provider after the Voucher project, indicating that the Programme has catalysed new sustainable relationships.

4.43 Contact with a Knowledge Provider post-Voucher was also higher for Client Managed businesses, relative to Non-Client Managed businesses, at 59% and 46% respectively (significant at 5%). There was no statistical variation by Phase.

4.44 The nature of the on-going contact varied across the survey sample. This contact was most commonly reported to be 'Informal discussions on innovation opportunities' (98 of 132), but 'participation in collaborative R&D project(s)' was also quite common (29 of 132).

Other innovation activity

4.45 Finally, in terms of follow-on activity, around a third of the businesses surveyed (31%) indicated they had undertaken other innovation activity (not supported via Invest NI) following the completion of their Voucher project. This was significantly higher for Client

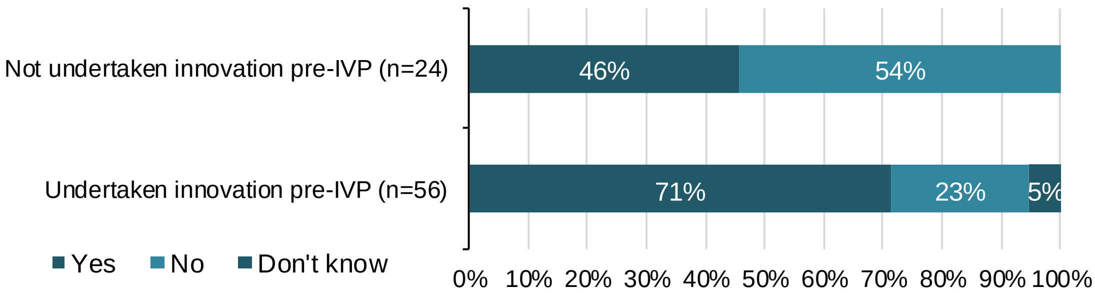
Managed businesses, relative to Non-Client Managed businesses, at 47% and 21% respectively (significant at 1%). There was no variation by Phase.

4.46 This other innovation activity was most commonly product or service innovation (i.e. testing or introducing new products or services), and in most cases involved collaboration with an external source of knowledge including the private sector, universities and colleges in Northern Ireland and elsewhere, and government or public research institutes. In 14 of the 80 cases where other innovation activity was reported, no collaborators were involved.

4.47 The survey sought to gather evidence on the potential influence of Vouchers on this post-Voucher innovation activity (n=80). In around two-thirds of cases, businesses reported that they would have undertaken this subsequent innovation activity in the absence of engagement with Innovation Vouchers, but in third that they would not. This suggests that the influence of the Programme is modest overall, but evident for some businesses.

4.48 However, it is notable that the influence of the Programme on this post-Voucher innovation activity varied significantly by pre-Voucher innovation activity, as summarised in the chart below (with the difference between those saying 'no' significant at 1%).

Figure 4-3: For those respondents that had undertaken other innovation activity following the completion of the Voucher, response to: "Do you think that you would have undertaken this subsequent innovation activity in the absence of your engagement with the Innovation Vouchers Programme?"



Source: Business survey, 2019

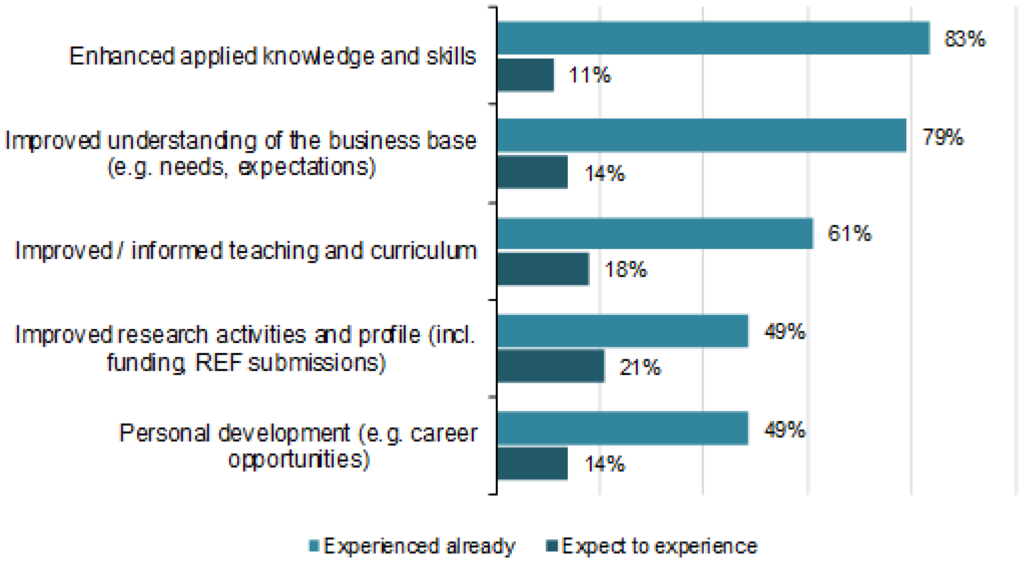
4.49 The group of businesses (n=13) that had not undertaken innovation before Vouchers and reported they would not have undertaken post-Voucher innovation activity without the Programme is a modest proportion of the survey sample as a whole (just 5%). However, the data indicate that the Programme has influenced businesses to continue to innovate, particularly where they have no prior experience of this type of activity. Given the focus of the Programme on providing a 'first step' on an innovation journey, this is an encouraging message. It may also suggest that a greater focus on businesses that have not previously innovated would enhance its contribution to influencing levels of innovation across the business base over the longer-term.

Wider outcomes

4.50 The principal outcomes of the Programme are those for participants. However, the online survey of academics that have delivered Voucher projects, and consultations with the co-ordinators at participating Knowledge Providers, identified a range of wider qualitative outcomes which are important for understanding the effects of the Programme in the round.

4.51 Overall, the experience from the delivery-side was very positive. The academic survey shows that respondents had experienced, or expected to experience, benefits as a result of their involvement with the Programme, as summarised in Figure 4-4 below.

Figure 4-4: Experienced/expected benefits for academics as a result of involvement with Innovation Vouchers



Source: SQW analysis of survey of academics (n=72)

4.52 Considering the outcomes set out in the Figure above, and drawing on the wider qualitative research, the following points are made:

- **Enhanced applied knowledge and skills** was the most common benefit experienced by academics, and this was also reflected in the consultations with KP coordinators. The Programme offers the opportunity for academics/technicians to enhance their knowledge and skills, and develop in new areas, ensuring that knowledge and skills remain relevant and are 'up to date' through their engagement with the business base.
- **Improved understanding of the business base** and **improved relationships with business and industry** were common benefits identified in both the survey of academics and consultations with Knowledge Provider coordinators. The Programme was seen to offer an important link between Knowledge Providers and businesses, increasing SME awareness of the Knowledge Provider 'offer'. This was especially important to some colleges that had previously been seen as principally (or solely) teaching institutions (as reported by Co-ordinators). In addition, Vouchers often led to follow-on work for the client-business, mostly through second vouchers or other government funded programmes. However, the consultations highlighted that the scale of follow-on work was varied, and there were no formal systems in place at Knowledge Providers to track business progress post-project completion.
- Both the academic survey and consultations indicated that the Programme **benefited teaching and curriculum development** as it enables academics to use content from their projects in teaching to provide 'real world' examples. The benefit of academic staff engagement in Voucher projects to understand better industry behaviours was also highlighted.

- **Improved research activities and profile** (self-reported) had been experienced by nearly half of the academic survey respondents. Academics reported that research undertaken as part of the Programme was beneficial for their wider research activities and in some cases submission for research funding. Some also noted that IV projects supported student/PhD research.
- Nearly half of academic survey respondents indicated that they had benefited from the Programme in terms of **personal development**, e.g. managerial experience.
- **Financial contributions** were highlighted as an important benefit by most academics and KP co-ordinators. This varied as Vouchers represented a large proportion of some institutions' funding streams, whereas in other cases they were a more modest element of the financial mix. This is to be expected and reflects in part the different strategic choices and capacities of the institutions to deliver Voucher projects at scale.

Summary Conclusions

- The Programme has delivered positive effects on innovation perspectives and relationships (e.g. increased understanding of the role of innovation in contributing to business growth and development, commitment to undertaking innovation, enhanced relationships with Knowledge Provider) and market and business capacity outcomes (approaching half of respondents indicated that they had introduced a new or significantly improved product as a result of Innovation Vouchers).
- There is strong evidence that the Programme has led to increased investment by the SME base in R&D and innovation, which aligns strongly to the strategic case.
- The Programme has led to new or increased exports for around a fifth of respondents. This is an encouraging finding because changing export behaviour is not a core objective of Innovation Vouchers.
- At the time of the survey, Innovation Vouchers had led to turnover increases for 38% of respondents and employment increases for 17%. Where the impacts could be quantified, the mean increases were £253k and 2.6 FTEs, although there was considerable variation, especially on turnover. Over half of Phase III respondents expect to achieve turnover and/or employment benefits in the next three years.
- The volume of scale of businesses 'moving-on' to other Invest NI innovation and R&D supports is significant, and 50% of businesses remained in contact with a Knowledge Provider following project completion. This suggests the Programme is delivering against the objective of being a 'first step' on an innovation journey.
- The majority of academics reported a range of qualitative benefits including enhanced applied knowledge and skills, improved relationships with business, and improved teaching.

5. Additionality and other contributory factors

Purpose and Approach

5.1 Evidencing the additionality of an intervention, to move from gross to net outputs/outcomes, is core to robust evaluation. Within the timing/budget for this study, the approach is based on self-reported data from surveyed participants who were probed on whether the claimed benefits generated by their Voucher project(s) may have happened in any case (*Deadweight*), and whether it reduced their ability to do other things and/or secure other benefits (*Substitution*). Survey data were also used to estimate the extent to which benefits may have occurred at the expense of non-participants (*Displacement*).

5.2 The additionality analysis has been undertaken at two levels, and for two distinct purposes:

- first, for *descriptive* purposes, the findings are based on the frequency of responses to questions on additionality for the participant sample as a whole
- second, for *quantitative analysis* purposes, additionality has been identified at participant-level so that the additionality metrics used in grossing-up the findings of the survey to the population (for Phase II and Phase III respectively) take into account the varied range of project outcomes, and to enable a sensitivity analysis of additionality by cross-tabulation.

5.3 The approach to additionality takes a direct, but subjective, perspective on how effects are perceived on the ground. There are no reasons to doubt the sincerity or integrity of responses provided, but they are likely to include significant Optimism Bias – that is effects (whatever these are) are likely to be remembered as being more significant than was probably the factual reality. This should be borne in mind when reviewing this material.

5.4 To provide a further perspective, the survey also therefore asked businesses to identify whether a range of other factors were present alongside or after the completion of the Voucher project which may also have influenced outcomes. Views on additionality from academics and other consultees are also presented to provide a wider perspective.

Descriptive additionality

5.5 The headline findings on self-reported additionality from the full sample across both Phases are set out in Table 5-1. There are no significant differences between the Phases.

Table 5-1: Self-reported findings on deadweight and types of additionality (n=246)

		% Respondents
Deadweight	We would have achieved the outcomes anyway, at the same speed, scale and quality (deadweight)	13%
Partial additionality	We would have achieved the same outcomes, but not as quickly	24%
	We would have achieved the same outcomes, but not at the same scale	5%

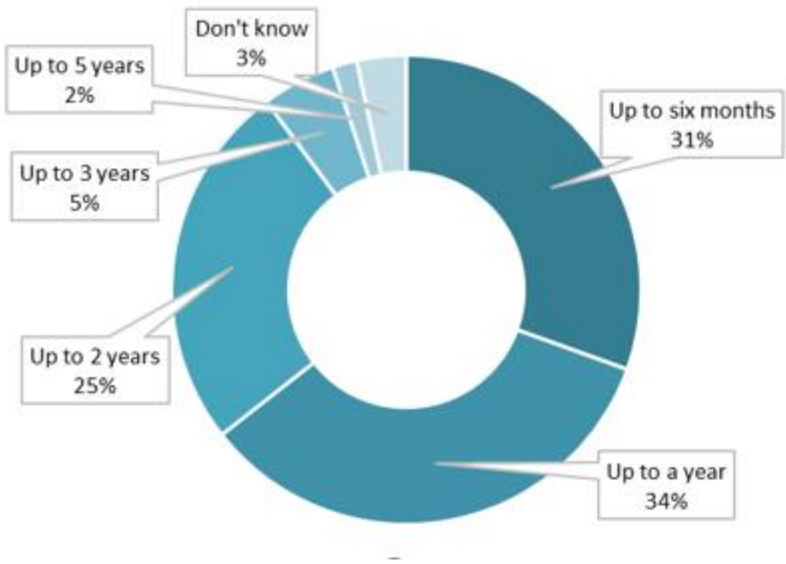
	We would have achieved the outcomes, but at a lower quality	8%
Full additionality	We *probably* would not have achieved the same outcomes	24%
	We *definitely* would not have achieved the same outcomes	28%

Source: Participant survey

5.6 Positively, self-reported deadweight was low, with 13% of survey respondents indicating that the outcomes would have been achieved at the same speed, scale and quality without Vouchers. By contrast, over 50% of respondents stated full self-reported additionality, with 28% stating that they 'definitely' would not have achieved the same outcomes without Vouchers, and a further 24% that they 'probably' would not have achieved these outcomes. As is typical with interventions such as Innovation Vouchers, partial additionality was also quite common, notably in terms of timing, where the Vouchers brought forward outcomes that would have otherwise taken longer to realise.

5.7 Looking at the partial additionality data in more detail, for those respondents that identified timing additionality (n=59), the effect was most commonly bringing outcomes forward by up to a year, however, in some cases outcomes were brought forward more substantially. This acceleration is an important effect, given 'Social Time Preference' (i.e. that society values things more 'now' than in the future), and in enabling businesses to innovate more promptly and access markets more quickly.

Figure 5-1: For those identifying timing additionality, response to 'Approximately how much longer would it have taken for you to achieve these outcomes in the absence of the Innovation Voucher project(s)?' (n=59)



Source: Business survey, 2019

5.8 Where quality additionality was identified (n=20), businesses were asked to provide a narrative description of how this additionality was realised. The feedback was context specific, however, a common theme related to the knowledge and skills of the KP that the Voucher enabled to be utilised as the key factor, which led to a higher quality output. Some examples of this evidence that illustrate this theme are set out below.

Description of quality additionality from the participant survey

"*The product wouldn't have had the same rigour, and we wouldn't have had the knowledge input for the product*."

"*The professionalism that was afforded to me would have been beyond my budget which would have affected the overall quality*."

The quality would have been lower "*in the design and the material of the products, because I wouldn't have the knowledge of the materials*."

5.9 Alongside consistent findings between Phase II and Phase III on self-reported additionality, generally the findings between Client Managed and Non-Client Managed businesses were similar. The one statistical variation was that Client Managed businesses were more likely to report quality additionality effects (12%), compared to Non-Client Managed businesses (5%), a weakly significant difference (at 10%). However, overall the self-reported data suggests that additionality is consistent across both Phases and client managed-status.

5.10 In this context, it is worth reflecting that the findings are also broadly consistent with the previous evaluation of the Programme, covering the 2008-2014 period. In the previous evaluation – that asked the same questions, and also focused on businesses with completed Vouchers – 43% of survey respondents identified full additionality, compared to 52% in this current study. Care must be taken in making direct comparisons owing to differences in the sample and timing of the survey, but this does again suggest that the overall additionality of the Programme – as perceived by businesses – is broadly consistent over time.

Substitution

5.11 Substitution tests the extent to which engagement with Innovation Vouchers reduced a business's ability to engage in other business development activities. The survey found limited evidence of substitution: of the 256 survey respondents, 15% identified substitution was evident, with the corollary that no substitution was evident for the vast majority of businesses. The level of substitution was consistent between both Phases and by client managed status.

5.12 It is not possible to know the exact nature and scale of the outcomes of the activity that Vouchers 'substituted' for. Nevertheless, some estimate of these effects has been accounted for in the quantitative assessment.

Displacement

5.13 Displacement assesses the extent to which the benefits of an intervention amongst the target group takes away benefits from non-participants – in the case of Vouchers, displacement would occur where the new products/services/processes developed by businesses take market share away from existing non-participating firms in Northern Ireland.

5.14 Evidence on displacement is based on self-reported information from surveyed beneficiaries on two factors:

- on the location of sales (n=186), the mean proportion of sales in NI was 57%, and the median 70% (note: these do not take into account the volume/scale of sales)

- on whether the sales would be taken by competitors were the firm to cease trading (n=184), 46% stated that they believed all of their sales would be taken by competitors if they were to close, 34% that some of the sales would be taken, and 20% that none of the sales would be taken.

5.15 These two factors have been combined to identify a displacement value for each survey respondent. With over half of sales in Northern Ireland, a relatively high level of displacement may be expected. However, it is important to highlight that displacement does not mean that these businesses are not beneficial to the economy. Increased competition amongst businesses can be important for driving productivity; however, it is not possible to capture/model this additional benefit with any accuracy.

Quantitative additionality

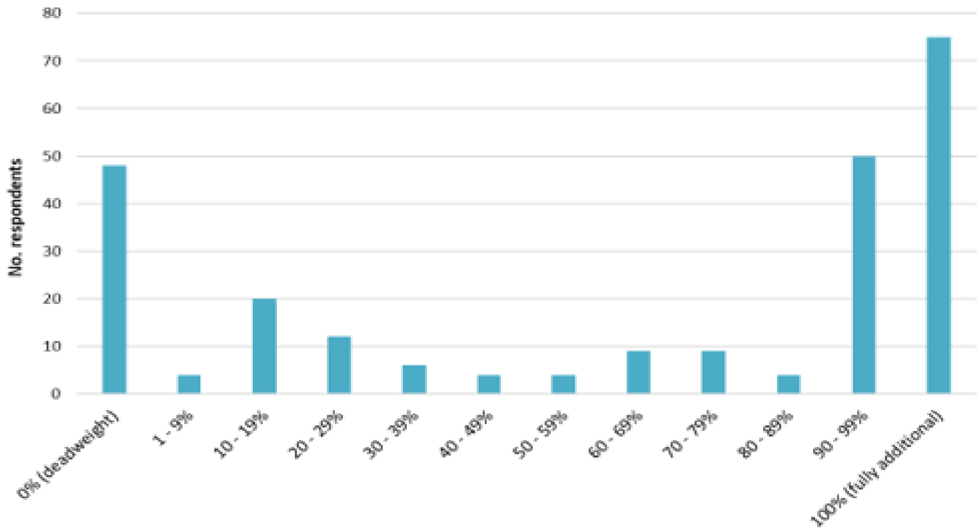
5.16 For the quantitative analysis of additionality, metrics for Deadweight, Substitution and Displacement were developed at the level of each respondent to the business survey. The step-by-step process for deriving the business-level additionality ratios is set out in Annex C. Two additionality assessments have been constructed, excluding and including displacement:

- data *excluding* displacement are set out below when providing averages across the survey, unless otherwise stated
- data *including* displacement are used when applying the additionality values to the gross employment and turnover data to provide the quantitative additionality case.

Findings

5.17 Consistent with the findings above, respondent-level additionality values varied, although full deadweight and high or full additionality were the most common, as summarised below.

Figure 5-2: Range of additionality values (n=245)[28]



Source: Participant survey and SQW analysis

[28] 11 respondents indicated that no outcomes had been generated by the Voucher/refused to respond on additionality, in which case no ratio was derived

5.18 The mean additionality ratio (to re-iterate excluding displacement) across these respondents was 60% i.e. 60% of benefits are additional to the Programme. If displacement is included (for those firms where a displacement value was provided), the mean additionality ratio reduces to 43%. As such, the displacement value impacts the additionality findings quite substantially: this is not unexpected – as noted above, businesses supported by the Programme were operating largely in local markets in Northern Ireland.

5.19 Consistent with the descriptive additionality above, the ratios were similar across Phase II and Phase III, as set out below. It is worth noting that the average additionality ratio was slightly lower for agri-food businesses (at 39%) than the other sectors combined (44%).

Table 5-2: Self-reported additionality ratios (mean)

	Average additionality – pre-displacement	Average additionality – post-displacement
Phase II (n=107)	56%	39%
Phase III (n=138)	63%	45%
Overall (n=245)	60%	43%

Source: Business survey, 2019 and SQW analysis

Firm-level results – full survey sample

5.20 The next step in identifying an overall additionality estimate for the Programme was to apply the individual respondent-level additionality ratios to the gross data for that respondent, to identify a respondent-level net figure for jobs created and turnover respectively.[29] These respondent-level data were then aggregated to generate a total 'net' figure for jobs created and turnover, respectively, across the sample of surveyed firms, including and excluding displacement. The aggregate net data were then compared to the aggregate gross data to provide an overall gross-to-net ratio, for jobs created and turnover outcomes (including and excluding displacement). Note that this analysis to derive a Programme level additionality ratio is based on the achieved employment and turnover effects for Phase II and Phase III. The headline findings of this analysis are set out in Table 5-3.

Table 5-3: Gross-to-net conversion factors derived from the survey (n=119)

	Gross	Net – pre-displacement	Ratio pre-displacement	Net – post-displacement	Ratio – post-displacement
Jobs created	82.00	51.31	63%	37.19	45%
Turnover (£k)	10,171	7,038	69%	4,206	41%

Source: Participant survey and SQW analysis

5.21 Using this approach, the overall conversion factors from gross to net derived from the survey are 45% and 41% for jobs created and turnover respectively (including adjustment for displacement). These weighted ratios compare to an overall ratio of 43% resulting from analysis of the sample in aggregate i.e. not allowing for the scale of gross effects reported by businesses. Note that these ratios combine findings for Phase II and Phase III. The impact analysis set out in Sections 6 and 7 for Phase II and Phase III separately apply the results relevant to that period only. However, to account for the lower sample sizes (and therefore a

[29] For example, where Respondent X reported 10 gross jobs and had an individual additionality ratio of 0.5, the net jobs created for that respondent would be 5. Similarly, if Respondent X reported gross turnover of £50,000 from the Programme, the net turnover contribution would be £25,000.

small number of responses impacting on the ratios), the average values derived from the survey sample as a whole are also used to provide a range of estimated impact when scaling-up to the population.

Summary conclusions

- In the majority of cases of the participants surveyed, the Programme delivered additionality, either fully (c.50%) or in part. Deadweight – where the same outcomes would have occurred in any case – was present for around one in ten respondents with a higher number reporting substitution. Overall, these are positive findings.
- The additionality of the Programme is estimated to be 45% for job creation, and 41% for turnover generation, based on applying participant-level additionality ratios to gross outcomes. It is important to note that the overall additionality picture is influenced heavily by Displacement effects reflecting in part that the supported business often operate in local markets.

Other contributory factors

5.22 The analysis above suggests that the Programme has delivered additional outcomes. However, the survey evidence also demonstrates that other internal and external factors may have influenced the effects of the Voucher activity, and other investment has often been required to realise the outcomes reported.

Other factors influencing outcomes

5.23 Taking these points in turn, as set out in Table 5-4 around half of the survey sample reported that a new business plan or strategy had been implemented during or after the completion of the Innovation Voucher project, and a third that new equipment had been purchased. External factors are also important, with 41% (and 54% of Client Managed businesses), reporting changes in levels of market/customer demand.

Table 5-4: Internal and external factors

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
New Head of Innovation or similar appointed	6%	9%	3%		9%	4%	
New senior management team/business leadership in place	15%	18%	13%		27%	7%	***
New equipment purchased	33%	39%	28%	*	43%	27%	**
New business plan/strategy implemented	49%	47%	51%		62%	41%	***
Changes in level of competition e.g. a major competitor closing	20%	25%	16%	*	29%	14%	**
Changes in level of market/customer demand	41%	42%	40%		54%	32%	***

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Other	8%	4%	10%		4%	10%	*
None of the above	26%	30%	23%		16%	33%	**

** denotes significance at 10%; ** at 5%; *** at 1%*

Source: Business survey, 2019 Overall = 256; PII n=112, PIII n=144; CM n=101; N-CM n=155

5.24 These findings suggest that the Voucher is in a majority of cases one of a number of factors, which, taken together, may contribute to business outcomes. This said, a quarter of the survey sample reported that none of these internal or external factors was evident during or after the Voucher project, and this was significantly higher (at 5% significance) for Non-Client Managed businesses, relative to Client Managed businesses. This might suggest that the Voucher is more important to these businesses in driving outcomes, but is also likely to reflect changes around management and business planning which may be more common in larger businesses, with more established systems and processes in place.

5.25 Whilst these internal or external factors may not be directly linked to the Voucher in all cases, the survey suggests that the implementation of a new business plan/strategy alongside or after the Voucher is associated with key outcomes. As shown below, those businesses that reported they had implemented a new business plan/strategy, were more likely to report they had introduced a new or improved product to the market, and experienced increases in turnover and employment. The differences between those that had and had not implemented a new business plan/strategy were highly significant in all cases (at 1% significance).

Table 5-5: Key outcomes by whether the business reported a new business plan/strategy implemented during of following the completion of the Innovation Voucher project

New business plan/strategy implemented?	Introduced a new/significant improved product to market	Reported increase in turnover	Employment increased
Yes	57%	50%	26%
No	39%	25%	9%
Overall	48%	38%	17%

Source: Business survey

5.26 The causation here is not clear – it may be that those businesses that experienced benefits in terms of product development and turnover and employment were more likely to introduce a new business plan/strategy in order to capitalise fully on these benefits, rather than the business plan/strategy enabling the benefits to be realised. However, the data do suggest that wider changes in the businesses can be associated with realising the benefits from Voucher activity, which highlights that ensuring pathways to follow-on support may be important.

5.27 It is also worth highlighting that agri-food businesses were more likely to report that new equipment had been purchased during or following the completion of the Innovation Voucher than businesses in other sectors, 46% compared to 28% respectively (a highly significant variation, at 1%). Further, over half of the agri-food businesses that reported they had introduced a new/improved product to the market (n=43) had purchased new equipment. Again, the causation here is not clear, and this is likely to vary in different cases, however, the survey data highlight the role of other factors in explaining outcomes alongside the Voucher.

Additional investment

5.28 The survey evidence also indicates that further investment following the Voucher is quite commonly, although by no means always, needed to realise business benefits. For example:

- of the 70 businesses that reported an increase in *turnover* as a result of the Innovation Voucher, over a third (36%) reported they had invested additional resource (financial and/or in-kind) in order to realise benefits over and above the Innovation Voucher
- of the 32 businesses that reported an increase in *employment* as a result of the Voucher, approaching half (47%) reported they had invested additional resource (financial and/or in-kind) in order to realise benefits over and above the Voucher
- for the 100 Phase III respondents that reported they expect to realise turnover and/or employment in the future, approaching two-thirds (64%) reported that they would need to invest additional resources *in the future* to realise these benefits.

5.29 The value of additional investment varied significantly between respondents, from relatively modest values (of £100 or less), up to £500k or more. Similarly, there was no pattern as to which source of investment was on average the largest in financial terms, this may be related to the relatively small n values. The most common source of investment was internal to the business, and looking across the data:

- in Phase II, additional investment was most commonly sourced internally, and where respondents were able to provide an estimate of the level of their own investment (n=13), the average (mean) was approximately £88,500
- in Phase III, the average level of internal additional investment to date was £19,000 (n=27), however, further investment was also anticipated in the future in order to realise expected benefits, with an average of £44,000 (n=55).

5.30 It is also notable that Phase III businesses expected significant investment from other private sector sources in the future – an average of £112,000 (n=24) – and from other public sources – an average of £73,500 (n=20).

5.31 These data are not unexpected, given the nature of Innovation Vouchers which are focused on supporting specific innovation projects with a modest scale of input from the KP. Indeed, it is notable that in most cases additional investment was *not* required to realise benefits, most notably in turnover to date. This said, the findings do indicate that an assessment of the effects of the Programme needs to consider that other investment is often required for benefits to be realised fully.

Other perspectives on additionality

5.32 Three further perspectives on additionality are noted from the evaluation:

- First, the online survey of academics involved in the delivery of Vouchers suggested that the level of engagement with the SME base would have been significantly lower without the Programme. This is particularly notable given the prior experience of those surveyed in business engagement - 85% of respondents to the e-survey had worked with SMEs before delivering voucher projects. In the absence of Innovation

Vouchers, almost half of respondents reported that engagement with SMEs would be "greatly reduced" and a further third that it would be "slightly reduced." The two main reasons for this were that the Programme provides an easily accessible format for academics to engage SMEs, and that the voucher funding allows SMEs (who would otherwise be unable to pay) to engage with academics.

- Second, Knowledge Provider co-ordinators identified high levels of self-reported additionality. Without the Programme it is unlikely that specific projects would have progressed (although some longstanding relationships with particular companies were noted), and the overall level of innovation related engagement with the SME base would also be lower as there was not thought to be a 'substitute' programme.
- Third, the minority of stakeholders with a sufficiently detailed knowledge of the Programme to comment also reported a positive perspective on additionality. There was a consistent perspective offered that without the Programme the scale and nature of innovation activity supported would not have been progressed, leading to lower outcomes and benefits for the economy. This is consistent with the feedback discussed in Section 2 regarding the need and strategic positioning of the Programme.

Summary conclusions

- Whilst the Programme has delivered additional outcomes, it is important to recognise that other internal and external factors may have influenced the effects of the Voucher activity. The implementation of a new business plan or the purchase of new equipment (evident for around half and a third of business survey respondents, respectively) are particularly common.
- A sizeable proportion of businesses reported that additional investment was required to generate benefits (36-47% depending on the outcome), although it is notable that further investment was not required in most cases.
- In addition to the positive additionality self-reported by businesses, other consultees also commented positively on the additionality of the Programme.

6. Impact and value for money - Phase II

Approach and coverage

6.1 The impact assessment for Phase II focuses on the quantitative effects of the Programme in terms of net employment achieved and net turnover achieved, subsequently converted to Gross Value Added (GVA). The assessment is based on scaling-up the results of the survey sample to the population of businesses with completed Voucher projects.

6.2 The scaling-up involved the following:

- identifying the proportion of the survey sample that identified an employment/turnover effect, and the average gross effect where realised
- applying the proportion of the survey sample with the benefit to the population, and multiplying this by the average gross effect to estimate the gross population effect
- adjusting the gross population effect to net by applying the additionality ratios derived from the survey to estimate the net population effect; two gross to net adjustments have been applied
  - ➢ applying the Phase and outcome specific additionality ratio derived from the survey to the gross effect (i.e. the aggregate gross employment/turnover effects for Phase II businesses divided by the aggregate net employment/turnover effect for Phase II)
  - ➢ applying the average outcome specific additionality ratio derived from the survey to the gross effect from both Phases (as set out in Table 5-3).

Impact assessment

Employment impact

6.3 The estimated employment impact for Phase II is set out in Table 6-1. The evaluation estimates that the employment effects of Phase II for business with completed projects is between 80 and 104 net jobs created, with a mid-point of 92 jobs created.

Table 6-1: Estimated employment impact for Phase II

Survey businesses with employment benefits	12
Survey sample	112
Proportion of survey sample	11%
Average gross effect where evident	2.7
Population of businesses with completed projects	618
Total businesses with employment effects	66
Total employment impact (gross)	177

	Phase II specific additionality for scaling-up	Average additionality for scaling-up
Employment additionality ratio	59%	45%
Net employment impact	104	80

Source: Business survey, 2019

GVA impact

6.4 The GVA impact of the Phase II is based on the reported turnover effects, adjusted for additionality, and then further adjusted for the conversion of turnover to GVA. The latest data from ONS indicate that GVA is 34% of turnover in Northern Ireland: this has therefore been used to convert the turnover data into GVA[30]. The findings of the analysis, again for completed projects, are set out in Table 6-2.

Table 6-2: Estimated GVA impact for Phase II (excluding outlier)

Survey businesses with turnover benefits	31	
Survey sample	112	
Proportion of survey sample	28%	
Average gross effect where evident (£)	158,000	
Population of businesses with completed projects	618	
Total businesses with turnover effects	171	
Total turnover impact (gross, £)	27,026,464	
	Phase II specific additionality for scaling-up	**Average additionality for scaling-up**
Turnover additionality ratio	32%	41%
Net turnover impact (£)	8,675,999	11,176,717
Net GVA impact (£)	2,969,174	3,824,991

Source: Business survey, 2019

6.5 The data indicate GVA effects from Phase II of between £3.0m and £3.8m based on the scaling-up. However, this excludes the survey evidence from one business that reported a very significant turnover effect (£9m in gross terms, and £7.2m after additionality, including displacement). This outlier was excluded from the scaling-up, but should be included in the overall impact assessment of the Programme. The GVA estimates including the outlier are set out in Table 6-3.

[30] Source: Annual Business Survey 2017 Regional Results, released 16/5/19

Table 6-3: Estimated GVA impact for Phase II (including outlier)

	Phase II specific additionality for scaling-up	Average additionality for scaling-up
Net GVA impact – excluding outlier (£)	2,969,174	3,824,991
Net GVA effect of outlier (£)	2,710,450	
Net GVA impact – including outlier (£)	5,679,624	6,535,441

Source: Business survey, 2019

6.6 The analysis suggests that the net GVA contribution of Phase II (including the survey outlier) is between £5.7m and £6.5m, with a mid-point of £6.1m.

Value for Money

6.7 Value for Money (VfM) is a key consideration for evaluation studies, because it establishes the relationship between the inputs made, and the economic returns secured. The evaluation's Terms of Reference required two forms of VfM assessment:

- An assessment of the 'Three Es', namely Economy, Efficiency, and Effectiveness. Respectively, these are (i) the extent to which project outcomes have been achieved for the minimum cost input (ii) the costs with which outputs/outcomes (gross and/or net) have been delivered (routinely presented as 'Cost per XX'), and (iii) the extent to which the objectives defined for the intervention at the outset have been realised in practice, and will be sustained in the future.
- An overall assessment of Return on Investment that compares the total inputs in financial terms to the impacts generated.

Three Es

Economy

6.8 Economy assesses the extent to which project activity has been delivered at the minimum cost to the public purse. One potential consideration of Economy is the extent to which the scale of public sector input has been minimised through the delivery of Voucher projects at below the maximum cost. However, consistent with the evidence from the previous evaluation, with an essentially fixed amount per project the scope for this is limited, and it is arguably rational and appropriate for businesses and Knowledge Providers to seek to maximise the project through utilising the full Voucher value. As set out below, the average 'value receipted' per Voucher – covering both the costs of the Voucher and overheads – was around £4,800.

Table 6-4: Average 'value receipted' per Voucher

Row Labels	Average of value receipted per Voucher
2012-13	4,850
2013-14	4,793
2014-15	4,771

Source: Invest NI monitoring data

6.9 Given the scale of the Programme in Phase II, with 883 Vouchers awarded and 659 completed, the costs of programme management and delivery appear to be reasonable. This included a tight core management team, that leveraged learning and knowledge from the previous waves of the Programme, and the use of existing capacity and infrastructure at the Knowledge Providers, including to support demand stimulation and engagement with the business base.

Efficiency

6.10 Efficiency represents the cost with which net outputs and outcomes are being achieved. For Phase II, the principal metric refers to the cost per net job created (with the comparison of GVA to inputs covered in Return on Investment). As set out above, the evaluation estimates that businesses with completed projects in Phase II generated 92 net jobs created. This provides a cost per net job created of approximately £37,200.

6.11 This is somewhat higher than the findings from the previous evaluation of the Programme, which found a cost per net job of approximately £15,350. However, this earlier figure included both achieved and expected jobs, whereas the £37,200 covers *achieved* jobs only. Further, it needs to be recognised that Innovation Vouchers are not principally a job creation intervention, meaning that a cost per job is not the most meaningful assessment of the value for money of the Programme.

Effectiveness

6.12 Effectiveness represents the extent to which the stated objectives of an intervention are being achieved through the outputs and outcomes that it is generating. It is not simply the scale, value, or indeed variety of outputs/outcomes that matters, but that results are indeed those things that were intended to be delivered by the intervention in the first place. The Table below sets out an assessment of the performance of Phase II against the objectives and targets established, drawing on the monitoring data and survey evidence.

Table 6-5: Progress against targets

	Evidence from the evaluation	Assessment of performance
Output/Activity Targets		
Complete 647 Innovation Voucher projects which are, at a minimum, 'New to the Firm' by March 2016. Each project must include at least one of the following types of innovation: product or service innovation, process innovation marketing innovation and/or organisational innovation	659 Innovation Voucher projects competed The survey evidence indicates that projects largely focused on product or service innovation (accounting for 84% of first vouchers in the survey sample)	Target met
A minimum of 70% of SME participants will not have previously engaged with the same Knowledge Provider as part of a knowledge transfer project (as at March 2016)	68% of businesses surveyed had no existing link with any Knowledge Provider prior to the Programme	Target met
A minimum of 30% of SME participants will not have previously engaged with any KP or undertaken an R&D project (as at March 2016)	45% of participants surveyed had not engaged in innovation activity prior to their engagement in the Programme	Target met

Outcome Targets		
Generate a minimum of £10.7m in gross GVA within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest)	The survey evidence suggests a gross GVA contribution of £12.3m (by August 2019); this includes a major outlier	Target met (dependent on inclusion of a major outlier)
Generate a minimum of £5.1m in net additional GVA within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest)	The survey evidence suggests a net GVA contribution of £5.7- £6.5m, with a mid-point of £6.1m (by August 2019); this includes a major outlier	Target met (dependent on inclusion of a major outlier)
Generate a minimum return on investment of £1.39 in undiscounted net additional GVA for every £1 in direct NI investment within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest)	The survey evidence suggests a RoI of £1.7- £1.9, with a mid-point of £1.8, undiscounted net additional GVA for every £1 in direct NI investment	Target met (dependent on inclusion of a major outlier)
Create a minimum of 169 gross FTE jobs within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest)	The survey evidence suggest 177 gross FTE jobs created (by June 2019)	Target met
Create a minimum of 46 net additional FTE jobs within 4 years of the final Innovation project being completed (i.e. by March 2020 at latest)	The survey evidence suggests 80 – 104, with a mid-point of 92 net additional FTE jobs created (by June 2019)	Target met
A minimum of 40% of participating SMEs to have engaged in an innovation project on a higher stage of the 'Innovation Escalator' within 2 years of completing their respective Innovation Voucher project (as at March 2018)	Monitoring data indicate that 45% businesses secured some form of follow-on support from Invest NI, with 35% securing support in the 'Investing in R&D and Development' and/or 'Developing Innovation' and Technology assistance type	The scale of follow-on assistance is in line with target intent, however a definitional issue precludes a definitive assessment

Source: SQW analysis

6.13 In summary, taking the evidence in the round, the evaluation makes a positive assessment of the Economy, Efficiency and Effectiveness of Phase II.

Return on Investment

6.14 As set out above, the estimated GVA impact of Phase II is estimated to be between £5.7m and £6.5m, with a mid-point of £6.1m. This compares to a cost of delivery to Invest NI (excluding Invest NI staff costs) of approximately £3.4m, providing a positive Return on Investment (RoI). The detailed data are set out below and show that Phase II outperformed its RoI target of 1.39 and the 1.42 RoI reported in the 2014 Evaluation.

6.15 Benchmarking this performance to comparator voucher schemes is not straightforward. RoI figures for the schemes run by Interface in Scotland and Enterprise Ireland are not publicly available. Further, additional data seen in confidence by the evaluation team are not directly comparable to the Programme because these data are for the economic impact of the provider as a whole (i.e. covering multiple schemes) rather than the impact of the voucher scheme in particular, or because the methodology behind the calculations is unclear. It is also noted that consultations with providers highlighted that the comparator schemes should not be primarily judged by their economic returns. Like Invest NI's Programme, their objective is to drive behaviour change and build links between businesses and the knowledge base. Commentary on comparator delivery model and success factors is provided in Section 8.

Table 6-6: Return on Investment (based on self-reported analysis)

Factor	Phase II specific additionality for scaling-up	Average additionality for scaling-up
Net GVA (£)	5,679,624	6,535,441
Cost (£)	3,428,746	
Return on Investment	1.7	1.9

Source: SQW analysis

Summary conclusions

- The net impacts of Phase II are estimated to be: 80 and 104 net jobs created, with a mid-point of 92 jobs created; and a net GVA contribution (including outlier) of between £5.7m and £6.5m, with a mid-point of £6.1m.
- When GVA benefits are compared to the cost of delivery, this results in a positive Return on Investment (RoI) of between £1.7 and £1.9 of GVA impact generated for every £1 invested by Invest NI. Phase II therefore outperformed its RoI target.
- Taking the evidence relating to Economy, Efficiency and Effectiveness and Return on Investment in the round, the evaluation makes a positive assessment of value for money of Phase II.

7. Impact and value for money – Phase III

Approach and coverage

7.1 The assessment of impact and value for money for Phase III is consistent with the method used for Phase II. However, as an interim assessment, the Phase III analysis also includes estimates of the employment and turnover expected to be realised within the next three years, adjusted to account for optimism bias, in order to account for the uncertainty of future effects.

Impact assessment

Employment impact

Achieved

7.2 The estimated *achieved* employment impact is set out in Table 7-1. The evaluation estimates that the employment effect of Phase III at this interim evaluation stage (that is, for those projects that were completed by the point of the evaluation) is between 70 and 86 net FTE jobs created, with a mid-point of 78 net FTE jobs created.

Table 7-1: Estimated achieved employment impact

Survey businesses with employment benefits	20	
Survey sample	144	
Proportion of survey sample	14%	
Average gross effect where evident	2.5	
Population of businesses with completed projects	548	
Total businesses with employment effects	76	
Total employment impact (gross)	190	
	Phase III specific additionality	**Average additionality**
Employment additionality ratio	37%	45%
Net employment impact	70	86

Source: Business Survey, 2019

Expected

7.3 The estimated *expected* employment impact at this interim evaluation stage for businesses with projects completed in Phase III is set out below. Note that this data includes the adjustment for optimism bias of 25%.

Table 7-2: Estimated expected employment impact

Survey businesses with employment benefits	68
Survey sample	144
Proportion of survey sample	47%
Average gross effect where evident	3.0
Population of businesses with completed projects	548
Total businesses with employment effects	259
Total employment impact (gross)	788
Employment additionality ratio	44%
Net employment impact	345

Source: Business Survey, 2019

7.4 This analysis suggests that approximately 345 FTE jobs will be created in the next three years, if the benefits identified in the survey are realised in practice. It is important to note that this covers the impacts from completed projects only, it does not include potential employment impacts from the projects that remained in delivery at the point of the impact analysis. The impact of these projects should be considered in a final evaluation of Phase III.

GVA impact

Achieved

7.5 The estimated *achieved* GVA impact at this interim evaluation stage for businesses with projects completed in Phase III is set out below. The analysis suggests that the net GVA contribution of Phase III at this point is between £2.8m and £3.4m, with a mid-point of £3.1m.

Table 7-3: Estimated achieved GVA impact

Survey businesses with turnover benefits	39	
Survey sample	144	
Proportion of survey sample	27%	
Average gross effect where evident (£)	135,218	
Population of businesses with completed projects	548	
Total businesses with turnover effects	148	
Total turnover impact (gross, £)	20,068,597	
	Phase III specific additionality	**Average additionality**
Employment additionality ratio	50%	41%
Net turnover impact (£)	10,024,006	8,299,311
Net GVA impact (£)	3,430,500	2,840,261

Source: Business Survey, 2019

Expected

7.6 The estimated *expected* GVA impact for Phase III is set out below. Again, this data includes an adjustment for optimism bias of 25%. The final net GVA estimate also includes data from an outlier that reported significant expected gross turnover effects (£2.25m) that was excluded from the scaling-up. This suggests that c.£8.2m of additional GVA will be created in the next three years from businesses with completed projects at this interim evaluation stage.

Table 7-4: Estimated expected GVA impact

Number with T/O benefits	78
Sample	144
Proportion of survey	54%
Average gross effect where evident (£)	133,245
Firms with completed projects	548
Total firms with T/O effects	297
Total T/O impact (gross) (£)	39,551,615
T/O additionality ratio	56%
Net T/O impact (£)	22,061,912
Net GVA impact (£)	7,550,215
Net GVA impact plus outlier (£)	8,239,763

Source: Business Survey, 2019

Summary impacts

7.7 For illustrative purposes, the estimated achieved and expected employment and GVA impacts from businesses with completed Phase III projects are set out in Table 7-5.[31] The data suggests that if the effects are realised, businesses with Phase III projects completed at this interim evaluation stage will create approximately 420 net jobs, and generate GVA of approaching £11.4m by mid-2022 (i.e. three years following the survey).

7.8 This is a positive finding. However, it is important to recognise that the majority of the impact is expected rather than realised (82% for employment, and 72% for GVA), and in this context, recall that approaching two-thirds of businesses that reported they expect to realise turnover and/or employment in the future will require additional resources in order to do so. As such, the ability of the Programme to deliver against these impacts will rely on other factors, including potentially significant levels of investment by the supported businesses.

Table 7-5: Summary of Phase III impacts

	Achieved	Expected	Total
Net employment	78	345	422
Net GVA	3,135,381	8,239,763	11,375,143

Business Survey, 2019

[31] The achieved data takes the average of the 'Phase III specific additionality' and 'Average additionality' values. The expected net GVA effect includes the outlier excluded from the scaling-up. The data are mid-points.

Value for Money

Three Es

Economy

7.9 Consistent with Phase II, the overall Economy of the Programme in Phase III appears sound, with a very significant volume of activity delivered by a tight management team and leveraging the capacity and infrastructure from across the Knowledge Provider base.

7.10 In Phase III, the average 'receipted value' remained close to the maximum value of a Voucher, at an average of around £4,630 for completed projects. Indeed, of the projects for which data was available (n=606), nearly three-quarters (73%) had an amount receipted of at least £5,000, suggesting that the Programme continues to focus on delivering projects to the maximum available within the existing parameters.

Table 7-6: Average 'receipted value' per Voucher

Row Labels	Average of amount receipted per Voucher
2015-16	4,585
2016-17	4,643
2017-18	4,647
2018-19	4,706

Source: Invest NI monitoring data

7.11 Programme management evolved in Phase III, with the introduction of an online application process. The implications of this for the economy of the Programme in terms of management and delivery costs is not yet evident quantitatively. However, it does have the potential to reduce the time and costs associated with the application process for businesses, and to facilitate efficient programme management and monitoring of data, which has the potential to lead to economies over the longer-term; this is a positive development.

Efficiency

7.12 Phase III did not involve a formal target for job creation. However, the evaluation indicates that the net cost per job of achieved employment of approximately £35,100, is in line (if slightly below) the findings for Phase II. However, if expected employment effects are included, the cost per net job reduces to approximately, £6,500.

7.13 This achieved and expected cost per net job compares favourably to the evidence from the previous evaluation and wider benchmark evidence on similar schemes elsewhere. This said, the data should be treated with caution given the reliance on expected, and therefore somewhat uncertain, employment benefits. A definitive assessment on efficiency in terms of cost per net job of Phase III will only be available at the final evaluation stage.

Effectiveness

7.14 An assessment of Phase III's performance against established targets is provided below.

Table 7-7: Performance against targets

	Evidence from the evaluation	Assessment of performance
Output/Activity Targets		
Complete 920 Innovation Voucher projects which are, at a minimum, 'New to the Firm' by March 2021. Each project must include at least one of the following types of innovation: product or service innovation, process innovation marketing innovation and/or organisational innovation	604 projects competed at the interim evaluation stage, with a further 72 projects on-going; assuming a high completion rate this would provide around 700 completions, with four further calls in 2019-20 to deliver 220 further completions[32] The survey evidence indicates that projects largely focused on product or service innovation (accounting for 97% of first vouchers in the survey sample)	Programme on course to meet objective, although will rely on strong demand in final year to meet target completions
A minimum of 75% of SME participants will not have previously engaged with the same Knowledge Provider as part of a knowledge transfer project (as at March 2021)	75% of businesses surveyed had no existing link with any Knowledge Provider prior to the Programme	Programme on course to meet objective
A minimum of 50% of SME participants will not have previously undertaken a R&D project (as at March 2021)	47% of participants surveyed had not engaged in innovation activity prior to their engagement in the Programme	Programme broadly in line with target
Outcome Targets		
A minimum of 70% of businesses reporting that they have an increased understanding of the role of innovation in contributing to business growth and development (as at March 2021)	76% of survey respondents reported that they have an increased understanding of the role of innovation in contributing to business growth and development	Programme on course to meet objective
A minimum of 60% of businesses reporting that they have a greater commitment to undertaking innovation activities as a result of their Innovation Voucher project (as at March 2021)	66% of survey respondents reported that they have a greater commitment to undertaking innovation activities as a result of their Innovation Voucher project	Programme on course to meet objective
A minimum of 80% of businesses reporting that they have enhanced their relationship with a Knowledge Provider as a result of their Innovation Voucher project (as at March 2021)	67% of survey respondents reported that they have enhanced their relationship with a Knowledge Provider as a result of their Innovation Voucher project	Programme behind target
Generate a minimum of £19.3m in gross GVA within 4 years of the final Innovation project being completed (i.e. by March 2025 at latest)	The survey evidence suggests a gross GVA contribution of £6.9m achieved by mid-2019, with a further £15.6m anticipated by mid-2022	Programme on course to meet objective, if expected effects realised
Generate a minimum of £9.1m in net additional GVA within 4 years of the final Innovation project being completed (i.e. by March 2025 at latest)	The survey evidence suggests a net GVA contribution of £2.8m - £3.4m, with a mid-point of £3.1m by mid-2019, with a further £8.2m anticipated by mid-2022	Programme on course to meet objective, if expected effects realised
Generate a minimum return on investment of £1.66 in undiscounted net additional GVA for every £1 in direct NI investment within 4 years of	The survey evidence suggests a RoI of £1.25, undiscounted net additional GVA for every £1 in direct NI investment by mid-2019. But further	Programme broadly in line with target, and likely to be met if

32 Data provided by Invest NI in early October 2019 show that a further 48 projects have been completed since March 2019, that 105 were in progress, and a further 115 would be expected to arise from recent and upcoming Phase III calls

the final Innovation project being completed (i.e. by March 2025 at latest)	GVA expected in the next three years, which is likely to substantially improve the RoI if realised	expected effects realised
A minimum of 50% of participating SMEs to have engaged in an innovation project on a higher stage of the 'Innovation Escalator' within 2 years of completing their respective Innovation Voucher project (as at March 2023)	Monitoring data indicate that 29% businesses secured some form of follow-on support from Invest NI, with 25% securing support in the 'Investing in R&D and Development' and/or 'Developing Innovation' and Technology assistance type.	Programme broadly in line with target, however a definitional issue precludes a definitive assessment

Source: SQW analysis

7.15 At this interim stage, the evaluation makes a positive assessment of the Economy, Efficiency and Effectiveness of Phase III.

Return on Investment

7.16 As set out above, the GVA impact of Phase III to date is estimated to be around £3.4m (using the Phase III specific additionality). Comparing this to the total cost of Phase III over the evaluation period, the Return on Investment is positive, with £1.25 of impact generated for every £1 of investment by Invest NI. As noted above, the target was £1.66, which suggests that the Programme is broadly on line with this target at the interim evaluation stage. The target is likely to be met – and potentially out-performed – if the expected turnover effects are realised. Given the uncertainty, this expected effect has not at this stage been included in the RoI calculation, however, this will need to be considered at the final evaluation stage. As with Phase II, it has not been possible to benchmark the interim RoI figure against comparators.

Table 7-8: Return on Investment (based on self-reported analysis)

Factor	Findings
Net GVA (£k)	3,430,500
Cost (£k)	2,734,386
Return on Investment	1.25

Source: SQW analysis

Summary conclusions

- It is estimated that, at this interim stage, business with completed Phase III projects will create c.420 net jobs, and generate GVA of over £11m by mid-2022. Whilst this is a positive finding, it is important to recognise that the majority of this impact is expected rather than realised. Linked with the findings above, the ability of the Programme to deliver these impacts will rely on other factors, including potentially significant levels of investment by or on behalf of the supported businesses.
- Considering achieved impacts only, Phase III's Return on Investment is positive, with £1.25 of impact generated for every £1 of investment by Invest NI. At this interim stage, the Programme is broadly on course to achieve its £1.66 target.
- At this interim stage, the evaluation makes a positive assessment of the Economy, Efficiency and Effectiveness of Phase III.

8. Process and operation perspectives

8.1 This penultimate Section of the report sets out findings related to the process and operation of the Programme. The findings draw on evidence from consultations with Invest NI, Knowledge Provider coordinators, academics involved in the delivery of project, and businesses, to provide a 'formative' perspective on the delivery of the Programme.

Management and Delivery

Overall reflections

8.2 The consultations and research completed for the evaluation provided consistently positive feedback regarding the effectiveness of programme management and operation by Invest NI. In terms of personnel, the central team are well regarded, with the continuity from earlier Phases of the Programme and the knowledge this brings recognised and valued, both internally and externally. The inputs from Client Executives and others in promoting the Programme, as well as the presence of Invest NI sector and technology experts at assessment panels, was also recognised to contribute to the success of the Programme.

8.3 Five points are made regarding programme management:

- The application and appraisal processes are regarded generally as clear and straightforward – one Knowledge Provider co-ordinator noted that they "*run like clockwork*." Consultees commented positively on the relatively fast speed of decision making, and also the provision of feedback to unsuccessful applicants. This was especially so in cases where changes to the application form following feedback later resulted in a successful application.
- The level of 'paperwork' for monitoring and reporting, principally the final project report, was regarded by Knowledge Providers as proportionate given the modest monetary value of each voucher – "*very straightforward – no unnecessary micromanaging of the programme*."
- The guidance materials provided to support businesses in developing their application were judged to be clear, concise and helpful to both businesses and academics. The material is available online so is easily accessible to all.
- Marketing was commented on positively, both in relation to direct marketing by Invest NI and through Invest NI's provision of marketing materials to the Knowledge Providers including case studies, videos and flyers. Updated materials are provided in advance of each call opening, so are regarded as useful for promotional activities carried out by the Knowledge Providers.
- Programme eligibility is determined by firm size and sector, and the Programme is promoted widely to all eligible businesses across NI by Invest NI and the Knowledge Provider network. Indeed, the geographic spread of Programme beneficiaries is broadly in line with that of the wider NI business base. As such, there is no evidence to indicate that the management of the Programme does not comply with the equality

of opportunity provisions of Section 75 of the Northern Ireland Act 1998, or the Disability Discrimination Act 1995.

8.4 A major process change during Phase III was the introduction of the online application form. This was generally welcomed by Knowledge Providers, although some trade-offs were identified. For example, there were practical challenges in completing the online form for businesses who require support at this stage – academics do not have access to the online platform so supporting and checking the application before submission was reported to be more difficult than previously. Specific teething problems were also identified with the 'back end' of the system by Invest NI staff, but overall the move to the online application form was regarded as a positive development. It is also notable that the Programme was the first within the Invest NI suite of interventions to move to a fully online system.

8.5 The consultations also identified some potential areas of management improvement. First, fast-track applications outside the formal calls and group voucher options are currently available, although relatively under-utilised. Consultations identified that, outside the core Programme team, there was not a consistent awareness of these options amongst other Invest NI staff. Better promotion of these options within Invest NI may lead to greater take-up. However, it is recognised that there is a careful balance here, given that fast-track applications and group vouchers are regarded as exceptional rather than standard elements of the Programme's operation. Any activity to raise the profile of these opportunities should focus on internal knowledge and understanding only, in order to ensure these options are considered where appropriate and needed, not to seek to increase substantially their usage.

8.6 Second, generally, consultees reported that there was good communication from the central team to Client Executives when firms apply for a Voucher and on the result of the application. However, a small number of instances where the results of applications from client-managed firms had not been communicated (i.e. they 'slipped through the net') were reported which can lead to some issues for individual Client Executives when engaging with the firms. The evaluators understand that the programme team are aware of this and are examining ways to ensure consistency in communication. The programme team currently provide information to Client Executives following each call, and the Invest NI CRM system also provides information on all support mechanisms, including Innovation Vouchers, awarded to any client. As such, and when the small number of miscommunications is set against the overall volume of applications received, this is not considered to be a systemic issue with the Programme.

8.7 Third, although not directly related to the operation of the core Programme, the issue of linkages to follow-on support was commonly raised, notably by other Invest NI staff. The data presented above indicates that many client managed firms do successfully move on to further Invest NI supports post-Vouchers. However, a potential gap was highlighted for non-client managed firms who are ineligible for other forms of Invest NI assistance, but are still seeking to undertake follow-on innovation activity. If a Voucher project is to be the first step on an innovation journey, making a smooth connection with the subsequent steps is important to enhance the benefits of the Programme. This links to the findings in Section 2 about the new Innovation Accreditation Scheme and the importance of ensuring that alignment, linkages and pathways between different interventions are maximised for the benefit of the NI economy.

Progress against the action plan from the 2014 Evaluation

8.8 A 12-point action plan relating to the recommendations from the 2014 Evaluation was developed by the programme team. Consistent with the study Terms of Reference, progress against this is assessed below. Overall, the evaluators conclude that Invest NI has responded effectively to the Evaluation Plan.

Table 8-1: Progress against action plan

Action Plan recommendation	Evaluator's assessment of response
Invest NI should consider refining the Programme's application form to include a specific reference to "Quality" additionality (alongside the existing references to "Scale" and "Timing" additionality), and include a separate question which probes explicitly applicants' "ability to pay" for their proposed project in the absence of Innovation Vouchers support.	The application form was revised for Phase III.
For any future rounds of activity, Invest NI should develop a tighter set of Programme objectives, which capture fully the strategic intents of the intervention, focusing on addressing the underpinning rationale for intervention and avoiding a level of precision in target-setting that may lead to perverse incentives in delivery.	Programme objectives were revised for Phase III. However, the targets remained very specific (e.g. a RoI of £1.66 rather than £1.6). This reflects appraisal requirements but is open to question given the focus of the programme on changing behaviours/attitudes to collaborative innovation.
In revising the objectives for the Programme, Invest NI should develop a set of indicators which capture better the short-term and intermediate benefits of Voucher experience (eg beneficiaries' greater openness to innovation, improved understanding by beneficiaries of the role that innovation plays in firm growth and development, improved relationships with the Knowledge Base, investment in in-house innovation activity, etc.).	A revised set of indicators were included for Phase III.
The Programme Team should consider formalising the process for follow-up discussions between programme beneficiaries and academics involved in projects which have not been completed, this to understand the lessons that can be learned. This should be considered by the Programme Team as a "continuous improvement" action.	Programme team follow-up with projects which do not complete.
A firm-level unique identifier, using Invest NI's central CCMS system, should be used in future programme rounds.	All clients have a unique IV Code, but matching data from Invest NI's central CRM system to the separate IVP tracking spreadsheet is still problematic. In future, the CRM will become the key source of information.
Recognising the evidence that participants receiving support in developing their application generally secured more benefits (in terms of qualitative outcomes) than those that did not, Invest NI should consider how greater levels of pre-application engagement with Knowledge Providers/Invest NI can be facilitated, within appropriate cost and time limitations.	All 10 voucher co-ordinators consulted reported that they and their academic colleagues provide pre-application support where necessary.
The Programme Team should encourage Knowledge Providers to maintain a relationship with participants following project completion, so providing a more consistent approach to aftercare. The	Invest NI did not fully agree with this recommendation. Rather, it was agreed that whilst KPs should maintain a

Programme Team should consider developing guidance to facilitate this approach.	relationship with businesses, Invest NI was best placed to take the lead on ongoing engagement/monitoring.
Invest NI should develop further existing linkages and processes to maximise and encourage the flow of demand from the Programme to other later-stage innovation supports, notably Grant for R&D and Knowledge Transfer Partnerships (KTPs). Any "blockages" identified to greater collaboration should be addressed. Key to this will be to ensure that Client Executives and Innovation Advisers understand fully how/where Vouchers fit in alongside other support regimes operated by Invest NI.	Regular meetings take place with Innovation Advisor and KTP Manager. However, not all voucher recipients are Clients so not all are eligible to move onto these supports.
Further collaboration between Knowledge Providers, particularly in Northern Ireland, to embed learning and sharing of good practice on what works in delivery should be promoted. This could include more regular (perhaps bi-annual) "network meetings" of all providers, an online "community and resource" for co-ordinators and academics and the development of learning case studies disseminated across the Programme on an on-going basis	Regular bilateral contact has been maintained, and group events held when there are key issues to discuss.
The Programme Team should work with Knowledge Providers to investigate further why VAT payment by recipients remains an issue for the Programme and put in place proportionate measures to address late/non-payment of VAT	VAT liability has been highlighted, and subsequent vouchers not awarded until VAT has been paid on previous projects.
The Programme Team should investigate the costs and benefits of putting in place an online application system for Innovation Vouchers for future programme rounds	Online applications were introduced in April 2017.
Invest NI should consider actively increasing modestly the Voucher value, to say £4,500, reflecting inflation since 2008. The maximum numbers of vouchers provided should remain at three and the time-period for deployment should remain at nine months	Change in voucher value considered (as reference in Board Casework document for Phase III) but not implemented.

Source: SQW analysis

Reflections on Voucher delivery

From Knowledge Providers and academics

8.9 Consistent with the positive feedback on Programme delivery and operation from Knowledge Provider Co-ordinators and academics, the experience of delivering individual Voucher projects is also generally positive. Consistent with the high completion rate of projects in Phase II (and early years of Phase III), most projects are delivered successfully, and whilst each project is unique and tailored to individual contexts, the delivery process appears to work well in most cases.

8.10 The e-survey asked academics what they considered to be the key enablers/barriers in project delivery, that underpins this positive feedback. Setting clear objectives at the outset was the most commonly cited enabler, this is also linked to the enablers of gaining a clear understanding of business needs and managing their expectations about what can realistically be achieved with a modest budget. Academics also reported that company commitment to the project and good communication between the two parties were key enablers. Some quotations that reflects the nature and tone of the feedback are set out below.

Key enablers in project delivery from the academic e-survey

"Well scoped project with well managed expectations and a good alignment with the available skilled people to deliver the project"

"Cooperation between partners, effective and clear communication of wants/needs of SME, realism about what is achievable within the limited funding available"

"Understanding the problem/need and level of technical expertise in the business and setting their expectations related to outputs and time spent on the project accordingly"

"Both academic and industrial partners need to be flexible and to communicate effectively"

8.11 Where challenges were experienced, the barriers to effective project delivery cited were often the opposite of the enablers, e.g. unrealistic client expectations, a lack of communication and company disengagement from the project - *"unresponsive client, information/materials not supplied on a timely basis."* Lack of finance was also cited which could be in relation to the overall project budget or a longer-term commitment by the business to invest in implementing the results of the project. Fundamentally, these issues relate to the behaviours and attitudes of the businesses, rather than being systemic issues with the Programme model itself. They should also be seen in the context of the other feedback that is very positive.

8.12 Co-ordinators at Knowledge Providers were also asked about issues in voucher delivery from a management perspective within their institution. For those respondents from institutions without a team of staff dedicated to voucher projects, it was reported that it can be challenging to encourage staff to engage with the Programme because of their other responsibilities. For university staff, voucher projects may also be less appealing than financially larger collaborative R&D projects as these generate more income and are more likely to lead to academic publications. Echoing the feedback from individual academics, co-ordinators noted the importance of having a 'tight' Letter of Notification to help manage business expectations.

8.13 Consultees reported that events to encourage knowledge sharing between the different Knowledge Providers had been organised in the past, but that recently this had stopped. Going forwards, there was an appetite amongst co-ordinators for this activity to re-start. As with the 2014 Evaluation, the issue of VAT non-payment by some firms was also raised – whilst the application information has been changed to make firms aware of their obligations, in practice it can still be difficult for the institutions to recover VAT.

8.14 Academics were also asked how likely is it that they would recommend Innovation Vouchers to an academic colleague, to enable the identification of a Net Promoter Score as a proxy for overall levels of satisfaction. This metric classes respondents as either promoters, passives or detractors. Encouragingly, c.50% of academics were classed as promoters, generating a 'positive' Net Promoter Score of +39. It is recommended that this is used as a baseline for future assessments of the Programme.

8.15 Some quotations that reflect the nature and tone of the feedback regarding the Programme when academics were asked to explain their response to the question on whether they would recommend Innovation Vouchers to an academic colleague are set out below.

Overall feedback on the Programme from the academic e-survey

"A great way to engage with SMEs and gain industrial experience that can brought into the College either from a research/upskilling perspective or through curriculum development"

"The companies that I have been involved with have gained knowledge and practical experience, enabling them to progress their ideas that otherwise may just have remained unexplored"

"Vouchers provide an excellent mechanism for engaging start-ups with academics with benefits for both parties"

"Poorly rewarded for time/work put into the projects"

From businesses

Programme processes and Knowledge Providers

8.16 Businesses reported high levels of satisfaction with Programme processes. Over 80% of respondents across both Phases were satisfied with the agreement of Project Definition and Terms of Reference. In addition, over 80% of Phase III businesses were satisfied with the application process and timeliness of the funding decision.[33]

8.17 Businesses were also generally satisfied with the support from the Knowledge Provider, including in relation to understanding of their needs, and the provision of regular contact during the project period. Similarly, the knowledge/experience of academics at Knowledge Providers was rated 'good' on average.[34]

8.18 As set out in the Table below, there were some interesting variations between the two Phases and client-managed status. The differences across the Phases were all weakly significant (at 10% level), and it is possible that the higher average scores for Phase III reflect that the support is more recent, which may influence the positive feedback. The difference by client-managed status were statistically stronger (at 5% level), and it is interesting that Client Managed businesses were more positive on average regarding the quality of the output. As discussed previously, Client Managed businesses were more likely to report that new/improved products or services had been delivered by the project, which may influence this qualitative perspective, and the other more positive findings including the knowledge/experience of academics.

Table 8-2: Business reflections on Knowledge Providers

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Level of satisfaction (1 = very dissatisfied, 5 = very satisfied)							
Understanding of your needs	**4.1**	4	4.2	*	4.3	4	**
Appropriateness of solutions to needs	**3.9**	3.7	4	*	4	3.8	-

[33] Given the risk of memory decay and changes in the application process, Phase II beneficiaries were not asked these questions

[34] The survey sample does not allow for a robust analysis of these results by institution

	Overall	PII	PIII	Sig diff?	CM	Non-CM	Sig diff?
Regular contact with you during the project period	**4**	3.9	4	-	4.1	3.9	-
Quality of project output(s)	**3.8**	3.7	3.9	-	4.1	3.7	**
Overall satisfaction with the Innovation Vouchers project	**3.9**	3.8	4	-	4.1	3.8	-
Knowledge and experience of academics (1 = very poor, 5 = very good)							
Knowledge/experience of academics	**4.1**	3.9	4.2	*	4.2	3.9	**

** denotes significance at 10%; ** at 5%; *** at 1%*

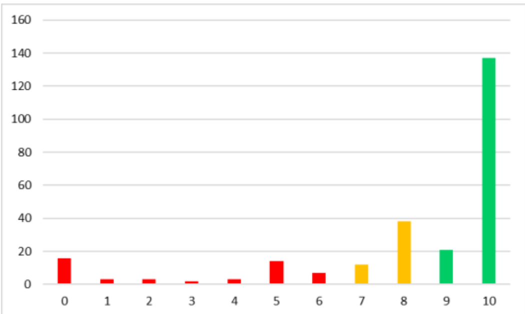
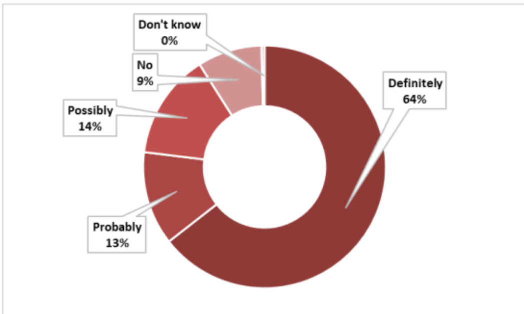
Source: SQW analysis Overall = 256; PII n=112, PIII n=144; CM n=101; N-CM n=155

Overall satisfaction

8.19 The business survey also included two questions designed to gauge overall satisfaction with the Programme: whether they would recommend Innovation Vouchers to another business; and if they were eligible, would they take-up another Innovation Voucher in future.

8.20 The answers to both were positive and showed no variation between Phases or client managed status. The detailed findings are set out below. The chart on the left shows that over 50% of respondents would unreservedly recommend the Programme to another business. When combined with the other responses, a Net Promoter Score of +43 is achieved. As with the academic responses to a similar question, it is suggested that this is used as a benchmark for future evaluations. Encouragingly, the chart on the right shows that almost two thirds of beneficiaries would, if eligible, definitely take up another Innovation Voucher.

Table 8-3: Business satisfaction with the Programme (n=256)

On a scale of 0-10, how likely is it that you would recommend IV to another business? (0=would not recommend at all, 10=would recommend unreservedly)	**Assuming you were eligible, would you take up another Innovation Voucher in future?**
	

Source: SQW analysis

Summary Conclusions

- The consultations provided consistently positive feedback regarding the effectiveness of programme management and operation by Invest NI. Academics and businesses also reported high levels of satisfaction with the Programme.

- From the 'delivery side', setting clear objectives at the outset of a project is a key enabler to success. Conversely, unrealistic expectations, a lack of communication and company disengagement hinder project delivery. From an institutional perspective, the issue of VAT non-payment by some businesses was raised.

Lessons from elsewhere

8.21 Consultations were undertaken with representatives from innovation voucher programmes in the Republic of Ireland and Scotland to benchmark the delivery model. Key findings are presented below, which can inform thinking on the Programme going forward, and also suggest that many of the issues in delivery of the Programme in Northern Ireland – both positive and more challenging – are evident in comparator schemes.

Table 8-4: Innovation voucher programme comparison

Interface	Enterprise Ireland
About the programme(s)	
Three different voucher programmes are offered: • Standard - £5k funding aimed at encouraging first-time partnerships between a company and a university/FE college • Student placement - £5k to fund a PhD/Masters student to work within the business on a clearly defined project and continue the standard innovation voucher • Advanced - £20k (with match funding) to either encourage sustained relationships with academia and enable existing partnerships to continue the development of a project, or for those businesses who are beginning their collaborative journey The majority of projects have been 'standard' innovation vouchers	• The programme aims to build links between Ireland's public Knowledge Providers (i.e. higher education institutes and, public research bodies) and small businesses. It also assists a business or businesses to explore a business opportunity/problem with the Knowledge Provider • The voucher is worth €5k plus a maximum of 30% overheads • Each business is allowed up to three vouchers, the first two of which are fully-funded by Enterprise Ireland • The vouchers are open to all sectors excluding agriculture • The vouchers can be used by any SME limited company, excluding sole traders
Key success factors and feedback	
Prior to the project • A good relationship between Interface with Knowledge Providers, helped by Interface running IV related workshops with them • Support from the Scottish Funding Council and Knowledge Providers in marketing the different programmes During the initial stages • A quick outcome decision - outcomes are provided 2-3 weeks after submission • The application is a coordinated effort between the business and a Knowledge Provider • Realistic milestones are encouraged in the application which helps frame outcomes and impacts. These milestones are referred to where there are disputes on non-delivery • Clear and consistent IP terms are agreed to by all KPs to prevent businesses from 'shopping around' to get the best deal	Prior to the project • Make sure the Knowledge Provider co-ordinator is fully involved in the programme - "*they can make a huge difference*" • Marketing of the programme is actively undertaken by the Knowledge Provider through workshops which ensures the quality of applications. Previously national marketing campaigns had resulted in many applications but not all were relevant to the voucher programme • Updating the scope of what types of projects are eligible for support as technologies change, e.g. artificial intelligence related projects are now eligible but weren't originally During the initial stages • The use of an *online* application process provides a much leaner interactive process and ensures answers are provided (e.g. by making some questions mandatory)

Interface	Enterprise Ireland
During the project • Good communication by Interface with the business and Knowledge Provider when the project is facing challenges After the project • Interface remains in contact with the businesses to track impact • Ability to move from a standard to an advanced voucher is seen to encourage higher quality and more in-depth innovation	During the project • Each business signs-off the outputs achieved, providing an honest account of the project

Source: SQW analysis

Voucher parameters

8.22 Finally, for this Section, drawing on both the process perspectives and the wider evidence, we consider the findings of the evaluation on those specific issues regarding the parameters of the Innovation Vouchers Programme raised in the ITT. These are important questions, but they should be seen as one set of perspectives only on the wider messages that the evaluation has identified, and their implications for the future.

8.23 The evaluation gathered a wide range of feedback on the parameters (maximum value, number of vouchers available etc.), with variation in perspectives both within and between different groups. However, it is important to highlight that the overall weight of the feedback and any suggested changes were generally focused on the margins of the Programme, rather than impacting on the 'core offer'; the current voucher model and broad value was still seen generally as the most appropriate form of intervention.

8.24 Compared to other groups, businesses were more likely to support changes (e.g. a higher voucher value, scope for more vouchers, flexibility in Knowledge Providers etc), but this is arguably not unexpected. The continuing level of demand from eligible businesses indicates the current model is not fundamentally broken, although there may be a case to re-consider some of the parameters given the general reduction in demand over time.

8.25 It is also important to recognise trade-offs in considering changes to the Voucher parameters. Some changes may make the Programme more attractive to some businesses at detriment to others (e.g. owing to a sector focus), and there may be trade-offs between value for money and demand (e.g. with co-financing improving the former but limiting the latter). There are also practicalities to be considered – in some cases options are limited because of legal and technical issue (e.g. including the private sector in the Knowledge Provider base related to State Aid) and any changes may have implications for management/resources at Invest NI.

8.26 More generally, it is important to recognise that the clarity and continuity of the delivery model is valued and recognised by partners, stakeholders and businesses. This should not preclude any changes that reflect changing demand and contextual conditions. However, the benefits generated from the (relative) simplicity and clarity of the Voucher model as it stands should be a consideration in thinking through any substantive changes going forward.

8.27 Drawing on feedback from across the research tasks, the table below sets out the findings on the specific criteria and operational parameters included in the study Terms of Reference.

Table 8-5: Voucher parameters

Parameter	**Findings**	**Evaluation assessment of validity**
Is £5k still the most appropriate value of a voucher?	There was no consistent view on the case for changing the 'sprit' (rather than the 'letter') of the voucher value. • 60% of academics agreed that £5k was still the correct value. Of the 40% who supported a change, only one respondent thought that the value of the voucher should be decreased. Those who wanted an increase were split relatively evenly between an increase in line with inflation, and a larger increase to c.£7-10k to allow projects to deliver more detailed outputs; so, in practice around one in five academics were in favour of a substantive increase in the voucher value. • Five Knowledge Provider co-ordinators supported the £5k value. Three thought £5k was acceptable, but stated that a larger value would lead to better project outputs. The remaining two Knowledge Providers consulted definitely wanted a larger value to allow the delivery of more detailed projects and to support achievement of research income targets. • Three-quarters of business responses supported an increase in value. Where stated, this was usually for an increase of up to £10k, with only 3 respondents recommending a larger increase. • Wider stakeholders supported retaining the value at around £5k, with the impacts of inflation noted. If the original £4k voucher value had kept pace with inflation, by 2018 it would have been approximately £5.2k[35]. If the updated £5k voucher value from 2015 had kept pace with inflation, it would have been worth c.£5.4k in 2018.	A voucher value of *around* £5k remains valid. However, consideration should be given to increasing the value of the voucher in line with inflation.
Should there be other voucher options, e.g. larger amount, co-financed?	There was no consensus on the introduction of co-financed Vouchers. • The views of Knowledge Providers and academics were evenly split – some thought that co-financing ensures company commitment to the project, but others noted that given the relatively small size of participating businesses not all of them would have the ability to pay for a co-financed voucher. • Other stakeholders were also concerned that a co-financed voucher at the first voucher stage could act as a deterrent, especially for the smallest/newest firms. • Some academics and wider consultees suggested that the second voucher should be larger (perhaps £10k).	As above, there is no strong case for a larger or co-financed first voucher.
Is the offer of a maximum of three vouchers and the associated funding structure still appropriate?	The three voucher was structure generally considered appropriate, and monitoring data indicates that few firms currently progress to a third voucher. • c.35% of academics supported a change to the current structure, stating that making companies contribute financially to the second and third vouchers can deter them from applying. However, the majority of academics stated that the current structure is appropriate, partly because co-funding for the second and third vouchers ensures company commitment to the projects.	A maximum of three vouchers per business remains valid. However, consideration should be given to the introduction of larger and co-financed follow-

[35] Using the Bank of England's Inflation calculator for 2008-2013 (using RPI measure) https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator

	• Knowledge Provider co-ordinators were evenly split between those who recognised the case for a fourth voucher (perhaps at 50/50 financing) and those who did not think an increase was needed because few companies currently use all three vouchers. • Around 60% of business respondents wanted an increase in the number of vouchers, although again they did not specify how many vouchers would be more appropriate. • Monitoring data indicate that the majority of vouchers awarded have been single vouchers (88% and 79% in Phase II and III respectively) with only a small number of firms using the full allocation of three vouchers (2% in Phase II and 5% in Phase III).	on vouchers for client managed firms
Is there scope to extend the Knowledge Provider base, e.g. to include Catapults, Heath Trusts etc?	There was general support for extending the Knowledge Provider base to other publicly funded providers, including those from outside Northern Ireland. • As may be expected, there were some concerns from existing Knowledge Provider and academics about including new Knowledge Providers, especially in relation to the private sector. • Around 60% of business respondents wanted the Knowledge Provider base to be extended, including to the private sector and public/private providers in GB. • Stakeholders within and outside Invest NI strongly supported the involvement of other state funded Knowledge Providers, including the Catapult network in GB. It was recognised that the logistics of procurement makes the inclusion of private sector Knowledge Providers difficult for Invest NI. In addition, inclusion of the private sector within the Programme risks duplicating other Invest NI supports such as Technical Development Incentive (TDI).	Extending the Knowledge Provider base to other publicly funded providers, including in GB, is valid. However, this should be selective and focussed on Research and Technology Organisations (RTOs) with specific sectoral/technical expertise relevant to the needs of Northern Ireland's industrial base
Should the IVP be focused on specific sectors or business types?	On the 'delivery side', there was a clear consensus that a strong sector focus is not appropriate for Vouchers, but the results from the business survey highlight the higher performance of agri-food firms in achieving tangible outcomes compared to other sectors. • All Knowledge Providers and 90% of academics surveyed disagreed with a sector focus because the underlying need for innovation exists across all sectors. • Data from the business survey show that agri-food businesses were statistically more likely than other voucher recipients to report launching a new product and increasing their turnover (but not employment). • Stakeholders, both within and outside Invest NI, recognised that a key strength of the current Programme is that it is open to all sectors and did not want to dilute this. Some suggested a 'soft' focus' or targeted promotion to individual sectors for specific calls could be trialled, rather than a strict focus which would exclude responses from some sectors.	Further consideration required in the Economic Appraisal – agri-food firms are more likely to achieve tangible outcomes, but should this be prioritised over wider outcomes (e.g. building links with Knowledge Providers)?

Source: SQW analysis

9. Conclusions and recommendations

Conclusions

9.1 The key conclusions from the evaluation, split by Phase where relevant, are presented below.

Context, rationale and objectives

9.2 Since the approval of Phase II, the strategic policy agenda has consistently emphasised the importance of improving Northern Ireland's relatively low levels of innovation compared to other UK regions. This provides a **sound headline rationale for intervention**. Moreover, evidence from the business survey suggests that many beneficiaries had low levels of previous innovation and lacked links to Knowledge Providers before engaging with the Programme. This aligns with the market failure argument for Innovation Vouchers.

9.3 That said, the Programme has also commonly supported businesses, especially client managed ones, that have innovated previously and do have existing links to Knowledge Providers. For these businesses, the Programme is encouraging and de-risking further innovation activity rather than addressing the stated market failures of information and co-ordination failures which prevent firms from starting an innovation journey. This split between beneficiaries has implications for the future of the Programme, what market failures it seeks to address, and what it aims to achieve. This issue is returned to in the recommendations.

9.4 Stated Programme objectives shifted towards an explicit focus on more intangible outcomes in Phase III compared to Phase II. This is an encouraging development, reflecting more fully the strategic and policy objectives. The survey evidence shows that for businesses, Innovation Vouchers is principally about developing new products and services as the direct and immediate effects of the support. Although this means that there are differences between what the Programme is seeking to achieve formally – building new connections between businesses and the knowledge base – and what businesses are looking to achieve – new or improved products and services – this is not unexpected, and highlights the variation between macro-level policy objectives, and business-level business objectives. Given the positive business feedback on the Programme (see below) this is not considered to be a substantive issue, although, clarity on policy objectives should be a priority going forward.

Inputs and activities

9.5 Taking into account the costs of voucher projects and wider delivery costs such as marketing, **the total expenditure of Phase II is estimated at c.£3.4m,** a slight underspend on the approved £3.7m budget. **Expenditure for Phase III to March 2019 is estimated at £2.7m**, roughly in line with budget at this interim stage. Demand in Phase III has not reached a level where it became necessary to seek approval for the expanded £9.65m budget.

9.6 Knowledge Providers deliver individual voucher projects, with institution-specific delivery models. Across the providers however, a third of academics reported spending more time on individual projects than initially agreed. This likely reflects their interest in the delivery of projects, but there is a risk related to the true Value for Money and sustainability of the Programme. There is a case to consider this issue in more detail going forward.

9.7 **The Knowledge Provider network has evolved over the evaluation period**, with Colleges becoming more prominent. This is encouraging because a broader Knowledge Provider base should make the Programme more resilient as it is not dependent on a small number of providers and any potential changes in their appetite for engagement or other issues that may impact on their ability to delivery Voucher activity. That said, the two universities and CAFRE remain crucial delivery partners.

9.8 The operating model and customer journey was largely consistent across both Phases. Key changes to Phase III included: a reduction in Invest NI's contribution to follow-on vouchers; the introduction of an online application form; and **a modest change in voucher value**. The effective reduction in value was acknowledged by all 10 Knowledge Provider co-ordinators consulted, although it was not seen to have impacted substantively on demand or delivery.

9.9 **Some 674 projects were initiated in Phase II, with 704 projects initiated at this interim stage of Phase III**. Taking into account the fall in the volume of ineligible applications and the consistency in scores of successful applications throughout the evaluation period, the evidence suggests that the quantity and quality of demand from eligible applicants has been largely maintained. This said, there has been a general reduction in the number of applications – both eligible and ineligible – since the start of Phase II which should be taken into account in thinking through the scale of likely demand for any future Phases.

9.10 In terms of beneficiaries, the majority of vouchers awarded have been single vouchers (i.e. awarded to businesses that have not received a previous voucher), and their spatial distribution broadly reflects the distribution of the NI business base. Notably, the vast majority of beneficiary businesses employ less than 10 people, and 30-40% had no turnover at the time of application. **The Programme is therefore supporting large numbers of small, and often pre-start, businesses that are not eligible for other Invest NI supports**.

Outputs and outcomes

9.11 Monitoring data indicates that **659 projects were completed in Phase II, and 604 Phase III projects had been completed by March 2019.** The level of project non-completion has remained very low in both Phases. This is a very positive finding, suggesting that the Invest NI selection process is robust, and that project activity is meeting business expectations and needs.

9.12 **The 'output' from a Voucher project for two-thirds of supported businesses is a technical report** or other written output. However, the survey suggests that over a third of businesses also receive prototypes and a not insignificant minority (14% in the survey sample) a product ready for market. Therefore, and despite the modest value of the voucher, it can lead directly to market outcomes for businesses, particularly so in the agri-food sector.

9.13 Outcomes are the resultant effects of an intervention on the performance and behaviour of participants. The following points are noted:

- **The Programme has delivered positive effects on innovation perspectives and relationship**s: at least two-thirds of surveyed businesses reported an increased understanding of the role of innovation in contributing to business growth and development, commitment to undertaking innovation, and/or an enhanced relationship with Knowledge Providers

- **Market and business capacity outcomes** have been delivered for a substantial proportion of beneficiaries: notably, half of businesses surveyed indicated that they had introduced a new or significantly improved product as a result of Innovation Vouchers; this rate was consistent for Phase II and Phase III which suggests in most cases products are introduced quite quickly to the market after project completion, although it may also reflect some response bias in the survey sample.

- There is strong evidence that **the Programme has led to increased investment by SMEs in R&D and innovation**, which aligns strongly to the strategic case for Innovation Vouchers.

- **The Programme has led to new or increased exports for around a fifth of respondents**. This is encouraging because changing export behaviour is not a core objective of Innovation Vouchers.

9.14 In terms of quantitative effects, at the time of the survey, **Innovation Vouchers had led to turnover increases for 38% of surveyed businesses, with employment increases for 17%.** Where these impacts could be quantified, the mean increases were around £250k and 2.6 FTEs respectively, although there was considerable variation across respondents, especially on turnover. This is not unexpected for an innovation intervention, where the distribution of benefits can be highly skewed. Over half of Phase III respondents expect to achieve turnover and/or employment benefits in the next three years.

9.15 Findings for two sub-sets of the businesses are highlighted

- **Agri-food businesses were more likely than those from other sectors to report launching a new product/service as a result of Innovation Vouchers, and to generate turnover benefits at this point**. This is likely to reflect the nature of the sector and the time-paths required for innovations to reach the market and deliver business benefits. This highlights the importance of agri-food businesses to the overall outcomes of the Programme.

- **Businesses that were Client Managed when they approached the Programme were also more likely to report some outcomes**, relative to those that were not. This included the introduction of new products or services, the introduction of new or significantly improved processes, and securing equity finance from external investors. Increased turnover was also more common for Client Managed businesses. This is likely to reflect the capacity of these businesses to secure the benefits from the innovation activity supported by the Programme.

9.16 The evidence suggests that the volume of businesses 'moving-on' to other Invest NI innovation and R&D supports is substantial. Further, 50% of businesses surveyed remained in contact with a Knowledge Provider following project completion – this suggests **the Programme is commonly delivering against the objective of being a 'first step' on an innovation journey**, and suggests that the long-term effects of the Programme may be significant, as businesses continue to invest in innovation and R&D.

9.17 Whilst primarily aimed at businesses, the Programme has also generated benefits on the 'delivery side.' For example, the financial contributions made by the Programme were highlighted as an important benefit by most academics and Knowledge Providers, particularly in cases where Vouchers represent a larger proportion of an institutions' funding sources. The majority of academics also reported a range of qualitative benefits including enhanced applied knowledge and skills, improved relationships with business, and benefits to their wider teaching activity, including through an enhanced insight into business needs and behaviours.

Additionality and other contributory factors

9.18 **In the majority of cases of the participants surveyed, the Programme delivered additionality, either fully (c.50%) or in part**. Deadweight – where the same outcomes would have occurred in any case – was present for around one in ten respondents. The evaluation also found limited evidence of Substitution – engagement in Innovation Voucher activity did not, in the main, prevent participants from progressing other business development opportunities. Overall, these are positive findings.

9.19 The **additionality of the Programme is estimated to be 45% for job creation, and 41% for turnover generation**, based on applying participant-level additionality ratios to gross outcomes. This was broadly consistent in both Phases. The overall additionality picture is influenced heavily by Displacement effects, which partly reflects that of many of the businesses supported operate principally in NI markets.

9.20 Whilst the Programme has delivered additional outcomes, it is important to recognise that **other internal and external factors may have influenced the effects of the Voucher activity**, for example the implementation of a new business plan or the purchase of new equipment (around half and a third of respondents, respectively). A sizeable proportion of businesses also reported that additional investment was required to generate benefits (36-47% depending on the outcome), although it is notable that further investment was *not* required in most cases.

Impact and value for money - Phase II

9.21 The net impacts of Phase II are estimated to be: between 80 and 104 net jobs created, with a mid-point of 92 jobs created; and a net GVA contribution (including outlier) of between £5.7 and £6.5m, with a mid-point of £6.1m. When these benefits are compared to the cost of delivery, this results in a positive Return on Investment (RoI) of between £1.7 and £1.9 of GVA impact generated for every £1 invested by Invest NI. **Phase II therefore outperformed its RoI target** and the RoI calculated in the 2014 evaluation

9.22 Positively, **Phase II also met its output and outcome targets**. Whilst the achievement of some of the GVA targets is dependent on inclusion of a major outlier, this is not unreasonable as past evidence shows that the benefits from innovation support projects are not evenly distributed amongst beneficiaries. Taking the wider evidence relating to Economy, Efficiency and Effectiveness in the round, the evaluation makes a positive assessment of Phase II's value for money.

Impact and value for money – Phase III

9.23 It is estimated that, at this interim evaluation stage, business with completed Phase III projects will create approximately 420 net jobs, and generate GVA of over £11m by mid-2022. Whilst this is a positive finding, it is important to recognise that the majority of this impact is expected rather than realised (82% for employment, and 72% for GVA). Linked with the findings above, the ability of the Programme to deliver against these impacts will rely on other factors, including potentially significant levels of investment by or on behalf of the supported businesses.

9.24 Considering achieved impacts only, **Phase III's Return on Investment at this interim stage is positive**, with £1.25 of impact generated for every £1 of investment by Invest NI. The Programme is broadly on course with its £1.66 target even at the interim evaluation stage. The target is likely to be met – and potentially out-performed – if the expected turnover effects are realised.

9.25 Encouragingly, **Phase III is broadly in line with wider output and outcome targets** at this interim stage, and is likely to achieve its GVA targets if the effects expected by the survey sample are realised in practise. Therefore, and considering wider evidence, at this interim stage, the evaluation makes a positive assessment of the Economy, Efficiency and Effectiveness of Phase III.

Process and operation perspectives

9.26 The consultations provided consistently **positive feedback regarding the effectiveness of programme management and operation by Invest NI**. This applied to the personnel managing the Programme, as well as the established systems and processes in place.

9.27 From the delivery side, setting clear objectives at the outset of a project is a key enabler to success. Conversely, unrealistic expectations, a lack of communication and company disengagement all hindered project delivery, but these factors reflect business attitudes rather than a systemic issue with Programme design. From an institutional perspective, the issue of VAT non-payment by some businesses was raised.

9.28 Encouragingly, **academics and businesses reported high levels of satisfaction with the Programme**. For businesses, this applied to Programme processes, support received from the Knowledge Provider and their overall impression of Innovation Vouchers.

9.29 Looking forwards, the overall weight of the feedback and any suggested changes were generally focused on the margins of the Programme, rather than impacting on the 'core offer'. The current voucher model and broad value was still seen generally as the most appropriate form of intervention, although there is a case to consider some voucher parameters for any subsequent phase, drawing on the evaluation evidence.

Recommendations

9.30 The evaluation highlights that overall there has been continued demand from the business base, although there is some evidence that the scale of this demand has been reducing over time. This said, the evaluation findings are positive in terms of the performance of the

Programme against its intended aims and objectives in both Phase II and Phase III, and wider contribution to the development of the level of innovation within the business base in Northern Ireland.

9.31 In this context, the following recommendations are made:

- **Recommendation 1**. Subject to the standard appraisal, casework, and approval process, Invest NI should continue to fund the Innovation Vouchers Programme. The fundamental purpose of the Programme should remain as increasing the level of business innovation activity in Northern Ireland.
- **Recommendation 2**. The evidence suggests that there are differences in the context, rationale, and outcomes related to the nature of the businesses supported by the programme, with client managed status at application a key differentiating factor. The implications of this should be considered fully in the Economic Appraisal of Phase IV. This is fundamentally a policy question and will need to be reflected in the objectives of Phase IV: what is the balance between supporting businesses that are genuinely 'new to innovation', and those already innovating, and what are the implications of this for Programme outcomes and impacts?
- **Recommendation 3**. Linked to Recommendation 2, in the Economic Appraisal of Phase IV, there should be an explicit consideration of: increasing the voucher value in line with inflation; whether larger and co-financed vouchers (or other modifications to the programme model) are appropriate for client managed firms; extending the Knowledge Provider base; the level of risk within the Programme (e.g. potentially 'lowering the bar' for applications, and/or working with more technically challenging and higher risk projects); and whether some form of sector targeting is appropriate given the higher performance of agri-food businesses in generating tangible outcomes.
- **Recommendation 4**. Maximising linkages with and through the new Innovation Accreditation Scheme will be particularly important. Invest NI should consider developing an 'action plan' (or similar strategic document) to ensure that this opportunity can be maximised for Innovation Vouchers and the wider innovation support landscape. A particular issue here should be considering the follow-on pathways for businesses supported by Vouchers that are not Client Managed by Invest NI. It will also be important to explicitly consider linkages with the Innovate Us Programme.
- **Recommendation 5**. This evaluation has calculated Net Promoter Scores for business and academic satisfaction with the Programme. It is recommended that future evaluations also use this metric to allow changes in satisfaction to be tracked over time. Alternatively, this data could be collected in real time through Programme monitoring.
- **Recommendation 6**. Events to encourage knowledge sharing between the different Knowledge Providers have been organised in the past, and welcomed. Following feedback from consultees, it is recommended that this initiative is re-energised,

demand and interest permitting. Invest NI should also be alert to any examples of unhelpful competition between the institutions.

- **Recommendation 7**. A third of academics reported spending more time on individual projects than initially agreed, indicating that this is potentially a systemic issue. The Programme central team should engage with Knowledge Providers to understand the causes of this in more detail and discuss potential solutions, e.g. guidance in how to draft a 'tight' Letter of Notification and the need for closer monitoring of inputs.

- **Recommendation 8**. Phase III has an output target which refers to "enhanced" relationships with a Knowledge Provider. As many participating businesses do not previously have any relationship, the wording of this target should be revised to "*new or* enhanced" relationship in any future Phase to ensure clarity. Further, the case for a higher target on this outcome compared to the two other outcomes (businesses with increased understanding of the role of innovation and commitment to innovation) should be reviewed.

- **Recommendation 9**. Both Phase II and Phase III include targets for businesses progressing to a higher stage of the 'Innovation Escalator.' The spirit of these targets is appropriate. However, the 'Innovation Escalator' is not clearly defined and comprehensive monitoring data is not available. For Phase IV, all targets should be clearly defined and aligned with the monitoring regime to allow formal assessments of progress.

- **Recommendation 10**. Data held in the IVP's team's tracking spreadsheet has varied between and within Phases as the Programme has evolved. With the introduction of the online application form, it may be appropriate to capture this information in the CRM for future Phases. It is recommended that a consistent set of data is collected during Phase IV. Specifically: the inclusion of a column for successful/unsuccessful applications and one for sector of the business; that data is entered in a consistent format (e.g. £1,500,000 or £1.5m); and that attention is paid to business names to avoid multiple entries (e.g. ABC Ltd vs ABC Limited).

9.32 The evaluators do not consider that there are any likely impacts on anti-poverty, social inclusion, equality of opportunity or good relations from the recommendations made.