Effects Of Choice Of Country On The Success Of Accelerator-Based Technology Startups

A Comparison Of Ireland And Spain

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Declaration

I declare that the work described in this dissertation is, except where otherwise stated, entirely my own work, and has not been submitted as an exercise for a degree at this or any other university. I further declare that this research has been carried out in full compliance with the ethical research requirements of the School of Computer Science and Statistics.

Signed: _____

Amado Hidalgo

September 2014

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I agree that the School of Computer Science and Statistics, Trinity College may lend or copy this dissertation upon request.

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September 2014

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Abstract

In this dissertation, the startup ecosystems in the Republic of Ireland and Spain are investigated, focusing on startups in the Internet and mobile applications sectors. The current compositions of the support networks available in both countries, specifically concentrating on accelerator and incubator programmes, are examined and the question of what makes a startup successful is evaluated.

These topics will be evaluated in terms of the following research questions:

- What programmes exist in Ireland and Spain to support early-stage startups?
- Is the country a key factor in the success of early-stage startup companies?

Why is this important? Ireland and Spain have suffered an economic recession in recent years. Their economies and wealth creation have in the recent past been dependent on somewhat artificial factors such as property transactions and speculation. Unemployment, especially youth and long-term, is a tremendous problem in both countries. These countries need to explore sustainable means of wealth creation to fuel their domestic economies. New Technology-Based Firms (NTBFs) "*provide sustainable secure, high-quality and highly-skilled employment opportunities*" (Löfsten & Lindelöf, 2005). As a consequence, it is important the formation of new companies in technology sectors is encouraged.

A number of studies investigating this subject and success factors have been found, but most of the literature refers to firms based in the United States or the United Kingdom. Some EU-wide high-level comparisons exist but nothing has been found specifically for Ireland or Spain.

In this study, a number of semi-structured interviews have been conducted with founders of startups based in Ireland or in Spain, and with accelerator and incubator programme managers, to paint a picture of the current startup ecosystems in both countries as well as to examine what level of support is being made available and how it is being utilised by startups.

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1   INTRODUCTION

1.1   Context and Background

Entrepreneurship and the creation of new enterprises are one of the "*most important drivers of a country's economic development and growth*" (Kirwan, van der Sijde & Groen, 2006, p.173). In particular startups and new technology based firms (NTBFs) are linked to an increased weight in a country's wealth and job creation (Kirchhoff, 1994) and its preparedness to take advantage of opportunities in innovation and technical progress.

Entrepreneurs require strategic capital, economic capital, cultural or human capital, and social capital, for the entrepreneurial process to be "*sustainable over time*" (Kirwan, van der Sijde & Groen, 2006, p.175). But founders do not always provide sufficient resources in all those four areas. This study aims to find if the support provided by accelerator, incubator or other startup support mechanisms can bridge that gap and fulfil the entrepreneurs' needs to successfully develop the firm from the initial idea stage through the market research and evaluation into the exploitation of the opportunity into a viable market offering, and beyond.

Ireland and Spain share a number of factors and operating environments but also differ in several crucial areas. Both countries have suffered a deep economic recession in recent years. Their economies and wealth creation have been overly dependent on somewhat artificial factors. Unemployment, especially youth and long-term, is a grave problem in both countries. Sustainable means of wealth creation to propel their economies must be evaluated.

Small and medium enterprises (SME's) typically create the largest percentage of domestic jobs. New technology-based firms (NTBFs) provide sustainable secure, high-quality and highly-skilled employment opportunities (Kiederich & Kraus, 2009; Löfsten & Lindelöf, 2005). As a consequence, it is important these countries encourage the formation of new companies in technology sectors.

Fourteen seed accelerator organisations in Ireland and in Spain were approached to be included in this research. Eight declined to comment or did not respond. In order to incorporate the point of view of the founders who participated in acceleration programmes, nine founders of startup companies in Ireland and Spain were approached. Semi-structured open-ended interviews with those nine startup founders and with the six

programme managers or senior staff at the accelerator and incubator organisations were conducted. These interviews are the source of the primary data in this research.

1.2   Research Questions

The topic of this study centres on the startup ecosystems in Ireland and Spain. The effect the participation of founders of early-stage startup companies in support programmes such as incubators and accelerators has on their success in attracting funding and ultimately in their survival rates is explored, and the differences between both countries are considered in this context.

These topics will be evaluated in terms of the following research questions:

- What programmes exist in Ireland and Spain to support early-stage startups?
- Is the country a key factor in the success of early-stage startup companies?

1.3   Research Interest and Relevance

Ireland and Spain have suffered and are still suffering an economic recession. Their economies and wealth creation structures have in the recent past been overly dependent on somewhat artificial factors such as property transactions and speculation. Unemployment is a tremendous problem in both countries, especially youth and long-term unemployment. Manufacturing and construction jobs are scarce and will not likely return in the numbers seen during the boom. These countries need to explore more sustainable means of wealth creation to fuel their domestic economies. New Technology-Based Firms "*provide sustainable secure, high-quality and highly-skilled employment opportunities*" (Löfsten & Lindelöf, 2005). As a consequence, it is important these countries encourage the formation of new companies in technology sectors. A key component is the use by startups of supporting mechanisms such as business incubators and seed accelerators, programmes which fund and assist groups (cohorts) of startup companies to increase the efficiency of the investment.

This research aims to investigate what influences the success of tech startups so that efforts can be finely tuned and better targeted. Does location (the country itself) influence positively or negatively in their success and survival?

A number of studies investigating success factors were found during the literature review, but most of the literature refers to firms based in the United States or the United Kingdom. Some EU-wide high-level comparisons exist (Beraza Garmendia & Rodriguez Castellanos, 2011; Kirwan, van der Sijde & Groen, 2006; Guillén, 2010; Guillén & Suárez,

2001; Görg, Strobl, Ruane, *et al.*, 2000; Salido, Sabás & Freixas, 2013) but no study has been found specifically targeting the ecosystems in Ireland and Spain.

1.4   The Scope of the Study

This study targets seed accelerator and incubator organisations in the Republic of Ireland and in Spain as well as founders of New Technology-Based Firm (NTBF) in Ireland and in Spain. In particular, the research is focused on startups in the Internet and mobile applications sectors.

A total of fifteen semi-structured interviews were conducted. Fourteen seed accelerator / incubator organisations in Ireland and Spain were approached to be included in this research. Eight declined to comment or did not respond. Six accelerator or incubator programme managers were interviewed. Of these, two are based in Ireland and four in Spain. In addition, nine startup founders were interviewed, four of them have their business based in Ireland, four have it in Spain and in one further case, the Spanish CEO is based in Ireland but his company started in Spain and the co-founder and bulk of the team remain in Spain. The organisations and individuals were selected through opportunistic sampling, word of mouth, personal connections of the researcher and the supervisor and social networks (LinkedIn groups and Twitter).

The research was undertaken between March and August of 2014, with interviews mainly taking place throughout the months of June and July. The sample of accelerators / incubators included in the study is small, due to the time constraints involved, but it includes some of the longest established organisations present in both countries. While the potential sampling universe of startups is large (thousands of new firms are established every year), the inclusion of the startup business founders interviewed for this study allow us explore the opinions and experiences of actors engaged in the startup ecosystem in both countries.

1.5   Chapter Structure

This dissertation is composed of five chapters. An overview of the chapters is presented here.

Chapter 2: Literature Review

This chapter summarises the findings of the literature review. The focus of the literature review was sourced by exploring the most relevant search terms based on the research

questions (i.e. accelerators, startups, founders, entrepreneurship, new technology based firms, NTBF, success factors, etc). Formal and peer-reviewed sources were consulted for the initial grounding of the research as well as to explore theories and previous research in this area. However, a significant percentage of the sources consulted were online (weblogs, EU and industry reports, newspaper articles, etc) and of recent publication, as the startup scene is currently experiencing a blossoming period in both countries and formal research work is not widely available.

Chapter 3: Methodology and Fieldwork

The third chapter exposes the reasons for the selection of the research method, namely the analysis of existing information (secondary data) validated by primary data in the form of targeted semi-structured interviews.

A review of the ethical implications is presented and the measures taken to ensure the required ethical standards were retained.

Chapter 4: Findings and Analysis

This chapter presents an analysis of the responses to the interviews and summarises the main themes exposed in them.

A comparison of the responses from accelerator programme managers and founders to similar questions is presented, in order to contrast how the value offered by accelerators and incubators is actually perceived by the firms that use their services.

Chapter 5: Conclusions and Future Research

The final chapter describes the conclusions found in the analysis of the secondary and primary data obtained in the study. A number of potential topics to expand the research are also included in this chapter.

2 LITERATURE REVIEW

2.1 Introduction

Entrepreneurship and the creation of new enterprises are one of the "*most important drivers of a country's economic development and growth*" (Kirwan, van der Sijde & Groen, 2006, p.173). In particular startups and new technology based firms (NTBFs) are linked to an increased weight in a country's wealth and job creation (Kirchhoff, 1994) and its preparedness to take advantage of opportunities in innovation and technical progress.

Entrepreneurship is defined (Shane & Venkataraman, 2000; Kirwan, van der Sijde & Groen, 2006, p.175) as the "*process in which actors interact in such a way that opportunities are recognised, preparatory steps are taken in order to exploit the recognised opportunity, and, subsequently value is created*".

(Ge, 2003) quoting (Sahlman, 1990, p.479) describes a startup company as one "*that is at very early stage of its development, typically less than one year old. The company may use venture capital investment for product development, prototype testing and test marketing. This stage involves further study of market, bringing together a management team and refining the business plan*". (Little, 1977) defines new technology-based firms (NTBFs) as "*independent ventures less than 25 years old that supply a product or service based on the exploitation of an invention or technological innovation*" (Hogan & Hutson, 2004).

Throughout this dissertation, the terms "startup," "high technology small firm" (HTSM) and "new technology based firm" (NTBF) have the same meaning and are used interchangeably.

The entrepreneurial process can be broken down in three stages (Van der Veen & Wakkee, 2004). The first stage is opportunity recognition and developing ideas into an actual business opportunity. The second stage is assessing the needs in the market and matching those with the resources available to the entrepreneurs and their networks, evolving the idea and business opportunity into a proper business plan. The third stage is exploiting the opportunity to create value by providing a product or service that the market can buy in.

Kirwan, van der Sijde & Groen argue that entrepreneurs require sufficient amounts of four types of capital, namely *strategic* capital, *economic* capital, *cultural or human* capital, and *social network* capital, for the entrepreneurial process to be "*sustainable over time*" (2006,

p.175). They assessed those needs in terms of five functional areas: research and development; production and operation; market development and sales; organisation and governance; finance and administration, finding that "*needs in strategic, economic and cultural capital were well reported across the five functional areas, with social needs appearing to be underreported*" (2006, p.184). They found that the startup founders did not provide sufficient resources in all the four capitals, suggesting the initial capital contributions are a base to *attract the necessary capitals* to establish the venture (2006, p.184).

This study aims to find if the support provided by accelerator, incubator or other startup support mechanisms can bridge that gap and fulfil the entrepreneurs' needs of capital to successfully develop the firm from the initial idea stage through the market research and evaluation into the exploitation of the opportunity into a viable market offering, and beyond.

2.2   Taxonomy of Startup Support Programmes

There are a number of mechanisms that aim to assist newly-founded high tech businesses. The assistance provided is usually a combination of several initiatives, such as defining business plans, building on from an initial idea or prototype to a minimum viable product (MVP) and beyond, obtaining initial funding and follow-on capital, connecting with investors, providing a physical base or location, mentoring and training on business, product, legal and other aspects of running a business, and other ancillary services, etc.

The actual services offered by the different programmes are based on their business model, which provide a way of broadly classifying such programmes:

Seed Accelerator

The literature (Cohen, 2013; Christiansen, 2009; Salido, Sabás & Freixas, 2013; Miller & Bound, 2011) and others) coincide in defining Accelerators as time-limited programmes that have a competitive application process open to all, offer some level of initial funding to startups in exchange for a small stake in the company, intense mentoring and education, networking opportunities with other startups, investors and advisors and are generally organised in batches (cohorts) of startups starting and finishing the programme at the same time. In most cases, the programmes end with a "Demo Day" where the founders pitch their product and business to a group of potential investors. Most

accelerator programmes include office space, although several online programmes are beginning to appear.

Business Incubator

While several definitions of Incubators are found in the literature (NBIA, 2009; Richards, 2002; Cohen, 2013; Salido, Sabás & Freixas, 2013; Miller & Bound, 2011; Moraru & Rusei, 2012), they tend to coincide in defining Business Incubators as programmes that offer physical office space and services support, some mentoring and training, usually in exchange for rent fees from the startup. Many of these incubators in Europe are linked to universities, business schools or research centres. Their startup companies tend to be spinouts from these institutions created to commercialise their intellectual property.

Figures from the National Business Incubation Association (NBIA, 2009) indicate 93 percent of US incubators are not-for-profit and about one third are connected to universities or higher education institutions.

Business Angel

Business angels are "*individual investors, or groups of individual investors*" (Cohen, 2013, p.20) "*who have available financial means and are ready to invest in entrepreneurship ideas*" (Ramadani, 2009, p.249). They tend to invest in the early stages of the business and get actively involved as advisors or even as members of the board. They usually invest in local businesses and within their own area of professional expertise. Angels sometimes organise themselves in business angel networks, syndicates or academies (San José, Roure & Aernoudt, 2005) to pool resources or gain a better understanding of the investment process or improve their investment skills.

Company Builder

Company or Venture builders are programmes "*where new business opportunities are sourced from within, usually stemming from the company builder founder's expertise in an area or sector.*" (Salido, Sabás & Freixas, 2013, p.9). They usually provide several elements such as technology and business assistance, capital, business models and have almost full ownership of the startup (Rocket Internet, 2013).

Science and Technology Park

The Association of University Research Parks (AURP) defines a university research park as a "*property-based venture, which master plans property designed for research and*

commercialization, creates partnerships with universities and research institutions, encourages the growth of new companies, translates technology and drives technology-led economic development" (AURP, 2014). The International Association of Science Parks and Areas of Innovation (IASP) expands this definition to focus on the "*flow of knowledge and technology amongst universities, R&D institutions, companies and markets"* (IASP, 2014), facilitating the creation of startup companies through incubation and spin-offs.

Table 2-1 below summarises the key differences between Incubators, Investors, and Accelerators (Cohen, 2013).

**Table 2-1 - Key Differences between Incubators, Investors, and Accelerators.
Source: Cohen, 2013**

	Incubators	**Angel Investors**	**Accelerators**
Duration	1 to 5 years	Ongoing	3 months
Cohorts	No	No	Yes
Business Model	Rent; non-profit	Investment	Investment (can be also non-profit)
Selection	Non-competitive	Competitive, ongoing	Competitive, cyclical
Venture Stage	Early, or late	Early	Early
Education	Ad hoc, human resources, legal, etc	None	Seminars
Mentorship	Minimal, tactical	As needed, by investor	Intense, by self and others
Venture Location	On site	Off site	On site

Table 2-2 below describes the main features across different startup growth programmes (Salido, Sabás & Freixas, 2013, p.9)

**Table 2-2 - Main features across different startup growth programmes. Source:
Salido, Sabás and Freixas, 2013, p.9**

Types	Batches/ Cohorts	Equity Taken	Idea Sourcing	Physical Space	Mentorship	Investor Meetings	Funding	Time Limit	Average Stay	Geo-graphical Footprint	Total Identified in 10 Countries
Incubator	No	No	External	Yes	Yes	Sometimes	No	No	1-2 years	All over Europe	136
Accelerator	Yes	Minority Stake	External	Sometimes	Yes	Yes	Yes	Yes	3-12 months	Main city hubs	111
Company Builder	No	Majority Stake	Internal	Yes	Yes	Yes	Yes	No	2-3 years	Berlin, Dublin, London	13

Source: Telefónica Global Affairs and New Ventures 2013

2.2.1   Accelerators and Incubators

(Isabelle, 2013) identifies five key factors entrepreneurs should consider when selecting a business incubator or an accelerator, namely the current stage of the new venture; a fit between the entrepreneur's needs and incubator's mission, purpose, and sector focus; the selection and graduation policies; the actual nature and extent of services; and the available network of partners

An incubator is generally more appropriate for very-early-stage ventures. Selection criteria of many accelerators, generally exclude very-early-stage ventures. Success of the startups and subsequently of the incubator/accelerators is higher when their mission and goals are aligned and meet the needs of the region. Incubators are most successful, and hence so are their client firms, when their mission and goals correspond with the specific needs of the region's entrepreneurs and the incubators' sponsoring organizations. It is therefore imperative for entrepreneurs to have a good understanding of the mission and goals of any incubator or accelerator under consideration. The author adds (2013, p.13) that an "*important distinction between incubators and accelerators appears to be their legal status. Incubators are typically not-for-profit organizations, whereas most accelerators are for-profit organizations designed to bring a return on investment to their sponsors by providing fast-test validation of business ideas [...] for-profit organizations are more likely to take equity in client firms*".

Wright and Robbie from the University of Nottingham, UK, after extensive review of the available literature on venture capitalists and private equity investments and analysis of transactions and startup valuations concluded that (Wright & Robbie, 1998, p.561) research on the performance of venture capital investments and of the venture capitalists themselves is scarce.

Fishback et al. draw a parallel between the "*American Idol*" television series and the accelerator model where participants are chosen in a contest-based model, and they are groomed to become "*the next wave of potentially high growth start-ups*" (Fishback, Gulbranson, Litan, *et al.*, 2007, p.7). Through deep involvement of the accelerator team in mentoring, intensive bootcamp-style training, legal and commercial advice, involvement in business and product development, etc, "*the accelerator becomes the "new company" throughout seed-stage development*" (2007, p.5).

There is evidence in the literature that ventures associated with business incubators succeed at a greater rate than non-incubated ventures, however there is also evidence to the contrary (Scillitoe & Chakrabarti, 2010).

Finding reliable data is not simple. While some attempts of benchmarking accelerator programmes have been published recently (Salido, Sabás & Freixas, 2013; Christiansen, 2014b), those authors acknowledge the lack of completeness of their findings and prompt calls to policymakers to make comparable data more widely available.

Löfsten (2010) studied the effects on the performance of 131 Swedish NTBF's located in incubators. While those startups appeared to have benefited from networking opportunities through those incubators, he found lower correlation between the firms' performance (based on sales and employment) and those networks than between their performance and the level of financing based on bank loans.

While few accelerators publish financial data, in its tenth anniversary, Ireland's NovaUCD (UCD Office of the Vice-President for Innovation, 2013) completed a 10-year economic impact study of their activities. The 126 companies incubated in those ten years raised €91 million in equity funding, have a combined annual turnover in excess of €70 million, directly employ over 600 individuals and overall support over 1,300 jobs. The economic value of those companies to the Irish economy is estimated at €36.6 million. The commercialisation income to the accelerator itself is over €5 million. The knowledge output of those companies is also impressive; 445 inventions have been disclosed, 318 patents filed and 81 license agreements concluded.

In its 2012 Annual Report and Accounts report, Enterprise Ireland (2013, p.31) indicates there are "*22 Business Incubation Centres on higher education campuses throughout Ireland, hosting some 320 companies that employ more than 1,400 people*". In 2012, the contributions from Enterprise Ireland to Incubation Centres amounted to a total of €18m, invested in 30 deals.

Enterprise Ireland's Internet Growth Acceleration Programme (iGAP) was set to "*provide intensive management development to those leading high-potential companies in the internet sector*" (2013, p.31). In 2012, twenty-five early-stage internet-based companies participated in the iGAP. Enterprise Ireland define high-potential startups (HPSU's) as "*ambitious young, internationally focused businesses with the potential to achieve annual sales of over €1m and employ 10 or more people within three to four years.*" (2013, p.41). Enterprise Ireland supported a total of 97 high-potential start-up (HPSU) companies.

Replicating their model internationally is one way that successful accelerators can expand their reach. Professor Peter Clinch, UCD Vice-President for Innovation hints at this possibility when he declares *"one day soon, we may see the development of NovaUCD hubs outside of Ireland."* (UCD Office of the Vice-President for Innovation, 2013, p.8).

In the same report, Frank Ryan, CEO, Enterprise Ireland quoted their own evaluation of Irish incubators and accelerators, indicating that "*90 percent of respondent companies felt that being located in a campus incubator contributed positively to the growth of the company*" (2013, p.9). Networking with other alumni companies was viewed as highly valuable by 45 percent of respondents, and "*26 percent had actually done business or formed business partnerships with companies that were in their incubation network.*"

Enterprise Ireland (EI) is the Irish government organisation responsible for the development and growth of Irish enterprises in world markets (Enterprise Ireland, 2013). Enterprise Ireland define a High Potential Start-Ups (HPSUs) as a *start-up venture that is introducing a new or innovative product or service to international markets, is involved in manufacturing or internationally traded services, capable of creating 10 jobs in Ireland and realising €1 million in sales within three to four years of starting up, led by an experienced management team, headquartered and controlled in Ireland and less than six years old* (Enterprise Ireland, 2014a).

As part of Enterprise Ireland's support for High Potential Start-Ups (HPSUs), the *New Frontiers* entrepreneur development programme funds 150 companies each year. The programme was founded in 2012, consists of three phases and is imparted by 14 incubation centres in higher education institutions in Ireland. Figure 2.1 shows the current locations of the New Frontiers incubation centres in Ireland.
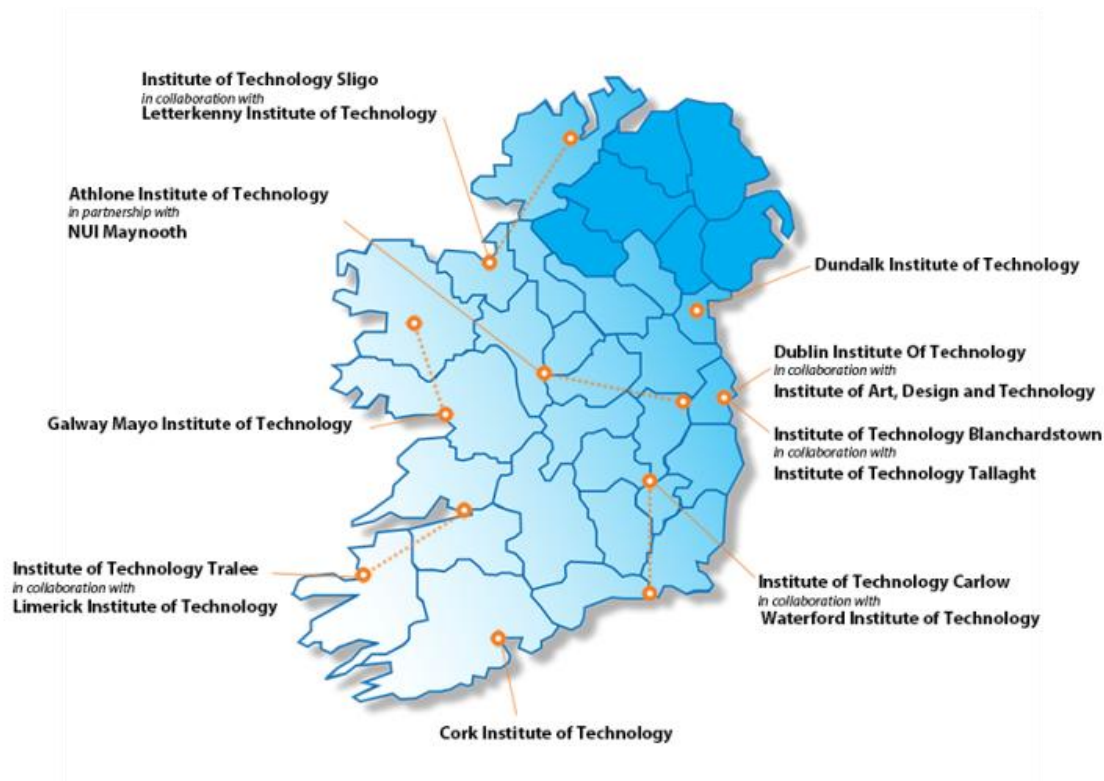
Figure 2.1 - New Frontiers incubation centres. Source: Enterprise Ireland, 2014b

The New Frontiers programme phases are Phase 1 - Validate, Phase 2 - Plan and Phase 3 - Develop. (Enterprise Ireland, 2014b)

Phase 1 - Validate is delivered over an 8-10 week period on a part-time basis, allowing the entrepreneurs to continue their current jobs. General start-up training and workshops are designed to help the entrepreneurs validate the potential of the business idea, network with peers and fine tune the business model. It also serves as a springboard to access the next phase.

Phase 2 - Plan is a 6-month full-time intensive incubation programme, based on location in one of the country's Institutes of Technology, following a competitive selection process. The aim of Phase 2 is to develop an investor-ready business plan, *identify potential customers, sales channels and funding options.* In addition to physical space in the campuses facilities, comprehensive mentoring and business advice, participant companies receive €15,000 tax-free funding from Enterprise Ireland, as well as web hosting and support from Amazon.com and access to Microsoft's platform for software

developers. Enterprise Ireland puts the value of these at over €100,000. No equity is taken in the business.

Phase 3 - Develop includes incubation facilities for a further 2-3 month period as well as guidance and introductions to government and private investment opportunities. No additional direct funding from Enterprise Ireland is provided. The aim of Phase 2 is to assist HPSU in delivering on the business plan.

In line with Enterprise Ireland's goals of supporting sustainable economic growth and job creation in Ireland, one of the requirements to participate in the New Frontiers programme is the founders' intention to achieve significant turnover (over €0.5 m) and create more than five jobs in three to five years.

The most recent Enterprise Ireland's Annual Report and Accounts for 2012 (Enterprise Ireland, 2013) indicate a total of 97 HPSUs were supported in 2012 receiving €22 million in funding. In addition, 24 startups received follow-on investments of €6.46 million. A further 60 early stage projects received a total of €3.1 million funding under the Competitive Start scheme.

As example, one of the Enterprise Ireland's New Frontiers centre is The Rubicon Centre, associated with the Cork Institute of Technology, founded in 2006 in its present form. The Cork Institute of Technology (CIT) has run entrepreneurship programmes since 1998, under the Graduate Enterprise Programme and later the Genesis Programme. Around 250 companies in total have graduated from CIT's programmes, creating over 2,500 jobs and receiving over €100 million in investment (Rubicon Centre, 2013).

The Rubicon runs two *New Frontiers* Phase 1 and one Phase 2 programmes every year. Phase 1 typically includes 15 participant companies while Phase 2 includes approximately 12 participants. According to the report, between 25 to 30 percent of those participating in Phase 1 go on to Enterprise Ireland and about 70 percent into Enterprise Boards. The survival rate of companies who pass through the Rubicon's programmes is estimated at over 70 percent. While not all participants are in the ICT, Internet or Software sectors, of the four organizations that have received further investment, one was in the food business and three in software, indicating a stronger preference by investors for this sector.

The Dublin Institute of Technology (DIT) incubator *Hothouse* runs two *New Frontiers* cohorts every year. DIT has completed over 80 licences and launched over 20 companies from their research labs. According to the Sunday Business Post (Ryan, 2014), these

companies have *created 1,300 jobs in over 200 companies, which together have attracted €115 million in equity investment*.

2.3 Parallels and Differences between Ireland and Spain

Ireland and Spain share a number of factors and operating environments. Both are members of the European Union with a relatively similar recent history (civil war in the early part of the 20th century followed by a period of inward-looking and an eventual transition to an open-market economy in the second half of the 20th century). Both countries have experienced a large flux of emigration. More recently, they have been involved in a property-fuelled bubble and subsequent crash, a banking crisis and suffer high unemployment.

However they differ in several crucial areas, such as geographical surface, population size, language, culture, legal systems, bureaucracy, and political system to name a few.

Ireland and Spain have suffered and to an extent are still suffering a deep economic recession. Their economies and wealth creation have been overly dependent on somewhat artificial factors such as property transactions and speculation. Unemployment is a tremendous problem in both countries, especially youth and long-term unemployment. Manufacturing and construction jobs are scarce and will not likely return in the numbers seen during the boom. As such, these countries need to explore more sustainable means of wealth creation to fuel their domestic economies. It is widely accepted that small and medium enterprises (SME's) create the largest percentage of domestic jobs. The Services sector is considered to be among the few that will experience growth in job creation, with generally highly skilled and better paid employees than the more traditional sectors such as agriculture and farming, tourism or manufacturing. New technology-based firms (NTBFs) provide sustainable secure, high-quality and highly-skilled employment opportunities (Kiederich & Kraus, 2009; Löfsten & Lindelöf, 2005). As a consequence, it is important these countries encourage the formation of new companies in technology sectors.

### 2.3.1 Macro-economic figures

Spain's population (46.2 million) is over ten times that of Ireland (4.5 million). Spain's total area is 505,370 sq km, while Ireland's is 70,273 sq km. The overall population density in Spain is 94 persons per sq km. Ireland's is 68 per sq km.

The major Spanish cities are Madrid with 6.5 million inhabitants, Barcelona 5.5 million and Valencia 0.8 million. The three largest Irish cities (including suburbs) are Dublin 1.1 million inhabitants, Cork just under 200,000 and Limerick just under 100,000, according to the 2011 Census (Central Statistics Office & Northern Ireland Statistics & Research Agency, 2014).

Eurostat figures from May 2014 show a third (33.6 percent) of the population in Ireland are under the age of 24, in contrast with a quarter (25.1 percent) in Spain. Spanish population is ageing. This is reflected in the median age of 41.6 years in contrast with 35.7 years in Ireland. Spain's population growth rate is estimated to be just 0.81 percent in 2014, with a birth rate of 9.88 births / 1,000 population estimated for this year. In contrast, Ireland's population growth rate in 2014 is estimated to be 1.2 percent and its birth rate is 15.18 births / 1,000 population. Fertility rate in Spain is 1.48 children born per woman, while Ireland's is 2 children born/woman. Over 55's in Ireland account for 22 percent of the population, while in Spain they account for almost 30 percent.

Whereas there has been a reduction in education expenditure in both countries since the beginning of the recession, 2010 data included in the World Factbook (Central Intelligence Agency, 2013) show Ireland spent 6.4 percent of GDP compared with around 5 percent in Spain.

Despite both countries having suffered from the recession, unemployment in Ireland is significantly lower than in Spain and according to figures from the IMF Economic Outlook April 2014 (International Monetary Fund, 2014), it is expected to remain so in the coming years (see Fig 2.1). Worryingly, youth unemployment rate (ages 15-24) in Spain is over 53 percent while in Ireland is just over 23 percent. Long term unemployment rate in Spain is almost double (13.6 percent) than in Ireland (7.4 percent).

Unemployment (% of labour force)
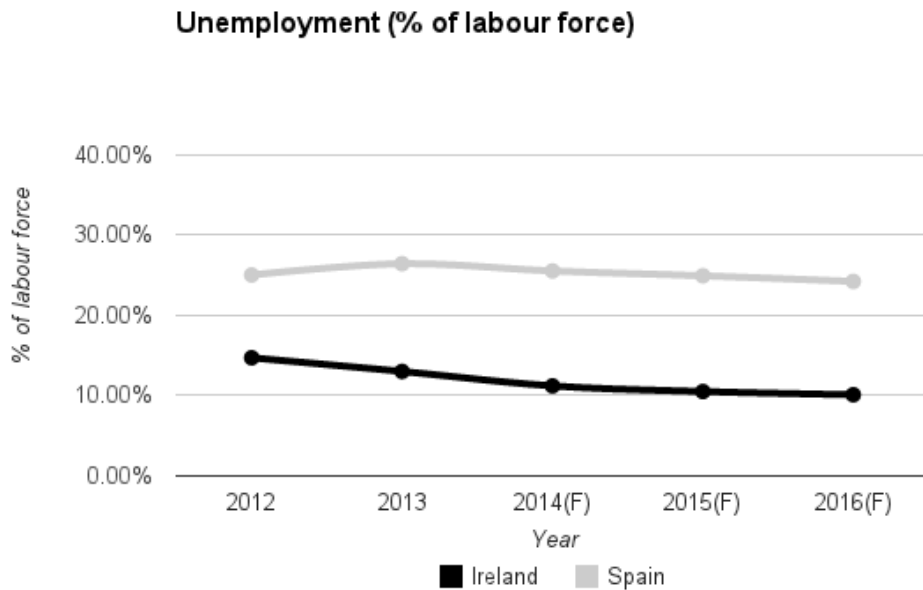
Figure 2.2 - Unemployment (as a percentage of labour force). Source: IMF Economic Outlook April 2014

Spain's economy is much larger than Ireland's; the gross domestic product (GDP) in 2013 was US$190.4 billion in Ireland compared with US$1.389 trillion in Spain. The GDP per capita paints a different picture, with Ireland at US$41,300 and Spain at just US$30,100. The IMF Economic Outlook April 2014 forecasts a larger increase in the gross domestic product (GDP) in Ireland (2.5 percent in 2015) than in Spain (1.0 percent in 2015).

Exports remain the primary engine for Ireland's growth (Fedec & Sousa, 2014). Ireland's total exports for 2013 were valued at €185bn. The main exporting sectors are pharmaceuticals and chemicals, computer services, business services, financial services and insurance, medical devices and food and beverages (IDA Ireland, 2014).

Ireland main imports are electrical machinery and components (16 percent of total imports), fuel (15 percent), motor vehicles (10 percent), food (10 percent) and medical and pharmaceutical products (9 percent). The European Union accounts for 60 percent of total imports.

Spanish GDP contracted by 3.7 percent in 2009, ending a 16-year growth trend, and continued contracting through most of 2013. Economic growth resumed in late 2013, albeit only modestly, as credit contraction in the private sector, fiscal austerity, and high

unemployment continued to weigh on domestic consumption and investment (Forbes, 2013).

The main sectors of Spanish economy are tourism, automobile and energy. Spain is a world leader in renewable energies, becoming the first country in the world to utilise wind power as its main source of energy fulfilling 20.9 percent of the country's total demand in 2013, ahead of nuclear, hydroelectric power and fossil fuels (Asociación Empresarial Eólica (AEE), 2014).

Figures from the 2013 annual report from the Banco de España show Spain's exports amounted to US$458 billion in 2013, increasing by 4.2 percent from the previous year. Spain primarily exports manufactured products, with semi-finished goods, ships, cars, pharmaceuticals and electronic devices accounting for over 50 percent of Spain total exports. Spain is also the world's third largest exporter of wine and fruits and vegetables (Linde, 2014).

Spain decreased its imports in 2013 down to US$431 billion in 2013 due to the slowdown of internal consumption. Its main imports are fuel (19 percent of total imports), food (7 percent), machinery (6 percent) and motor cars (4 percent). The European Union accounts for 60 percent of Spain's imports (Fedec & Sousa, 2014).

2.3.2 Startup costs and ease of doing business

According to the World Development Indicators from the World Databank (World Bank, 2013), in 2013 the cost of business start-up procedures was 0.3 percent of GNI per capita in Ireland compared with 4.7 percent in Spain.

In December 2013, Forbes magazine ranked Ireland as the best country in the world for doing business, citing the educated workforce, the 12.5 percent corporate tax rate, labour costs and the language as main factors for continuing to attract foreign direct investment. Forbes grades 145 nations on 11 different factors: property rights, innovation, taxes, technology, corruption, freedom (personal, trade and monetary), red tape, investor protection and stock market performance (Badenhausen, 2013). Spain ranked number 33 in the Forbes list. Spain's headline corporation tax rate is 30 percent.

A report by the American Chamber of Commerce Ireland shows that U.S. firms alone invested US$129.5 billion in Ireland between 2008 and 2012, becoming the fourth largest recipient of U.S. foreign direct investment (Quinlan, 2013).

In the ease of doing business index (World Bank, 2013), Ireland ranked number 15 (out of 189 economies analysed and with 1 being the most business-friendly regulations) while Spain ranked 52. The pole position was taken by Singapore closely followed by New Zealand. The disparity is also reflected in two other figures, namely time and paperwork. The number of days on average required to start a business is 10 in Ireland and 23 in Spain. Ireland requires an average of four (4) procedures to register a business, while Spain requires ten (10).

A complementary indicator introduced by the World Bank is the *Distance to Frontier*, which "*benchmarks economies to the frontier in regulatory practice, measuring the absolute distance to the best performance on each indicator*" (2013, p.155). The distance to frontier for starting a business in Ireland in 2014 is 92.54 percent. In contrast, Spain's distance to frontier is 77.79 percent. This score means Spain was over 22 percentage points away from the top scoring country (Singapore).

In March 2014, Ireland's Minister for Justice, Equality and Defence, Alan Shatter TD, announced several changes to the Start-up Entrepreneur Programme (STEP), to facilitate non EEA "*migrant entrepreneurs and investors who, in return for permission to reside in the State, are prepared to invest here for the purpose of saving or creating jobs.*" (Irish Naturalisation and immigration Service, 2014). Some of these changes included a reduction of the required minimum investment from €75,000 to €50,000. In addition, a new 12-month immigration permission to complete the application to STEP was introduced.

Investors and their immediate family members will be allowed enter the State and to remain in Ireland typically for a period of 5 years. Investments in the range from €500,000 to €2 million will be required from the investors to qualify for this scheme. IDA Ireland and Enterprise Ireland will assess individual proposals.

These measures were introduced in view of increasing competition from similar programmes in countries such as United States' EB-5 Visas (U.S. Citizenship and Immigration Services, 2012), United Kingdom (GOV.UK, 2014; Gill, 2013), Canada (Leiber, 2013; Government du Canada, 2013), New Zealand or Australia's Investor visa (subclass 891) and Business Innovation and Investment (Permanent) visa (subclass 888).

The Irish government, through several of its branches and organisations, has introduced several initiatives and tax reliefs to foster entrepreneurship and job creation by startup businesses. Amongst them, we can include the *Start Your Own Business Relief,* the *Seed*

Capital Scheme, the *Employment and Investment Incentive,* the *Relief from Corporation Tax for start-up companies* and the *Research and Development Tax Credit.*

The *Start Your Own Business scheme* (Office of the Revenue Commissioners, 2014b) provides for relief from Income Tax of up to €40,000 per annum for two years for long term unemployed individuals who start a new business. The *Seed Capital Scheme* (Office of the Revenue Commissioners, 2013a) provide a refund of taxes paid in respect of the investment, subject to a maximum investment of €100,000. The *Employment and Investment Incentive* (Office of the Revenue Commissioners, 2014a) offer tax relief for investments of up to €150,000 in certain trades in small and medium-sized companies. Relief is available at up to 30 percent, with a further 11 percent tax relief (not subject to the high earners restriction) is available if employment levels have increased at the company at the end of the holding period (3 years) or if the company used the capital raised on research and development. The *Relief from Corporation Tax for start-up companies* (Office of the Revenue Commissioners, 2013b) introduced in the Finance Act 2013 (Section 34), enhances the tax relief available to startups by allowing "*any relief not availed of in the first 3 years of trading, due to losses or insufficiency of profits, to be carried forward for use in subsequent years*" with a maximum of €5,000 per employee and capped at €40,000 in total per year. This measure is focused on job creation, basing the amount of tax relief on the employers' contributions in respect of its employees. The *Research and Development Tax Credit* (Office of the Revenue Commissioners, 2009) provides a 25 percent tax credit for qualifying in-house Research and Development expenditure, which may be set against the company's Corporation Tax liability.

To address the cost of starting up a business, the Spanish government published a new law in September 2013 to assist entrepreneurs and their internationalisation (BOE-A-2013-10074, 2013). The new bill includes a number of wide reaching measures to incentivise the entrepreneurial culture and facilitate the creation of new businesses. Among them, a new type of limited company (*Sociedad Limitada de Formación Sucesiva or SLFS*) is introduced which does not require a minimum setup capital, unlike traditional limited companies which in Spain require a minimum capital of €3,000, although it includes several restrictive clauses, such as the limit on the annual remuneration of the founders or distribution of profits. Fiscal measures are introduced to reduce the tax on profits destined to investments to fifteen percent. Business angels and investors in seed funds are incentivised by means of deductions in tax for investments and exemptions in capital gains tax for divestments, as long as the profits are reinvested in other startups. To

simplify red tape, there is a provision for public administrations to eliminate one administrative procedure for each new one introduced.

In terms of fostering the internationalisation of Spanish companies, the bill introduces a new biannual "Strategic Plan for the Internationalisation of the Spanish Economy" to increase competitiveness and maximise external contributions to growth and job creation. It strengthens the role of *ICEX* (the Spanish Institute for Foreign Trade) as the principal organisation to foster internationalisation and competitiveness of Spanish companies during all phases of the process.

To facilitate access to credit, the bill enhances and strengthens the roles of several public organisations and public funds, such as *Instituto de Crédito Oficial (ICO), Compañía Española de Financiación del Desarrollo COFIDES, S.A. (COFIDES), Fondo para la Internacionalización de la Empresa (FIEM), Fondo para Inversiones en el Exterior (FIEX)* and *Compañía Española de Seguro de Crédito a la Exportación, S.A. (CESCE)*, eliminating restrictions and extending their scope.

Several measures to facilitate the entry and stay of non-EU entrepreneurs, investors and highly qualified workers are contemplated in the bill, such as the reduction in the processing time of applications, a special investor visa that allows individuals who invest a minimum of €500,000 and their immediate family reside in Spain for up to two years, renewable every two years, an entrepreneur visa, among others.

Despite the positive measures introduced in the bill, at least on paper, the general consensus among the Spanish business entrepreneurs, programme managers and investors interviewed was the bill was not having a real effect in fostering an entrepreneurial ecosystem.

2.4   Startup Ecosystems and Funding

The recent European Union report *Mapping the European ICT Poles of Excellence: The Atlas of ICT Activity in Europe* (De Prato & Nepelski, 2014) analysed current and future European geographical clusters in the period between 2010 and 2013. European ICT Poles of Excellence (EIPE) are defined as "*geographical agglomerations of best performing Information and Communication Technologies production, R&D and innovation activities in the European Union, that exert a central role in global international networks*" (2014, p.9). As part of the project the authors developed a ranking (the EIPE Composite Indicator), based on the weights of forty-two ICT research and Development (R&D),

Innovation and Business sub-indicators, normalised on a scale of 0 to 100. Those sub-indicators go beyond the number of VC deals or successful exits, taking also into account the activity of local computer science departments, number of academic citations and patents, among others.

Using the EIPE CI ranking, Dublin ranked number 16 out of 34 regions, with a composite indicator of 57 while Madrid ranked number 28 with a composite indicator of 46. Both are, according to the report, in the third tier. No other Irish or Spanish NUTS3 regions (*see glossary*) make it into the top performing regions (defined as having an EIPE CI greater than 41). The top tier consists of three NUTS3 regions: Munchen / Kreisfreie Stadt (with an EIPE CI of 100), Inner London-East (EIPE CI of 97) and Paris (EIPE CI of 95). The second tier includes 8 NUTS3 regions, while the third tier has 23 NUTS3 regions.

Paul Stasse (2014) points out the above study may suggest a supra-regional "*innovation cluster forming in the region circling around London/Cambridge, Paris, Amsterdam and Munich with Brussels, Leuven, Eindhoven, Darmstadt and Luxemburg in its core*" with high speed rail connections linking many of them. He advises local governments should focus on maximising the "*flow of people, ideas and money through the local hub by strengthening ties in surrounding regions*". Startup companies should also aim to build international connections early on.

The 2013 activity report from the European Private Equity and Venture Capital Association (EVCA) shows a sharp increase in the fundraising that took place in Europe. The overall fundraising was in excess of €53 bn, more than twice the volume of 2012 and the largest amount since 2008. Venture capital accounted for 8 percent (€4bn) of the total fundraising, an increase of 4 percent from 2012. "*More than 3,000 companies were venture backed. Start-up stage investments accounted for the majority of venture capital activity by amount (55 percent) and number of companies (59 percent).*" (EVCA, 2014, p.6).
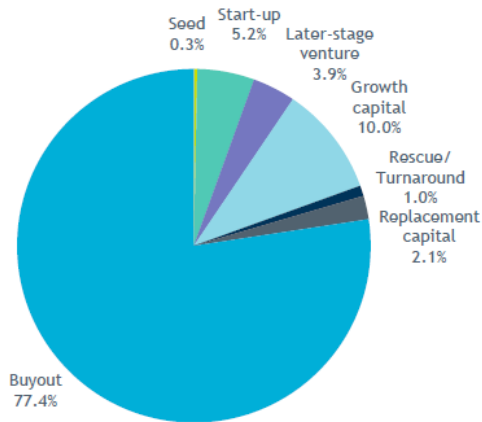
In terms of investments, companies in the Seed and Start-up stages represented 7.9 percent and 34.7 percent respectively of the total number of companies that received investments while the amounts received were just 0.3 percent (Seed) and 5.2 percent (Start-up).
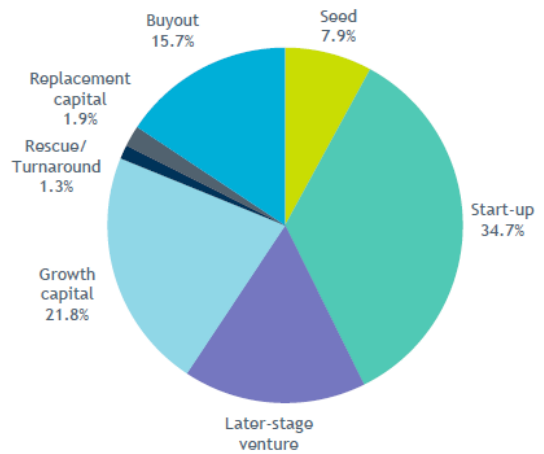
Figure 2.3 - Investments in 2013 by stage focus. Source: EVCA, 2014, p.30.

With regard to the geographical location of the portfolio company, the EVCA report shows companies in UK and Ireland received 27 percent of all private equity investments while those in Southern Europe (Greece, Italy, Portugal and Spain) received just 11 percent.

Venture capital investments as percentage of Gross Domestic Product (GDP) show Ireland (with a 0.066 percent of GDP) outperforming every other European country, doubling UK figures (0.029 percent) and over six times larger than Spain's (0.010 percent). Ireland's percentage also increased from the 2007-2012 levels while Spain's suffered a dramatic reduction.
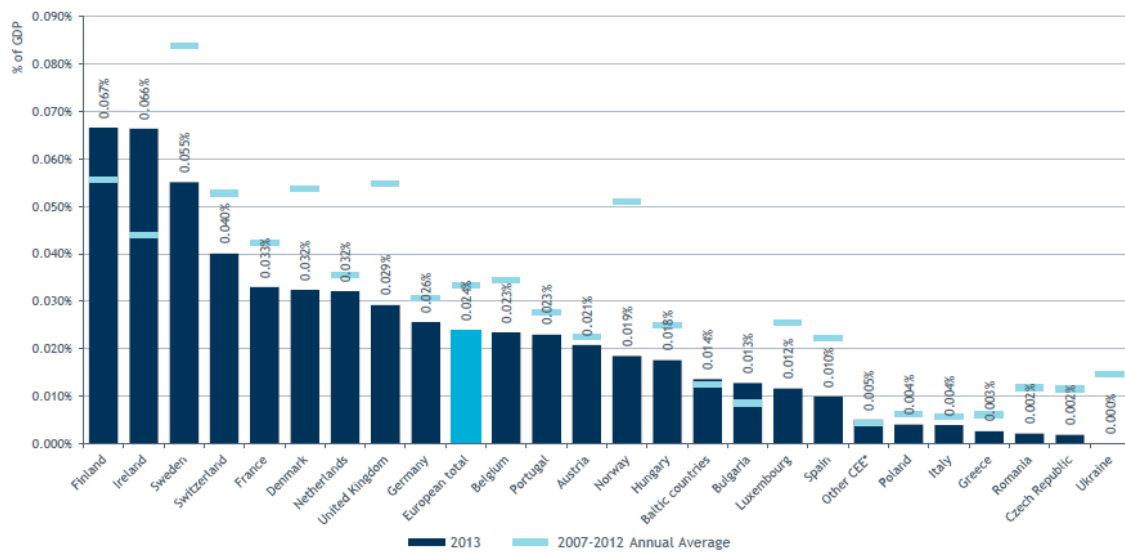
Figure 2.4 - Venture Capital Investments in 2013 as percentage of GDP. Source: EVCA, 2014, p.49.

Hogan and Hutson carried out a survey of some 117 Irish startup firms to find how they were obtaining financing. Their findings indicate the use of equity financing, as opposed to debt, is the preferred method of obtaining external funding. *Internal funds are the most important source of funding in new technology-based firms. However, in apparent contradiction to the pecking order hypothesis, the use of debt is rare and equity financing is the prime source of external finance* (Hogan & Hutson, 2004, p.3).

Crowdfunding is a popular method to obtain initial seed fund for projects. International crowdfunding platforms such as Kickstarter, Seedrs, IndieGoGo, RocketHub, etc or domestic companies such as Ireland's iFund and FundIt, or Spain's Lanzanos, Crowd Angel, Goteo, fandyu, are commonly used by startups to launch new projects or products. While these are generally used by companies that are not in an accelerator, or at least not during the programme itself, there is evidence that some incubators and accelerators consider this as an option to further fund their startup alumni. For instance, on April 1st, Trinity College launched a non-profit pilot crowdfunding platform (crowdfunding.tcd.ie) open to the general public, to initially support three companies from the College's 2013 LaunchBox business accelerator programme.

There was controversy earlier in 2014 on the Spanish government's decision to draft a regulatory proposal for equity-based crowdfunding platforms which would limit investors to a maximum of €3,000 per project and an investment ceiling of € 6,000 per platform in a 12-month period. Crowdfunded projects would only be allowed to raise a maximum amount of €1million (Barrera, 2014a). Less than a month later, the government removed the limits for professional investors although the limits remain the same as above for individual non-professional investors as well as for the overall crowdfunded projects (Otto, 2014; Barrera, 2014b).

In a report commissioned by Telefónica Europe, a decalogue of policy recommendations for EU legislators is proposed. Amongst them, reducing the "funding gap" for Series A and Series B rounds is recommended. They identify that even seed funding in Spain tends to be insufficient to "*make an impact*" (Salido, Sabás & Freixas, 2013, p.7) (p.7), a sentiment echoed by several of the Spanish entrepreneurs interviewed in this study.

The GEM Global Entrepreneurship Monitor report (Amorós & Bosma, 2014), which surveyed 197,000 individuals worldwide in 2013, including 24,600 people in Spain and over 2,000 in Ireland, notes a declining entrepreneurial activity in Spain in the recession years and highlights that almost a third (29 percent) of entrepreneurs in Spain start a business because they have no other option to work. This figure is similar in Ireland, according to the report. Perceptions of entrepreneurship are rather different between the two countries. Just 52.3 percent of the Spanish adult population giving a high status to successful entrepreneurs, in contrast with over 81 percent in Ireland, well above the European Union (EU28) average of 65 percent. Only 16 percent of Spaniards perceived opportunities in the country, compared with over 28 percent in Ireland, just under the EU28 average. Interestingly, the report puts a similar percentage of people in both countries (36.3 in Spain and 40.4 in Ireland) that would be prevented from starting a business by fear of failure.

Perception of job creation is different in Ireland and Spain, according to the GEM report. 3.6 percent of the Spanish adult population consider early-stage entrepreneurial activity will generate up to five jobs, and just half a percent consider it will create between five and twenty jobs. This compares with 5 percent and 2.1 percent of Irish adults, respectively.

GEM defines two dimensions of entrepreneurial activity. Entrepreneurial Employee Activity (EEA), also referred as "*intrapreneurship*" or "*corporate entrepreneurship*" and Total Early-stage Activity (TEA), the combination of the nascent and the new business owners. Using these two dimensions, they classified several countries in a quadrant.

Ireland fell on the upper-right quadrant with both high EEA and TEA, together with Australia and the United States, suggesting "*a relatively high degree of autonomy for employees, and a relatively high rate of employers' support for employees who come up with new ideas*" (2014, p.56). Spain is on the opposite quadrant, together with France, Germany, Greece, Portugal, Slovenia and Japan, with both low EEA and low TEA, suggesting, according to the authors "*a relatively low percentage of employees with post-secondary and higher education, and a low emphasis in the education system on innovative and pro-active behaviour.*"

3 METHODOLOGY AND FIELDWORK

3.1 Introduction

Several common research philosophies and methods available to researchers in technical disciplines will be reviewed in this chapter, evaluating how suitable each one is to address the research questions.

The method that is considered to be the most appropriate is the analysis of secondary data available in the literature accompanied by semi-structured interviews with a group of startup founders and accelerator and incubator managers located in Ireland and Spain. In this chapter the reasons why this method was chosen will be explained.

3.2 Philosophical Approaches

In the field of Information Systems (IS) research, four main research philosophies are commonly used: Positivism, Interpretivism, Realism and Pragmatism.

In natural and physical sciences, a positivist philosophy is considered when working with objective phenomena that can be measured and quantified, are repeatable and can be generalised, yielding laws that are independent of the researcher who makes the measurements. The research is considered to be value-free, although some authors (Saunders, Lewis & Thornhill, 2009) argue that by adopting a philosophy, including positivism, the researcher is already taking a value-driven position.

Interpretivism takes an opposite position to that of positivism. It argues that human behaviour cannot be quantified and measured in the same way as physical sciences and the world of business and information systems involve complex situations and decisions that are not easily generalised. In our interactions with others, we interpret our role as social actors (Saunders, Lewis & Thornhill, 2009) and our knowledge of reality is a social construction (Walsham, 2006). An interpretivist philosophy is therefore suited to research in business fields to investigate social interaction phenomena.

Realism takes a similar approach as positivism, however it recognise that humans are affected by social forces and cannot be studied in the same manner as subjects in physical or natural sciences. It shares with positivism that reality exists independently from the human mind, but it includes the social aspect to explain the phenomena studied. Realism tends to be appropriate when studying business or information systems when a quantitative analysis is required.

Pragmatists conduct research driven by the research question and take the stance that no single philosophy may be adequate to answer the research questions. As such, choosing one philosophy is seen as limiting the finding of knowledge which is not beneficial to the research process. Depending on the nature of the research question, one or a combination of philosophical approaches and associated methods may be used.

3.3   The Research Questions

In this study, the startup ecosystems in Ireland and Spain are analysed. The effect the participation of the founders of early-stage startup companies in support programmes such as incubators and accelerators has on their success in attracting funding and ultimately in their survival rates are evaluated.

These topics will be evaluated in terms of the following research questions:

- What programmes exist in Ireland and Spain to support early-stage startups?
- Is the country a key factor in the success of early-stage startup companies?

3.4   Research Methods

3.4.1   Research methods and strategies considered

Saunders et al. describe three methods for conducting research in business and information systems, namely deduction, induction and abduction (Saunders, Lewis & Thornhill, 2009).

The deductive method is based on scientific principles; researchers attempt to develop a scientific conclusion from causal relationships. The researcher is independent of the data being observed and requires a structured approach; this makes this method best suited to the positivist and realist philosophies where a quantitative research is applied to natural and physical sciences. One of the drawbacks is the need to use a relatively large set of samples in order to be able to arrive to a conclusion that is generalist enough to be considered valid.

Induction is most commonly utilised when studying human behaviour, social sciences and business decisions and accepts the researcher is involved in the research process (Saunders, Lewis & Thornhill, 2009). As such, it suits an interpretivist philosophy stance on the part of the researcher and a qualitative collection of data.

The abductive method originates from what Peirce described as "guessing" (Peirce, 1901). It is a research strategy used by interpretivists to present known facts as the cause of the fact itself. Abduction attempts to move from lay terms into more scientific descriptions of the social phenomena. While it is generally considered a weaker form of scientific research, some authors argue that abduction "*may play a part in qualitative data analysis - specifically, in the identification of themes, codes, and categories*" (Lipscomb, 2012) in combination with the deductive or inductive methods.

Several strategies are available to the researcher in the business and information systems fields. These strategies are considered in the context of the research question.

- Experiment

- Action Research

- Survey

- Archival Research

- Grounded Theory

- Ethnography

- Case Study

Both Experiment and Action Research would typically require the researcher embeds him/herself in a startup business which would be willing to enter into an accelerator or incubator programme in order for the researcher to manipulate certain variables and study the benefits and implications of such decisions. Not only was this not a feasible option in this research, both in terms of the availability of the researcher to take time off his professional and personal commitments, but more importantly, finding a startup willing to participate in such research and allowing the researcher make or influence in the decisions of the company was not possible nor considered to be ethical.

Surveys are popular tools in quantitative research in the field of information systems. However, as explained in the previous section, they do not describe accurately the nature of business decisions and their benefits or disadvantages. Surveys also require the definition of a specific set of answers that the researcher wishes to quantify. While the literature and anecdotal evidence enumerate certain benefits to participating in support programmes for startups, such as networking, access to funding, increased visibility,

mentoring, it was deemed that imposing these specific benefits on to the subjects studied – founders of startup businesses and managers of those support programmes – would have precluded the inclusion of additional insights that these subjects could provide.

Archival research relies on the statistical analysis of secondary (archive) data to find answers to the research question. By their very nature, Internet startups or NTBFs have been in business for a short time. While there is some evidence in the literature (Christiansen, 2014b, 2014a; Wauters, 2014; Salido, Sabás & Freixas, 2013) tracking the success rates of some accelerators and their startup alumni, in most cases the data applies to firms in the United States. While some reports from established incubators are available (e.g. (UCD Office of the Vice-President for Innovation, 2013; Telefónica, 2012; NDRC, 2014, 2013), it was deemed the archival data would not be sufficient to provide evidence to support statistical analysis.

Grounded Theory is a methodology first proposed by Glaser and Strauss (1967) and is used in social sciences where a theory is built based on continuous observations, constant comparisons and the codification and analysis of the data generated by those observations. The researcher does not start with a hypothesis but he/she builds the theory based on the data collected. This leads to predictions and eventually to forming a hypothesis. The researcher takes an inductive approach within an interpretivist philosophy. While this method would likely be helpful in the study of the business decisions and results of joining an accelerator or incubator programme, it requires continuous observations, a larger sample universe than was available to the researcher and extensive data collection, which was outside the scope of this dissertation.

Ethnography's purpose is "*to interpret the social world*" (Saunders, Lewis & Thornhill, 2009). Using an inductive approach, it is a method that can be used to study the differences and commonalities of cultures by observing the participants. As such it would be a method useful in the study of startups founders and their business decisions in two countries such as Spain and Ireland. However, ethnography requires a large sample set and is a lengthy process, which put it outside the scope of this dissertation.

Case Study research is defined by Robson as a strategy which "*involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence*" (Saunders, Lewis & Thornhill, 2009, p.145). It is considered that case study research can provide answers to "why?" questions, which makes it suitable in explanatory and exploratory research (2009, p.146). Data collection in case study research can include observation, documentation, archival records, questionnaires,

participant observation and interviews. Based on the level of formality, interviews can be categorised as structured, semi-structured and unstructured or in-depth (2009, p.320). The exploratory and qualitative nature of this study makes the structured interview unsuitable due to its reliance on a predetermined set of questions. Unstructured interviews are seen as "informal talks" which allow the researcher explore a theme in depth. While a degree of flexibility was desired in this study, the exploration of certain subjects was sought and as such, a semi-structured interview, where the researcher provides a set of "themes" which can be adjusted and may vary from interviewee to interviewee, was preferred to the other two types of interviews. They have the advantage of allowing for the "*discovery of unexpected themes while still targeting specific areas*" (Barrett, 2013, p.26).

3.4.2   Research Method Adopted

Based on the research question, the participation of the founders of a startup business into an accelerator or an incubator programme is essentially considered a business decision. In order to gain an insight on how the founders reach to this decision, an inductive approach in line with interpretivism philosophy is taken which, while relying on a smaller sample universe, can still provide valuable insights into the reasons and context of such decision. The focus of the research is not to gather exhaustive quantitative data through these interviews but to include the opinions and experiences of knowledgeable individuals involved in the startup scenes both in Ireland and in Spain.

A number of semi-structured interviews were conducted with startup founders and business owners, accelerator or incubator programme managers and individuals involved in venture capital organisations and service providers, based in Spain and in Ireland.

The participants were selected through opportunistic sampling, recommendations, personal connections of the researcher and the supervisor and social networks (LinkedIn groups and Twitter). An introductory letter was sent by electronic email (Appendix C). Interviews were conducted in person, by telephone or via online meeting, to accommodate the schedule of the interviewee, as well as practical considerations due to their and the researcher's geographical location.

3.5   Ethics

The research proposal and data gathering method discussed above was submitted for approval to the Ethics Committee of the School of Computer Science and Statistics of the

University of Dublin, Trinity College in accordance with the school research ethics protocol. Approval was granted.

Increasing competition in the startup and in the accelerator scene has seen an increasing number of such organisations appear in both countries. Being many of them private organisations, there is however little to no information published on the level of success of their investments. As such, potential ethical issues may arise if sensitive information provided by one accelerator is known by a competitor, or if their success rate is not considered high enough to attract the best startups to their programmes. To deal with such potential ethical issues, the data gathered during the interviews was anonymised and aggregated. Interviewees were notified and permission sought before any direct quote was included in the final published dissertation.

Prior to the interviews, the participants were sent a list of potential questions or themes to discuss (Appendix B), as well as an information sheet for participants and Trinity College Dublin's Informed Consent Form (Appendix D). In the initial stage of the interview, the interviewees were thanked for their participation and were reminded of the purpose of the research. The ethical implications of the research were briefly explained. It was stated that no quote would be attributed to them without obtaining their permission. They were also reminded they could choose not to respond to any specific questions without prejudice to the research and that they could stop the interview at any point. In line with the ethics protocol, interviewees were reminded the researcher did not have any conflict of interest with regard to the research topic and with any of the participants either individually or at an organizational level and that, in the extremely unlikely event that illicit activity is reported, the researcher would be obliged to report it to the appropriate authorities.

3.6   Limitations of the Chosen Method

The method has several limitations. First of all, semi-structured interviews may suffer from data quality issues, related to reliability, bias and validity and generalisability (Saunders, Lewis & Thornhill, 2009, p.326). To overcome these issues, the interview questions were worded concisely in a way to avoid or minimise bias. Questions were double checked by the dissertation supervisor and tested on a smaller scale with two startup business owners. The questions and themes to discuss were sent in advance to the participants in order to ensure they had a full understanding of them.

A further limitation is the size and composition of the sampled universe. Only a subset of companies was included, i.e. new technology based firms (NTBFs) based in Spain or

Ireland in the Internet and mobile application businesses, and accelerators and incubators serving these sectors. Within these fields, due to time constrains, only a small group of individuals could be interviewed. One can argue if the selection of those individuals is representative of the sector and whether conclusions can be gleaned from such a limited sample. While acknowledging these limitations, the purpose of the study was not to gather and analyse large amounts of quantitative data but to include the opinions and experiences of individuals involved in the startup scenes in both countries.

Another limitation is agreeing on the definition of what constitutes an accelerator and an incubator. The position taken in this case was that the interviewees would be allowed to discuss their experiences with either or both types of startup supporting organisations without prejudice or direction by the researcher. Semi-structured interviews allow the flexibility required in this situation.

3.7 Conclusion

In this chapter several common research philosophies and methods available to researchers in technical and social sciences disciplines were reviewed, evaluating how suitable each was to address the research questions. The most appropriate method selected was the analysis of secondary data available in the literature accompanied by semi-structured interviews with a group of startup founders and accelerator and incubator managers located in Ireland and Spain. While the scope was naturally limited, in order to extract wider trends, an inductive approach was used. The most fitting philosophy to answer the research questions based on the interviews conducted was interpretivism. Due to the nature of the analysis performed on business decisions in the field of Internet startup businesses, qualitative research was chosen over quantitative research design as it generally adapts better to social phenomena and business decisions.

4 FINDINGS AND ANALYSIS

4.1 Introduction

A total of fifteen (15) semi-structured interviews were conducted over a two-month period in June and July 2014. Eight other organisations were invited to participate in the research but did not respond to interview requests. As described in chapter 3, the intention of this research was not to gather exhaustive quantitative data through these interviews but to include the opinions and experiences of knowledgeable individuals involved in the startup scenes both in Ireland and in Spain. As such, a varied spectrum of interviewees was sought.

Seven of the interviewees are located in Ireland, eight in Spain (Figure 4.1). In terms of gender, of the 15 individuals interviewed only one is female (Figure 4.2).

Six accelerator or incubator programme managers were interviewed. Of these, two are based in Ireland and four in Spain. All the accelerator managers interviewed had been or continue to be involved as founders in other companies; their experiences as founders were also included in the interviews, and are described below where applicable.

Nine startup founders and business owners were interviewed, four of them have their business based in Ireland, four have it in Spain and in one further case, the Spanish CEO is based in Ireland but his company was founded in Spain and the co-founder and team remain there (Figure 4.4).

Of those nine startups interviewed, four have participated in an incubator or accelerator programme, while the five remaining have not (Figure 4.5).

The figures below summarise the breakdown of the subjects interviewed.

Interviewee Location

Figure 4.1 - Interviewee Location
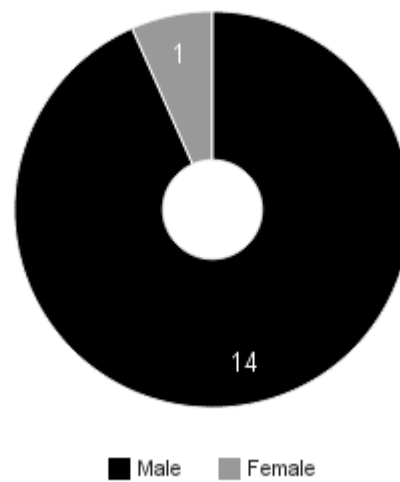
Gender of Interviewee

Figure 4.2 - Interviewee Gender

Role of Interviewee
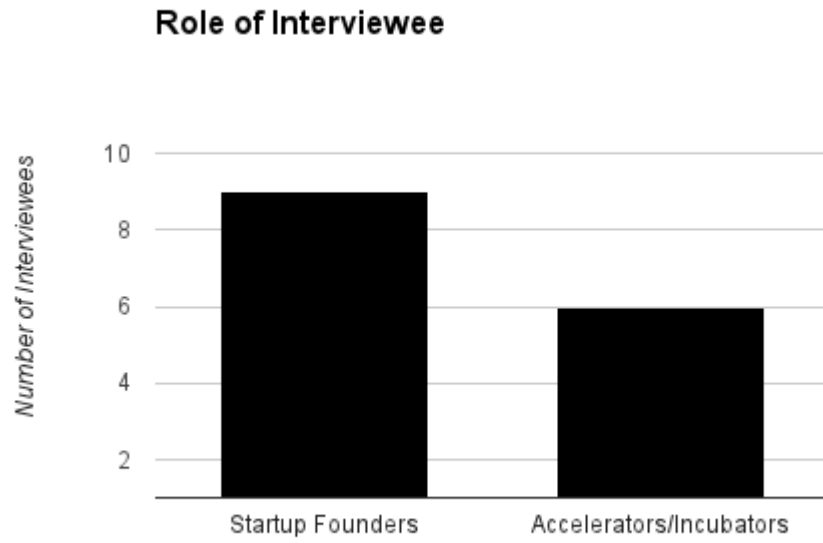
Figure 4.3 - Interviewee Role
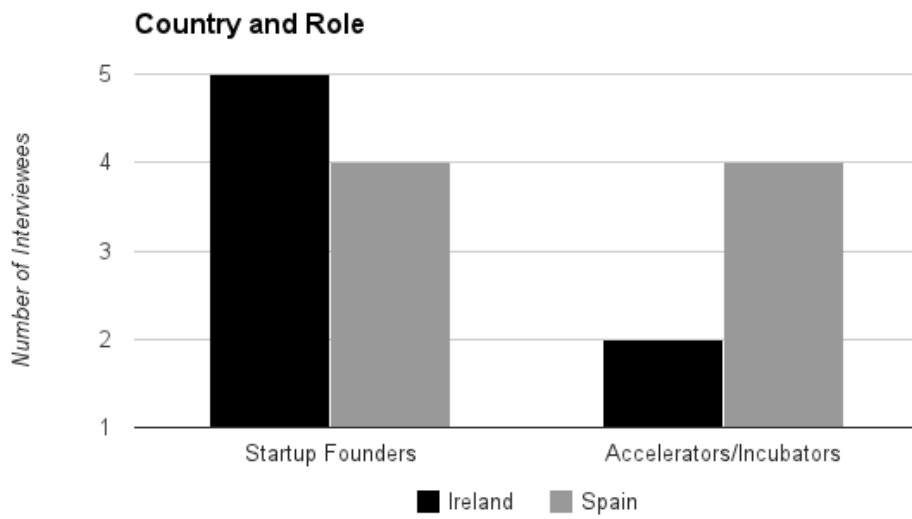
Country and Role

Figure 4.4 – Breakdown by Interviewee Country and Role

Participated in Startup Support Programme
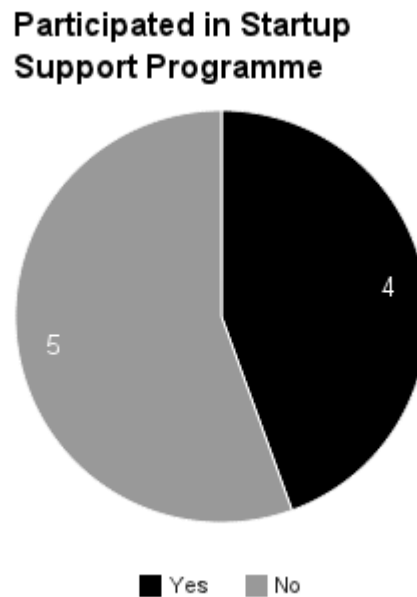
Figure 4.5 – Breakdown by Participation in a Startup Support programme

4.2 Interviews

4.2.1 Interviews with Startup Founders

Interview 1

The first interview was conducted in person with the founder and Chief Executive Officer (CEO) of a Spanish startup in the fashion sector. The company develops a web-based personal shopper portal which, using artificial intelligence algorithms, allows women choose and combine their own clothes with those from a number of clothing brands, providing personalised recommendations on looks and matching outfits. The founder described the company's stage of development as advanced and profitable.

While he indicated the company had intentions of reaching a global market, currently the portal is only available in Spanish language and has a clear focus on the local market in Spain, with the brands available being primarily Spanish. He expressed being global is complex and expensive.

He considers starting a business in Spain is relatively cumbersome and expensive; initial costs and taxes for a small company or sole-trader are not linked to benefits. He also indicated recruitment costs (hiring and firing) in Spain are high. He was critical of public

policy towards entrepreneurship, mentioning that it would not be the silver bullet to solve Spain's unemployment problem, despite it being the solution touted by politicians in recent times. He suggested some basic measures, such as lowering rates and levies until a company had benefits or for a fixed period, or facilitating the flow of funding money by making it easier for VC's, would bring in clear benefits. One of the problems he highlighted was the low values of funding rounds or the lack of true series B and C funding in Spain.

In 2011, the company entered into an acceleration programme run by a corporate accelerator in Madrid. He rated their experience as "*very positive*".

He considered the programme was well managed, provided great networking opportunities, it run multiple events and organised training programmes relevant to their needs. Being backed by a large corporation, the accelerator gave them business connections and access to senior executives within the corporate that he would not have achieved, at least not as easily. In his own words, "*networking is simpler in accelerators, but it is still feasible [*if you are not in one*] if you put in extra effort*".

The benefits of participating in an acceleration programme he cited were networking, access to funds and validation (the *badge*). Initially they required the money, but the main benefits he mentioned were the networking opportunities and the opening of doors to further investment and financing.

Validation was also considered useful in latter stages of their progress. Being an alum of that specific accelerator, he believed it facilitated the receipt of further investment. He mentioned that Spanish investors are relatively risk averse. Having been validated and received investment from the accelerator put their company in a lower risk position with certain investors and venture capitalists.

He considered the equity sought by the accelerator to participate in the programme was small for what he received in exchange, both in terms of early funding as well as networking, advice and training. But when asked if he would participate in an accelerator if they offered no funding, he said he would not, indicating it was not only the actual money he sought, but considered that by investing in the company, the accelerator organisation would have a vested interest in the success of the startup.

In late 2013, he moved with his family to Ireland in order to explore the English-speaking market. The other cofounders and the rest of the staff remain in Madrid. He chose Ireland due to proximity, local contacts and cost - he considered the United Kingdom a more expensive place to live and the United States too distant and too large to enter.

Being an ex-alum of the accelerator in Spain, he was offered the possibility of working from the Dublin office of the accelerator, which he uses on a regular basis. He also attends events organised by the Irish accelerator and has taken advantage of local networking opportunities facilitated by the accelerator.

When asked to name some drawbacks or disadvantages of participating in an accelerator programme, he stated he personally had none in the one he participated. However, he considered the equity requested by some accelerators, especially the lesser known or those without a track record, could be too large for the actual value to the startup. He also mentioned less experienced founders may be taken advantage of by accelerators or investors if not given the proper advice.

Interview 2

The second interview was conducted in person with the cofounder and CEO of an Irish startup in the smart cities sector. She is a Spanish national living in Dublin and was the only female founder interviewed as part of this research. Her company specialises in big data crunching and predictive analytics to build city-scale systems which increase the resilience of social structure in the cities, applying data science to predict behavioural changes in citizens' dynamics.

She considers her company is still at a relatively early stage of development although it already has several paying clients and is in profit.

She came from Spain to Dublin in 2012 to study English and digital marketing. She spent a year working in a startup which at the time was participating in an accelerator programme in Ireland. The CEO of that company and the interviewee then founded the current company in 2013 and she became full-time CEO at the end of 2013. A third cofounder, advisor and smart cities expert is based in the United States. Software development takes place in Ireland.

She chose to locate in Dublin as she considered it a safer and closer location than the United Kingdom or the United States, although indicated her intention to open up a branch and technology innovation lab in the San Francisco Bay Area in the near future. She considered the startup ecosystem in Ireland to be favourable, with dynamic feedback and quality networking connections. They aim for a global market with initial focus on Europe and the US. As such, she considers Ireland has stronger relation with the US than Spain, which influenced their decision to set up the business in Dublin. However, she considers

the size of the local market in Ireland too small, limiting the number of cities they can target.

She indicated founding a business in Ireland is simple, bureaucracy and red tape are relatively minor and startup costs are not high, praising some measures such as fee free banking for startups in their first two years. She did not find any obstacles being a Spaniard doing business in Ireland; working with service providers such as accountants was simple and painless. However, she did mention a certain level of risk to company directors who receive no unemployment benefits should the business fail.

In terms of her experience with accelerator programmes, while her current company was not looking for funding at the time of the interview and had not applied to an accelerator, she had worked as an employee of a startup which at the time was participating in a corporate-run accelerator programme in Ireland when her current cofounder was CEO of said startup. She considered the accelerator as a "*big family*", which helped current and previous alumni with networking opportunities and even free co-working space to further assist them. Some of the advantages of participating in an accelerator programme she cited were seed funding, networking and connections, visibility and credibility for future funding rounds, opening doors. She indicated there can be positive learning outcomes from other alumni companies if the programme is well focused. She considered venture capitalists and angel investors in Ireland are overly cautious and tend to wait for a "*big name*" to invest before they commit or match their investment. In her opinion, receiving seed funding from an accelerator simplifies access to additional funding.

Among the downsides of an accelerator programme, she mentioned there are too many meetings, workshops and training sessions, some not useful or relevant to their needs, distracting them from their objective. She also expressed the need for the programmes to ensure the focus is not only on the product or minimum viable product (MVP) and demo day but on the actual needs of the business. She considered some of the programmes she had researched to be too focused on preparing the founders for the pitch to investors on the demo day. If she were to participate in an accelerator programme, the key factors she would value would be the track record of the programme managers and the quality of the other participating startups.

She expressed she would not participate in an accelerator if they offered no funding. Giving away equity for no funding would be seen as not valuing the business; she also considered other investors might be suspicious if the accelerator itself would not commit any funds.

When asked to define what would constitute success, somewhat surprisingly, she did not indicate receiving funding or achieving an exit, but highlighted achieving market penetration and the betterment of the lives of citizens in the places they provide their services.

Interview 3

The third interview was conducted via online meeting with the founder of four companies in Spain. His first company (Company A), founded in 2005, is an online publication specialised in automobile news and reviews, and formula one car racing. It is a well established business with an audience of over 700,000 unique users. They have around 10 staff with some freelancers and part-timers.

In 2013, the founding team of Company A spun off a separate online platform (Company B) to help the general public in the selection and purchase of automobiles. The portal provides information and vehicle specifications from various sources and prices and offers through integrations with third parties.

In 2013, he co-founded an online marketing consulting business (Company C), which advises companies on how to create and maintain their online strategy, adding value to their brand, attracting clients and grow their business.

In March 2013, he co-founded a company (Company D) to invest in technology and Internet startups. He defined it as an invite-only association of business angels. Their investment vehicle works like a business angel syndicate (Graham, 2009) or like a small "*VC behaving like an angel*" (Horowitz, 2010). He and his cofounders invested €60,000 initial seed money and at time of writing, they had increased capital to €300,000. To-date they have evaluated over 150 projects and invested in 17 of them showing high potential growth capacity. The average investment is €10,000, keeping their investment small to increase their diversification. In exchange, they typically receive around 1 percent equity, although in some specific cases, the investment and equity received were larger, especially at an early seed stage. He indicated that there have been no exits yet in any of the companies invested, which he attributed to their still early stages of those companies.

His inclusion in this study is therefore doubly interesting, both from a perspective of founder of Internet startups as well as angel investing in others.

In his capacity as founder, he considered bureaucracy in Spain is not a problem or a deterrent, at least for the Internet businesses he has been involved with. While it can at

times be frustrating, it is not seen as a factor in the success or failure of a startup. However, he believed the lack of an entrepreneurship culture and a certain lack of individual responsibility in Spain are hurting the country's prospects, despite the various government campaigns, which he considered opportunistic and misguided ("*not everyone can be an entrepreneur*"). A fear or the stigma of failure was also cited as a factor preventing an increase in the country's entrepreneurial efforts. He advised failure is acceptable, but you must learn from your failures and fail fast and cheap.

In his capacity as investor, he decided to create a small investment fund together with like-minded and experienced founders of Internet companies in order to pool resources and invest in early stage startups. They do not include smaller investors, only individuals with experience in Internet companies as well as some executives from larger companies. While he initially indicated their involvement was mostly in providing funding, he admitted that when investing in less experienced businesses, they tend to assist with additional services, such as hosting, content creation, advice, taking a seat on the Board and "*behaving like a mini-accelerator*". However, he pointed out the objective of both his companies (Companies A-C) and what he values in the companies he invests in, is that they have a relatively slow growth and generate profits rather than focusing on a pitch or obtaining funding rounds.

When evaluating a project, they mainly value the team and the sector. The business plan is useful, but acknowledged that it is often unrealistic or unattainable. He commented different founders tend to seek different things, although funding money is usually at the top of the list. Others seek visibility and contacts.

When asked about the accessibility of global markets to Spanish startups, he responded that most of the companies they have invested in via Company D have global aspirations. Interestingly, he admitted his three other businesses (Companies A-C) are the opposite, focusing solely on the Spanish market. He attributed this strategy to their philosophy of walking at their own rhythm and slow growth objectives.

When discussing how he measures success, since most of the companies they have invested in are at an early stage of development and have not yet achieved profits, he considered the receipt of further funding rounds a key success factor of his investments. For those more matured companies he has invested in, profit, growth and corporate responsibility are seen as the key success factors.

In his own businesses (Companies A-C), he values the working environment, having happy employees and feeling comfortable and free to explore innovative projects.

Interview 4

This interview conducted via online meeting with the CEO and cofounder of a Software-as-a-Service (SaaS) company in Spain.

In 2006, he was founder and CEO of a grid computing startup company, spun off from a University lab, which developed hybrid cloud management software. In 2010, it raised more than $15M of international funding. During that time the company grew from 2 to 40 employees. He then stood down as CEO and sold his shares in the company.

He founded his current company in 2011. The company develops a real-time dashboard for tracking business metrics, gathering in a single place data from various other SaaS applications, as well as internal metrics which can be pushed through their application programming interface (API). Founders invested around €100,000 of their own money. They have since received a further €1 million in two separate funding rounds from Spanish and international investors and VC's. He pointed out the company is at an advanced stage of development, with numerous paying customers and profitable.

Although they initially applied to the Y-Combinator and TechStars accelerators in the United States, they did not end up participating in any accelerator programmes. Funding for both his companies was obtained from personal loans and venture capital primarily. Some university grants were also used in his first company. While he indicated in 2006 incubators as such did not exist, his first company started as a spin-off from a research team in a Spanish university. He did mention that in the initial stages of his first company, he would have found it beneficial to go through an accelerator or incubator programme. But with his experience, contacts and access to funding and VC's now, he would not find it useful in his current company. He would only consider an offer to participate in one of the top-tier accelerators globally, such as Y-Combinator or 500 Startups, in order to benefit from their experience in the areas they lack, such as online marketing.

He expressed a view that there are too many accelerators in Spain and questioned the quality of some of those programmes and the mentors involved ("*anybody is a mentor these days*"). He also questioned how some accelerators could attract startups with a track record and growth prospects, observing the "*real gems*" might instead apply to US accelerators, leaving the potentially less successful ones in the country.

When discussing his opinion on failure, in his first business he thought failing and admitting defeat would have been a distressing experience and used it as an incentive to stay open and pull through. However, he now considers failing is acceptable, as long as you learn from it.

His company was created with a clearly defined global reach; software code, website content, support and documentation were all created in English from the beginning. This was a key factor in garnering international clients. But he admitted being a pure software-as-a-service company makes it relatively simpler than in other sectors, such as retail or hardware.

Regarding the geographical location of the business, he has the networking contacts in Spain and knows the ecosystem there. Building up a network elsewhere would be a lengthy process. They started in Madrid and later moved to Barcelona, for personal reasons. From the point of view of founding a technology startup, he considers there is no great difference between the two cities. The ecosystem is similar with access to talent, investors and good infrastructure and communications. However, he thought startups in other cities may find it more difficult. He was critical of the explosion in the number of accelerators - over seventy are listed in the community-generated Spain Startup Map website (Megias & Ormeño, 2014) at the time of the interview - considering many of them appeared to have been established as local or regional political favours with no real ecosystem or access to further funds beyond the initial acceleration phase.

While the availability of high quality technical and software development staff in Spain is high, he was keen to point out talent in other areas, such as digital marketing or experienced software architects, is scarce, with many having left the country in recent years due to lower salaries and employment opportunities.

When asked about what could be done in Spain to foster true entrepreneurship, he mentioned there has been progress in the process of setting up a company with the creation of the figure of the *New enterprise limited liability company* (in Spanish "*Sociedad limitada nueva empresa*", as defined in (BOE-A-2003-6586, 2003)), which simplifies the bureaucratic steps required to set up a limited company. He also mentioned that some local taxes and rates do not apply to Internet businesses and soft loans can also be helpful to startups. He was critical of the lack of real incentives to hire staff and that government grants are time consuming and still require a significant amount of paperwork.

Interview 5

The fifth interview was conducted via online meeting with the cofounder of two business-to-consumer (B2C) startups in Spain. Both are online comparison portals, one of videogames and the other one of running shoes. They work by comparing offers from multiple third party websites and online stores. They charge these stores a percentage of every sale generated through the portals.

The videogame comparison portal was founded in 2012 and, according to the interviewee, is generating sales and has already become profitable. In early 2014, they spun off a separate online comparison portal for running shoes, based on the same technology and business model as the first startup. Between the two companies, they currently have around 10 staff, including founders, freelance and part-time staff.

Initial funding was by bootstrapping. In late 2013, they received €330,000 seed investment from several VC's and angels. They did not participate in an accelerator programme, although they have received investment from one. He was of the opinion that accelerators can be useful for technical founders without much business experience. He echoed the opinion of interviewee #4 above about the recent increase in the number of accelerators in Spain and the dilution of the real meaning of an accelerator. He was also critical about the lack of transparency and publicly available information of the results of accelerators, such as the companies who have received further investment, number so exits, how many are still alive. He also questioned the track record of those managing and mentoring in some accelerators.

He considered a certain short term spirit in many startups and accelerators, trying to copy the American model in Spain are, in his words, "*doomed to fail*". As the ecosystem in Spain is different to Silicon Valley, he saw no point in copying the models that work there. He advised people running accelerators should have real experience in running successful businesses in the country, adapting to the local market peculiarities, in order to add value.

When asked about the location chosen for his companies, he expressed they wanted to remain and innovate in Spain, "*betting on Spain*". The advantages he cited were the technical workforce was cheaper than other places in Europe, access to local contacts and networking and language. He considered that, while offshoring may be an inexpensive option for a startup, in his experience, it did not work. Spain also has the advantage of being a small market but sufficiently large to validate products and market

strategy before expanding internationally. While their long-term goals are clearly global, he considers marketing for a consumer company is expensive and may not be effective due to local peculiarities of the different markets ("*it's not just putting up a page in English*"). In line with this strategy, in July 2014, they opened up a version of the site for the German market.

However, he indicated there are still administrative and legal barriers as well as tax disadvantages for startups and online companies in Spain that would need to be addressed by the government to foster entrepreneurship in the country. He was highly critical of messages sent from the current administration that entrepreneurship is the solution to Spain's economic and unemployment problems and that anyone can become an entrepreneur ("*if you don't undertake, don't complain*"). He likened entrepreneurship to continually managing chaos as well as people, risks and conflicting interests. He indicated there are few or no accelerators or even courses in Spanish universities that teach how to manage people and teams.

He defined business success in terms of creation of employment ("*paying salaries*"), exports, revenue growth, profit and value generation, meeting their growth objectives. But he admitted that when a company receives external funding, how success is defined and the business model need to be aligned with the requirements of the investors too. While performance indicators when bootstrapping are based around revenue, when receiving external investment, the key indicators and objectives revolve around value generation. He considered founders need to be older and with more business experience in order to be successful

Interview 6

This interview was conducted via online meeting with the founder of a Madrid-based online marketplace for selling and buying automobiles, founded in 2005. Through several other associated websites, they also offer car dealer directory and listings, classified adverts, automobile leasing, and motor industry news.

Since 2009, he has been involved as professor and entrepreneurship mentor in one of Spain's top-ranked international business schools.

In 2009, he started investing individually as business angel in Internet startups. While the amounts he invested were relatively small (€10k-€30k), he said he did "*reasonably well*", but realised it would not scale and noticed he was duplicating efforts. He was subsequently invited to join a business angel network and accelerator in Barcelona.

Together with several other partners and investors and in order to take advantage of more fiscally rewarding investment tools, in 2011 he co-founded a privately-held startup venture capital fund, known in Spain as "*Sociedad de Capital Riesgo*" or SCR and regulated by law (BOE-A-2005-19412, 2005) to invest in Internet, entertainment and educational ventures in Spain. By law, these SCR's need to be constituted with a minimum of €1.2 million in funds. This was later increased to €2.4m including other investors. Their latest funding round has brought their fund up to approximately €5m. He described it as a seed fund, investing after angel rounds. They usually take a seat on the Board of the companies they have invested in, participating in regular meetings in order to offer advice and adjust course. To-date they have invested in fourteen startups, one of them has failed and there have been two successful exits.

While he recognised the startup ecosystem has increased in size significantly in the recent years, he considers there is no immediate risk of overflowing or overstretching since many of the actors have got involved only recently and "*carry very little water*". He confided that when they receive proposals from startups that have been through an incubator or accelerator, they are suspicious and almost avoid them. He considered that good startups and founders should be able to contact him directly and if the projects are sufficiently good, they should not require acceleration.

He pointed out the lack of overall coordination and clarity of the startup and entrepreneurial efforts at a national or governmental level, "*there is no Startup Spain*", he said alluding to coordinated efforts in other countries such as Chile (Carmel & Richman, 2013). It is his opinion that there is a lack of clarity from the government and the traditional bricks and mortar model is still at the core of the economy. Some of the measures appear to be short-term, extracting taxes and rates from founders from the very first day, artificially removing people from the unemployment statistics. As an example of a zero-cost measure the government could introduce, he suggested a change in the way stock options are taxed and promoted, which would go a long way to attract and retain talent in startups.

He pointed out a certain spreading of the entrepreneurial ecosystem in Spain, lacking "*density*". As opposed to other countries where the startups are primarily clustered in one or two centres such as London, Dublin, Berlin, Tel Aviv or Silicon Valley, he noticed multiple centres exist in Spain, such as Madrid, Barcelona, Valencia, Malaga and many smaller ones, contributing to the dispersion and possible dilution of the efforts. He did not

consider this trend would change in the immediate future, but expects the market will adjust itself.

When discussing the bureaucracy in Spain, he did not consider it to be a real problem to founders and while it could be simplified, he pointed out "*there are many other things you could do while you wait, such as selling*" and the existence of services which manage the administrative process or provide off-the-shelf ready-made companies. He highlighted a deficiency in business related education, a lack of an entrepreneurial spirit in Spanish youth and even a negative perception of business owners which may discourage young people from considering entrepreneurship as a career opportunity. A Spanish version of the Dragon's Den television programme started in October 2013 lasting just seven episodes.

Despite the criticisms, he was optimistic about the evolution and position of the startup ecosystem in Spain, pointing out an increase in the frequency and size of exits in high technology Spanish startup companies, as well as the size of investments and the entry in the Spanish market of global investment funds, which he qualified as "*a landmark*".

Interview 7

This interview was conducted by telephone with the Irish co-founder of an animation studio based in Dublin, which develops and produces animated content for multiple platforms. While the animation studio does publish its films on the Internet, it is not strictly speaking an Internet or mobile applications business. However, it was decided to incorporate it in this study due to the business owner's experience with Irish startup support programmes commonly used by Internet firms.

He started the business in 2011 after finishing an animation degree in a local college, where he also met his three co-founders. They initially set up as freelance animators joining forces to build a portfolio of mock projects, in order to be able to pitch for real work. The company now has a staff of ten, including the four co-founders.

In 2012, they entered into a small business startup fund competition by Enterprise Ireland. They were selected from over one hundred other projects and received €50,000 in exchange for five percent of the business. They used the funds to upgrade the studio hardware and software and hire talent to be able to take on multiple projects. Monthly meetings with a business mentor were included in the deal. He described being included in the Enterprise Ireland's High Potential Start-Up (HPSU) programme as a valuable outlet to promote the company, having been approached regularly with project offers. He also

considered the learning and mentoring opportunities as "*very useful*", making them realise as a business they "*had to make money, not just art*". Interestingly, he indicated he had expected more networking opportunities at a higher level. The equity given in exchange (five percent) was in his own words, "*fair*", indicating it demonstrated a real interest and commitment on Enterprise Ireland's part. Interestingly, when asked if he would be willing to provide equity even if there had been zero funding provided, he indicated they might have considered it if the benefits were clear and there was "*access to a wealth of knowledge*".

In July 2012, they received funding of €50,000 from the Irish Film Board as part of the Frameworks scheme to produce a short animated film. While they received script writing assistance and participated in regular meetings, he described it as "*not as full-on*" as Enterprise Ireland's assistance.

When asked if they had considered joining an accelerator or incubator programme, he indicated they had initially considered it, but believed they might get distracted by other startups in other sectors; sharing co-working space with others might not benefit them and wanted to ensure the relationships with the co-founders remained solid.

When discussing the location of the business, he mentioned he had initially wanted to go to Canada due to its long established animation industry. He deems Ireland a "*pretty good place*" to do business, where other Irish animation companies have helped and given them advice. He regarded the sector as being in "*friendly competition*" with each other, but rallying to promote Ireland as an animation country, pitching their companies as "the Irish team". Networking opportunities abound and he thinks the morale is high. Tax breaks offered by the Irish government are helping attract international companies to Ireland to produce films. International artists and talent are being attracted to Ireland. With regard to the bureaucratic and administrative processes to set up the business, he admitted their initial understanding of business was near zero, but believed dealing with the administration or banks is not challenging nor would it deter them from setting up the business in Ireland.

His view on success has changed over time. Initially, success for them was making a short film. Now, the company's goals are to create a dependable environment where artists want to come to work to, and solidify their position. He admitted he did not consider selling the business to larger production studios as a measuring stick for the company's success.

Interview 8

This interview was conducted by telephone with the Irish founder of a social media and digital marketing startup based in Dublin. He is the participant with the youngest established business at just four months at the time of the interview.

While working at Google, he attended Startup Weekend in 2012 and went on to co-organise the 2013 and 2014 editions of this event where entrepreneurs and aspiring entrepreneurs can find out if startup ideas are viable (Startup Weekend, 2014).

He participated in phase one of the Enterprise Ireland's New Frontiers programme but decided not to progress to phase two as he did not find it too useful. He had applied to enter into two separate accelerators in Dublin but his application was not successful. He reckoned this has made him more resourceful and self-reliant. He did admit he thought there was value in entering into accelerator and incubator programmes, especially in corporate-backed accelerators due to their higher potential to tap into the corporate's resources and global access.

However, he considered some accelerators or incubators tend to be too focused on customer validation, have too frequent meetings and too short duration. When asked what he would expect to get out of participating in an accelerator programme, he responded that most of what is provided can be obtained by one's own means. Office space can be found inexpensively especially if shared with others. Networking opportunities are attainable through various means, such as the Startup Weekend he had been involved in. Startups do not generally require much money, he argued, and can be obtained by various methods, citing "*How To Get 100k Free From The Irish Government*" (Connor, 2013) as an example, or doing consultancy work or coding for others. The sense of security offered by accelerators is only temporary, he pointed out. While initially he had thought respect or "validation" of belonging to an accelerator (the *badge)* would be important for him, he no longer saw them as necessary if you possess confidence in yourself.

When queried about the location of his business, he was not concerned about the administrative burdens or bureaucracy, but he considered the Irish as relatively risk-averse. The startup culture is still young compared with other regions such as Silicon Valley or Israel, and has not developed to its full potential. While he appreciated the "*humility*" of Irish people, he said they should "*bang on their chests*" and be proud of their achievements, believe in themselves. He was somewhat concerned about the availability

of talented technical staff and a pipeline of software developers. He mentioned initiatives to encourage young people to develop computer skills and teach them to write software, such as Coder Dojo, were beneficial but would not yield fruit for five or ten years.

When discussing success, he indicated for him it was making money in a sustainable way that would allow him to live and hire a talented team. Once you can be profitable, you can have "*bigger dreams*"; until then, you cannot "*get too excited*".

Interview 9

This interview was conducted over Skype with the co-founder of an online and mobile accounting software company based in Dublin. Their products include free online accounting software, free online invoice templates and paid online payroll.

They have been in business for three years, half of which were spent building the product, in the past year they have been internationalising it. They have a staff of three, including the two founders. Founding has so far been achieved by bootstrapping, small government loans and some sales. In 2012, they participated in a New Frontiers programme at the DIT Hothouse Incubation Centre in Dublin.

He listed funding, mentoring and sales training and getting pre-vetted for Enterprise Ireland's HPSU as the three most important benefits of participating in the programme. He was however disillusioned with accelerators who focus too much in getting funding and on the demo day. He also questioned the track record of some European accelerators. At this stage of the business, he is no longer interested in accelerator or incubator programmes in Ireland, although he would consider joining Y-Combinator in the United States.

Regarding the accessibility of global markets, he considered the European market is fragmented, with multiple different regulations in the financial and accounting sectors as well as compliance issues. Social networking and marketing suffer from similar localised issues, making it difficult to launch in multiple countries. He pointed out that he considered Ireland in a good position to access the US, UK and Europe.

He does not consider bureaucracy or administrative paperwork a deterrent to start a business, but cautioned a founder's life is "*one of struggle*" and one had to dedicate time to learn skills such as design, branding, marketing, which do take time. He pointed out some accelerator programmes are too short preventing the entrepreneur from dedicating the time to learn these important skills.

He praised the Irish government structure in terms of Enterprise Ireland and the local Enterprise Boards, although indicated access to funds was "*tricky*" and grants were difficult to obtain. He suggested a "*founder's dole*", a state benefit that directors of startup companies could avail of if the venture did not succeed. But he pointed out he would not be prevented from started a business by fear of failure.

He considered personal success as doing something he loved. For his business, he deems growth as a measure of success.

4.2.2   Interviews with Accelerator and Incubator Programme Managers

Interview 10

The first interview to a programme manager was conducted over Skype with the founder of an accelerator based in Valencia, Spain. Founded in 2012, the objective of this Spanish accelerator is to help the growth of entrepreneurial projects, increasing their level of access to resources in Silicon Valley and their commercial success. In turn, they also assist technology companies based in the United Stated to enter the European markets via Spain. Over thirty startups have passed through the accelerator programmes in their four editions. At the time of the interview, the fifth programme was about to commence.

The acceleration programme lasts four months. Participants receive up to €40,000 in funding, office space, mentoring and over €200,000 in products and services, such as web hosting, helpdesk, Amazon web services, among others. They typically invest in companies in the Internet, software, mobile, videogames, social media or cloud computing sectors that have gone beyond the "*idea*" phase into a more developed project. The founding team must be formed of at least two people and at least one founder must have a technical background. He indicated they value the founding team higher than the product or service itself, although pointed out they must have at least a minimum viable product (MVP) and ideally close to a final product, with some sales and end-users utilising the product or service.

Once accepted into the programme, the companies receive €10,000 initially in exchange for up to 7 percent equity. The accelerator reserves the option to invest a further €25,000 after the completion of the programme, for a maximum of 10 percent equity in the business.

In his experience, startups which enter into an acceleration programme generally seek growth, sales and customer acquisition and retention strategies, media relationship

knowledge, financial and legal advice, valuation guidance, assistance and instructions to present the business and product / service to investors, etc.

When questioned about the location of the business, he praised the ecosystem and lower cost of living in Valencia and pointed out the startup founders generally have no issue with relocating the business there, at least for the duration of the programme. With regard to the global reach and aspirations of the startups, he highlighted their connections in Silicon Valley as well as in several other international locations such as Germany, Brazil and South America, Asia, Canada, etc, were an advantageous point of their programme.

He indicated a key to their success was the regular tracking on the progress of the startups by means of monthly reports, weekly meetings and strong emphasis on metrics and key performance indicators (KPIs); "*our very first talk is on KPIs*", he stressed. The specific KPIs used depend on the type of company, he added, but included financial and sales metrics, website visitors, customer acquisition, conversion ratios, growth rate, etc. He considered success simply as cashing out exits of the businesses they invested in.

He considers there are far too many accelerators in Spain, echoing the opinion of interviewee #6 above that few of those offer proper funding, real assistance and almost none have had a successful exit.

When asked how they attract startups with potential and track record, he adduced to brand and global recognition of their global accelerator network in Silicon Valley, a successful exit of their own within two years of forming the accelerator, their knowledge of the market, heavy scouting and regular participation in startup events. While many startups reach them via the application form, he also admitted there are several which enter by invitation.

Interview 11

The second interview with a programme manager was conducted over Skype with the co-founder of an accelerator and business angel network based in Barcelona, Spain. Before founding the accelerator in 2008, he had worked in a VC fund and had started three internet companies.

The accelerator provides training, seed funding, mentoring and advice, office space and access to further funding rounds via their business angel association. They typically invest in startups in the Internet and mobile applications sectors. They seek companies which

have at least one founder with a technical background, must have a prototype and ideally some traction in terms of sales or at least end-users.

Their programme starts with a week-long "*entrepreneur campus*" where up to twelve companies validate their offering, receive training, participate in workshops and present their projects to the mentors, business angels and VC's. There is no cost to participate in the campus, the programme takes no equity and no funding is provided during this initial stage. However, access to up to €150,000 investment by the business angels and mentors in the network is facilitated to the winners of the campus stage.

Selected companies then may access the acceleration stage, where they stay between three and six months in their co-working space in Barcelona, to foster accelerated growth of the startup. At the end of the acceleration stage, they present in the Investor's Day. They typically run two programmes each year and at time of writing, they had completed ten editions, having invested in around thirty startups. He indicated over 75 percent of participants in the accelerator had managed to receive additional funding. Investments tend to be small, between €20,000 and €40,000, going up to €70,000 in some cases, depending on the number of investors involved. He did not disclose what the typical equity given in exchange is.

Their model has evolved from one where every member of the business angel club had to invest together, to one where a "*lead investor*" is chosen to track the investment, meeting regularly – at least on a monthly basis – with the founding team to offer guide and follow up. The lead investor generally receives an extra 0.5 percent compensation. Investments are in the form of convertible notes, which allow the investors "*receive shares of preferred stock as part of the startup's initial preferred stock financing, based on the terms of the note*" (Walker, 2012).

His opinion on the value of accelerators was that good projects will generally succeed without external assistance of an accelerator, which may only postpone the inevitable failure of bad projects. However, he valued as positive the inclusion of "*good travel companions*" for the startup founders through the acceleration phase. He pointed out that beyond the purely monetary requirements of startups, they provide training and mentoring as well as contacts. He admitted their focus on the Spanish markets where they have the most experience and somewhat limited international networking contacts may be considered a weak point for startups with global aspirations.

Regarding access to global markets, he mentioned "no-one starts global", in reference to the initial testing of the business model and product or service in the local market before reaching to other territories. He did not see any specific obstacles with dealing with bureaucracy or the administration in Spain, considering the formation of a limited company ad become a simple process, which should not deter anyone from starting a business.

When asked about the success of their programme, he indicated that out of around forty companies they have invested in, over twelve projects have already yielded benefits.

Interview 12

This interview was conducted via online meeting with the founder of an accelerator, business angel network and venture capital fund, located in Valencia, Spain.

They run two acceleration programmes per annum, targeting startups in the Internet and mobile applications sectors. The acceleration phase consists of four months on site in their offices in Valencia, and includes mentoring, networking and relationships with public and private organisations that sponsor startups, expert advice on strategy, marketing and sales, search engine marketing and optimisation, analytics, human resources, legal, finance, etc. during and post-acceleration.

The accelerator stage ends with an investor's day where founders pitch their companies. Those who are selected after the acceleration phase are eligible to receive €50,000 on average in funding from a seed capital fund associated with the accelerator, as well as follow-on funding of €150,000 to €250,000 on average, sometimes more, from external funds and VC's part of their network within three to twelve months.

When discussing what the needs of the startups were, he listed some common ones, such as know-how, online marketing, advice on pitching the business to investors, monetisation strategy, networking and connections, increase in visibility, synergies and connections with other founders and access to international investors and markets. One characteristic they offer in their programme which he highlighted was an accompanied visit to London for the founders to meet British VC's. He pointed out they do not act as "match-makers" and demand the founding teams are fully formed and work well together. He insisted their selection process is focused on finding the right team of founders, rather than just an innovative product or idea, and use tests of emotional intelligence to weed out unsuitable or potentially problematic teams.

He pointed out when they started in 2010, there were practically no entrepreneurial or investing culture in Spain, even less in Valencia. Initially their investments were carried out via a limited company. He welcomed the introduction of regulatory requirements in Spain for professional investors, and converted their investment vehicle into a "*Sociedad de Capital Riesgo*" (SCR), regulated by Spain's "*Comisión Nacional del Mercado de Valores (CNMV)* ", the agency in charge of supervising and inspecting Spain's stock markets and the activities of all the participants in them, tasked with the protection of investors and the transparency of the Spanish market.

He indicated they track the companies they assist and invest in using standard KPIs and dashboards, such as Google Analytics, which allow them a clear picture of the state of each startup at any given moment. Once the startup has completed the accelerator programme, they typically take a seat on the Board of the company and meet regularly, usually every month.

At the time of the interview they had run seven editions with over forty participating startups. In the first three editions fifteen companies passed through the programme. Of them, twelve obtained public and/or private funding and remain in business. Three did not survive. Seven continue to experience strong growth, while he described the remaining five as flat growth self-employment businesses. Four of those seven successful companies operate in multiple countries.

When discussing the internationalisation of Spanish startup companies, he pointed out the language was a barrier, and in particular the company's "digital fingerprint" not being in English. Most VC's and international studies, he continued, are in English, which may leave out stories of successful non-English startups such as Spain's eDreams, which has become Europe's largest travel agency and the fifth largest in the world and was acquired by a US private equity firm in 2006 for over €150 million. However, he admitted running a startup in two languages is double the work, advising companies to clearly define their target market. "*If they truly want to be global, they must launch in English from day one*", he said. Nevertheless, he pointed out that being global was not necessary to be successful and cited several Spanish startups they had invested on, in sectors such as food or local produce that would make sense to launch on a local scale.

Interview 13

This interview was conducted by telephone with a programme manager of an incubator in Barcelona, founded in 2001 and linked to a local university's technology park, leveraging

its in-house research capabilities. They target early stage startups in the software, Internet, mobile applications, videogames, clean-tech and electronics sectors.

They receive over 200 applications each year, selecting between 6 and 7 percent, or 12 to 14 companies every year. In the past ten years over 130 companies have passed through the incubator programme, which have collectively received over €25 million in funding from public sources. One of the incubator's tasks is assisting the startups in obtaining funding from private and institutional investors. Last year, he cited their startups had received over €1.5 million in public funding, with an average of between €50,000 and €75,000 per project, plus €150,000 to €200,000 of private investments through a network of business angels.

Some of the services they provide to startups are mentoring, networking, market research and consulting, business development assistance, incubation and office space, access to public financing and to a network of private investors, technical and human resources development, communication, advice on legal, patents and intellectual property, fiscal and accounting issues.

He considered they offered value in specific areas such as knowledge of and access to the university's experts, innovation and R&D. Expertise in obtaining access to public funding was seen by entrepreneurs as a "*safety factor*". He also cited the duration of their programme, typically three to five years, as a key difference with accelerators.

The incubator was initially set as non-profit, offering services for free and only taking around four percent equity in companies if they were successful in receiving funding from external sources. They continue to track those companies by means of quality surveys and regular tracking of KPIs such as number of staff, turnover, number of tenders and contracts won, number of users and retention rate, webpage hits, social media followers, etc.

With regard to measuring success, he said their main indicator was whether the startup was still "*alive*" after year three. He cited 85 percent of their startups meet this criterion. Second indicator was the level of funding the company had received.

When discussing internationalisation of Spanish startups, he described their companies usually started with the intention of commercialising their products and services in international markets, but the reality was their knowledge of the domestic market and local networks meant they employed a local strategy. None of them had launched abroad before year three.

Interview 14

The interview was conducted by telephone with a programme manager of an Irish incubator, associated to a local institute of technology. The incubator opened in its present form in 2006, although the entrepreneurial programmes run by the university had been running since 1998 in various forms.

They currently run a part-time programme for female entrepreneurs in addition to Enterprise Ireland's New Frontiers. A new programme aimed at female entrepreneurs in the science, technology, engineering and maths (STEM) sectors is planned for later in 2014. While the incubator is not specialised, the reality is that many companies are in the information and communications technology (ICT) sector.

In particular, they run two 6-week phase one and one 6-month phase two of the New Frontiers programme every year. Typically they accommodate fifteen companies in each phase one and twelve in each phase two. At time of the interview, over fifty companies were located in the incubator centre. He estimated around 70 percent of them will benefit from follow-on County Enterprise Boards programmes and 25 to 30 percent progress to Enterprise Ireland.

Some the services they offer to startups include incubation space, training programmes, access to the university's Research and Development labs and academic expertise, business development, marketing assistance, access to a panel of mentors, network opportunities, financial and legal advice, etc. While they do not provide investment or funding directly and take no equity share in the startups, they assist in the identification of funding through a business angel network and public funding opportunities.

He pointed out globalisation and internationalisation of some companies, such as software, was simpler than others, such as food. Many of their companies use Ireland as a local trial or test bed, gain references in the domestic market and then look at targeting international markets.

Overall in its fifteen years in existence, over 250 companies had graduated, creating over 2,500 jobs and attracting over €100 million investment. Seventy percent of those companies are still trading. Typical of programmes associated to Enterprise Ireland, one of the main indicators of success they use is the number of employees in the startup. After this, they measure financial and trading indicators, such as revenue, sales, profits investment received, etc. Once companies have completed the incubation programmes, tracking tends to be ad-hoc and less frequent. He estimated between 60 and 70 percent

of companies had increased their economic value, mainly by receipt of grants and/or additional funding.

Interview 15

The last interview was conducted in person with the programme manager of an incubator located in Dublin, associated to a local university. The incubator programme typically lasts three years and is open to all companies to apply. They also provide a shorter term (six months) accelerator programme, only available to companies spun out of the university. They do not focus on any particular sector and include companies in ICT, life sciences and medical devices, physics, engineering, clean-tech, food and agri-tech, among others.

The accelerator is typically run once a year and consists of three phases. Sprints are one-day "hackathon-style" events to generate ideas and identify potential new business opportunities. A commercial bootcamp follows, run over five weeks on a part-time basis, which focuses on education and assistance in the definition of a commercialisation plan and the protection of any potential intellectual property. They run two bootcamps per year with between forty and fifty companies attending. The top performers join the six-month accelerator. The university's technology transfer offices have the expertise on the specific domains and work with the researchers to protect the intellectual property (IP).

When discussing the typical needs of startup founders and university researchers, he highlighted the access to networks and credibility in the market place. The incubator can assist them with those needs.

But he highlighted the importance of the ecosystem and coordination of efforts to ensure sustainable domestic job creation and economic success. Pointing out the relatively artificial wealth creation generated by Foreign Direct Investment and the damaging effect to the local economy if those foreign companies leave the country in the face of a crisis, he advised of the need to foster the creation of domestic companies. He believes the ecosystem is the way to achieve balance, in the same way as Silicon Valley or New England in the United States had generated a high level of success by clustering talent in a well defined geographic region. The system also provides credibility. Participating in a New Frontiers or having been selected as a high potential startup (HPSU) by Enterprise Ireland, gives the startups the credibility or track record they may lack on their own. He said incubators and accelerators are "*extremely important*" to add credibility to the new businesses.

He considers the ecosystem in Ireland is still in its infancy, having operated for less than ten years, especially in comparison with Silicon Valley or Israel. But he cautioned that attempting to steer the ecosystem is not simple or swift. While venture capitalists, angels and other investors are an important piece of the puzzle, you also need public money. It takes some of the unknown risk out of the system and encourages other players to participate. However, payback should not be expected to happen in the short-term and these investments need to be seen as adding value to the overall economy in the long term. Ireland needs to continue to build the system, bringing in people with the skills and talent to handle that risk.

He intimated the key success metric for university and government sponsored incubators in Ireland is above all, employment, in contrast with other regions such as United States or Israel where the key metric is traded exits. He also pointed to the short-termism of the United States, and as example he compared it with Germany, where sustainable wealth creation generally means family ventures run over two or three generations of business owners in "city-regions", generating satellite jobs in the area.

He sees many large corporations are not investing in the kind of research and development and innovation that generates economic growth and employment, focusing instead on financial and fiscal engineering to maximise profits.

Ireland was described as attractive due to its well educated workforce. He highlighted the role of education in fostering an entrepreneurial spirit in young people. Even the thought of entrepreneurship was not in young people's minds, so putting this idea as a viable career option was, in his words, of "*unbelievable importance*". There is no need to reinvent the wheel, he argued, pointing out the system takes out a degree of risk and uncertainty from such a career choice.

4.3   Analysis

4.3.1   Supporting Programmes for Early-Stage Startups in Ireland and Spain

All of the incubator and accelerator programmes analysed in this study provide a combination of services to their startup clients, from a "menu" which include the following:

- Office space
- Mentoring and training
- Web hosting and other technical services
- Access to follow-on funding

- Connections with local business angel network

- Connections with and access to public funding

- Sales and marketing strategy advice

- Assistance to define an online strategy (Search engine optimization, etc)

- Human, legal and financial advice

- Advice on patent & Intellectual Property (IP) protection

- Market research, in some cases

- When associated to a university or technology institute, access to the university's research and development resources and expertise

- Credibility

Table 4-1 summarises the main remaining characteristics of the incubator and accelerator programmes who participated in the interviews. It can be seen that the duration of the accelerator programmes tends to be shorter than in incubators.

Table 4-1 – Characteristics of the Incubators and Accelerators interviewed

	IV#10 Spanish Accelerator	IV#11 Spanish Accelerator	IV#12 Spanish Accelerator	IV#13 Spanish Incubator	IV#14 Irish Incubator	IV#14 Irish Incubator + Accelerator
Duration	4 months	3 – 6 months	2 months	3 - 5 years	6 months	Incubator: 3 years Accelerator: 6 months
Funding (average)	€40k	€20k-€40k Up to €70k in some cases	€50k from Angels. €150-€200k from VCs	€50-€75k public money €150-€200 network of business angels	None	Variable
Equity sought (average)	7% up to a max of 10%	Not disclosed	Max 10%	4%	None	Not disclosed
Success in terms of	Cashing out on exits	Exits, Profits		Is company alive after year 3? Then funding received	Employment	Employment

Another difference appears to be what they consider as success. Accelerators, which tend to be commercial organisations, focus on cashing out on the exit of the invested

companies, in terms of acquisitions or entry in the stock market (Initial Public Offering – IPO). Incubators align their success to the level of employment generated by the new businesses.

Access to post-seed funding appears to be a problem in both countries. The findings in the 2013 report commissioned by Telefónica to investigate the European ecosystem (Salido, Sabás & Freixas, 2013) are echoed by several founders and programme managers. Florida points out that VC's "*cluster in areas with high concentrations of financial institutions and those with high concentrations of technology-intensive enterprises (...) Venture capital investments flow predominantly toward established high technology areas*" (Florida & Kenney, 1988, p.33).

Clayton M. Christensen and Derek van Bever from the Harvard Business School differentiate three types of innovation. (Christensen & Bever, 2014). *Performance-improving innovation* is substitutive, replacing old products with new and better versions. Innovation of this kind does not typically generate significant job creation as consumers simply buy new products exchanging older ones. The second kind is *Efficiency innovations* help companies make and sell mature, established products or services to the same customers at lower prices (2014, p.63). While this innovation increases the firm's productivity, reduces costs and free up capital, it has the negative effect of eliminating jobs. Lastly, *market-creating innovation*, is high impact innovation in which new technology is created which transforms complicated or costly products so radically that they create a *new* class of consumers, or a new market (2014, p.63). This generates a "virtuous circle" benefitting the company, increasing employment and accelerating economic growth.

Corporations are not investing in research and development in this third kind of innovation to generate sustainable economic growth. Ben Schneider (2014) argues investors need to acknowledge the need to focus their investments on innovation that creates new markets and employment, instead of using metrics that privilege the efficient use of capital and reduce jobs; otherwise the current economic situation will worsen. He advises change is required in the metrics that evaluate a company's performance, to align them with the requirements of the new consumers who demand new and innovative products and services

Some corporations have realised how important this market-creating innovation is to stay ahead of the competition and started to back VC funds and create corporate accelerators and incubators. George Deeb analysed 560 companies and found they were investing

US$ 8 billion a year in venture-capital related programmes, suggesting this is a "*big pool of money*" startups could tap into (Deeb, 2014). Some corporations, such as Barclays, Disney, Kaplan or Microsoft, have partnered with experienced third-party accelerators to run these programmes (e.g. Techstars in the United States), whereas others have started their own accelerator, such as Telefónica, Coca Cola, Nike, Samsung, etc. Either way, startups can tap into these corporations' pool of resources, both in terms of funding, contacts, know-how and industry experience, but perhaps more importantly, the corporates may become their first big customer, which can be used as reference to open up the door to other potential customers and give credibility to the company and their products or services. Bradford (2014) cautions startup founders about potential consequences of taking part on corporate-backed accelerators, such as possible commercial restrictions limiting the capacity to attract customers outside the circle of the corporation, i.e. inability to sell to competitors. Another issue highlighted is the corporates' mixed track record of appointing programme directors with a real track record in running successful startups of their own; instead some have chosen from within the corporation's ranks, which may not be the most adequate for the needs of the founders. This sentiment was echoed by some of the founders interviewed who had passed through an accelerator, pointing out the commitment and expertise of the accelerator managers are the key to the success of their stay in the programme. Bradford finally highlights the real commitment of the corporation to the programme and the actual terms of the participation as key factors in the long term success of the venture and the startups associated with it. He argues that corporate accelerators who reward the programme managers solely on the basis of the results of the startups invested may have a higher long-term motivation in the success of the startup and create value to the founders and investors. Not overlooking the terms and conditions of the programmes must be due diligence on the part of the founders to prevent their future ability to commercialise and attract further funding beyond the corporate.

On the topic of public sector involvement, several programme managers both in Spain and Ireland used the Israeli model to highlight that when public finances get involved in bridging the financing gaps, the money needs to be targeted and well coordinated for it to have a lasting and culture-shifting effect. In their book "Start-up Nation", Senor and Singer (2009) describe *Yozma* (Hebrew for "initiative"), a programme introduced by the Israeli government in 1993 to attract foreign VC firms, whereby the government would double any investments with public funds. Yozma was funded to the tune of US$ 100 million and included ten different funds. A distinguishing characteristic of the Yozma funds was they had to include a foreign VC, an Israeli VC and an Israeli investment bank. This government intervention removed a certain component of risk, kick-starting the startup

ecosystem in Israel and encouraging investments, which increased over sixty times to US$ 3.3 billion in a decade, up to the year 2000. In addition to funds, the Israeli government created a network of over twenty technology incubators, to channel the know-how and expertise of the Diaspora who were returning to the country in large numbers in the early and mid 1990's after the collapse of the Soviet Union.

4.3.2   Influence of the Country as a Success Factor

Spain

While the level of bureaucracy in Spain was described as cumbersome and expensive, it was not seen as a deterrent to start a business. The process of setting up a company has been simplified since the introduction of the figure of the *New Enterprise Limited Liability Company* (in Spanish "*Sociedad limitada nueva empresa*").

The lack of an entrepreneurship culture, the fear of failure and a certain lack of individual responsibility in Spain are hurting the country's prospects. A lack of an entrepreneurial spirit in Spanish youth and a negative perception of business owners, together with a deficient business-related education in schools and technical universities need to be reversed in order to foster the entrepreneurial spirit in the country.

Several were suspicious of the reasons of the Spanish politicians for promoting entrepreneurship as *the* solution to Spain's economic and unemployment problems. Some policies are seen as short-term, extracting taxes and rates from founders before they achieve profitability, and artificially removing people from the unemployment statistics. The lack of overall coordination and clarity of the startup and entrepreneurial efforts at a national or governmental level was highlighted ("*there is no Startup Spain*"). The ecosystem lacks "*density*" in the words of one of the participants.

A problem that most interviewees pointed out was that while there seems to be an abundance of seed funding for startups, the level of funding in subsequent series is low, which may force some companies to consider moving abroad. Several suggestions were proposed, such as lowering rates and levies or facilitating flow of money by making it easier for VC's to invest in a profitable way. There might be light at the end of the tunnel. A recent increase in the frequency and size of exits in Spanish tech startup companies, size of post-seed investments and the entry in the Spanish market of global investment funds may indicate a reversal of this problem.

Spanish startups, perhaps due to the relatively large size of the domestic market (small market but sufficiently large to validate products and market strategy), tend to have a more domestic focus than Irish. Access to local established contacts, networking and a language barrier were cited as other reasons. So if the startup is looking for a international projection, it was found that raising the company's "digital fingerprint", launching in English language from day one and foster an international network of connections must be addressed.

Several interviewees were of the opinion there are too many accelerators in Spain, questioning the quality of some of those programmes and the mentors involved. One of the VC's interviewed considered there is no immediate risk of overflowing, as few provide quality assistance, training or funding and they have had no successful exist to-date.

Ireland

Bureaucracy is perceived as less complex or burdensome in Ireland than in Spain, although most of the participants indicated this would not be a deterrent to starting a business in either country

The ecosystem in Ireland seems to be favourable, with dynamic feedback and quality networking connections and a stronger relation with the United States than Spain. One of the interviewees regarded Ireland as a "*pretty good place*" to do business and viewed other startup companies as being in "*friendly competition*" with each other.

However the size of the local market in Ireland is too small. This may be an advantage as indigenous companies need to export rapidly in order to scale up. A fragmented European market, with multiple different regulations, compliance, localisation in social networking and marketing, is making it difficult to launch in multiple countries. However, Ireland is seen to be in a good position to access the US, UK and European markets.

Tax breaks offered by the Irish government are helping attract international companies to Ireland, but as one incubator manager mentioned, the influence of foreign investment may detract from the creation of domestic businesses. Several interviewees praised the Irish government's initiatives driven by Enterprise Ireland and the local Enterprise Boards, although indicated access to funds and grants could be simplified.

Ireland was described as an attractive location for businesses, due to its well educated workforce, highlighting the role of education in fostering an entrepreneurial spirit in young people. However the thought of entrepreneurship was not in young people's minds, so

putting this idea as a viable career option was, in the words of one participant, of "*unbelievable importance*".

The startup cultures in both countries are still young compared with other regions such as Silicon Valley or Israel. Initiatives to encourage young people to develop computer skills and entrepreneurial spirit to consider starting a business as a viable career option are important, but will not yield fruit for several years.

The ecosystem also provides credibility. Participating in a New Frontiers programme or having been selected as a high potential startup (HPSU) by Enterprise Ireland, gives the startups the credibility or track record they may lack on their own. While there are indeed similar programmes in Spain, the lack of a coherent and centrally managed strategy may hurt Spain's prospects.

5   CONCLUSIONS AND FUTURE WORK

5.1   Conclusions

The topics of the research are the startup ecosystems in Ireland and Spain in the Internet and mobile applications sectors, the support networks available in both countries, specifically focusing on accelerator and incubator programmes and the factors for startup success.

These topics will be evaluated in terms of the following research questions:

- What programmes exist in Ireland and Spain to support early-stage startups?
- Is the country a key factor in the success of early-stage startup companies?

By using semi-structured interviews with a mixture of accelerator and incubator programme managers and early-stage business founders based in Ireland or Spain, these topics were analysed.

5.1.1   Supporting Programmes for Early-Stage Startups in Ireland and Spain

A number of supporting programmes exist in both countries. Startup events abound, incubators now exist in most universities, established and well backed accelerator programmes with a proven track record are running regular programmes, several of them focused on Internet and mobile application startups.

The sentiment expressed by the individuals interviewed, as well as the analysis of the available programmes seem to point to a greater degree of coordination in Ireland, at least of incubator programmes, than in Spain.

Participation in accelerator and incubator programmes can be useful for inexperienced founders and those in need of early-stage seed funding beyond what bootstrapping ad "friends and family" investments can achieve. While there are key differences in the approach, duration, level of funding, equity sought in exchange for such funding and the definition of success, the services provided by both accelerators and incubators are similar. A combination of several of the following services is provided by both types of programmes, mentoring and training; office space; Internet access, web hosting and other technical services; access to follow-on funding; connections with local business angel network and access to public funding; sales and marketing strategy advice; assistance to define an online strategy; advice on human, legal, financial and patent and intellectual

property (IP) protection issues; market research and credibility (the "badge" of belonging to the programme).

While there seems to be a recent explosion in Spain in the number of programmes that called themselves accelerators or incubators, in many cases, they do not possess a track record and may dilute the coordination efforts or hurt the prospects of startup founders.

Startup founders considering participating in one of those programmes should research the track record of the programme as well as of the programme managers and the mentors involved. The commitment and expertise of the managers are the key to the success of the programme. In cases where there is a corporate backing the accelerator, founders should consider the commitment of the corporation to the programme and the actual terms and conditions associated as influential factors in the long term success of their startup.

5.1.2 Influence of the Country as a Success Factor

Several of the founders interviewed indicated a lack of talent available as one factor affecting their potential success. Richard Florida hypothesised that talent "*is attracted by diversity, or what are referred to as low barriers to entry for human capital*" (Florida, 2002, p.744) and linked to high-technology locations. He also advises "*the key to understanding the new economic geography of creativity and its effects on economic outcomes lies in the 3Ts of economic development: technology, talent, and tolerance*" (Florida, 2003). As such, it would follow that in order to attract talent, the countries and cities in particular need to invest in innovation and foster a culture of creativity, tolerance and openness.

In a 1994 study on the factors that determined entrepreneurship rates in nine countries, including Ireland, Reynolds, Storey and Westhead concluded *that the differences on entrepreneurship rates were negligible, that country conditions had a relevant impact on the lower/higher rate of business creation and that entrepreneurial activity was a necessary condition but not sufficient for economic growth.*" (Guerrero & Peña-Legazkue, 2013, p.9). Policy makers should focus "*not only on the quantity but also on the quality of entrepreneurial activity*" (2013, p.10).

Bureaucracy in Spain was described as cumbersome and adding unnecessary expense to new companies; however, the individuals interviewed did not see this as a deterrent, with some measures having been introduced to simplify the process. Administrative and legal barriers as well as tax advantages for startups and online companies in Spain need to be addressed by the government to foster entrepreneurship in the country.

The lack of an entrepreneurship culture, the fear of failure and a certain lack of individual responsibility in Spain are hurting the country's prospects. A lack of an entrepreneurial spirit in Spanish youth and a negative perception of business owners, together with a deficient business-related education in schools and technical universities need to be reversed to foster the entrepreneurial spirit in the country. While social perception of entrepreneurs is higher in Ireland, entrepreneurship is not in young Irish people's minds when considering a career choice. While some initiatives have been introduced to address this (Young Scientist of the Year, Coder Dojo, Dragon's Den Junior, etc), the startup cultures in both countries are still young compared with other regions such as Silicon Valley or Israel.

The low level of funding available in later-stage seed rounds is considered a problem in both countries - indeed at a pan-European level - despite the abundance of seed funding for startups. This may prompt some companies to consider moving or setting up abroad. This trend might be reversing with a recent increase in the frequency and size of exits in European tech startup companies and the entry of global investment funds.

The size of the domestic market is very different in Spain and Ireland. Spanish domestic market while relatively small in a global basis, is sufficiently large to validate products. A language or culture barrier also influence the Spanish founders to attack the domestic market first or in some cases exclusively. Ireland domestic market is tiny in comparison. This may have forced many Irish companies to be "born-global" and consider a global (or at least an English-speaking market) from day one. rapidly in order to scale up. However, a fragmented European market, with multiple different regulations, compliance, localisation in social networking and marketing, is making it difficult for companies in both countries to launch in multiple territories. Overall, it is advisable that if the startup is looking for a international projection, they need to raise the company's "digital fingerprint" and launch in English language from day one and grow their international network of connections.

The ecosystem is key. It provides credibility and creates a sense of urgency and activity other players can take advantage of. Participating in Ireland's New Frontiers programme or having been selected as a high potential startup (HPSU) by Enterprise Ireland, gives the startups the credibility or track record they may lack on their own. Similar programmes exist in Spain; however a lack of a coherent strategy may hurt Spain's prospects. While we might be getting close to saturation point in the number of accelerators in Spain, many question the quality of newcomers to provide quality assistance, lacking a verifiable track

record. One of the VC's interviewed considered there is no immediate risk of overflowing. On the other hand, the highly centralised approach in Ireland may stifle the arrival of other accelerators into the country.

Having analysed the literature available, the overarching conclusion is that in most cases, there does not seem to matter much what country the startup is based on. The success or failure of the startup is heavily reliant on the founding partners, their business experience and the relations within the founding team. This conclusion was echoed by the experiences and successes of several entrepreneurs interviewed and the managers of accelerator and incubator programmes in both countries analysed.

5.2   Limitations and Future Work

This study has several limitations which also offer opportunities for further research. First of all, it includes just a small subset of startups, i.e. firms based in Spain or Ireland in the Internet and mobile application sectors. Further research may expand into other industries, such as biotechnology, medical devices, renewable energies, or financial services, which are of great importance in both countries, and assess whether their needs are similar to those of companies in the sectors reviewed in this study, or evaluating whether similar supporting mechanisms are readily available for firms in those sectors.

Staying within the Internet and mobile application sector, a comprehensive survey may be carried out to validate the findings in this study in a larger sampling universe.

The firms evaluated had in many cases been in business for a relatively short time (typically under five years). Tracking the success of these companies over a longer period of time would be an interesting research opportunity, as it would validate if the support obtained by the firms in their early stages had been sufficient to propel them into sustained success. Research into the success rates of startup companies that have taken advantage of supporting mechanisms versus those that have not over a longer period of time could yield interesting insights of the value of the startup supporting programmes.

As discussed in the study, few incubators and almost no commercial accelerators disclose their success rates. For those who do, the use of a standard set of performance indicators (KPIs) would be beneficial and would allow a fair and scientific quantitative comparison of their startups' evolution and success rates. Defining such set of standards would be a worthwhile exercise which would open another avenue of research.

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7   APPENDICES

7.1   Appendix A - Glossary

Incubator or Business Incubator

An organization designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services that could include physical space, capital, coaching, common services, and networking connections. (Entrepreneur, 2014)

Business incubators nurture the development of entrepreneurial companies, helping them survive and grow during the startup period, when they are most vulnerable. These programs provide their client companies with business support services and resources tailored to young firms. The most common goals of incubation programs are creating jobs in a community, enhancing a community's entrepreneurial climate, retaining businesses in a community, building or accelerating growth in a local industry, and diversifying local economies.(NBIA, 2009).

Accelerator, Seed Accelerator or Accelerator Programme

Accelerator programs are programs of limited-duration—lasting about three months—that help cohorts of startups with the new venture process. They usually provide a small amount of seed capital, plus working space. They also offer a plethora of networking opportunities, with both peer ventures and mentors, who might be successful entrepreneurs, program graduates, venture capitalists, angel investors, or even corporate executives. Finally, most programs end with a grand event, a "demo day" where ventures pitch to a large audience of qualified investors (Cohen, 2013, p.19).

Angel, Business Angel, Angel Investor

Angels are individual investors, or groups of individual investors, who provide seed capital and varying amounts of advice to young firms (Cohen, 2013, p.20).

Company Builder

Startup growth programme, where new business opportunities are sourced from within, usually stemming from the company builder founder's expertise in an area or sector. Main characteristics: work through market validation before putting a team together, almost full

ownership of the startup and bootstrapping during initial phases using the founder's resources (Salido, Sabás & Freixas, 2013, p.9).

Research Park, Technology Park, University Research Park, Science and Technology Park

A science park is an organisation managed by specialised professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a Science Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities (IASP, 2014).

AURP defines a university research park as a property-based venture, which master plans property designed for research and commercialization, creates partnerships with universities and research institutions, encourages the growth of new companies, translates technology and drives technology-led economic development (AURP, 2014).

Seed

Financing provided to research, assess and develop an initial concept before a business has reached the start-up phase (EVCA, 2014, p.28).

Start-up

Financing provided to companies for product development and initial marketing. Companies may be in the process of being set up or may have been in business for a short time, but have not sold their product commercially (EVCA, 2014, p.28).

Early-stage fund

A venture capital fund focused on investing in companies in their primary development stage (EVCA, 2014, p.8).

Later-stage fund

A venture capital fund focused on investing in later-stage companies in need of expansion capital (EVCA, 2014, p.8).

Later-stage venture

Financing provided for the expansion of an operating company, which may or may not be breaking even or trading profitably. Later-stage venture tends to finance companies already backed by venture capital firms (EVCA, 2014, p.28).

Convertible Note

A convertible note is short-term debt that converts into equity. In the context of a seed financing, the debt typically automatically converts into shares of preferred stock upon the closing of a Series A round of financing […] One of the key advantages of issuing convertible notes is that the valuation issue is kicked down the road until the Series A round of financing. (Walker, 2012).

Growth

A type of private equity investment – most often a minority investment but not necessarily – in relatively mature companies that are looking for capital to expand operations, restructure operations or enter new markets (EVCA, 2014, p.28).

High Potential Start-Up (HPSU)

A start-up venture that is introducing a new or innovative product or service to international markets; involved in manufacturing or internationally traded services; capable of creating 10 jobs in Ireland and realising €1 million in sales within three to four years of starting up; led by an experienced management team; headquartered and controlled in Ireland and less than six years old (Enterprise Ireland, 2014a).

Initial public offering (IPO)

The sale or distribution of a company's shares to the public for the first time by listing the company on the stock exchange (EVCA, 2014, p.62).

Minimum Viable Product (MVP)

The minimum viable product (MVP) is that product which has just those features (and no more) that allows a product to be deployed that resonates with a subset of customers (typically the *early adopters*); some of whom will pay money or give feedback (Ries, 2009).

Nomenclature des Unités Territoriales Statistiques (NUTS)

The Nomenclature of territorial units for statistics, abbreviated as NUTS (from the French Nomenclature des Unités territoriales statistiques) is a geographical nomenclature subdividing the territory of the European Union (EU) into regions at three different levels (NUTS 1, 2 and 3, respectively, moving from larger to smaller territorial units). Above NUTS 1 is the 'national' level of the Member State (European Commission eurostat, 2014).

7.2 Appendix B – Interview Questions

7.2.1 Interview Questions For Startup Founders

Initial / Setup Questions

1QF: -What is your Age Group and Sex?

2QF:- How long have you been living in Ireland?

3QF:- What is your current role and company? What sector best defines your company? (this research focuses on ICT companies)

4QF:- What stage of development do you see your business at now?

5QF:- How many staff - founders or employees - do you have now?

6QF:- How much funding have you raised to date? From what sources?

Value of the Accelerator Programme

7QF:- What needs do you, as Startup founder, have that an Accelerator programme covers? Which ones they do not?

8QF:- What are the 3 most important benefits you received from participating in an accelerator programme?

9QF:- What value would you put / how would you value the contribution the accelerator has made to your company's development?

10QF:- If you received ZERO funding from the accelerator, what % of equity would you be willing to give to participate?

11QF:- What are the main drawbacks of participating in an accelerator programme?

12QF:- What would you do differently if you joined in another accelerator programme?

Location

13QF: What factors influenced your decision to move/live in Ireland / Spain (as appropriate)?

14QF:- What would you say the biggest advantages in setting up a business in Ireland (vs Spain)?

15QF:- What would you say the biggest challenges in setting up a business in Ireland (vs Spain)?

16QF:- How do you rate the accessibility of the EU / Global market from Ireland / Spain (as appropriate)? What makes the difference?

17QF:- Logistics, i.e. moving to Ireland, location, etc. What impact do these factors have in your decision of locating your business in Ireland / Spain (as appropriate)?

18QF:- Bureaucracy: what could Spain/Ireland (as appropriate) do better? What is one country doing better that the other could learn from?

19QF:- Subsidies, unemployment benefits, insurance, cushion fund, etc. Are these important for entrepreneurs? What risk is too much risk?

Success

20QF: - In what terms would you define you achieving success?

21QF:- How much do you value the networks, infrastructure, Business Communities, etc provided by the Accelerator?

7.2.2 Interview Questions For Accelerator/Incubator Programme Managers

Initial / Setup Questions

1QA:- What is your role within the Accelerator?

2QA:- Does the Accelerator specialise in particular sectors (e.g. Mobile apps, ecommerce, health/biology, generic/non-specialized)? (this research focuses on core ICT startups)

3QA:- How long has the Accelerator been in existence?

4QA:- What is the duration of the Programme and how many cycles do you run per year?

5QA:- How many Programmes have you run so far?

6QA:- How many startup companies have you accepted into the Programme so far (in total)? What is your average acceptance rate (% of applicants)?

Funding & Investment

7QA:- What is the average investment/funding (EUR '000) that you provide and what is the typical equity (%) that you take in exchange?

8QA:- Typically, how much additional investment (on average) your startups receive after the Programme from other investors, VCs, etc?

Value of the Accelerator Programme

9QA:- What do you see as common needs of Startup founders that you, as an Accelerator, fulfil? Which ones you do not?

10QA:- How do you rate the accessibility of the EU / Global market from IRELAND / SPAIN (as appropriate)? What makes the difference?

Success

11QA:- How do you rate the success of the companies you help? What KPI's do you use?

12QA:-What % of companies you have helped are/have been successful on a national/European/Global scale?

13QA:- What % of your startups have increased economic value, and by how much? (Value seen as Funding from VCs, angels, grants, etc)

14QA:- Do you actively track the startup companies that you have invested on after they have graduate from the Programme? How?

7.3   Appendix C – Cover Letter / Email

Subject: *Measuring the impact of accelerators in the success of startups in Ireland and Spain (Trinity College Dublin research)*

<div align="right">
Mr Amado Hidalgo,
School of Computer Science and Statistics,
University of Dublin, Trinity College,
Dublin, Ireland
</div>

Dear Mr/Ms........,

I am currently engaging in a MSc. in Management of Information Systems at the University of Dublin, Trinity College. The focus of my research is to study the effects that seed accelerators have in the success of ICT startups, specifically those based in Ireland or Spain.

My dissertation supervisor, Mr Brian O'Kane, suggested I contact you directly as my understanding is that [ACCELERATOR NAME] fits the criteria of my research. While I am aware your schedule might be rather full, I would be grateful if you would consider participating in a research interview. It is expected it will not take more than 30-45 minutes to complete and, if necessary, it may be conducted over the telephone or via Internet conferencing (skype).

The aim of the research is to identify if high-tech startups founded in Ireland have a higher chance of succeeding than those founded in Spain or if in fact the country really does not matter that much. Why is this important? Ireland and Spain have suffered (are still suffering) a deep economic recession. Their economies and wealth creation have been very dependent on somewhat artificial factors such as property transactions and speculation. Unemployment is a tremendous problem in both countries, especially youth and long-term unemployment. As such, these countries are exploring more sustainable means of wealth creation to fuel their domestic economies. Tech startups or New Technology-Based Firms (NTBFs) provide sustainable secure, high-quality and highly-skilled employment opportunities. As such, it is important these countries encourage the formation of new companies in technology sectors. An important factor in the success of startups is their participation in seed accelerator programmes.

This study targets seed accelerator organisations in Ireland and in Spain as well as founders of New Technology-Based Firm (NTBF) startup companies in Ireland and in Spain. In particular, we focus the research on startups in the Internet and mobile app

business spaces. This research aims to investigate what influences the success of tech startups so that efforts can be finely tuned and better targeted. A number of studies investigating this subject and success factors have been found, but most of the literature refers to firms based in US or UK.

We believe participating in this research would also be valuable to you in several ways. Firstly, you will discuss your experiences and your organisation's, with the potential to influence developments in the Irish startup scene. Secondly, you will be kept informed of the research findings. And thirdly, you have the chance to equip future business founders with the skills they may need to succeed by offering to share your insights with this study.

Should you agree to take part in this study, let me assure you that confidentiality is guaranteed. Unless instructed otherwise, company details and names of individual participants will remain anonymous. We will not be seeking confidential or sensitive information and you are not obliged to answer any questions you do not wish.

My email address and mobile number are shown below. I look forward to your prompt reply.

Yours sincerely,

Mr Amado Hidalgo

MSc Management Information Systems, School of Computer Science and Statistics

University of Dublin, Trinity College

Email: hidalgoa@tcd.ie or hidalgo.amado@gmail.com

Mobile: +353-86-8030209

Mr Brian O'Kane (Research Supervisor)

Email: brian.okane@oaktreepress.com

Telephone: + 353-21-431-3855

7.4 Appendix D - Ethics Application Form

	School of Computer Science & Statistics **Research Ethics Application**

CHECKLIST

The following documents are required with each application:

1.	• SCSS Ethical **Application Form**	**Yes**

2.	• **Participant's Information Sheet** must include the following:
	  a) Declarations from Part A of the application form;
	  b) Details provided to participants about how they were selected to participate;
	  c) Declaration of all conflicts of interest.
		Yes

3.	• **Participant's Consent Form** must include the following:
	  a) Declarations from Part A of the application form;
	  b) Researchers contact details provided for counter-signature (your participant will keep one copy of the signed consent form and return a copy to you).
		Yes

4.	• **Research Project Proposal** must include the following:
	  a) You must inform the Ethics Committee **who** your intended participants are i.e. are they your work colleagues, class mates etc.
	  b) How will you recruit the participants i.e. **how** do you intend asking people to take part in your research? For example, will you stand on Pearse Street asking passers-by?
	  c) If your participants are under the age of 18, you must seek both parental/guardian AND child consent.
		Yes

5.	• Intended **questionnaire** / survey / interview protocol / screen shots / representative materials (as appropriate)	**Yes**
6.	• **URL** to intended on-line survey (as appropriate)	**N/A**

<table>
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School of Computer Science and Statistics

Research Ethical Application Form

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Part A

Project Title: **What effects do Seed Accelerators have in the success of a technology startup? A comparison of Ireland and Spain**

Name of Lead Researcher (student in case of project work):   **Mr. Amado Hidalgo**

Name of Supervisor: **Mr. Brian O'Kane**

TCD E-mail: **hidalgoa@tcd.ie**

Contact Tel No.:   **086-8030209**

Course Name and Code (if applicable): **MSc Management of Information Systems, SCSS (DPTCS-MISY-1P09)**

Estimated start date of survey/research: **May-June 2014**

I confirm that I will (where relevant):

- Familiarize myself with the Data Protection Act and the College Good Research Practice guidelines http://www.tcd.ie/info_compliance/dp/legislation.php;
- Tell participants that any recordings, e.g. audio/video/photographs, will not be identifiable unless prior written permission has been given. I will obtain permission for specific reuse (in papers, talks, etc.)
- Provide participants with an information sheet (or web-page for web-based experiments) that describes the main procedures (a copy of the information sheet must be included with this application)
- Obtain informed consent for participation (a copy of the informed consent form must be included with this application)
- Should the research be observational, ask participants for their consent to be observed
- Tell participants that their participation is voluntary
- Tell participants that they may withdraw at any time and for any reason without penalty
- Give participants the option of omitting questions they do not wish to answer if a questionnaire is used
- Tell participants that their data will be treated with full confidentiality and that, if published, it will not be identified as theirs
- On request, debrief participants at the end of their participation (i.e. give them a brief explanation of the study)
- Verify that participants are 18 years or older and competent to supply consent.
- If the study involves participants viewing video displays then I will verify that they understand that if they or anyone in their family has a history of epilepsy then the participant is proceeding at their own risk
- Declare any potential conflict of interest to participants.
- Inform participants that in the extremely unlikely event that illicit activity is reported to me during the study I will be obliged to report it to appropriate authorities.
- Act in accordance with the information provided (i.e. if I tell participants I will not do something, then I will not do it).

Signed: ....   Date: 1st May 2014

　　　　Mr. Amado Hidalgo

Part B	

Please answer the following questions.	*Yes/No*
Has this research application or any application of a similar nature connected to this research project been refused ethical approval by another review committee of the College (or at the institutions of any collaborators)?	*NO*
Will your project involve photographing participants or electronic audio or video recordings?	*NO*
Will your project deliberately involve misleading participants in any way?	*NO*
Is there a risk of participants experiencing either physical or psychological distress or discomfort? If yes, give details on a separate sheet and state what you will tell them to do if they should experience any such problems (e.g. who they can contact for help).	*NO*

Does your study involve any of the following?	Children (under 18 years of age)	*NO*
	People with intellectual or communication difficulties	*NO*
	Patients	*NO*

School of Computer Science and Statistics

Research Ethical Application Form

Details of the Research Project Proposal must be submitted as a separate document to include the following information:

1. Title of project
2. Purpose of project including academic rationale
3. Brief description of methods and measurements to be used
4. Participants - recruitment methods, number, age, gender, exclusion/inclusion criteria, including statistical justification for numbers of participants
5. Debriefing arrangements
6. A clear concise statement of the ethical considerations raised by the project and how you intend to deal with them
7. Cite any relevant legislation relevant to the project with the method of compliance e.g. Data Protection Act etc.

Details of the Research Project Proposal

TITLE

What effects do Seed Accelerators have in the success of a technology startup? A comparison of Ireland and Spain

PURPOSE

I would like to investigate if Internet / tech startups founded in Ireland have a higher chance of succeeding than those founded in Spain, is it the other way around or if in fact does the country really matter that much.

Why is this important? Ireland and Spain have suffered (are still suffering) a deep economic recession. Their economies and wealth creation has been very dependent on somewhat artificial factors such as property transactions and speculation. Unemployment is a tremendous problem in both countries, especially youth and long-term unemployment. Manufacturing and construction jobs are scarce and will not likely return in the numbers seen during the boom. As such, these countries need to explore more sustainable means of wealth creation to fuel their domestic economies. Tech startups or New Technology-Based Firms (NTBFs) "provide sustainable secure, high-quality and highly-skilled employment opportunities" (Storey et al., 1998; Löfsten et al., 2005). As such, it is important these countries encourage the formation of new companies in technology sectors.

Of course, both countries are attempting to encourage this already and a key component is the use by startups of seed accelerators, programmes which fund and assist groups (cohorts) of startup companies to increase the efficiency of the investment.

This research aims to investigate what influences the success of tech startups so that efforts can be finely tuned and better targeted. Does the country itself influences positively / negatively in their success (or lack thereof)? Are investors better off directing their money to one country over the other?

A number of studies investigating this subject and success factors have been found, but most of the literature refers to firms based in US and UK. Some EU-wide high-level comparisons do exist but nothing has been found specifically for Ireland or Spain.

METHODS TO BE USED

Focused open-ended Interviews with a small number of Ireland- and Spain-based seed accelerator programme managers and a sample of the Founders of startups who have participated in these programmes (alumni).

PARTICIPANTS

A list of the longest established seed accelerators based in Ireland and Spain has been compiled by the Researcher, utilising various resources, such as web searches, business directories and literature review. There are conflicting definitions of seed accelerators and depending on what factors you consider and who undertakes the task of compiling the list, the number of accelerators vary widely. For example, while tech.eu listed just 10 accelerators in Spain, F6S (a worldwide network for founders) listed over 60 and the Spain Startup Map (a community-generated map created to connect and promote the Spanish startup ecosystem) included over 70 of such accelerator companies in Spain. Due to the nature and scope of this thesis, a small (two or three) number of representative organisations in Ireland and in Spain will be approached to participate in the interviews. When possible, interviews will also be conducted with several of the Founders of startups who have participated in programmes in those accelerator organisations (alumni).

While such a small number is not statistically representative, it is not the intention of the Researcher to provide a comprehensive analysis of every single organisation involved in this fast changing environment, but to add the expert opinion of those involved at the forefront of the entrepreneurial environment in both countries.

The interviews will be conducted in person where possible, or via Internet conferencing (skype) if direct access is not available.

ETHICAL CONSIDERATIONS

Increasing competition in the startup and specially in the accelerator scene has seen an increasing number of such organisations appear in both countries. Being many of them private organisations, there is however little to no information published on the level of success of their investments. As such, potential ethical issues may arise if sensitive information provided by one accelerator is known by a competitor, or if their success rate is not considered high enough to attract the best startups to their programmes.

To deal with such potential ethical issues, we will anonymise and aggregate the data and figures obtained during the interviews. We will also notify and seek permission from the interviewees before any direct quote is included in the final published dissertation.

LEGISLATION RELEVANT TO THE PROJECT

Several legislation and government publications exist in both countries which deal with entrepreneurship and assistance to startups (e.g. Ireland's "*Action Plan for Jobs 2014*" or Spain's "*Ley 14/2013, de 27 de septiembre, de apoyo a los emprendedores y su internacionalización*").

This research will be compliant with the data Protection Act, 1988. Data obtained during the research will be stored electronically on the Researcher's computers in an encrypted folder (see http://www.truecrypt.org/docs) and/or in secure online storage (Box.com data centres, facilities and operations are Safe Harbor certified; Box also encrypts all data at transfer with high-grade SSL and at rest with 256-bit AES. See http://www.box.com for more details). Paper-based documents will be scanned, uploaded to the online storage and then shredded.

Part C

I confirm that the materials I have submitted provided a complete and accurate account of the research I propose to conduct in this context, including my assessment of the ethical ramifications.

Signed: .... Date: 1ˢᵗ May 2014

     Mr. Amado Hidalgo

There is an obligation on the lead researcher to bring to the attention of the SCSS Research Ethics Committee any issues with ethical implications not clearly covered above.

Part D	*DOES NOT APPLY*

If external ethical approval has been received, please complete below.

External ethical approval has been received and no further ethical approval is required from the School's Research Ethical Committee. I have attached a copy of the external ethical approval for the School's Research Unit.

Signed: .... *DOES NOT APPLY* .... Date: ...... *DOES NOT APPLY* ....

    Lead Researcher/student in case of project work

Part E

If the research is proposed by an undergraduate or postgraduate student, please have the below section completed.

I confirm, as an academic supervisor of this proposed research that the documents at hand are complete (i.e. each item on the submission checklist is accounted for) and are in a form that is adequate for review by the SCSS Research Ethics Committee

Signed: .... Date: ....

    Supervisor **(Mr. Brian O'Kane)**

TRINITY COLLEGE DUBLIN

INFORMED CONSENT FORM

LEAD RESEARCHERS: **Amado Hidalgo**

BACKGROUND OF RESEARCH

This research attempts to investigate the impact the location of an ICT startup (whose core business is in the ICT sector) has in its success. I am specifically comparing Spain and Ireland. By participating in this interview, you will contribute to our study of the factors that influence the potential success of ICT startups.

PROCEDURES OF THIS STUDY

Interviews of founders of ICT startups / Interviews of Accelerator organisations, based in Ireland or in Spain.

PUBLICATION

This information is being gathered for the completion of a dissertation as part of the M.Sc. In Management of Information Systems. This dissertation along with the gathered anonymous data may be published in Trinity College Dublin Library along with all other theses and dissertations.

Individual results will be aggregated anonymously and research reported on aggregate results.

DECLARATION:

- I am 18 years or older and am competent to provide consent.
- I have read, or had read to me, a document providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
- I agree that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
- I understand that if I make illicit activities known, these will be reported to appropriate authorities.
- I understand that I may stop electronic recordings at any time, and that I may at any time, even subsequent to my participation have such recordings destroyed (except in situations such as above).
- I understand that, subject to the constraints above, no recordings will be replayed in any public forum or made available to any audience other than the current researchers/research team.
- I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.
- I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.
- I understand that my participation is fully anonymous and that no personal details about me will be recorded.
- *<If the research involves viewing materials via a computer monitor>* I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
- I have received a copy of this agreement.

PARTICIPANT'S NAME:

PARTICIPANT'S SIGNATURE:

Date:

Statement of investigator's responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERS CONTACT DETAILS: Amado Hidalgo – hidalgoa@tcd.ie **- 086-8030209**

INVESTIGATOR'S SIGNATURE:

Date:

TRINITY COLLEGE DUBLIN

INFORMATION SHEET FOR PARTICIPANTS

- Your participation is voluntary and anonymous
- The interview is open ended but should not take more than 45 minutes;
- Each question is optional;
- You may refuse to answer a question with no penalty;
- There are no known conflicts of interest between the Researcher and you;
- The provisions for debriefing after participation
- Preservation of participant and third-party anonymity in analysis, publication and presentation of resulting data and findings
- This information is being gathered for the completion of a dissertation as part of the M.Sc. In Management of Information Systems;
- This dissertation along with the gathered anonymous data may be published in Trinity College Dublin Library along with all other theses and dissertations.;
- I have no conflict of interest with regard to the research topic and with any of the participants either individually or at an organizational level;
- I am required by Trinity College Dublin to inform you that, in the extremely unlikely event that illicit activity is reported, I will be obliged to report it to the appropriate authorities;
- We may contact you to verify direct quotations before they are incorporated into the dissertation;
- No audio or video recordings will be made available to anyone other than the research / research team, nor will any such recordings be replayed in any public forum or presentation of the research.