

BiGGAR Economics

Evaluation of the Converge Challenge

A report to



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1 EXECUTIVE SUMMARY

This report presents the findings of an analysis undertaken by BiGGAR Economics to explore the benefits that the Converge Challenge has delivered both for the Scottish economy and the individual businesses it has supported.

Since 2011 the Converge Challenge has provided training to 150 start-up businesses, of which 62 have been formally incorporated. Of these 62 businesses 51 remained active in 2016, which represents an overall survival rate of around 85%.

Survey evidence gathered to support this assessment suggests that overall levels of satisfaction amongst the businesses that have participated in the Converge Challenge are very high. By far the most commonly used words used by participants to describe their experience of the Challenge were, “*supportive*”, “*challenging*” and “*informative*” and overall:

97% of Converge Challenge Participants reported that they were either “*satisfied*” or “*very satisfied*” with their experience.

Importantly this satisfaction also appears to have been translated into positive financial returns for the businesses involved. Since 2011 the businesses that have participated in the Converge Challenge have leveraged a total of £55.1 million in additional funding of which £20.1 million can be directly attributed to the support provided through the Converge Challenge. This implies that every £1 funding provided by university partners to date has enabled the businesses supported to leverage a further £23.53 in funding.

Overall £29.7 million of this funding was secured by businesses based in Scotland and of this £12.5 million can be attributed directly attributed to the support provided through the Converge Challenge. This implies that:

Every £1 funding that university partners have invested in the Converge Challenge to date has enabled Scottish businesses to leverage a further £14.60 in funding.

This funding has also enabled the businesses involved to generate significant benefits for the Scottish economy. It was estimated that the businesses supported by the Converge Challenge generated £5.2 million GVA for the Scottish economy in 2016 alone and supported more than 180 Scottish jobs¹. Of this it was estimated that £3.4 million GVA and around 100 jobs could be directly attributed to the support provided by the Converge Challenge. This implies that:

¹ These figures relate only to the Scottish economy and do not include the jobs and economic activity that the project supported outside Scotland.

Each £1 of funding that the SFC has invested in the Converge Challenge to date generated £4.27 GVA for the Scottish economy in 2016.

It should be noted that at the time of writing only around three months had elapsed since those who participated in the 2016 Converge Challenge completed the programme and as such would not yet have had a chance to fully implement what they have learned. It is therefore reasonable to expect that over the coming months, as these participants begin to make use of the knowledge and skills they have developed, that the performance of these businesses would increase. For this reason it is reasonable to expect that the impacts presented in this report would increase in subsequent years.

This represents a significant return on investment and for this reason it is particularly important to emphasise that the Converge Challenge does not operate within a vacuum. The success of the project relies heavily on the input provided by business support staff from the individual universities that support the project, who help to support the participating businesses before, during and after the competition process. Without this support it is highly likely that the benefits associated with the project report would be significantly lower than described in this report.

Many of the businesses that contributed to this assessment had high expectations about their future performance. If these expectations are realised then within three years time the annual economic impact attributable to the Converge Challenge could increase to £21.8 million GVA for the Scottish economy. This level of economic activity might be expected to support around 220 Scottish jobs. Should these expectations be realised then it would be reasonable to expect the return on investment ratios reported above to increase in the future.

These findings are particularly relevant given the increasing policy focus on increasing the productivity of the Scottish economy and the role of universities – and university business interaction - in driving business growth.

2 INTRODUCTION

Converge Challenge is a pan-Scotland company creation competition and entrepreneurship development programme for staff, students, and recent graduates of Scottish universities and research institutes, aimed at creating a new generation of entrepreneurs in Scotland. In late 2016 BiGGAR Economics was commissioned to assess the economic benefits that have been realised as a result of the Converge Challenge. This report presents the findings of that analysis.

2.1 Objectives

The objective of this report is to assess the contribution that the Converge Challenge has made to the Scottish economy and the return on investment that the initiative has delivered for its funders and stakeholders.

2.2 Report Structure

The remainder of this report is structured as follows:

- section three provides a description of the project and how it is funded;
- section four describes the outputs of the project, including the number of businesses that have participated in the project, the amount of training provided and the value of prizes awarded;
- section five describes the experience of beneficiaries of the Converge Challenge and of the university partners involved in the project. It also includes case studies that describe the experience of three project beneficiaries and one of the university partners involved in the project;
- sections six quantifies the economic impact of the Converge Challenge in 2016 and the potential economic benefits of the project over the next few years; and
- section seven quantifies the value of additional funding that businesses that have engaged with the project have been able to leverage in as a result of the support they have received; and
- section eight presents the conclusions of the analysis.

3 CONVERGE CHALLENGE

Growing out of a Heriot-Watt University scheme, Converge Challenge is a high profile, pan-Scotland company creation competition and entrepreneurship development programme for staff, students, and recent graduates of all Scottish universities and research institutions. The competition is aimed at creating a new generation of entrepreneurs in Scotland.

The long-term goal of Converge Challenge is to provide students and staff with practical commercial skills to enable them to bring novel products and services to market. In this way the Challenge aims to create sustainable, profitable companies and help Scotland's economy to grow.

Converge Challenge is focused on developing the entrepreneurial skills of participants through a rigorous programme of support and engagement over an 18 month period. Working with experienced facilitators from Scottish universities as well as the private sector, participants receive training, coaching, one-to-one mentoring and advice. Participants have the opportunity to connect with likeminded people to help them develop their business propositions, enhance their presentational skills, write proposals and improve their networking skills.

The Challenge works with any industry sector, both product and service based ideas, and at any stage of development. Alumni of the Challenge include businesses that specialise in hardware and software; diagnostics, medical devices and drug discovery; renewable technologies and novel photonics; business looking to bring art closer to the general public; the next generation of golf performance tracking; personal alarms; and fast food home kits.

3.1 Funding

In 2016 the Converge Challenge received funding from eight Scottish universities and the Scottish Funding Council (SFC). It also received significant in-kind advice and support from a variety of other organisations, including the Royal Society of Edinburgh.

3.1.1 University Funding

The Converge Challenge was first established by Heriot Watt University in 2010 and the project was quickly expanded to cover all Scottish universities. For the first couple of years the project was delivered as part of a wider business engagement initiative so exact details about the cost of the project at that time are not readily available.

Data provided by the Converge Challenge team however shows that during 2011 and 2012 the value of cash prizes awarded amounted to £77,500 and the value of in-kind support provided amounted to £82,800, a total of £160,000. If the total value of funding provided is used as a proxy measure for the cost of the project then this would imply that the total cost of the project between 2011 and 2012 amounted to £160,300.

Since 2013 several Scottish universities have recognised the value delivered by the Converge Challenge and begun to provide regular financial support to the project. In 2016 these universities were:

- the University of Aberdeen;
- the University of Dundee;
- the University of Edinburgh;
- the University of Glasgow;
- Heriot-Watt University;
- the University of St Andrews;
- the University of Stirling; and
- the University of Strathclyde.

Between 2013 and 2015 each of these universities provided £15,000/year funding for the Challenge and in 2016 this increased to £20,000. This implies that between 2013 and 2016 Scottish universities provided a total of £520,000 funding for the project.

In addition to this each university also provides significant in-kind support. This includes providing staff to sit on judging panels and resources to promote the Challenge internally. In 2016 the value of this in-kind support was estimated at £77,400 and between 2013 and 2015 it was estimated at £32,400/year.

Adding the figures discussed in this section together suggests that between 2011 and 2016 Scottish universities have provided a total of £0.9 million cash and in-kind support to the Converge Challenge.

3.1.2 Scottish Funding Council

The Converge Challenge also receives financial support from the Scottish Funding Council (SFC). In 2016 the total value of this funding amounted to around £282,000. Prior to this the project received around £175,000 per year from the SFC. This implies that the total value of funding provided by the SFC since 2013 has been around £0.8 million.

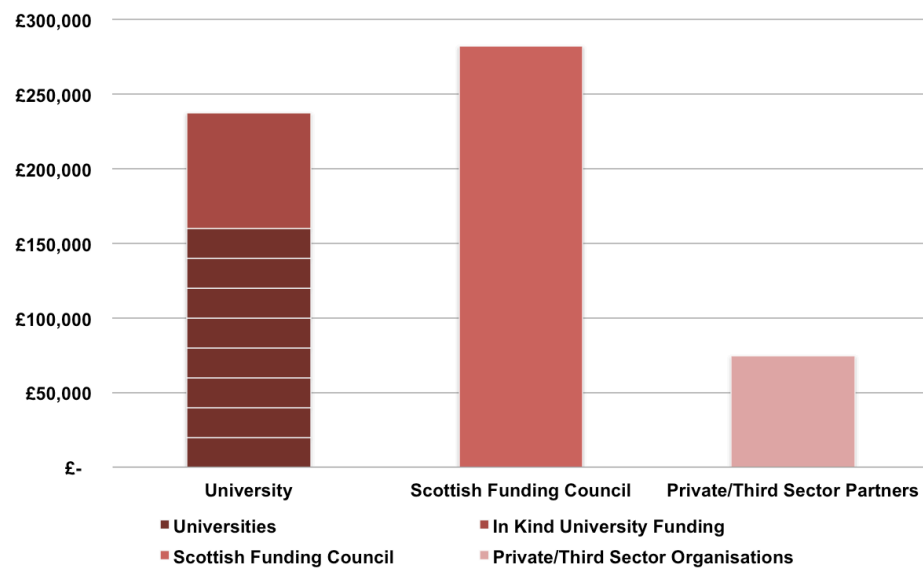
Adding this to the financial support provided by universities means that in 2016 the Challenge received a total of £442,000 in direct financial support. In 2014 and 2015 the total value of support received amounted to £295,000 and in 2013 the total value of financial support received amounted to £245,000. The total value of financial support secured by the Converge Challenge has therefore increased by around 80% since 2013, which provides strong evidence of the high regard in which the project is held by its partners.

3.1.3 Other In-kind Support

In addition to the support provided by the SFC and universities the Converge Challenge also receives significant support from several business partners, specialising in product development, recruitment, intellectual property (IP), finances, tax, accountancy, etc. The project also receives in-kind support from third sector partners, such as Entrepreneurial Scotland and Firstport, Scotland's social enterprise development agency. In 2016 it was estimated that the value of this in-kind support amounted to £74,500.

Figure 3.1 illustrates the various sources of support received by the Converge Challenge in 2016.

Figure 3.1 – Funding Sources in 2016



Source: Converge Challenge

Together, these academic, private and third sector partners form a collaborative ecosystem of organisations, which combine their respective competencies to provide participants at various stages of development with funding, training and expert advice.

3.2 Categories and Awards

The Challenge has a prize fund of £150,000, including in-kind benefits, and is composed of three main categories:

- Converge Challenge.
- KickStart; and
- Social Enterprise.

3.2.1 Converge Challenge

The Converge Challenge is aimed at those who have recently graduated from, or are affiliated to, a Scottish university or research institution. In 2016 it attracted 112 applicants, more than half the total for that year. To be eligible to apply entrants must either be aiming to spin out a company from their institution or incorporate a new business in the next 12 months.

In phase one of the competition, those who wish to participate submit a two page application form, outlining their business idea, target market etc., and the 30 top submissions are chosen. In phase two, entrants are invited to a three day residential training programme that focuses on the fundamentals of creating and building a new business such as business development and market research, employing people, managing accounts, and pitch training. Phase three of the competition is the submission of a business plan, which can be up to 20 pages long, from which the judges select the top ten. From this shortlist, the top six

businesses are chosen to pitch their ideas to investors and the external judging panel, which happens in phase four of the competition.

In 2016, the winner of the Converge Challenge won a 1st Prize of £43,000 in cash and a further £33,000 in in-kind support, including:

- £5,000 in legal support;
- £2,500 mentoring;
- £5,000 financial advice;
- £5,000 branding and marketing support;
- £5,000 recruitment advice;
- £5,000 intellectual property;
- £5,000 product development and support; and
- £1,000 networking.

In addition, the winner of the 2nd prize received £15,000 in cash and £17,000 of in-kind support. In 2016, Converge Challenge also introduced the Design and Creativity Award, which is aimed at exciting ideas in digital media, textiles, architecture, and design. The award is worth £10,000 in cash, and £16,000 in in-kind benefits, including £5,000 in product development advice from Fearsome and also bespoke consultation from Interface, one of the key partners in the Converge Challenge.

Additionally, the top ten applicants shortlisted each received one to one mentoring over a 12 month period.

3.2.2 KickStart

KickStart is a competition targeted at those who are currently at a Scottish university or research institute, or who have recently graduated, and have an idea for a new product or service. The aim is to provide enough funding to support a project to secure intellectual property rights or develop a prototype.

As with the Converge Challenge applicants to KickStart, who numbered 70 in 2016 or about 33% of the total, submit a two page application form. The top 30 applicants also attend the entrepreneurial workshop, which focuses particularly on preparing a pitch. In phase 3 of the competition entrants are expected to submit a five page business case, and a one minute video pitch. In a parallel competition called the KickStart Digital Entrepreneur Award these videos are then be uploaded to YouTube and voted on by the public.

The judges then select a shortlist of ten candidates, and from this choose two finalists. In 2016, the winner of the competition received £3,000 and the winner of the 2nd prize received £2,000. The amount of prize money is expected to increase to £10,000 in 2017. The winner of KickStart is automatically entered into the Converge Challenge top 30 in the following year.

3.2.3 Social Enterprise

The criteria for entering the Social Enterprise award is the same as for the previous awards, although the focus of this contest is to develop businesses that focus on tackling social problems, strengthening communities improving people's life chances or protecting the environment. In 2016, 30 people applied for the Social Enterprise award, which has been running since 2014.

As with Kickstart, applicants are expected to submit a two page application form, attend an entrepreneurship training session and develop a five page business plan and one minute business pitch. The winner receives a £5,000 award, and the runner-up receives £3,000 (from Firstport, an advisory network for social enterprises), and access to the Firstport network.

3.3 Training Provided

One of the most important aspects of the Converge Challenge is the provision of training to budding entrepreneurs². This is provided to the top 30 applicants in the main Converge Challenge, KickStart and Social Enterprise competitions. This consists of a two to three day residential training course. Mentoring and additional training are also provided to the top 10 applicants in the main Converge Challenge.

3.3.1 Day One

The first day of the training introduces entrants to some of the practicalities and fundamentals of running a business. In addition, entrants are encouraged to consider some of the individual consequences of running a business, and what may happen if it proves unsuccessful. Some of the fundamentals considered are:

- different types of business structures, e.g. limited liability partnerships;
- the mechanics of managing a company;
- how to pay yourself and employ other people;
- how to manage different types of taxation, such as PAYE, VAT and Corporation Tax;
- returns to Company House; and
- monthly and annual accounting.

3.3.2 Day Two

The second day focuses on the basic corporate and commercial competencies that customers must have before launching their business. These core competencies include:

- how to understand and quantify commercial opportunity;
- market led product definition;

² About Converge Challenge. <http://www.convergechallenge.com/en/page/about-en>

- estimating resources and timescales from inception to first sales;
- “productisation”;
- money matters, including cash-flow projections and how to estimate funding requirements; and
- building a network, then building a team.

3.3.3 Day Three

The third day focuses more specifically on how to target products at specific customers and how to discover who these customers are. Specific topics include:

- customer definition;
- market segmentation; and
- markets, competitors and competitive product analysis.

3.3.4 Business Surgeries

After attending the three day residential course, applicants then develop their business plan. Before submitting this they have the opportunity to have their plan reviewed and critiqued by one of the Converge Challenge's sponsors.

3.3.5 One-to-One Mentoring

Based on the presentation of business cases the top ten participants from the main Converge Challenge are then selected and receive a year of one-to-one mentoring. By providing this source of advice, the Converge Challenge participants are able to receive consistent advice at a time that can often be frustrating and isolated.

Often this can mean finding someone in a similar industry, or who has set up a business in the last several years and has therefore recently been at the same stage as the entrepreneurs. This is particularly valuable in businesses in technology based industries, which are relatively young and prone to fast-paced change.

4 PROJECT OUTPUTS

This chapter describes the outputs delivered by the Converge Challenge to date, including the number of businesses supported, the value of funding awarded and the amount of training delivered.

4.1 Company Formation

Since 2011 the Converge Challenge has provided training to individuals from 150 start-up businesses, of which 62 had (at the time of writing) been formally incorporated. This represents an incorporation rate of 41%. Of these 62 businesses 51 remained active by 2016, which represents an overall survival rate of around 85%.

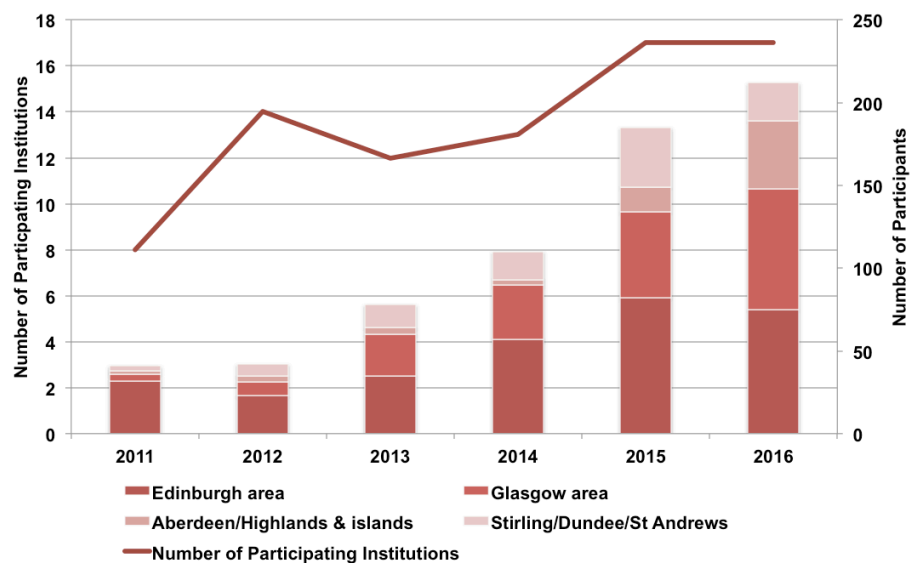
4.2 Participation

Converge Challenge grew out of a scheme developed by Heriot-Watt University in order to increase the scale of its knowledge exchange activities and entrepreneurship, by developing long-term relationships with industrial partners and providing customised support.

Since its original inception the Challenge has expanded significantly. Two new categories have been launched since the project started: Kickstart, which began in 2013; and Social Enterprise, which began in 2014. The total number of applicants applying to the Challenge (across all categories) has also increased significantly from 41 in 2011 to 212 in 2016.

As can be seen in Figure 4.1, participation by region has also broadened since 2011. Although the Edinburgh area still contributes 35% of all applicants, this is down from 78% in 2011, with the Glasgow area increasing its contribution from 10% to 34%, and Aberdeen/Highlands and Islands increasing from 5% to 19%.

Figure 4.1 – Participants and Participating Institutions



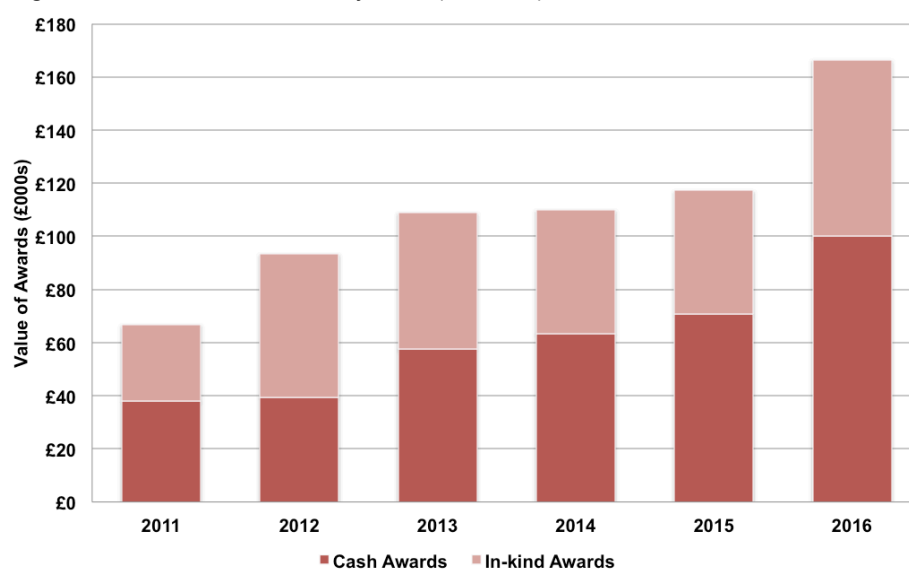
Source: Converge Challenge

4.3 Prizes Awarded

In 2016 the total value of prizes awarded was £166,500. Of this £100,000 was awarded in cash and £66,500 was awarded in in-kind services, such as intellectual property advice, marketing support, and product development.

The total value of awards has increased every year since the Converge Challenge started, rising from £66,800 in 2011 to £166,500 in 2016, an increase of almost 150%. Since its inception the Converge Challenge has awarded prizes with a value of £663,000, with 56% awarded in cash, and 44% awarded in in-kind support. The value of prizes awarded between 2011 and 2016 is summarised in Figure 4.2.

Figure 4.2 – Value of Awards by Year (2011-16)



Source: Converge Challenge

4.4 Amount of Training Provided

4.4.1 Residential Training Course

As well as awarding prizes to winning applicants, the Challenge also offers a residential training course to the top 30 applicants from the Converge Challenge, as well as the Kickstart and Social Enterprise competitions, as detailed in Section 3.3. This training is provided free of charge, and represents a substantial benefit to the participants.

In 2016 the Converge Challenge had been running for six years, KickStart had been running for four years and the Social Entrepreneur competition had been running for three years. Each year the top 30 applicants from Converge Challenge are offered the opportunity to participate in residential training along with 20 applicants to KickStart and 10 from the Social Entrepreneur competition. Taken together this implies that 290 people have been offered residential training opportunities since 2013.

4.4.2 Business Surgeries

The Converge Challenge also provides the applicants with an opportunity to have their business plan reviewed by their partners. At the time of

writing this had only been running for a limited period of time so the number of attendees to date was limited.

4.4.3 Mentoring

The top 10 Converge Challenge participants also receive one-to-one mentoring for a period of a year. As the Challenge has been operating for six years this implies that 60 people have been offered this opportunity.

5 PARTICIPANT FEEDBACK

This section describes the study findings relating to the experience of participants and universities with the Converge Challenge.

5.1 Business Experience

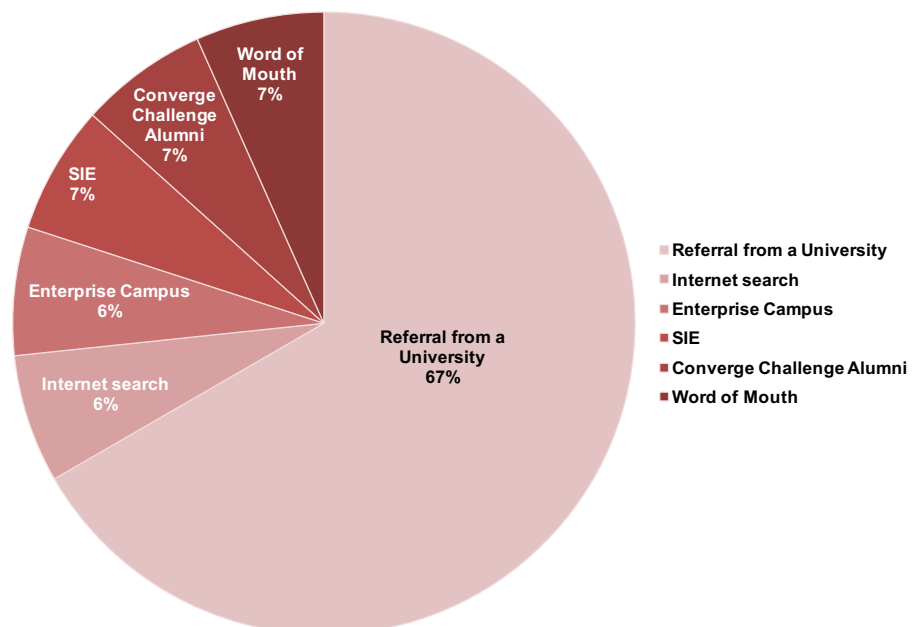
In order to evaluate the experience of Converge Challenge participants, an online survey of 75 businesses was undertaken in January 2017. In total, 44 responses were received to the survey, giving an overall response rate of 59%, a healthy response for this type of survey. Of the 44 responses, 29 were complete responses and 15 were partially completed responses. This section analyses these survey responses in more detail.

5.1.1 Awareness of Converge Challenge

All survey respondents were asked how they first found out about the Converge Challenge. Overall, around two thirds of all the participants that responded to this question reported that they had been referred by a University. Although this is not surprising given that eight Scottish universities are partners with the Converge Challenge, it nevertheless indicates that there is a strong relationship between the Challenge and the Universities and that there is a high level of awareness amongst University staff about the opportunities that the Challenge provides.

The remaining participants reported a variety of ways including being referred by another organisation (e.g. Scottish Institute for Enterprise or the Enterprise Campus), through personal connections (e.g. Converge Challenge alumni or word of mouth) and internet searching. These results are depicted in Figure 5.1.

Figure 5.1 – How did you first find out about the Converge Challenge?



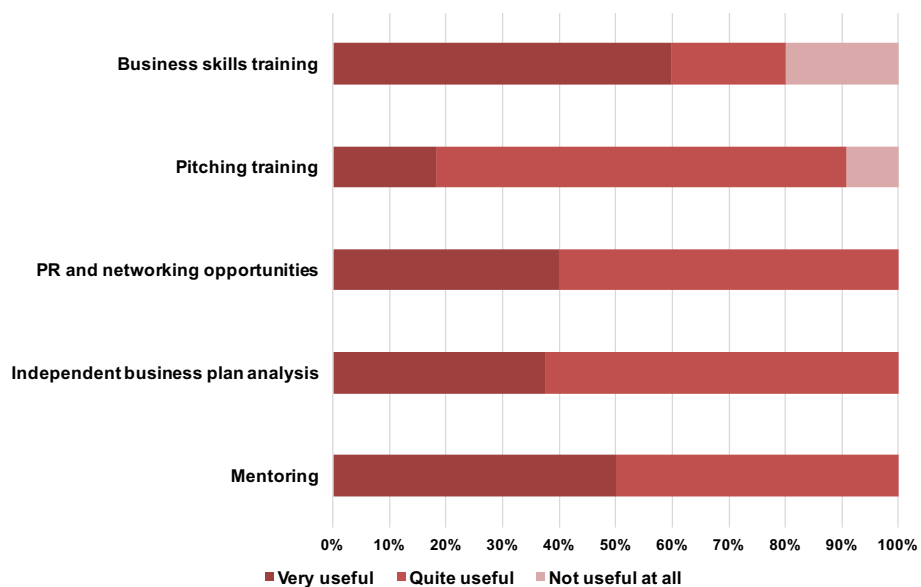
Source: BiGGAR Economics Survey

5.1.2 Usefulness of Training

A key feature of the Converge Challenge is the training it provides and survey respondents were therefore asked to evaluate the effectiveness of each of the different elements of training offered. Overall, 90% of respondents to this question considered the training provided to be useful or very useful. As indicated by Figure 5.2, participants found business skills training to be the most useful element of the training provided. Two respondents highlighted the “practical” and “hands on” nature of the business training in their additional comments to this question.

Mentoring, public relations (PR) and networking opportunities and business plan analysis were also considered to be quite useful. Most respondents considered pitching training to be useful rather than very useful, perhaps because pitching training is also offered by many other organisations.

Figure 5.2 – Please evaluate the effectiveness of each of the following elements of training.



Source: BiGGAR Economics Survey

The training provided through the Converge Challenge helps to equip participants with the necessary knowledge and practical skills required to set up and run a new business, thereby laying the foundations for participants to establish their own business. The two case studies below highlight the importance of the training provided by Converge, particularly as the support comes at a time when ideas are in their early stages.

Case Study 1 – Lingo Flamingo

Lingo Flamingo provides interactive, tailored foreign language workshops to older and vulnerable people in order to postpone the effects of dementia and other forms of mental illness. The social enterprise was founded by Robbie Norval, a language graduate, following his time working as a befriender in a care home and experiencing first hand the effects of dementia after a close family member was diagnosed. The thinking behind Lingo Flamingo is that the social aspect of language learning can help tackle loneliness and isolation. In addition, research indicates that speaking multiple languages can delay the onset of dementia by up to five years and can help with decision-making, multi-tasking, concentration and communication.

Robbie was runner-up in the 2015 Converge Challenge Social Enterprise category. He described the importance of the training provided by the Converge Challenge as follows: ***“The Converge Challenge's support came at a point when Lingo Flamingo was just an idea and gave me the confidence to develop it from an idea to a fully fledged business which I run full-time. As well as that, Converge developed my skills base, giving me the confidence to pitch (having never done so before), the ability to develop a business plan and make valuable contacts.”***

Robbie also highlighted the personal approach of the Converge Challenge team: ***“the staff members are fantastic - you were always very aware that they wanted you to succeed. A lot of competitions don't get back in touch whereas the staff at Converge are great at following up and keeping in touch. It's very well managed and definitely the best competition that I have entered so far.”***

Since the company's success in the Converge Challenge, Lingo Flamingo has received financial support from Firstport, UnLimited and Scottish EDGE. The company was also recognised as one of 50 “New Radicals”, radical-thinking organisations that are changing the UK for the better. The company was officially launched in 2015, with Scotland's First Minister delivering the keynote address and guests taking part in language sessions.

With support from Alzheimer Scotland and the University of Edinburgh, Lingo Flamingo are working on a pilot study to test the feasibility of evaluating Lingo Flamingo's work, measuring the cognitive effects of language learning on older adults.

Source: BiGGAR Economics – based on an interview with Lingo Flamingo

Case Study 2 – Shot Scope

David Hunter, a former electronics design engineer first applied to the Converge Challenge in 2013 with the Caddie Charger, a mobile charging device for golfers powered by a golf trolley battery. During and as a result of the subsequent Converge Challenge training, David developed the idea for Shot Scope. Shot Scope is a performance-tracking wristband for golfers that automatically collects scores, statistics and analytics. The technology works in the background to detect the exact position of every shot played. He re-entered the Converge Challenge in 2014 with Shot Scope, reaching the final six.

Having completed the Converge Challenge training twice, David is well-placed to comment on its effectiveness. He found the business plan analysis to be **“exceptionally useful”** forming the **“foundations of my business plan today”**. He also found the PR and networking opportunities very important in **“helping you to meet people who can help your business and providing that first stage of introductions.”** David also found the business skills training to be very useful, as it was **“quite accelerated”** with instructors **“who really know their stuff”**. David felt that it **“lays the foundations and gives you all the tools you need”**. He found the pitching training to be **“great for developing your confidence, particularly as you knew that you were going to have to deliver a one minute pitch in front of an audience and so you had something to aim for and work towards.”**

After Converge, David secured £2.6 million of investment from the University of Edinburgh, the Scottish Investment Bank, Scottish Enterprise, RSE Enterprise Fellowship, angel investment and Scottish EDGE. Shot Scope currently employs 18 full-time staff and has been available for general sale since September 2016. In 2016 Shot Scope was used by professional golfers on the European and Ladies European tour. The company has ambitious plans to be the leading product worldwide for golf performance tracking. The first step of this plan is exhibiting at the PGA Merchandise Show in Orlando where a team of eight will travel to represent Shot Scope.

David summarised his experience of the Converge Challenge as follows: **“the support from Converge comes at a time when you’re very uncertain about what you’re going to do. You’re on your own trying to do everything but Converge points you in the right direction, gives you the right skills and allows you to believe that you can set up and run your own business. It gives you the confidence and belief to say ‘I can do this’.”**

Source: BiGGAR Economics - based on an interview with Shot Scope

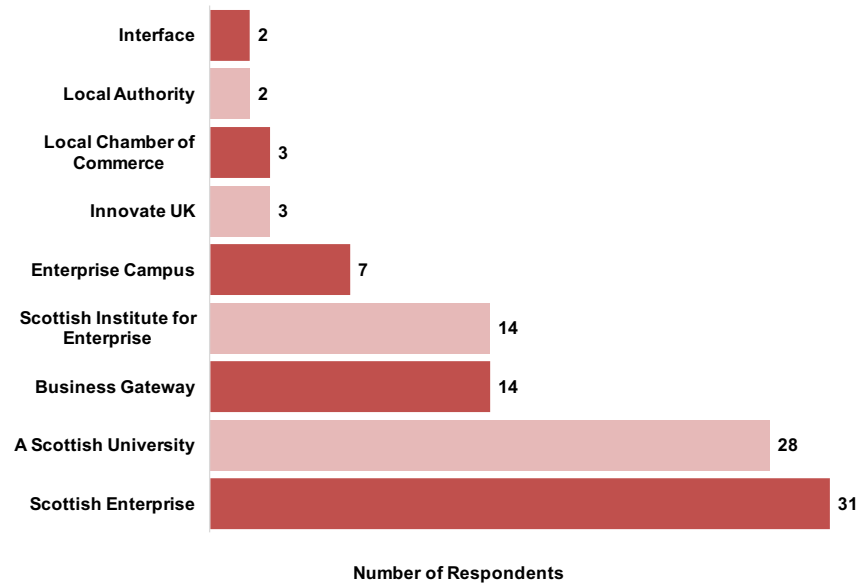
5.1.3 Role of Converge Challenge

In order to assess the role of the Converge Challenge in participants establishing their businesses, it was necessary to consider other sources of support available. Survey participants were therefore asked if they had received non-financial support from any other organisations. As Figure 5.3 indicates, the primary sources of non-financial support were Scottish Enterprise and Scottish universities followed by Business Gateway and the Scottish Institute for Enterprise. Other organisations cited include sector specific organisations such as Firstport, UnLtd, Royal Academy of Engineering, Cultural Enterprise Office and the Sporting Chance Initiative.

Analysis of survey responses indicates that 71% of those who answered this question cited two or more organisations that they had received support from. This reinforces the fact that the Converge Challenge does not exist in isolation and is instead part of a wider innovation support

ecosystem in Scotland, being supported by and reinforcing other organisations.

Figure 5.3 – Have you received non-financial support from any of the following?



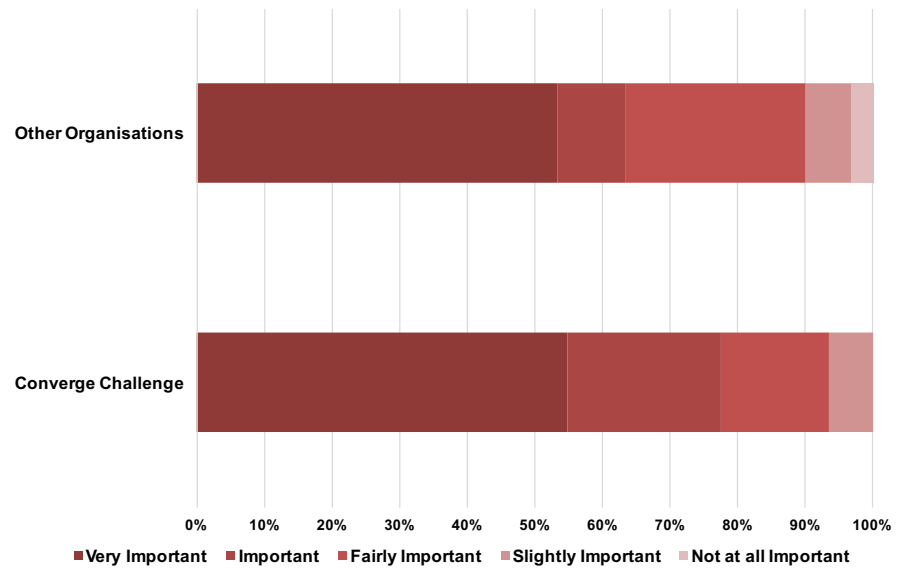
Source: BiGGAR Economics Survey

Participants were also asked to comment on how important the support received from the Converge Challenge and from other organisations had been to establishing and growing their business. Figure 5.4 presents a summary of these results and indicates that support provided by the Converge Challenge compares favourably with the assistance provided by other organisations. Overall the responses to this question indicate that 77% of respondents indicated that the support they had received from the Converge Challenge had been either “important” or “very important” to the success of their business to date.

Additional comments from survey respondents also support this, for example:

“The support from the Converge Challenge comes at a time when your very uncertain about what your going to do so it's very important. Other organisations have all helped too at some point in the process of establishing and growing the business. Together you are given guidance and support right through the process of setting up a business.”

Figure 5.4 – Thinking of all the support you received to date, how important has the support you have received from the following organisations been to establishing and growing your business?



Source: BiGGAR Economics Survey

The Converge Challenge provides assistance at a very early stage, when ideas are first taking shape and being developed. The support it provides can therefore play a critical role in helping to establish new businesses and leverage additional investment, as the case study of Pick Protection below outlines.

Case Study 3 – Pick Protection

Rebecca Pick developed her idea for 'the Personal Guardian', a personal and lone worker alarm, after a woman was attacked in Rebecca's apartment block while she was in her third year of university. The discreet wearable monitored alarm can send the Police to your exact location, alert pre-determined phone contacts and gather evidence via a recording.

In 2014 she applied for the Converge KickStart competition winning the runner-up prize. KickStart was a useful start to her entrepreneurial journey, with **“the application itself really helpful to gather your ideas”** and **“doing well in a prestigious competition builds your confidence”**. As well as this, the prize money enabled Rebecca to pay designers to create a mock-up of the Personal Guardian. This was crucial as it led to Rebecca having a tangible product to show potential investors, helping her to gain an initial £60,000 investment from Gabriel Investments, an early stage angel investment syndicate. This allowed Rebecca to further develop the product and undertake market research.

Now that the Personal Guardian had been developed further, Rebecca was able to enter the main Converge Challenge competition. Her further developed proposition secured her third place in the competition in 2015, making her the first undergraduate Converge Challenge winner. Part of the competition involves a pitching competition, where all participants deliver a one minute elevator pitch in front of an audience of 50 people. Of those attending, one was a journalist who subsequently published an article about the Personal Guardian.

As Rebecca put it, **“things snowballed from here with articles in Glamour³, Cosmopolitan⁴ and the Guardian⁵ creating a huge buzz around the Personal Guardian.”** This coupled with the accolade of winning third place in the Converge Challenge enabled Rebecca to secure further investment of £750,000, from Equity Gap and a number of other investors, including Unipart a £1 billion turnover company who are the alarm receiving centre for the Personal Guardian. Building on this investment, the Personal Guardian will launch in April 2017.

For Rebecca, the Converge Challenge has been critical to establishing and growing her business: **“it is very hard to get investment at an early stage when you don't have a viable product or any market research to support your idea. The Converge Challenge comes exactly at the critical moment when you most need it.”**

Source: BiGGAR Economics – based on an interview with Pick Protection

Additional comments from survey respondents tend to support this view:

- **“The timing was perfect as it enabled us to put together a business plan and model with which to engage investors.”**
- **“Converge Challenge provided the external due diligence which gave us a lot of credibility, initial seed fund to leverage follow-on funding and business coaching services which were all instrumental in establishing our business.”**
- **“Winning a Converge Challenge certainly raised our profile and opened up many more possibilities.”**

³ <http://www.glamourmagazine.co.uk/article/new-rape-alarm-informs-police-of-location-of-ongoing-attack>

⁴ <http://www.cosmopolitan.co.uk/reports/news/a37701/rape-alarm-informs-police-of-location-and-records-attack/>

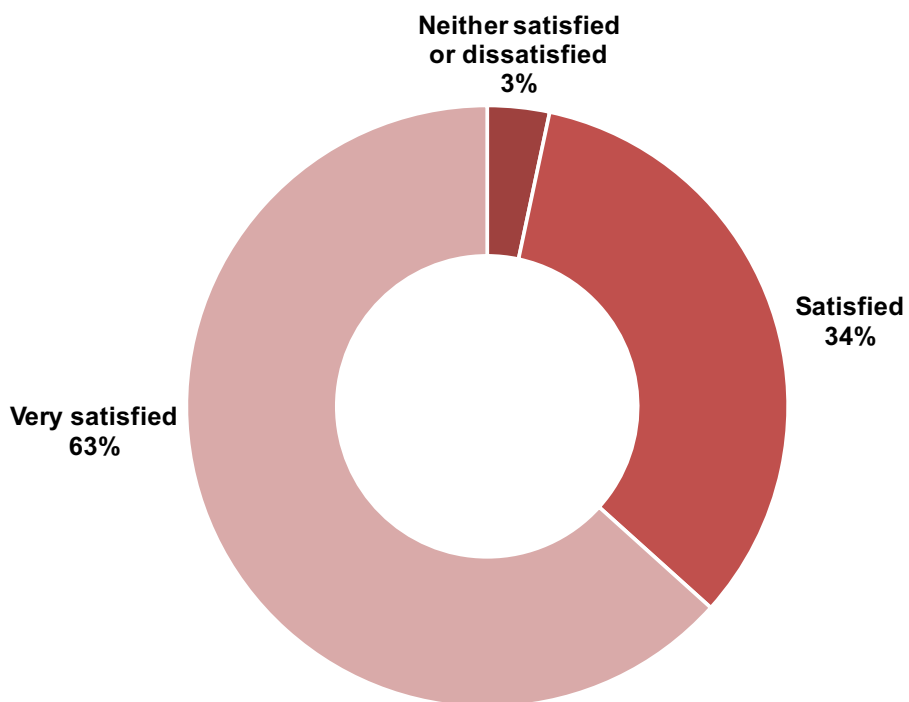
⁵ <https://www.theguardian.com/business/2015/aug/02/the-innovators-personal-rape-alarm-fast-track-police>

A second recurring theme of the case studies of Lingo Flamingo, Shot Scope and Pick Protection is the individual, long-term relationships the team at the Converge Challenge develop with participants. This is also a recurring theme in the comments left by survey respondents, for example, ***“the guys at Converge have been great to chat to and championed our business.”*** Others noted that, ***“the team are really great, friendly and approachable. You keep going back to them.”***

5.1.4 Satisfaction with the Converge Challenge

In order to ascertain the level of satisfaction with the Converge Challenge all survey respondents were asked how satisfied they were with their experience of the Challenge. As indicated in Figure 5.5, participants were extremely positive about their time participating in the Challenge, with 97% reporting they were either satisfied or very satisfied.

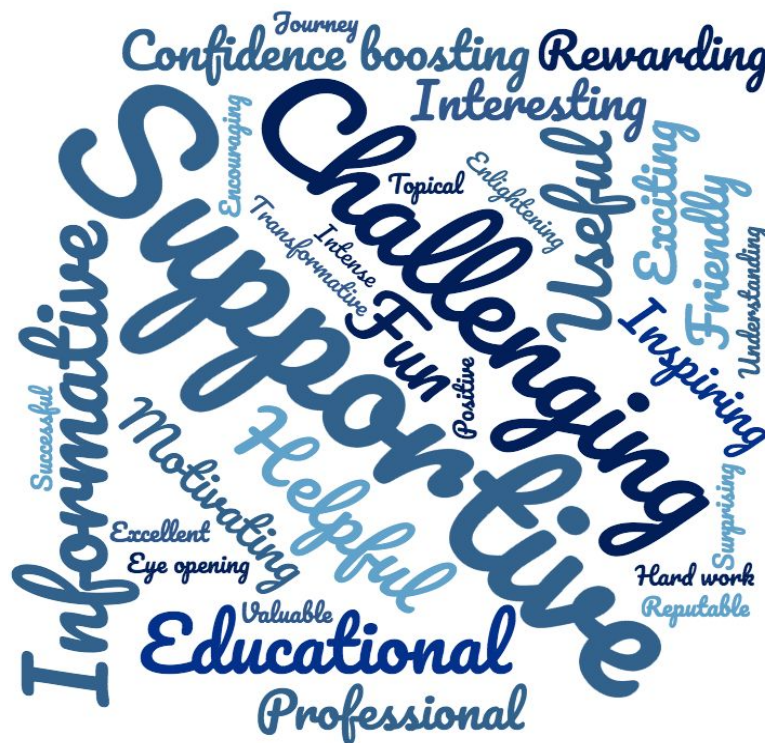
Figure 5.5 – Overall how satisfied are you with your experience of the Converge Challenge?



Source: BiGGAR Economics Survey

Before completing the survey respondents were invited to choose three words that best describe their experience of Converge Challenge. The responses provided to this question were then fed into text analysis software that assesses the frequency with which different words arise. The results are depicted in Figure 5.6, with the size of each word reflecting the frequency with which it was used. By far the most commonly used words to describe participants' experience of the Challenge were, “supportive”, “challenging” and “informative”.

Figure 5.6 – Please choose three words which best describe your experience of the Converge Challenge



Source: BIGGAR Economics Survey

Various survey respondents left comments conveying their satisfaction with their experience of the Converge Challenge. In order to give a sense of these, three in particular have been highlighted here:

- ***“It’s the best run entrepreneurial programme for universities we know of.”***
- ***“Compared to others, Converge is by far the most professional and helpful to high growth technology/science start-ups. I would sometimes even discourage people from applying to other competitions because their businesses are too technologically advanced.”***
- ***“Good inspiration and helped me believe I could do what I set my mind to.”***

5.2 University Experience

Since 2013 the Converge Challenge has received funding from eight Scottish universities. Consultation with one of the university partners suggests that the main benefits for the businesses that participate are the:

- funding to support the early stage development of the company;
- structure provided by the competition;
- skills developed during the training provided; and
- ability to engage with and learn from a network of peers going through a similar process.

For universities the Converge Challenge has helped to:

- support successful spin-out companies;
- generate positive publicity for new spin-out companies;
- enhance the profile of the university's entrepreneurship activity; and
- increase the University's capacity to provide entrepreneurship training.

These benefits are explored further in the case study below.

Case Study 4 – The View from Aberdeen

The University of Aberdeen has been an active participant the Converge Challenge since the early days of the project. The University is now one of the eight Scottish universities that makes a financial contribution to the project and also provides significant in-kind support to the project by participating in the steering group and the “sifting panel” that undertakings a preliminary assessment of the applications received.

To date applicants from the University have won five awards from the Converge Challenge, securing prize money amounting to £58,000 but according to staff at the University, participation is **“not just about the money”**. Rather, one of the most important benefits of participation was believed to be the structure of the competition and the encouragement that this gives participants to focus on developing a business plan.

Another important benefit of participation is the training provided to the businesses short-listed for awards, which staff regard as complementary to the in-house support provided by the University. This is because the training provided through the Converge Challenge is designed to support businesses beyond the initial start-up phase and into the early phases of their development and therefore covers areas that are beyond the remit of in-house provision.

The training provided through Converge Challenge also has informal benefits because it creates the opportunity for young businesses to meet with and learn from other each other. This helps to create a peer network, which can be a valuable source of support to the businesses involved as they move forward.

Participating in the Converge Challenge has generated various benefits for the University of Aberdeen including the opportunity to raise the profile of the University's entrepreneurship activity and publicise the variety of spin-out companies that have emerged from the University in recent years.

According to staff at the University one of the key strengths of the Converge Challenge is that, unlike a lot of other competitions, it isn't sector specific. As one member of staff put it: **“A key strength of the Converge Challenge is that all of the universities have the potential to benefit from the competition. If they have a promising company it doesn't matter what sector it is in, or even if it is a social enterprise, it has the potential to become a winner.”**

Feedback from staff at the University suggests that working with the Converge Challenge team has also been a positive experience. Staff involved with the project reported that the team are **“easy to work with”**, willing to listen to feedback and **“keen to engage in a way that suits the university”**. This approach has enabled universities to develop a real sense of ownership of the project, which is regarded as central to its continued success.

Source: BiGGAR Economics based on interview with the University of Aberdeen

6 ECONOMIC IMPACT

This section quantifies the economic impact attributable to the Converge Challenge in 2016 and the potential economic impact of the Challenge in the future.

6.1 Methodology

The quantifiable impacts measured in this study are reported using two widely accepted measures of economic impact:

- Gross Value Added (GVA) – this measures the monetary contribution that an organisation adds to the economy through its operations; and
- employment – this was measured in terms of total head-count jobs supported.

6.1.1 Gross Direct Effects

The starting point for this analysis was to estimate the total value of economic activity associated with the businesses that have been supported by the Converge Challenge since 2011.

The direct economic impact of an organisation can be measured by taking the turnover it generates and dividing this by the turnover/GVA ratio for the sector in which it operates. Where a company's turnover is not known, GVA can be estimated by applying the GVA/employee ratio for the sector in which the business operates to the total number of staff it employs. Both methods were used in this assessment depending on the information available from each business. In each case the relevant turnover/GVA and GVA/employee ratios were sourced from the ONS Annual Business Survey.⁶

6.1.2 Additionality

When assessing the economic contribution of a project or initiative such as Converge Challenge, best practice dictates that it is important to take account of what might have happened anyway (i.e. the reference case). In this case this means considering the level of growth that might have been achieved by the businesses supported by the Converge Challenge if the project did not exist. This was done using survey responses provided by the businesses involved and is discussed in further detail below.

6.1.3 Multiplier Effects

In addition to the direct economic activity supported, each of the businesses supported by the Converge Challenge will also generate indirect effects elsewhere in the economy. These effects occur as a result of the businesses expenditure on goods and supplies and by the expenditure of the staff employed by the businesses. These effects were captured by applying multipliers produced by the Scottish Government.⁷

⁶ ONS (2016), Annual Business Survey 2015

⁷ Scottish Government (2016), Input-Output Multipliers 2015

6.2 Current Economic Impact

This section quantifies the economic contribution that the businesses supported by the Converge Challenge generated in 2016.

6.2.1 Gross Direct Impact

As part of the survey carried out by BiGGAR Economics, participants in the Converge Challenge were asked to provide information about the employment and turnover that their businesses generated in 2016. Of the 32 respondents who fully completed the survey 24 (75%) reported their turnover in 2016. The direct GVA of these businesses was therefore estimated by applying an appropriate turnover/GVA ratio.

Eight of the companies that responded to this question reported that their turnover was zero in 2016. This reflects the reality that of the 41 companies that responded to the survey 17 were pre-commercial, and 21 were early stage companies. Although some of these businesses may not yet be generating a positive turnover, they will still employ staff and purchase supplies and as such they will generate an economic impact.

In order to estimate the economic impact of these businesses, the average GVA/employee for the relevant industry was applied to the total number of staff employed in each business. This was then adjusted to reflect the total level of funding that each company had received, to ensure that the GVA was not overestimated.

Using this method it was estimated that the businesses that have taken part in Converge Challenge since 2011 generated £9.6 million GVA and supported almost 240 jobs in 2016, of which £5.2 million GVA and more than 180 jobs were in Scotland. This effect is summarised in Table 6.1.

Table 6.1 – Gross Direct Economic Effect

Economic Impact	Scotland	Total
GVA	5.2	9.6
Jobs	184	236

Source: BiGGAR Economics

6.2.1.1 Net Additional Direct Impact

If the Converge Challenge did not exist then it is likely that the businesses supported would not have achieved the level of growth that they have realised and it is possible that some of the businesses may not even exist at all. In order to assess to what extent this is true survey respondents were asked how important the Converge Challenge was to their business. As can be seen in Table 6.2 the majority of businesses that responded to this question (17 out of 31) thought that the Challenge was very important to their business. Due to the high level of importance it was assumed that the Challenge had a major impact on these businesses, and therefore that 50% of the impact generated by these businesses could be attributed to the support that they had received from the Converge Challenge.

A similar method was applied to those who thought it was important, fairly important, etc.. Based on the overall response it was estimated that the

average additionality of the Converge Challenge was 43%, and this ratio was applied to companies that did not respond to the survey, or to this question. The responses provided to this question and the assumptions that were made based on these responses are summarised in Table 6.2.

Table 6.2 – Level of Reported Importance

	Responses	Additionality*
Very Important	17	50%
Important	7	40%
Fairly Important	5	30%
Slightly Important	2	20%
Not at all Important	0	10%
Total/Average	31	43%

Source: Converge Challenge Survey. *BiGGAR Economics Assumption

The additionality assumptions outlined above were then applied to the gross direct impact estimated in section 6.1.1. In this way it was estimated that the direct economic impact attributable to the Converge Challenge in 2016 was £2.2 million GVA and 80 jobs in Scotland. When companies outside of Scotland are included this figure increases to £3.5 million and 95 jobs. This impact is summarised in Table 6.3.

Table 6.3 – Net Direct Economic Effect

	Scotland	Total
GVA	2.2	3.5
Jobs	80	95

Source: BiGGAR Economics

6.2.2 Indirect Impacts

The indirect impacts associated with the support provided through the Converge Challenge were then estimated by applying appropriate multipliers to the net additional direct effect. This process is described below.

6.2.2.1 Supplier Impact

Companies supported by the Challenge would also generate economic impact in the supply chain through their expenditure on goods and services. This was estimated by applying the industry relevant Type 1 GVA and employment multipliers, which capture the supplier effect, to the additional direct impact of each company. As many of the companies employ high levels of staff, but with relatively smaller salaries it was necessary adjust employment multipliers to prevent overestimation of employment impacts.

In this way it was estimated that in 2016 companies that have taken part in the Challenge could generate an additional £0.6 million in the Scottish supply chain, supporting 12 jobs, and £0.8 million GVA and 16 jobs in total.⁸

Table 6.4 – Supplier Effect

	Scotland	Total
GVA	0.6	0.8
Jobs	12	16

Source: BiGGAR Economics

6.2.2.2 Income Impact

The individuals who have taken up the new jobs created within these businesses will spend some of their income within Scotland, which will generate additional economic impacts. This effect, known as the income effect, is captured by taking Type 2 multipliers, which capture income and supplier effects, by Type 1 multipliers, which capture supplier impacts only, and then multiplying the product by the direct GVA. As with the supplier effect the employment multipliers were adjusted to prevent overestimation.

In this way it was estimated that the income effect associated with the Converge Challenge generated an economic impact of £0.6 million and 13 jobs in Scotland, and £1.0 million GVA and 13 jobs in total, in 2016.

Table 6.5 – Income Effect

	Scotland	Total
GVA	0.6	1.0
Jobs	8	13

Source: BiGGAR Economics Calculation

6.2.3 Net Additional Impact

In this way it was estimated that the net additional impact generated by the Converge Challenge (i.e. the impact that can be directly attributed to the project) amounted to £5.3 million GVA and more than 120 jobs. Based on the location of the businesses involved it was estimated that £3.4 million of this GVA and around 100 of these jobs were in Scotland. This impact is summarised in Table 6.6.

⁸ As the multipliers are for Scotland, a relatively small economy, the impacts for total supplier and income impacts are likely to be an underestimate

Table 6.6 – Net Additional Impact

	GVA	Jobs
Scotland		
Direct Effect	2.2	80
Supplier Effect	0.6	12
Income Effect	0.6	8
Total Impact	3.4	101
Total		
Direct Effect	3.5	95
Supplier Effect	0.8	16
Income Effect	1.0	13
Total Impact	5.3	124

Source: BiGGAR Economics

It should be noted that at the time of writing only around three months had elapsed since those who participated in the 2016 Converge Challenge completed the programme and as such would not yet have had a chance to fully implement what they have learned. It is therefore reasonable to expect that over the coming months, as these participants begin to make use of the knowledge and skills they have developed, that the performance of these businesses would increase. For this reason it is reasonable to expect that the economic impact presented above would increase in subsequent years.

6.3 Potential Economic Impact

As part of the survey, respondents were also asked if they expected their business to grow over the next three years. Overall 90% of respondents expect to increase the turnover and employment supported by their businesses. Of those companies that completed the survey, 26 provided figures for how much they expected turnover and employment to increase by.

Previous evaluation experience shows that those responsible for running a business have a systematic tendency to over estimate the extent of positive events. In order to produce a robust estimate of future performance it was therefore important to account for this “optimism bias”.

This was done based on research by the Department for Communities and Local Government, which analysed 75 projects and found that project appraisers had an optimism bias of 40% in estimating potential job

outputs.⁹ On this basis an optimism bias figure of 40% was applied to the turnover and employment projection of the companies that responded.

It was then necessary to estimate the turnover and employment of the businesses that have taken part in the Challenge but did not provide estimates of future growth. This was achieved by considering the funding/turnover and funding/employment ratio (after adjusting for optimism bias) of the companies that took part, and then applying these ratios to the levels of funding (such as Scottish Enterprise or Local Authority funding) secured by each company.

Turnover/GVA ratios for the appropriate sectors were then applied to each company to estimate GVA. The level of employment supported was based on the survey responses provided by each business. In this way it was estimated that the future gross direct impact of the companies supported by the Converge Challenge could increase to £30.6 million GVA and 305 jobs in Scotland, and £35.1 million GVA and 367 jobs in total. This impact is summarised in Table 6.7.

Table 6.7 – Potential Gross Direct Economic Effect

	Scotland	Total
GVA	30.6	35.1
Jobs	305	367

Source: BiGGAR Economics

6.3.1 Net Additional Effect

The potential net additional effect was then estimated by applying the applying the additionality assumptions in Table 6.2 to the gross effect described in Table 6.7. Indirect effects were then captured by applying appropriate multipliers as described above.

In this way it was estimated that in within the next three years the Converge Challenge could be generating an additional £21.8 million GVA/year for the Scottish economy and supporting around 220 Scottish jobs. In total, it could generate £24.6 million and 244 jobs. This impact is summarised in Table 6.8.

⁹ Department for Communities and Local Government (2007), Adjusting for Optimism Bias in Regeneration Projects and Programmes, General Guidance Note.

Table 6.8 – Potential Net Additional Impact

	GVA	Jobs
Scotland		
Direct Effect	13.6	132
Supplier Effect	4.1	47
Income Effect	4.1	37
Total Impact	21.8	216
Total		
Direct Effect	15.5	150
Supplier Effect	4.4	51
Income Effect	4.7	42
Total Impact	24.6	244

Source: BiGGAR Economics Calculation

It should be noted that the figures in Table 6.8 are estimates, and that in order for this level of growth in employment and economic activity to be achieved it would require the companies involved to perform in line with their predictions. If actual performance were to deviate from expectations then the actual impact realised could be higher or lower than estimated above.

7 FUNDING

This chapter summarises the amount of funding secured by participants in the Converge Challenge. It considers two sources of information:

- information provided by the businesses supported in response to the survey undertaken by BiGGAR Economics;
- data collected by the Converge Challenge team.

7.1 Survey Respondents

The businesses that participated in the survey undertaken to support this study were all asked to provide information about the value and source of any additional funding that they had leveraged in since participating in the Converge Challenge. Analysis of the survey results indicates that the businesses that responded secured a total of £40.5 million of funding.

It is important to highlight that one company that is based outside Scotland secured a significant proportion of this funding. The value of funding raised by businesses based in Scotland was £15.0 million. Regardless, these figures are substantial and show that the Converge Challenge is a useful platform for leveraging additional funding. These results are summarised in Table 7.1.

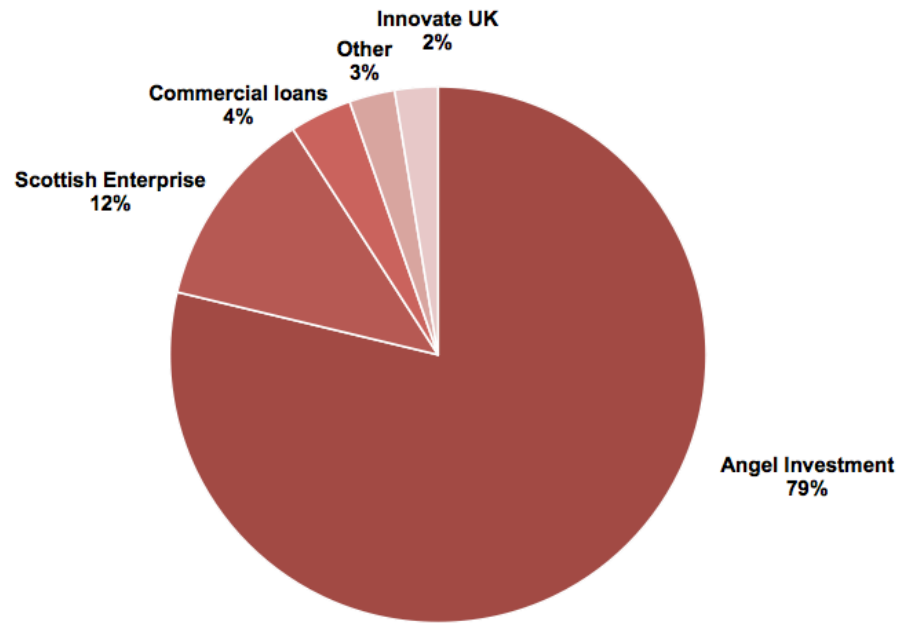
Table 7.1 – Value of Funding

Year	Total	Scotland
2011	26.6	1.1
2012	0.7	0.7
2013	2.5	2.5
2014	5.2	5.2
2015	5.3	5.3
2016	0.2	0.2
Total Funding Secured	40.5	15.0

Source: BiGGAR Economics Survey

Figure 7.1 provides a breakdown of the funding secured by source. This indicates that the majority of funding (79%) was secured through angel investment, followed by Scottish Enterprise (12%) and commercial loans (4%). The other category includes investment from the Scottish Institute for Enterprise, RSE Enterprise Fellowships and Enterprise Campus among others.

Figure 7.1 – Funding by Source



Source: BiGGAR Economics Survey Responses

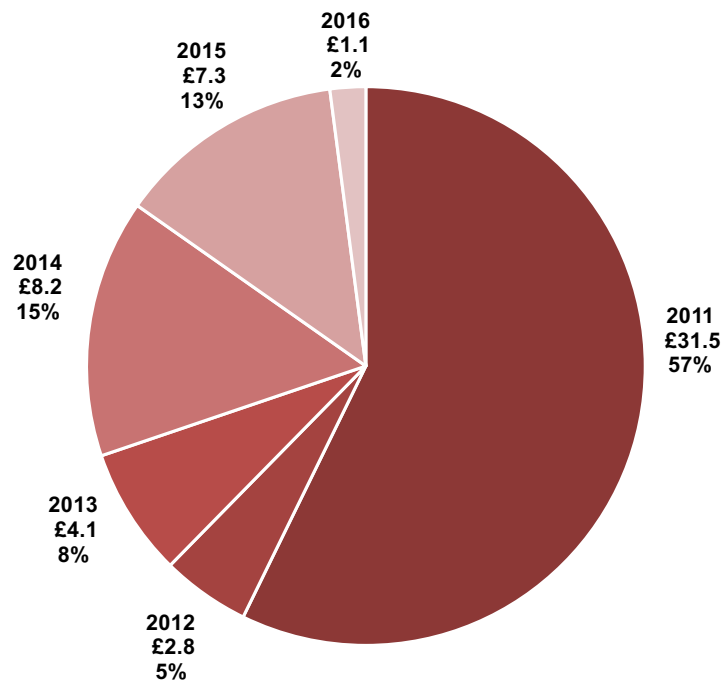
7.2 Total Funding

The Converge Challenge team also gathers data on the value of funding secured by its alumni. This information was used to supplement the survey responses in order to gain a more complete picture of the funding acquired by Converge Challenge participants to date.

Figure 7.2 depicts the total funding secured by Converge Challenge participants by year. Since 2011, companies involved in the Challenge have secured a total of £55.1 million in funding. As can be seen below, 57% of this funding was raised by companies who took part in the competition in 2011. A significant proportion of the funding secured in that year was secured by one company called DroneDeploy, which is currently based in the USA.

The fluctuations in funding secured from year to year are not surprising given that there can be time delays in this type of endeavour due to businesses still developing their products and seeking funding at different stages.

Figure 7.2 – Total Funding Raised by Year of Participation (£m)



Source: Converge Challenge and BiGGAR Economics Survey Responses

Some of the companies supported by the Converge Challenge are not based in Scotland. By excluding the funding secured by these businesses from the total it was possible to estimate that since 2011 Scottish based businesses that have participated in the Converge Challenge have leveraged in an additional £29.7 million of funding. Figure 7.3 provides a breakdown of this by year. It should however be noted that the 2016 Converge Challenge had only completed the Converge Challenge 6 months before the date of writing. It would therefore be reasonable to expect the level of funding secured by these businesses to increase in the future.

Figure 7.3 – Total Funding Raised in Scotland by Year of Participation (£m)



Source: Converge Challenge and BiGGAR Economics Survey Responses

7.3 Added Value of Converge

It is important to acknowledge that at one stage or another most of the businesses supported by the Converge Challenge will also have received support from other agencies and universities. For this reason it would be unreasonable to attribute all of the additional funding leveraged by these businesses entirely to the Converge Challenge.

To assess the added value of the support provided by the Converge Challenge the additionality factors described in Table 6.2 were therefore applied to the value of funding leveraged in by each business. In this way it was estimated that £20.1 million of the £55.1 million total funding that Converge Challenge participants have leveraged could be attributed directly to the Converge Challenge. At the Scottish level it was estimated that £12.5 million of the additional funding leveraged could be attributed directly to the Converge Challenge. These estimates are summarised in Table 7-2.

Table 7-2 – Value of Additional Funding Leveraged - £millions

Funding Leveraged	Scotland	Total
Total funding leveraged	£29.7	£55.1
...of which attributable to Converge Challenge	£12.5	£20.1

Source: BiGGAR Economics

8 CONCLUSIONS

The Converge Challenge was established in 2011 to support the creation of sustainable and profitable new companies. Since then 62 of the businesses supported have been formally incorporated. At the time of writing 53 of these businesses had been active for more than two years, which represents an impressive survival rate of 85%.

Evidence gathered from the businesses supported suggests that overall levels of satisfaction with the services provided by the Converge Challenge team is high. More than three quarters of those who responded to the survey also reported that the project had been either important or very important to establishing and growing their business. Importantly this high level of satisfaction was also reflected amongst the university stakeholders engaged with the project.

8.1 Value for Money

Evidence presented in this report suggests that since 2011 the support provided by the Converge Challenge has enabled Scottish based businesses to leverage additional funding of £12.5 million. Over the same period the Converge Challenge received £0.9 million in cash and in-kind support from Scottish universities. This implies that every £1 funding that university partners have provided to the Converge Challenge to date has enabled the Scottish businesses supported to leverage a further £14.60 in funding.

This report has also demonstrated that the businesses supported by the Converge Challenge generated an additional £3.4 million GVA for the Scottish economy in 2016 and supported around 100 additional Scottish jobs as a result of the support they received. Since 2013 the SFC has provided around £0.8 million funding for the Converge Challenge project (see section 3.1.2 for details). This implies that each £1 of SFC funding invested to date generated £4.27 GVA for the Scottish economy in 2016 alone. It is however important to note that this is an annual impact that is likely to increase in the future as the number of business supported by the project increases and the businesses supported by the project to date continue to grow.

These ratios are summarised in the middle column of Table 8-1. The last column of the table presents ratios for the project as a whole, including businesses based outside Scotland. Based on businesses high expectations about their future performance it would be reasonable to expect both these ratios to increase in the future.

Table 8-1 – Value for Money Ratios

Ratio	Scotland	Total
Funding leveraged/£1 university investment	£14.60	£23.53
GVA generated in 2016/£1 SFC funding	£4.27	£6.63

Source: BiGGAR Economics

The ratios presented above are impressive and for this reason it is particularly important to emphasise that the Converge Challenge does not

operate within a vacuum. The success of the project relies heavily on the input provided by business support staff from the individual universities that support the project, who help to support the participating businesses before, during and after the competition process. Without this support it is highly likely that the benefits associated with the project report would be significantly lower than described in this report.