Technology start-ups in Newcastle upon Tyne

A leading growth sector for the city?

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MEMOIRE

MASTER 1 DE LANGUES ETRANGERES APPLIQUEES

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Année universitaire 2013 – 2014

Remerciements

J'aimerais tout d'abord remercier toutes les personnes qui ont contribué à la réalisation de ce mémoire.

Je tiens en premier lieu à remercier Madame Catherine STONA, maître de conférence à la faculté d'Angers en qualité de directeur de ce mémoire pour son aide, ses réponses rapides et détaillées ainsi que ses précieux conseils.

Je souhaite également remercier Hervé DENIS, pour son analyse de mon travail de rédaction, les corrections qu'il a pu apporter et avec qui j'ai pu échanger pour construire la réflexion de ce mémoire.

Je souhaite aussi remercier Philippe DEMBELE de m'avoir accordé une interview et d'avoir partagé avec moi sa vision sur les start-ups à Newcastle en tant qu'étudiant et entrepreneur.

Enfin, je souhaite remercier Valeria LANATA, pour son soutien, ses conseils et sa patience durant la rédaction de ce mémoire.

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Introduction :

Thinking about start-ups and new technology companies in the UK automatically leads to London and its so-called Tech City or Silicon Roundabout area. Located in the centre of Shoreditch East London, this part of the city, generally considered as the British answer to California's silicon valley, only counted a dozen digital start-ups at the beginning of the 2000s. Nowadays, it houses more than 3000 companies employing up to 50,000 people[1]. While the rest of the economy in England is stagnating, the Tech City is booming with new companies arriving every week.

During the last two decades, the emergence of the Internet and technologic development has considerably changed the way to do business for companies. A simple idea with just a few resources can quickly become a successful international business: Facebook and Google being the most famous. More and more people are trying their luck every day. Start-ups are everywhere, in our smartphones, our computers, and even traditional companies know that they have to be online to exist on their markets.

Although most of them are concentrated in London, another part of England is taking advantage of this phenomenon.

Indeed, the North East of England and especially Newcastle Upon Tyne has been experiencing an incredible increase of tech start-ups in the last decade. The

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[1]   http://www.theguardian.com/uk/2012/jul/08/east-london-20-hottest-tech-companies

city has quietly become the place where entrepreneurs can set-up their businesses and, moreover, a better place to settle down than the busy capital.

But the main problem for Newcastle will be: does the technology start-up sector have a long-term sustainable impact on the economic growth of Newcastle upon Tyne?

We will define first what a technology start-up is, how this kind of business has become popular over the last few years, how it has evolved in the UK and most particularly in Newcastle upon Tyne.

In a second chapter we will study the present impact of the technology start-up sector on the city's economy, what economic components are impacted, how and why.

Finally, we will study how the sector is expected to evolve over the coming years, and determine what strategies have to be implemented.

CHAPTER I: Defining a start-up, its historical evolution and its development in the UK

To understand the problematic of first chapter it is important to define both a start-up company and the economic context in England and Newcastle upon Tyne that allowed the development of this new kind of business. We will start to define what a start-up is, why it is different from other businesses and how it appeared in the economic world scene. Secondly, how this innovative new way of business is evolving in England.

1. What is a start-up?

1.1. Definition of a start-up

A Start-up should have a simple definition, no more than one or two sentences, but in fact it is more complicated than that.

According to the Oxford dictionary, a start-up can be defined as "A newly established business". Obviously, this is incomplete and it is obvious that we need more information.

According to Graham, "A start-up is a company designed to grow fast. Being newly founded does not in itself make a company a start-up"[2].

The aim to grow, and grow fast is essential in a start-up business. Indeed, a start-up can be characterised by its ability to expand by a large factor over a short period of time. For example, Line, a new social network created in Japan two years ago, has now reached 230 million users with a turnover estimated at €300 million.

But why are start-ups growing faster than other companies?

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[2] GRAHAM Paul. www.paulgraham.com. Start-up=Growth. 2010.

Graham says that if any organisation wants to grow, it has to offer a product or service that many people want and then, reach all these people. Tech start-ups, thanks to the Internet are more likely fulfilling these two conditions. The Internet allows them to reach a lot of people without space or costs constraints compared to a classic enterprise. That is why web start-ups are growing fast.

But is a "rapid growth" enough to name a new founded company a start-up?

Apparently not and Steve Blank has come up with another definition to explain this point. According to him "A start-up is an organization formed to search for a repeatable and scalable business model." [3] It is the beginning of something expected to be big. It is a good definition because it highlights the notion of uncertainty of a start-up business.

For example, when you decide to create a new restaurant in your city, you should be aware of your business model[4] and what it is going to be. But when you create a start-up, you have to consider the idea that it could change radically from what you thought at the beginning, until you find a "repeatable and scalable business model". When you find it, your business stops being a start-up and becomes a company.

The example of a former start-up like Facebook is a perfect illustration. Eight years ago, Facebook was just Mark Zuckerberg's coding project built in his spare time in his Harvard dorm room. He did not write up a business plan, but just built a "cool" product quickly and launched it. As everyone knows it was very successful but he was not making any money and its business plan was not defined. It was only when he started to apply an advertising-based business model, that he made

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[3] BLANK, Steve. "Search versus Execute". 2012

[4] Method or means by which a company tries to capture value from its business (distribution, prices or advertisement).

the transition from a start-up to a profitable company. Now we can see that it is a global organisation with a powerful business model generating $4 billion of revenue that is used by 1/8th of the world's population, currently worth more than $100 billion.

1.2. The Dot COM Bubble

The Dot Com Bubble represents an important step in the start-up business development because it provoked the failure of many of them in the early 2000s and contributed to make the term popular all over the world. It has also changed the way to create and invest in start-ups nowadays and made it a sustainable economy. In order to understand this crash it is essential to know that at this time, the Internet was just starting, personal computers were common and easy to use, and tech start-ups were booming. It was a new economy seen by investors like a revolution about to change the world with enormous profitability perspectives.

1.2.1. What was the Dot Com Bubble?

The Dot Com Bubble, or Internet Bubble refers to the speculative investment that was formed around internet start-ups in the late 1990s increasing their real value on the market.

From 1996 to 2000 "Dot-com" companies were generally run by young people with new ideas or new concepts, were raising incredible funds from investors just because they were online and were seen as cool and profitable. At the peak of the dot-com bubble in 1999, it was said that someone became a millionaire every 60 seconds in Silicon Valley. For example, Pets.com, which had intended to

become an online pet products retailer, was losing money before it went public but raised billions of dollars after its Initial Public Offering (IPO). This example highlights the main problem and one of the reasons for the bubble. How analysts can convince investors to raise these incredible funds for a company that doesn't even make a profit? To resolve this problem, they were basing their valuation on some absurd data like the number of visits per day or the number of clicks/ HITS. With this method, if the number of visitors was increasing by two in a few weeks for example, they were assuming that the company was worth double as well, so obviously much more than its real value.

By early 2000, markets got back to reality. Investors finally realised that the dot-com economy was just a huge speculative bubble. Within months, the NASDAQ stock index crashed from 5,000 to 2,000[5]. A lot of over-valued start-ups failed and disappeared as fast as they appeared. The failure of Boo.com, one of the most famous and a pioneer in ecommerce can give us a better example. Founded in 1998, IT started selling branded fashion apparel in 1999, and ended up burning through $135 million in 2 years. Only the strongest ones like Google managed to survive to become the big companies we know today.

1.2.2. The consequences of the bubble

If the collapse of the market and the bubble burst was dramatic for hundreds of people, many specialists say that it was unavoidable for the market and for the Internet economy.

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[5]The characteristics of a stock market crash. www.hanoverfinancialservices.com. 2011

First for the infrastructure of the Internet network in the world. Thanks to the incredible growth during the inflation of the bubble it took just five years for the network to attain the infrastructural growth, which would otherwise have taken place in about 15 years.

Secondly, breaking the conventional business models. During the dot com bubble, internet businesses were evolving fast, creating new rules totally different from the traditional businesses. The bubble bust definitely helped to raise the awareness of analysts showing them how to correctly value this new economic business model.

To sum up, the revolution of the Internet has led to the establishment of a new economic business model. The bubble burst made it sustainable and full of opportunities, thanks to the lessons learnt. This model is now considered as good as the old one and has changed the way start ups are created and developed giving many of them the opportunities to be successful in the long term.

2. How has the UK start-up scene evolved over the last years?

As we already know what a start-up is, and now which business models work, it is important to finish establishing the context by studying what happened on a geographical level. So in this case how start-ups have developed in the United Kingdom. We will start by studying where the first start-ups started to set up in the country and then see over the last years how the situation has changed in terms of start-up geographical locations.

2.1.   London and its Tech roundabout

As the United Kingdom's capital and a major city in Europe, it is normal that London seems very attractive for start-ups, particularly for technology start-ups. So we will start this part of the chapter by studying what happened there. Indeed, it was the first place in England where a strong start-up community popped up. If we have to find the major place to set up a tech start-up in the city, it will automatically lead to an emerging district in the east called The Tech Roundabout. Since 2009, this district has experienced a huge increase from only a few to more than 300 start-ups to date. New ones are appearing every day due to the booming expansion of the sector. But, what made this quarter so attractive to investors?

First of all we can easily say that the development of the area started due to the decision made by the British government to create and promote a British "Silicon Valley" in London. Indeed, in his speech given in East London in 2010 David Cameron (appendix 1) pointed out the determination of the British government to create a new place and make London a technological hub in the world that he started to call the "Tech-Roundabout". This speech was a huge international advertisement for the district, thanks to the notoriety of David Cameron and his impact on the media. This speech was also really important because David Cameron explained why tech businesses could constitute a big opportunity for the UK and explained all the government's policies implemented - new visas to attract foreign high skilled entrepreneurs, giving more freedom to technology start-ups reviewing intellectual property laws or increase investments in technology - to make this sector and the region a big economic asset. As a result, big companies like Google decided to invest in the region to finance several of its start-ups.

A second strength for the area was the geographical position and the relatively low cost of living. As a poor district 10 years ago, the rent prices remained relatively low compared to the rest of the city allowing young entrepreneurs with little money to set up. Moreover, the area is well connected to the rest of England and the world due to its close proximity to London's airports, highways and train stations, making business relationship connections easier.

However, many specialists are now observing that because of its success, the area is experiencing a massive arrival of big companies, leading the start-up community to decline more and more. Indeed, big companies are renting many of the area's buildings and therefore pushing up the prices [30 per cent in four years] [6]. Start-up founders, as little entrepreneurs generally don't have enough money to stay and are forced to move. As Ian Hogarth, the chief executive and co-founder of Songkick, one of the most famous start-ups within the Tech Roundabout explains in an article in the Independent[7], many start-up funders are considering moving to the North. Places such as Newcastle, Cambridge, Manchester, Brighton and Leeds already have bustling tech clusters that are experiencing good growth, but maintaining respectable rents (appendix 2). However, one region appears to stand out from the crowd regarding digital and technological start-ups: The North East.

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[6] MCGREGOR Jay. The independent. Is the success of London's 'silicon roundabout' forcing new start-ups out of the capital? 2013.

[7] Ibidem.

2.2.   The North East: Newcastle upon Tyne, the new "Silicon City"

After seeing what happened in London, it is finally time to study the case of the North East and specifically what is occurring in Newcastle upon Tyne.

Even though it is not one of the biggest places in UK with a population of less than 300,000, Newcastle is one of the most attractive Northern cities for start-ups. In recent years the city of Newcastle has seen the emergence of many new technology businesses with around 40 to 50 big tech companies in Newcastle's tech cluster (the so-called Tech Triangle of Pink Lane, Westgate Road and Neville Street) like Sage, Leighton (one of the UK's foremost digital consultancies) or Ubisoft (the largest independent game publisher in Europe) among thousands of flourishing software technology, electronic gaming and creative businesses. So the question is: What   contributing factors have led to Newcastle's cluster emergence?

2.2.1.   Investors: The Role of the Accelerator Programs.

To make Newcastle attractive and popular for start-ups one of the main factors was the establishment in 2010 of the UK's first accelerator program, named "The Difference Engine". Indeed, having a good idea to create a start-up is one thing, but it's another matter finding investors. Obtaining an initial input of cash is challenging for entrepreneurs. To explain quickly what an accelerator program is the entrepreneur Vasily Ryzhonkov gives a pretty good definition. For him: "Accelerator Program is an intensive business program usually 3 months which includes mentorship, educational components, networking and aims at growing business rapidly. In exchange for the expert mentoring, exposure to investors/future capital and cash investment that entrepreneurs get from the accelerator, the entrepreneur gives a portion of the company's equity to the

program partners"[8]. This new way of developing tech start-ups has become very popular amongst start-up founders and investors over the last few years because investing in a start-up is always a risk for investors and many of them either fail or never live up to their initial promise. Accelerator programs are here to help founders to develop, to meet the investors and learn from specialists to avoid the failure.

That explains why the presence of accelerator programs in a city cluster are playing a big role in the founders' choice of where to set up. If other examples of programs came after such as Screen Reach, Love Your Larder and CANDDI within the North East, then Newcastle has definitely become a big hub for tech start-ups across the UK with the creation of Ignite100 by Paul Smith in 2011. Considered as one of the biggest in the world the program had a major impact on the start-up community creation in Newcastle and is still financing more than 30 businesses a year, boosting the development of the hub.

2.2.2. A good place to live and set up

If the financing through accelerator programs and the strong community are the main assets for start-up founders, there is another reason for the city's being attractive.

For some entrepreneurs, like Jonathan Grubbing, founder of SoPost (a start-up giving people the opportunity to send gifts via social media), in an article of the

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[8] RYZHONKOV Vasily www.worldbusinessincubation.com. Startup accelerators the history and definition. 2014

Guardian, Newcastle is "the best kept secret in tech," [9] even better than London. According to him in the success of Newcastle is the need for many entrepreneurs to find new places, London having become too competitive and too expensive for them to expand. With its low cost of living, large office space and low salary expectations, Newcastle is making a big impact attracting start-up entrepreneurs.

In the same article Paul smith also highlights another point about financing start-ups. "In terms of financials and burn rate[10], Newcastle makes far more sense than London,"[11] he says. In other words, what Paul Smith is highlighting is another big asset for the city saying that starting a business start-up in Newcastle instead of London is beneficial because with the same starting capital, it will have more time to develop and survive before having to make A profit thanks to the savings made on the low cost of living and lower wages. So it will have more time to find a sustainable business plan before expanding. Finally the good transport network (International airports, trains, port, highways) of the city allow entrepreneurs to connect with partners all over the world with a relatively short commuting time to London, under 2 hours and 40 minutes.

2.2.3.   A vibrant tech community

Finally, the attraction of tech start-ups in Newcastle is due nowadays to a big tech community in the City. The importance of a community is highlighted by Paul

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[9] CARD Jon. www.theguardian.com. Newcastle's startups the 'best kept secret in tech'. 2014

[10] It is the measure for how fast a company will use its shareholder capital

[11] CARD Jon. Loc. cit. p.16

Lancaster in an article called "Why tech start-ups (and giants) should leave London" (and move to Newcastle)[12]. Indeed, he explains the benefits of the community in the early development of tech start-up by getting together and helping each other. "There's a thriving grass-roots community of tech start-up founders, developers and designers all working together to support each other and build great things in the region. It's very easy to get involved through weekly, after-work get together" he says. He also highlights the presence of many associations, places or facilities, which can increase the relationships between start-up founders, sharing experience, expertise and knowledge, helping them in their businesses. "This 'Tech Quarter' is positively buzzing with tech start-up activity right now".

All this explains to us why a strong community is a big asset for tech start-ups, especially because at the beginning they were founded by A few people, new entrepreneurs who needed information to develop their businesses to avoid a quick failure, as many did. And the Newcastle tech community seems to be strong enough to provide them with all of that.

However, if all these advantages explain why Newcastle has been attractive for tech start-ups over the last few years what is now interesting to do is to find out the impact of this sector on the city's economy. Is it a good thing or a bad thing? Does it bring growth? If so, is it a medium or a long run growth? Does it create new jobs? For Newcastle workers or foreign high skilled workers?
This is what we are going to answer in the second part of this essay.

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[12] LANCASTER Paul. http://plandigitaluk.com. 2012

CHAPTER II: Newcastle and the tech start-ups: Present impact of the sector on the city's economy.

What we can say is that the previous decades have not treated the economy of the region really well. Newcastle upon Tyne and the North East of England in general, with an economy based on heavy industries such as shipbuilding, manufacturing, steel and coal mining, suffered through the deindustrialisation process in the 1970s and 1980s started by Margaret Thatcher's governments. Indeed, these industries having become obsolete, the city was left with considerable economic and social problems.

The salvation of Newcastle came with the diversification of its economy and the slow transition towards a more service and technological based economy. And as we have seen previously, something has been happening with the booming tech start-up sector in the city since 2011. In the interview I had with the start-up founder Philippe Dembélé (Appendix 4), he said that the implementation of entrepreneurial policies to support new ventures such as incubators or open business clusters in Newcastle have been really useful in developing his business. So the questions are: why is the tech cluster an important factor of growth and what are its impacts on the economy?

1. The importance of the cluster and how it can impact the economy of a city.

If there are many aspects of an economy that could be impacted by a start-up cluster in a city, the aim is to determine which ones are the most important in a general perspective and which ones are most impacted in Newcastle. First we will study how the cluster itself has an influence on the economic growth and look at the main economic areas impacted by the tech cluster in Newcastle.

1.1.   The main economic factors impacted by the cluster in Newcastle.

In an economic review report in April 2013 commissioned by the North East Local Enterprise Partnership, economists Heidi Mottram, Don Curry, Will Hutton, Bridget Rosewell and Jonathan Ruffer are highlighting the major economic impacts of the tech start-up cluster in the economy of Newcastle and the region. For them the cluster is stimulating job creation, attracting investment, sustaining the economic growth, and is creating regional knowledge growth. But why does the cluster impact all these factors? The answer can be summarised as a theory called the cluster effect.

1.2.   The cluster effect

First popularised by the Harvard Business School academic Professor Michael Porter[13], this notion implies that commercial establishments will tend to spontaneously group themselves by category helping each other to develop. When it happens it creates a cluster of interconnected businesses working together leading to their rapid growth in a region.

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[13] PORTER, M.E. (1990). The Competitive Advantage of Nations. New York: The Free Press. 1–857 pgs.

Let us take the example of Vadxx Energy, quoted in an article of the magazine Forbes[14] . In November 2012, the newly formed start-up Vadxx asked the national company Rockwell Automation to provide them with new solutions and help in order to refine their production process. Vadxx CEO Jim Garrett said, "Vadxx Energy has gained a lot of value from being part of an active cluster of advanced energy companies and organizations." He continued, "Joining forces with a credible, multinational company has helped us accelerate our commercialization activities, raise additional capital, and attract new customers." This example shows us that thanks to this multiplier effect, the cluster has the ability to allow companies within it to grow faster.

So the result is that many companies developing at the same time will expand and then, will need to attract investment. They will also have to hire new people and new high skilled people increasing employment and boosting the local universities. It will lead to the creation of more output and so to economic growth. Finally, it will increase competition and consequently increase the pace of innovation. Here are all the factors listed previously in the report.

However this is the theory now that we have understood what factors are impacted and the mechanism, it is important to see if it really apply to Newcastle and how.

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[14]O. BAGLEY Rebecca. www.forbes.com/sites/rebeccabagley/2012/02/09/the-cluster-effect/ 2012.

2. The start-up's sector influence on the economy of Newcastle

2.1. The impact on employment

2.1.1. Direct Effects

To explain the direct effect of tech start-ups in Newcastle we can take the example of TH_NK.

Based in the centre of Newcastle, TH_NK is a fast-growing digital agency. TH_NK was founded in 2002 and its fast growing development has led it to expand from an original team of three to more than sixty today, and this only after10 years. Indeed, tech start-ups even when they are small at the beginning, usually have a fast development. Therefore they are quickly in need of more staff. With the arrival of many new start-ups in Newcastle, the case of TH_NK is not an isolated one.

Moreover, according to a recent study, the region has now one of the highest unemployment rates in England at over 10% in 2013 with 7.6 start-ups for every 10,000 working age in Newcastle and over 26,300 people directly employed in the high tech sector (Computer service, telecommunication, software development, creative activities, audio visual etc.)[15]. And the unemployment rate has been decreasing for the last two years. Thanks to all this facts we can say that the tech start-up sector has a big impact on employment in the city.

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[15] North East Independent Economic Review Report. North East Local Enterprise Partnership. 2013

However if the direct impact on unemployment is real, does it only impact the employment in digital jobs?

2.1.2.   The indirect effect of the overall increase of employment in tech start-ups.

It is logical to think that the increase in employment due to tech start-ups in Newcastle concerns only the high tech sector as we have seen previously with the example of TH_NK. We will see that this is not the case.

The economist Enrico Moretti also sees start-ups as a big provider of good jobs and high salaries in the high tech sector. But he says that their impact on the local economy has to be considered much deeper than simply direct effects. For him the first impact of start-ups on the economy is employment not only in the high tech sector and it will be interesting to see if it can be applied to Newcastle as well. According to him again: "Attracting a scientist or software engineer triggers a multiplier effect, increasing employment and salaries for those that provide local services. In essence, a high tech job is more than a job ... research shows for each high tech job, five additional jobs are created outside the high tech sector." [16]

So the idea is that high-tech workers in start-ups who gets high salaries tend to spend a large fraction of their wages on personal and local services. They are more likely to go to restaurants and cinemas. They also use more services like taxis, or doctors for example and then create jobs outside the high tech sector. With the overall decrease of the unemployment over the last years, coinciding with the

[16] Moretti Enrico.The New Geography of Jobs. 2012.

development of the cluster, we do not take many risks in saying that these indirect effects showed by Moretti have a real impact in Newcastle. However, as they are indirect they are harder to measure, it cannot be asserted with absolute certainty.

2.2. Attracting investment

The second impact cited by economists in the report is the attraction of investment and investors. According to corporate finance specialist William McCullough in an interview about the North East tech start-up's attraction, "One of the most obvious attractions for those considering starting out in the technology sector is access to funding."[17]

There is a strong relationship between investment and economic growth. At a local or regional level, the more investment the companies in Newcastle will get, the more they will be able to produce output and generate capital. That's why it is important for Newcastle to attract investors to maintain a sustainable growth and we will see if tech start-ups are a key sector in this field. Moreover, Philippe Dembélé says that his next step to develop his business in Newcastle is raising funds. He mentions several ways to get investment such as business angels[18], but also venture capital and start-up programs.

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[17] MCCULLOUGH William.www.watsonburton.com. Bright outlook for tech startups. 2013.

[18] Usually, a former entrepreneur or professional who provides starting or growth capital in promising ventures, and helps also with advice and contacts. Unlike venture capitalists, angel investors usually operate alone (or in very small groups) and play only an indirect role as advisors in the operations of the investee firm. Source: http://www.businessdictionary.com/definition/angel-investor.html#ixzz32KwgNeB4

If these investors are present in Newcastle, is the investment in tech start-ups important enough to have a real impact on the economy of Newcastle? We will focus on the two most important forms: Venture capital investors and regional start-up programs.

2.2.1. Venture Capital Investors

To talk about investors in start-ups in the UK and Newcastle, we have to start talking about Venture Capital, which is one of the biggest sources of investment in the sector.

The UK venture capital industry has grown very quickly over the last years in the UK and can be defined as firms specialised in investing in start-ups and small businesses with perceived long-term growth potential. Consequently, this is a very important source of funding for start-ups that do not have access to capital. And according to an article on the Invest Newcastle Gateshead website, the North East is described as "having one of the best venture capital environments for digital start-ups"[19]. But who are they and what is their investment?

The most important capital venture is called Northstar Ventures. The firm have been financing local entrepreneurs and smaller businesses over £80M in Newcastle since 2004, investing in over 200 start-ups business in the region. But

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[19]DODDS Julie. www.investnewcastlegateshead.com. Designing a Digital Future. 2014.

how are the investments made? The firm is creating funds and supporting accelerator programs.

The main funds created by Nortstar Venture are the £30m Co-Investment Fund, the £13m Proof of Concept Fund and the £2.4m North East Creative Content Fund, They are also investing in accelerator programs with two funds; the £25m Finance for Business North East Accelerator Fund (Including the famous £1M accelerator program Ignite 100) and the £15m Finance for Business North East Proof of Concept Fund.

But what is interesting now is the result of these investments. And according to Michael Deny's[20] figures, we can see that this activity is very profitable in terms of growth. Indeed the Northstar venture has seen an overall gross return of 16.3% on all investments and a return of 19.6% from financing early stage businesses.

2.2.2. Regional Funds.

If we have seen that private firms are investing a lot in start-ups, they can also count on some regional funds provided by the North-East region.

First there is the £25m North East Technology Fund, created specifically for the technology sector and supporting technology businesses from the early stage through to the development-funding phase and beyond.

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[20] DENNY Michael. The UK venture capital industry and investment in smaller companies and technology start ups, vol 2. P.155.

Another fund is the North East Proof of Concept Fund. This fund is dedicated to early stage technology businesses that can seek a £15m investment. It is working with the region's universities, Centres of Excellence, individual entrepreneurs; technology start-ups to develop new businesses and the investments are generally between £50k and £150k.

2.2.3. Conclusion

What we can say after studying how tech start-ups have access to finance, both private and regional is that the tech start-up sector in Newcastle is attracting huge investments. These investments are creating a multiplier effect sustaining the economic growth, by giving more resources to start-ups to produce more output, develop their technology, increasing exports and so have an impact on the economic growth as a whole.

To understand better how the tech start-ups are contributing to the economic growth thanks to investments, let us have a look at the example of Eutechnyx's. Originally founded in 1987 in Newcastle, Eutechnyx's was the first business to receive investment from the Finance for Business North East Fund in April 2010, when it gained £650,000 to help its expansion into the free-to-play games market. This investment helped the firm to develop a publishing operation for its new game and employ 20 new staff. Eighteen months later, Eutechnyx received a further £1.8m from the Regional Growth Fund to help set up another publishing operation for its successful Auto Club Revolution racing game, which led to a further 190 new employees being taken on. It has produced games for Sega Genesis; Super Nintendo; PS1, 2, 3 and PSP; Nintendo GameCube and Wii; and Microsoft Xbox 360. As a result, its best-selling creation, Big Murtha Truckers, has

sold over 1.3m units to date all over the world making Eutechnyx's now a big firm, providing jobs, output and capital to the economy of Newcastle.

However some people like the entrepreneur Christina Krisztina Holly do not agree with the positive impact of investments in start-ups. For her, "the UK annually spends more money ($8 billion) on funding start-ups and start-up programs than what they spend on teachers or on universities" [21]. What she argues is that investing in start-ups can have an opposite effect on economic growth in the long run because if the investments are concentrated on start-ups in the UK, they are not granted to other important sectors such as education and research. Is she right? It would be interesting to see if it is the case of Newcastle.

2.3. Impact on regional knowledge growth

If Christina Kristina Holly thinks that start-ups are stealing money from the educational system, corporate finance specialist William McCullough says that they are strongly linked:" Being located in the North East gives these businesses the opportunity to connect with and utilise universities through projects such as Digital City, which collaborates with Teesside University and Newcastle Science City, which works with Newcastle University. Both projects offer business support to early stage businesses."[22] And facts seem to agree with McCullough.

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[21]HOLLY Krisztina www.forbes.com. Seven Reasons Why Startups Won't Save The Economy. 2013

[22] MCCULLOUGH William. Loc. Cit. p24.

Indeed, adult educational achievement has improved in the region since the North East has emerged as one of the leading centres for digital games development and start-ups out of London. The tech cluster by bringing together firms and university courses is acting as a magnet for entrepreneurs but particularly students. To give an example, from Northumbria University (One of the two major universities in the city with the University of Newcastle), there are approximately 100 students graduating every year in Animation and Special Effects and leading research takes place at all of the area's Universities[23]. Also, new specialised areas in digital and informatics have been created, with the objective of coping with the increasing demand from tech start-ups. Newcastle University is now considered as a centre of research excellence in Computing Science, and is developing a course in cloud computing. And more than half the North East's information technology and telecommunications graduates stay in the region after university (54%)[24]. The example of Philippe Dembélé is a case in hand. As a Newcastle University student studying a Master's degree in Innovation, creativity and entrepreneurship, he had the opportunity to create his own business thanks to the university. He also benefited from the support of mentors who helped him develop and create the project. In other words, the University stimulates students to become start-up entrepreneurs contributing to the development of the cluster in the city.

To summarise, all these facts are clearly showing us that the growth of the tech cluster in Newcastle is also impacting the general knowledge growth in the city

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[23]North East Technology Sector Report P.2. 2013.

[24]Faraway so close the north east as an international gateway. p41. 2013

and the economy as a whole. The testimony of Lucy Winskell, pro-vice chancellor, business and engagement at Northumbria university sums it up very well: "As one of the city's largest employers, we continually contribute to the economic growth of the city and work closely with a range of local suppliers and partners. Northumbria is proud to be ranked in the top five nationally for graduate start-ups and it's great to see how our talented students contribute to Newcastle's thriving economy, re-investing their time, expertise and passion into the city that launched their careers.[25]" The demand from tech start-ups for high skilled workforce, generally young people, is encouraging universities to create new courses specialised in digital, software, informatics, etc. to offer to these new businesses, attracting new students and creating a multiplier effect. As a result these new students by creating tech start-ups or joining them increase the development of the sector but also constitute new customers for all the other economic agents in the city (A new student is going to consume, purchase goods, rent an flat...).

Thanks to all these factors, employment, investment and education, we can see the positive impact of the tech start-up sector on the today's economy and definitely say that this is a leading growth sector for Newcastle. However, if we can see the actual benefits, what about the future? As we have seen in the first chapter with the dot com bubble, start-ups are characterized by their uncertainty to succeed. Thus, the problem for Newcastle is: Is it going to last? Even though the sector is booming right now, is it sustainable?

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[25] The Journal. Conference held to discuss the future of Newcastle. 2013.

CHAPTER III: What is next for the tech start-up sector in Newcastle?

The main point of this chapter is to determine the ability of the tech start-up sector in Newcastle to sustain the growth in the future. But as we already know, starting up is just the beginning. The next step is growth and sustainability, and this objective will be reached only if some start-ups have the opportunity to turn in good, long-term, viable businesses. Indeed, if start-ups are a current provider of jobs and growth in Newcastle, every year in the UK, half a million people set out to start a business of their own, but up to a third are believed to fail in their first three years. So to compensate this amount of failures, the city has to count on former start-ups to become big companies being able to sustain the growth on a long-term, but also attract new business and new investments.

So we will study first the important challenges that will allow tech start-ups to become viable businesses. Then we will study if Newcastle can meet these challenges and what strategies have to be implemented.

1. From start-up to a long-term business.

If people are well encouraged to create start-ups by investors in Newcastle and in England, the problem is what happens next? To try to understand what the evolution of the tech start-ups can be in Newcastle in the near future, it is first important to study the challenges they will have to face.

1.1. Challenges tech start-up will have to face

1.1.1.   Constant changes: The importance of innovation.

In the technology sector more than any other business, changes are fast and unpredictable. So start-ups in Newcastle, as technology and digital based-business are really impacted. According to Andrew Van Noy, CEO of e-commerce solutions provider Warp 9: "If a company isn't nimble enough, or cannot execute fast enough on an idea, the window of opportunity for your product or service may very well close before it is ready for the market[26]". In other words it is essential for tech start-ups to always be innovative, find solutions to new problem, to be successful in the long-term. This philosophy is perfectly summarised by the famous ex Apple's CEO Steve Jobs. In 2007, Steve Jobs said, "There's an old Wayne Gretzky[27] quote that I love. 'I skate to where the puck is going to be, not where it has been.' And we've always tried to do that at Apple. Since the very, very beginning. And we always will." Jobs' ability to anticipate future trends helped Apple dominate new digital markets like digital music sales (through the iPod and iTunes Store) and made Apple the big company it is today.

This is shows us that a fast changing market, can create opportunities, as in Newcastle nowadays, but also be the cause of decline for businesses if they do not manage to adapt and innovate in the future. There are a lot of examples of start-ups, like the famous social network MySpace that became successful but declined quickly because of a lack of innovation. As Marcus Messner, a professor of social

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[26] www.businessnewsdaily.com. 5 Challenges Your Tech Startup Will Face. 2014.

[27] A Canadian former Professional hockey player.

media and mass communications at Virginia Commonwealth University said, "MySpace became complacent and did not innovate, other social networks like Facebook constantly change," And this explains why innovation is going to be a big stake for the tech start-ups to continue to sustain the growth in the city.

1.1.2.   Better access to bigger markets.

This other challenge is well summarised by the CEO of a social ecommerce company with 20-49 employees in a recent survey by researchers GfK: He said: "There's lots of angel investing, but once a company bursts through there is no one to catch the company and propel them into a world class company. I am forced to look towards the US and the Far East. This is a disgrace for this country and means that we are unlikely to build the technology Titans of tomorrow to match the likes of ARM, Imaginations Technologies and Sage"[28]. What is highlighted by this entrepreneur is the lack of investment in start-up companies in the UK when they start to develop and want to access bigger markets. A recent study by DFJ Esprit and Go4Venture Advisers highlights the struggles European, and in particular British, entrepreneurs are currently facing, particularly when attempting to transform their business from start-up to mid-market companies. The report found that, while seed funding of early-stage European start-ups is relatively healthy, there is a scarcity of follow-on capital for later-stage businesses. For Amanda Jobbins, the Group Chief Marketing Officer of The Sage Group: "Not only does it show that European start-ups are under-funded in comparison to their US

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[28] GFK report. Tech City growth stunted by talent shortage and lack of access to capital. P.4.

counterparts, it also suggests that the UK regulatory regime is not incentivising investors to extend their support beyond the initial stage[29]."

According to all of them, the challenge is clear for Newcastle and the UK in general. If the support from investors is now important, the long-term success of tech clusters will have to pass through the incentive for investors to support start-ups when they start to become a sustainable business, and not only support them at the early stage.

1.1.3. Remove Cultural barriers.

The last big challenge is also highlighted by Amanda Jobkins. Indeed, for her the success of the tech sector in England will take place after a major change in mentalities about risk. The UK needs to increase the monitoring of young entrepreneurs. "In comparison to the US, we have a more conservative approach in Europe that is preventing entrepreneurs from taking their ideas forward. This is driven by a fear of failure", she said. And a recent studies by the European commission supports this statement. The research found that 48% of Europeans agree that you shouldn't start a business if there is a chance it will fail, compared to just 19% in the US. So the aim for the UK would be to change mentalities by educating young business talents to take more risks and have a better approach to it. Also she highlights the importance of monitoring young entrepreneurs: "There is evidence that this approach can, and does, work – 70% of small businesses that receive mentoring survive for five years or more. That is double the rate of those who don't. That alone is a compelling reason for business leaders, governments,

[29]http://blogs.reuters.com. UK startups need to get big enough to fail. 2013.

and financial institutions to band together in providing entrepreneurs with the support they need."

To sum up, the training of future entrepreneurs and the support given to their start-up business are also some key actions to allow the tech sector to expand.

1.2.   Conclusion

To conclude the three major factors that will allow the start-up to become sustainable businesses and then will make the tech start-up sector influence the economy in the long-term are innovation, long-term business investment and support of young entrepreneurs.

But is Newcastle able to develop enough these keys fields and allow the tech sector to have a sustainable impact on its economy? Is the sector strong enough to sustain the growth and face the challenges in the long run?

2.   What strategies have to be implemented?

2.1.   SWOT analysis of the start-up tech sector in Newcastle upon Tyne.

Now that we have seen the most important challenges, which have to meet by tech start-ups in the UK in order to expand and become profitable businesses and sustain the economy; it is essential to identify if the city is strong enough to

meet them, and what new strategies have to be adopted. The best way to do it is to make a SWOT analysis (Appendix 3).

2.1.1.   Definition

The purpose of a SWOT analysis is to determine the internal strengths and weaknesses of an organization/industry/sector and external opportunities and threats to help making strategic decisions. In the case of Newcastle, we will define what the strengths and the weaknesses of the tech sector are but also the opportunities and the threats to its expansion. Thanks to the results, we will be able to determine what strategies have to be adopted to make the sector strong enough and allow it to develop more in the future.

2.1.2.   Observations

What we can say thanks to the Swot analysis in appendix is that Newcastle has many strengths to sustain the development of the tech sector and many opportunities to expand it. So the strategies that will have to be implemented will be more to strengthen the existing strengths, matching them with new opportunities than a radical change in a direction with totally different strategies.

2.2.   Strategies recommended

According to the analysis, we can determine some relevant strategies.

2.2.1.   Strengthen the relationships between the city, digital courses and students

We have identified first that a big strength for Newcastle is its large number of students and graduates in digital and informatics thanks to its two major universities. However, in the economic context of early recovery from the crisis that occurred in 2008, it creates both new opportunities and threats.

We have seen in the previous challenges that one of them is to prepare students and new entrepreneurs about risk and change their mentality. And the universities can perfectly guarantee this role. But because of the crisis, we have also seen that budget cuts, and especially in education, also constitutes a big threat. The role of the council will be to avoid the cuts on informatics and digital courses as much as possible so that the training of students, who will become new entrepreneurs will not be threatened. The council will also have to make sure students are aware that they have many opportunities to start a business in the city. Once they have created their business, this investment will have paid off in the long run.

2.2.2.   Strengthen programmes to stimulate start-ups development and innovation.

We have also seen that a big challenge for the start-ups will be innovation and support. The SWOT shows us that Newcastle has many programs to sustain innovation and development in the tech start-up sector. Also, Philippe Dembélé in the interview says that the future of the sector in Newcastle will go through the support and promotion of new ventures.

So the strategy for the city will be to take more advantage of this opportunity to improve the quality, quantity and effectiveness of this programs to

support start-ups and stimulate the community in the sector. To do this, the solution can be the creation of more clustered working spaces dedicated to these programs. Policy makers should also involve other companies or associations outside the tech sector but specialised in innovation as well as share their experience. This support will be a solution to the big challenges encountered by start-ups about support at early and mid stages, and help them to succeed.

2.2.3. Invest in maintaining and communicating quality of life in Newcastle for start-ups entrepreneurs.

This strategy is based on one of the biggest strengths of the city in the attraction of tech start-up entrepreneurs: The quality of life and the strong tech community. The opportunity here is the increase of the standards of living in big cities like London. Newcastle, with a reasonably cheap quality of life and a strong community of tech workers is able to attract entrepreneurs who are looking for a cheaper business environment. In order to take advantage of this opportunity, the city should not apply budget cuts and develop all the aspects that are appreciated by the tech start-ups young entrepreneurs (vibrant nightlife of pubs, bars and clubs, great arts and culture scene…).

Moreover, the city should implement a strategy of communication both regionally and nationally concerning its advantages as a good place to set up a tech business.

2.2.4. Intensify measures to bring affordable residential and working spaces for tech start-ups on the market

Finally, if Newcastle has plenty of cheap residential and working spaces, the attraction of new entrepreneurs will lead to decrease the supply. In order to keep

this advantage in the attraction of start-up founders, but also to welcome new students, the city should provide more affordable spaces to live and to work in. This can be done, even despite the cuts by buying old cheap buildings of former traditional businesses that disappeared during the crisis and redevelop them for the tech companies. The council can also share the investments with programs like accelerators or venture capital investments, which are dedicated to start-up investments.

CONCLUSION

It is more than true to say that Newcastle has become one of the biggest tech clusters outside of London. And arguably, there has never been a better time to manage a tech start-up in the North East. Thanks to efficient financing programs, a low cost of living, a good place to live and a strong tech start-up community, the city has managed to attract many start-up businesses over the last decade and create a powerful cluster, shifting its economy from industrial manufacturing to high-tech services.

We have demonstrated first that the start-up tech cluster has a positive impact and can be considered as a leading sector on the economic growth of Newcastle. Three major effects have been identified.

1. First, we have seen that the cluster has a big impact on unemployment, both quantitatively and qualitatively. Indeed we have demonstrated that the tech sector is creating many jobs, direct or indirect, decreasing the unemployment rate in the city, and providing high skilled and well-paid jobs. This well-paid workforce is also more likely to consume thanks to a better purchasing power.

2. The second major impact largely influencing the economic growth is the attraction of investment. And in this field, the start-up cluster is bringing large investments, from private or public investors creating a multiplier effect on the growth of Newcastle.

3. Finally, we have seen that the tech start-ups have a big impact on education. Indeed, linked with the education system, the start-up business is

generating knowledge growth; attracting students and giving the opportunities to the local universities to develop in new technologies.

However the problem of this dissertation was to define whether the impact of the tech start-up sector on the economic growth could be sustainable. And if there is no doubt in saying that presently the start-up sector is one of the most important factors in the growth for Newcastle, it is however probably uncertain that it will remain so over the next years.

The main challenge for the city will be turning start-ups in big companies as it happened for the Silicon Valley, with Google or Facebook, be able to strengthen the community, innovation, investment and increase attraction for new start-ups. These will be the main factors in the success of the cluster in Newcastle over the long run to maintain and increase its contribution to the growth.

To meet these challenges, the policy makers in the city will have to implement new strategies that we have identified taking into account the strengths and weaknesses of the sector, but also opportunities and threats to the environment.

4 main strategies have been determined:

- Intensify measures to bring affordable residential and working spaces for tech start-ups on the market
- Invest in maintaining and communicating Newcastle's quality of life and launch a communication campaign targeted at start-ups entrepreneurs.
- Strengthen programs to stimulate start-ups development and innovation.

- Strengthen the relationships between the city, digital courses and students

In other words, the impact will only be sustainable if new strategies to strengthen the current forces of the sector and develop them are implemented. Otherwise, there is a real risk to witness an inexorable decline of the sector as it occurred in Cambridge in the 80's. And in our inter-connected world with Internet taking a bigger and bigger place in our society, it would be a missed opportunity not to count on the tech sector and its huge growth potential that can allow the city and the region as a whole to develop nationally and internationally over the next few years.

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1. Appendix 1: Transcript: David Cameron sets out Britain's hi-tech future

Speech at the Old Truman Brewery on Brick Lane in 2009.

http://www.wired.co.uk/news/archive/2010-11/04/david-cameron-silicon-roundabout

Introduction
Ten days ago, when I set out the coalition's strategy for growth at the CBI conference, I announced an important change in government policy towards business and enterprise. For a long time, that policy has been broadly this:

Identify the big ticket industries where Britain is strong -- and work strategically to strengthen them. Of course, we will continue to get behind our competitive advantages. And we will focus relentlessly on removing barriers to business success across the economy. But we're combining that with something else.

The world of business is changing at an astonishing rate. Insurgent companies are taking advantage of thousands of new innovations and millions of new consumers to generate billions in revenue within a matter of years. This is where so much of the promise of new jobs and opportunities lie. That's why, as part of our strategy for growth, we've made a really important decision.

We're not just going to back the big businesses of today, we're going to back the big businesses of tomorrow. We are firmly on the side of the high-growth,

highly innovative companies of the future.

Don't doubt our ambition. Right now, Silicon Valley is the leading place in the world for high-tech growth and innovation. But there's no reason why it has to be so predominant. Question is: where will its challengers be? Bangalore? Hefei? Moscow?

My argument today is that if we have the confidence to really go for it and the understanding of what it takes, London could be one of them. All the elements are here. And our ambition is to bring together the creativity and energy of Shoreditch and the incredible possibilities of the Olympic Park to help make East London one of the world's great technology centres.

I know this can't -- and won't -- happen overnight. But today, I want to show how we can get there.

East London
I know you've heard this many times before. Governments all over the world have tried to create their own Silicon Valley -- but it never seems to happen. So why here in East London and why now with this Government?

Let me start with the 'why here'. Something is stirring in East London. Only three years ago, there were just fifteen technology start-ups around Old Street and Shoreditch. Companies like the concert service Songkick; Moo, which prints business cards; and Last.fm, an online music community that was sold for £140 million. Fast forward to today, and there are now over one hundred high-tech companies in the area.

This on its own is incredibly exciting. But combine that with the possibilities of the Olympic Park. Just a few tube stops away, there's the potential for nearly one million square feet of flexible office and research space which

our technology companies can expand in to. Add to that the Olympic Park's green spaces, cafes and sports facilities, the quick access to City Airport and St. Pancras International and the fact that London has more outstanding universities than any other city in the world and it's clear that in East London, we have the potential to create one of the most dynamic working environments in the world.

And I believe we can really turn this vision into a reality. We understand where previous governments have gone wrong. They believed that they could design and create a technology cluster from on-high. But the lessons from Silicon Valley are instructive. There was no grand centralised plan.

Yes, the US Government and particularly its investment in defence industries gave it a head-start. And new firms were attracted by the cheap rents, the venture capital and the pool of talent at Stanford University. But so much of Silicon Valley's growth was organic. As the sociologist Richard Florida has argued, young and creative people were drawn there by the Bay Area's good quality of life and San Francisco's vibrant cultural scene.

This teaches government some simple things. Go with the grain of what is already there. Don't interfere so much that you smother. But do help out wherever you can. Help to create the right framework, so it's easier for new companies to start up, for venture capital firms to invest, for innovations to flourish, for businesses to grow.

Government Action
It's by having that sort of understanding that you arrive at the blueprint we are publishing today. The policies in this document set Britain on to the path of becoming the most attractive place in the world to start and invest in innovative

technology companies. £200 million of equity finance for businesses with high growth potential.

Indeed, we are today setting ourselves the ambition of making Britain the best place in the world for early stage and venture capital investment £200 million for new Technology and Innovation Centres -- one of which could be in the Olympic Park. Significantly boosting UKTI support for technology companies who are either starting up in the UK or trying to expand into new markets including spending at least £15 million and establishing a global task force for new technology. Opening up government procurement budgets to small and medium-sized firms.

And today, I can announce two further proposals. The first is to do with visas. Despite net migration reaching hundreds of thousands a year over the past decade, not enough was done to attract the next generation of wealth creators and job makers.

Tier one -- the immigration route through which the best and the brightest are supposed to come to Britain -- was a total failure. Indeed, the Home Office recently published research that showed that a third of tier one economic migrants are doing unskilled work. That's wrong and it's got to change.

So as we introduce our limit and reduce non-EU economic migration, we will reform tier one to make sure that it is genuinely a route only for the best. And as part of that package, I can announce today that we will create a new Entrepreneur Visa. These Entrepreneur Visas will mean that if you have a great business idea, and you receive serious investment from a leading investor, you are welcome to set up your business in our country.

So as we act to bring net migration to Britain down to the tens of thousands, I want this

message to be heard loud and clear the whole world over -- in every classroom or laboratory where a bright idea is born, every bedroom where a business case is put together.

If you've got an idea, if you want to create jobs, and if you have the ambition to build a world beating company here in the UK, we want you; we'll make it easy for you; we'll put out the red carpet for you. With our new Enterprenuer Visa we want the whole world to know that Britain wants to become the home of enterprise and the land of opportunity.

The second new announcement I can make today is to do with intellectual property. The founders of Google have said they could never have started their company in Britain. The service they provide depends on taking a snapshot of all the content on the internet at any one time and they feel our copyright system is not as friendly to this sort of innovation as it is in the United States.

Over there, they have what are called "fair-use" provisions, which some people believe gives companies more breathing space to create new products and services. So I can announce today that we are reviewing our IP laws, to see if we can make them fit for the internet age. I want to encourage the sort of creative innovation that exists in America.

Business Action
But the really exciting thing we're announcing today isn't to do with these more traditional government levers. For the past few weeks and months, we have had dozens of meetings with technology companies and venture capital investors from across the world.

We said to them: "Here's our vision for East London tech city -- a hub that stretches from Shoreditch and Old Street to the Olympic Park. This is what local businesses are saying they need.

What part can you play in making it happen?" I have to say: the response has been overwhelming.

Just listen to what's been agreed for the Olympic Park. The Olympic Legacy Company has agreed to create an "accelerator" space there, providing office space for companies that grow out of East London and beyond. Imperial Innovations, the venture capital arm of Imperial College London, is going to advise on making sure this accelerator space is attractive to spinout companies from academia and beyond. Indeed, they will be encouraging some of their own brilliant companies to be based here.

We've also spoken to over a dozen leading venture capital investors to encourage them to follow suit. What's more, Cisco will establish an Innovation Centre in the Olympic Park, focusing on technical excellence, and University College London and Loughborough University have agreed to work with the Olympic Legacy Company to build a bridge between academia and enterprise in the Olympic Park.

But what about here -- in the heart of East London where there's already so much to work with? We're working with business to make sure the infrastructure and advice you need is in place. So McKinsey and Company, one of the world's leading strategic consultancy firms, has agreed to share its expertise in establishing this technology cluster and help start-up companies in the area grow into global giants.

British Telecom has agreed to bring forward the roll-out of superfast broadband in the area, so you have some of the fastest internet speeds in the whole of Europe. And Qualcomm, one of the world's leading wireless technology companies, will provide expert advice to East London start-ups on intellectual

property matters, helping them to protect and commercialise their technologies.

We've also asked some of the world's biggest businesses and banks to help provide the finance that's so urgently needed. So Vodafone has committed to bring its Vodafone Ventures investment fund to the capital, to hunt out cutting edge British technology. Silicon Valley Bank, a West Coast institution, is today announcing that it will become a fully fledged bank in the UK, providing financing for technology and life science companies. And Barclays will create a new facility in East London to provide specialist banking services to high growth technology companies in the area.

Finally, we've persuaded some of America's most dynamic companies to set up research and development spaces right here. So Intel will establish a new research lab in East London, focusing on performance computing and new energy efficiency technologies. Google has agreed to create an Innovation Hub in East London too, which will be a creative space for their researchers to come together with developers and academics to create the next generation of applications and services.

And Facebook has agreed to create a permanent home in East London for their successful Developer Garage programme, which brings together and inspires the most talented developers and entrepreneurs here in the UK. All in all, this is a who's who of some of the world's biggest companies -- and an extraordinary list of proposals.

I want to thank each and every one of the companies and investors that has come together to do this. It's like nothing that has happened in our country before. It is a genuine innovation network -- bringing together high growth start-ups, universities, investors and global companies. And thanks to these efforts, we can help make East London one of the world's great technology centres and sow the seeds for sustainable growth throughout the economy.

Conclusion
Let me end by saying this. We're in a world where money is incredibly tight. And we're a government that is one hundred percent committed to giving power away and trusting in the creativity of the British people. I know those two things raise one big question: What is government for?

You've got some of your answers today. Of course, we will change laws where necessary so we break down the barriers to innovation. But more than that, we will use our power and influence to agitate for, cajole and inspire the change we want to see.

The incredible response from the private sector has shown just what a powerful tool this can be. Businesses coming together, using their expertise and applying their resources to making London a centre for innovation, for putting Britain on the path to economic dynamism.

That's what I mean when I say we're all in this together. And that's why I believe Britain can have such a strong, positive and confident future.

2. Appendix 2: Silicon roundabout and beyond: the best British tech startups

http://www.theguardian.com/technology/interactive/2014/jan/12/silicon-roundabout-best-british-tech-startups

3. Appendix 3: SWOT

Strengths	Weaknesses
- Stimulating programs for business start-ups - Digital students in university and specialised courses available. - Number of graduate students in digital studies - Programmes stimulating the matching between tech start-ups founders and experienced entrepreneurs. - Image of the city or region as a good place to live and start a tech business. - Strong tech community - Sources of investment for start-ups.	- Supply of houses and potential shortages in the market. - Supply of working spaces and potential shortages in the market.
Opportunities	**Threats**
- Economic crisis increased the part of students, or unemployed people who great incentives to create a start-up business because of the lack of jobs available. - Effect of the crisis encouraging the migration of tech sector business from big cities to smaller, cheaper cities with better lifestyles. - Collapse of housing market in UK, decreasing the prices of houses and buildings giving the opportunity for the sector to expand.	- Economic crisis forces the policy makers to public spending cuts, touching especially non traditional sectors. - Budget cuts reducing creation of new programs for start-up support.

Main sources: Newcastle Gateshead Initiative; census data; NCC GIS team/Gateshead LDF; Annual Business Inquiry; ING Research; BNG Creative Sector Study; arts council; NCC Adult and Culture Services; NCC Green Spaces Strategy

4. Appendix 4: Transcript of the Interview with Philippe Dembélé, founder of the start-up Timerex in Newcastle.

David SOULARD: What are you studying and what is your business about?

Philippe DEMBELE: I am currently a Newcastle University student, who is coursing a Master's degree in Innovation, creativity and entrepreneurship and will be graduating in September 2014.

My colleagues and I founded this application called Timerex last year. Its main function is to motivate people in their daily tasks. For example, in the case that you have to do something that is not of your interest, like writing an essay or washing the dishes, this application will motivate you. The idea is to encourage you to do these boring things by competing against animated challenge. Games like 'How many words can you write before the bomb goes off?' or Can you finish to wash the dishes before the animated person running the marathon finishes?

DS: How did you find your business idea?

PD: Actually, the business idea came up accidentally. Our plan was to create a mobile application but we did not have any idea what we could do it about. Suddenly, one of my business partners came up with the idea of motivating people through an app.

DS: What did you do after? How did you develop this idea?

PD: When we first had the idea, we spent a few weeks brainstorming how it would work and writing down every idea, either good or bad. This helped us refine the idea quite a bit and make sure it was solving important problems. After those conversations, we realised we had something really interesting in our hands.

DS: How is your company's current situation?

PD: Currently, I would say we are the comfort zone. This means we have already gone through all the processes required, like market research, business plan,

making contacts, approaching developers and more. Our next step is fundraising for the project. However, to fundraise we need to create an early version of the app so we can show its potential to future investors.

DS: What is your financing plan?

PD: We have already invested around £100 for insurance. But our current challenge is to actually fundraise through different ways such as business angels, start-up programs, venture capital investors, and others.

DS: Did the university give you any support to start-up your business?

PD: The University has given me the opportunity to have access to mentors and has provided me with adequate knowledge to be able to do this project. But on a financing point of view, we have to solve it ourselves.

DS: What do you think is the hardest part about starting up?

PD: Having a good idea and having the passion for what you do is actually what comes first when you want to start a new venture. However, the most challenging part is team management. Once individuals have a good relationship between each other, it is way easier to deal with any setback that might arise.

DS: What about the team? Do you think of hiring people?

PD: I am working with James Wright, a Business Management who also has knowledge in software. Once we finish creating the early version of the application and get some funding, we might think about find new people to help us in the adventure according to its success.

DS: What are the benefits of starting up in Newcastle rather than somewhere else in UK?

PD: Newcastle used to be a highly industrialised area. For a couple of years now, politics have been trying to put Newcastle back on its track by implementing entrepreneurial policies through the establishment of structures to support nascent and established ventures, such as incubators (BIC Sunderland) or open

business cluster (Newcastle software city). Therefore, the help of the business through its network is really useful.

DS: Many start-ups founders are also highlighting the strong technology community and the quality of life. Do you agree with this?

PD: When I first came in Newcastle, I was actually surprised by the architecture, culture and attitudes. It is a cheap city compare to the big ones like London. This city is less congested but also friendly and positive. Newcastle is a small tech city so people will more likely go out of their way to help you. It is an exciting place for business and culture with a good start-up community, lots of meet ups and events where people can share their projects.

DS: What do you think about the future of the start-up sector in Newcastle?

PD: I think as long as politics are willing to support and promote the creation of new ventures in this area, I do not see why there would not be a bright future for potential entrepreneurs and their start-ups.

DS: What is your advice for people who want to start their own business, particularly young entrepreneurs?

PD: As an advice, I would say: Go for it! It is by making mistakes that we learn. If you are going to start your own business, make sure you use your entire network potential, and if you do not have any network just go outside and talk to people about your idea. You will always find someone willing to give you some advices.

Résumé

Avec l'explosion d'internet depuis les 20 dernières années, on a pu constater l'apparition d'un nouveau type d'entreprises radicalement différentes des structures classiques que nous connaissions. Les start-ups, ces petites entreprises basées le plus souvent sur les nouvelles technologies ont rapidement fait la fortune de jeunes entrepreneurs, les propulsant sur le devant de la scène internationale. Si les Etats Unis font figure de précurseurs, notamment grâce à la célèbre Silicon Valley d'où ont émergé Google ou Facebook, le Royaume Uni s'avère également très efficace dans l'attraction de ces nouvelles structures à croissance exponentielle. Depuis 2009, le secteur est d'ailleurs devenu une priorité du gouvernement de David Cameron.

Si la plupart des start-ups sont d'abord apparues à Londres, on assiste depuis peu à une migration des entrepreneurs vers de plus petites villes comme par exemple, Newcastle upon Tyne, dans le nord est de l'Angleterre. En effet, grâce à un coût de la vie abordable, une main d'œuvre qualifiée et moins chère que dans la capitale, la ville s'est peu à peu forgée une bonne réputation chez les entrepreneurs.

Il paraît donc légitime de se demander quel est l'impact de ce nouveau secteur sur l'économie de la ville, et surtout de savoir s'il peut apporter une croissance à long terme.

Ce mémoire s'intéresse donc à la capacité de ces nouvelles start-ups à apporter une croissance économique durable à la ville de Newcastle upon Tyne. Il définit premièrement ce qu'est exactement une start-up, comment le secteur à évolué en Angleterre et pourquoi Newcastle est devenue attractive ces dernières années. Nous étudions ensuite les principaux impacts économiques, les challenges que vont rencontrer les start-ups pour prospérer, puis proposons des stratégies nécessaires pour favoriser le développement du secteur sur le long terme. Pour cela on peut compter sur le témoignage de Philippe DEMBELE, un jeune créateur de start-up à Newcastle mais aussi sur une analyse SWOT des forces et faiblesses du secteur en fonction des opportunités et menaces de l'environnement économique pour formuler des stratégies adaptées.