

The Role of Human Capital Development in Building Competitive Advantage

The Role of Human Capital Development in Building Competitive Advantage
(From The Micro-Firm perspective in the Irish ICT sector)

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The Role of Human Capital Development in Building Competitive Advantage

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Abstract

Background: This study aimed to explore the link between Human Capital Development (education and training) and Competitive Advantage in the micro firm operating in the ICT sector.

Objective: This study explores the links between HRM, the micro firm environment and culture, as well as exploring the entrepreneurial orientation of the owner / managers who operate them and the possible connection to competitive advantage.

Design: Semi-structured interviews were conducted with owner / managers working in the micro firm sector within the ICT sector, Industry and Government bodies, to explore the connections the connections between the economic climate, cultural environment and belief of those interviewed.

Settings: Micro Firms operating within the Irish ICT sector, Government Bodies and Industry partners were chosen with interviews taking place in their own working environment

Participants: Three Owner / Managers and one Independent Industry and two Government supported directors working within and around the Irish SME and ICT sector. Participants were selected through using the EGFSN framework that was used to identify the sectors to pool the participants.

Methods: Data was collected from six participants using semi-structured interviews and analysis was conducted on the qualitative data resulting from these interviews and from the literature examined in the background research and the literature review.

Results: Three themes emerged. A skills shortage in the ICT sector first reported in 2008 continues and a work ready issue regarding the skills and abilities of graduates leaving to work in the ICT sector. The final theme that emerged is a belief the HCD is a major contributor to CA in the micro firm environment. Two sub-themes are evident: The micro-firm learning environment, entrepreneurial orientation of the owner / manager of the micro firm as also being contributory factors to CA.

Conclusion: The findings show that those owner / managers who are orientated towards developing the Human Capital within their organization can provide their firm with a competitive advantage over those that do not. This statement must be considered in context as priorities of the micro firm can change rapidly in the ICT sector.

Dedication

I dedicate this work to the memory of my late parents.

Billy and Kay.

*There is not a day goes by that I don't think of you and
the many wonderful things in life that you taught me.*

Though I remember most your mantra.

"If you are going to do it, do it right",

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To my friends and work mates, thanks for putting up with me. To my family, thank you for letting me fall off the radar, I promise to be back to my old self at the end. Your love and support as it is always is so much appreciated.

Of the utmost importance, to my ever wonderful wife, Ailbhe, thanks for all your support, understanding and all the extra baby sitting in my absence. Thank you and I love you.

To my little Zara Kay, now that this is done, you can have your Daddy back. I love you.

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Introduction and Overview

In today's current economic climate many firms and businesses within many sectors are struggling to gain or maintain a competitive advantage in the market in which they operate. Today, this has been made all the more difficult by the many varied and changes faces of the economic environment, with such adverse factors as reduced demand for products as a result of increased unemployment globally, reduced market share as a result of increased competition within the market place via a reduction in the size of the global market due to an increasing internet marketplace and this has been further exacerbated with increasing difficulties in obtaining sufficient credit from financial institutions to maintain operations during cash lean periods.

The emergence of world trade with market access worldwide trade quickly opening up and leading to reduced barriers for trade on an international basis, particularly through online trading, firms have found themselves competing in much bigger, much more open, transparent, competitive and aggressive markets and it is now the consumer who enjoys much more in terms of product choice which as a result of shrinking markets, are much more competitively priced, all to the consumers benefit.

It is therefore important that firms find new ways of developing their competitive advantage. One method for firms and businesses to achieve this is through developing the knowledge and capabilities of its Human Capital (the workforce) and those who have the will to remain dynamic in their approach to stay ahead of the competition.

Human Capital development is quickly becoming a conscious strategic factor today and in order for companies to survive in the ever shrinking global economy, they require employees with first class skills, knowledge and competencies to gain and maintain any competitive advantage they may currently possess or alternatively, to catch-up on the competition before they (the competition) become too big to compete with or that the firm itself becomes too irrelevant and is absorbed in the market through forced closure or aggressive takeover.

The purpose of this research is to examine literature behind the concept of human capital development (HCD) and to understand how it may affect the competitive advantage of a micro firm by examining a sample small number of micro firms in the Irish ICT sector and conversing with a number of Irish Government bodies regarding both the micro firm and the ICT environment.

The main goal of this research is to examine the relationship between human capital development (education and training focused) and if it is believed to lead to competitive advantage for a typical micro-firm operating with the ICT sector.

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To do this, the researcher undertakes to gain access to some owners and senior management of ICT micro firms operating within the Irish ICT sector, Government bodies that represent such firms, educational representative's and to perform a qualitative study.

In order to do so, the researcher felt it important to give a detailed background of the environment in which micro -firms operate and to highlight the importance of the sector to the Irish economy, therefore this was included in the introduction background to the research.

Research Question

What Role does Human Capital Development in building Competitive Advantage in Irish Micro Firms in the ICT sector?

Aims and Objectives

To answer the research question there are certain aims and objectives to help focus the study

Aims

To examine and understand the Irish ICT sector as it is today.

To undertake a detailed review of the environment in which the Irish ICT Micro Firm operates.

To review the literature around Human Capital Development and Competitive Advantage.

Objectives

To examine the profile of the Irish ICT sector

To examine its importance to the Irish Economy

To examine possible challenges facing the ICT sector

To examine the role of the Entrepreneur

To define the Irish Micro Firm

To examine the importance of the Micro Firm to Ireland Economy

To examine the role of Human Resource Management

To obtain a view of HCD from Micro Firm Owner / Managers and Industry bodies

To determine if HCD is a factor in Competitive Advantage for the micro firm

To return a conclusion and recommendations (if any) as to how HCD may provide CA for the MF in the ICT sector

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Significance of the Research

The possible or potential significance of this research is that it may possibly go toward expanding the belief of owners / managers operating micro firms within the Irish ICT sector that there are benefits to investing in Human Capital Development with the major benefit being that of competitive advantage.

It has the potential to highlight the need for both industry and third level institutions to further examine the skills requirements and needs of the ICT sector at all levels of the micro firm, small, medium and multinational level in order that the graduates leaving college are in a work ready condition. This is significant if the Government and Industry leaders wish to realise the goal of turning Ireland into the European Hub for “Cloud Computing”.

If this can be achieved it could have the potential of making Ireland a more attractive destination for migrant workers to take up positions in the ICT sector and could potentially assist in resolving the current report skills deficit.

Limitations

This dissertation is limited by the time frame within which it was carried out. It is recognized by the researcher that not all aspects of Human Capital Development as a subset of Human Resource Management have been examined in full in this study, due primarily to the large volume of information available on the subject matter.

This research has been specifically aimed at the micro firm within the ICT sector with a view to establishing if the Owner / Manager believe that Human Capital Development could be a source of competitive advantage for their organization.

The EGFSN framework was used as a framework to direct the investigation and research was carried out on a small sample of ICT micro firms and industry partners through semi-structured interviews. It is recognized that the sample number was small, with six interviews in total and was also limited due to a number of interviewees not responding to questions placed via email.

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Background**1.1 Irelands Small, Medium and Micro-Enterprise Sector**

The SME sector in Ireland has come under the spot light in recent times due to the large number of jobs that it supports and the potential that it has to support an economic recovery in the Irish Economy.

The Central Statistics Office (2012) states that SME's accounts for 99.8 % of all the active enterprises in Ireland and they employ almost 70 % of the Irish workforce which contributes to 51.4 % of the total turnover in the Irish economy. In 2006 employment levels in the SME sector alone was 1,046 million, however, that number has since fallen to 854,500 in 2010, a drop of almost 19 % against the high of 2006 (CSO, 2012).

This report on SME's breaks the up the descriptor to include what they term as "Micro Enterprise's" or companies that employee less than ten people. Out of the 195,000 SME's over 90.8% of the SME's in Ireland employ ten people or less and these are classified by the CSO, European Commission and Enterprise Ireland as "micro-enterprises". The statistics show that Micro Enterprise's engaged 27.2 % of the workforce with SME's providing 23.1 % and Medium providing 18.8 %.

It is clear from the report that the services sector clearly provides the largest number of employment with the micro sector engaging more in the workforce with the SME sector accounting for half of the activity in all business activity in Ireland 2010.

1.2 European Commission SME Definitions:

The Council of the Commission of the European Communities (2003) adopted the definition of three categories of enterprise in 2003. Under Article 1, the term *Enterprise* is defined, "An enterprise is considered to be any entity engaged in an economic activity, irrespective of its legal form.

This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regularly engaged in an economic activity."

Under article 2, the commission clarified the staff count and financial ceilings that determine an Enterprise's categorization as;

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- “1. The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding € 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.”
- “2. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed € 10 million.”
- “3. Within the SME category, a micro-enterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed € 2 million.”

Darcy, McGovern and McCabe (2012) in their developmental paper examining organizational sustainability and the small to medium enterprise, use the EU revision definitions of 2005 and define the Irish SME sector as having the same three categories.

1. Small firms are those that have between 10 and 49 employees and no more than € 10 million in turnover
2. Medium firms are those that have between 50 and no more than 250 and no more than € 50 million in turnover.
3. The micro-firm is described here as a firm with less than 10 employees and less than 2 million in turnover

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2. Profile of the ICT Sector and its importance to Irelands Economy and the challenges facing it.

2.1 ICT Sector Profile:

The Information, Communications and Technology Sector or ICT for short consists of a number of specialist strands that support of number a various industries with the ICT sector. They are classified in the Forfas (2011) report under the following headings:

- Computer and Electronic Equipment Manufacturing
- Computer Consultancy
- Computer Facilities Management
- Computer Programming
- Other IT and Computer Services

The Department of Enterprise, Jobs and Innovation report (DEJI, 2012) describes the existing sector as being responsible for the employment of 97, 000 people of those 27,000 are employed in ICT hardware and with a further 70,000 employed in software and ICT services with the trend in hardware manufacturing related employment decreasing over the last ten years and a tangible shift towards the services arena. All of this records the ICT sector in Ireland as being a major employer. The descriptor includes what they term as “Micro Enterprise’s” or companies that employee less than ten people and out of the 195,000 SME’s in Ireland, over 90.8% of the SME’s employ ten people or less and these are classified by the CSO and European Commission as “micro-enterprises”.

ICT Ireland lists key characteristics and statistics surrounding the Irish ICT sector in the Creating Jobs and Generating Growth Report (2011) as:

- 9 of the top 10 global ICT Firms have a strong presence in Ireland.
- All of the top 5 global software companies have a significant presence in Ireland.
- 4 of the top 5 semi-conductor firms have a significant presence in Ireland.
- 4 of the top 5 technology hardware companies have a strong presence in Ireland.
- The total number of ICT enterprises in Ireland is approx 5,400.
- The ICT industry is currently responsible for approximately 25% of Ireland s total turnover.
- At present over 74,000 people are employed in ICT companies in Ireland with some 58,500 employees employed in ICT services.
- Employment in foreign owned agency-assisted ICT companies is approximately 37,000.
- In 2010, more than 3,500 new jobs were created in the ICT sector. A net employment growth rate of 6% in 2009.

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- The Innovation Taskforce has estimated that at least 177,000 jobs in the high-tech and RD&I sectors could be created by 2020 if structures adhered to.
- ICT accounted for over 50 billion of Irish exports in 2010.

2.2 The importance is the ICT Sector to the Irish Economy

Microsoft Ireland reported (2011) and the CSO performed a major review of what they term as the “information society in Ireland” in 2008. It showed the ICT sector as highly productive with each employee in the sector generating an average of € 177 k in gross value added compared with € 70 k average in gross value added for non-ICT firms.

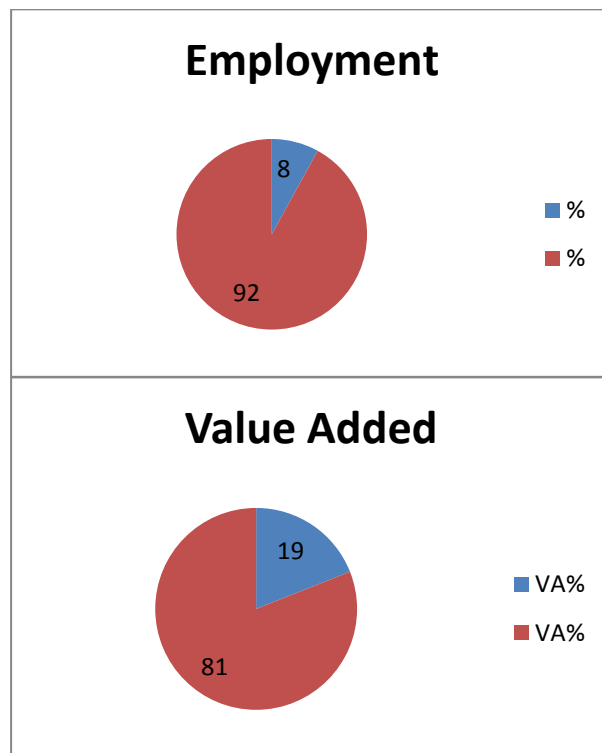


Figure 1. Source: CSO, Goodbody Economic Consultants

The chart above shows the value of ICT jobs and the disproportionate contribution that the sector makes to the Irish Economy value added level.

In terms of employment, since 2004 up to 2010 Employment in the ICT Sector has increased steadily over the years with few downward movements as the chart below describes:

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Source: CSO, Goodbody Economic Consultants

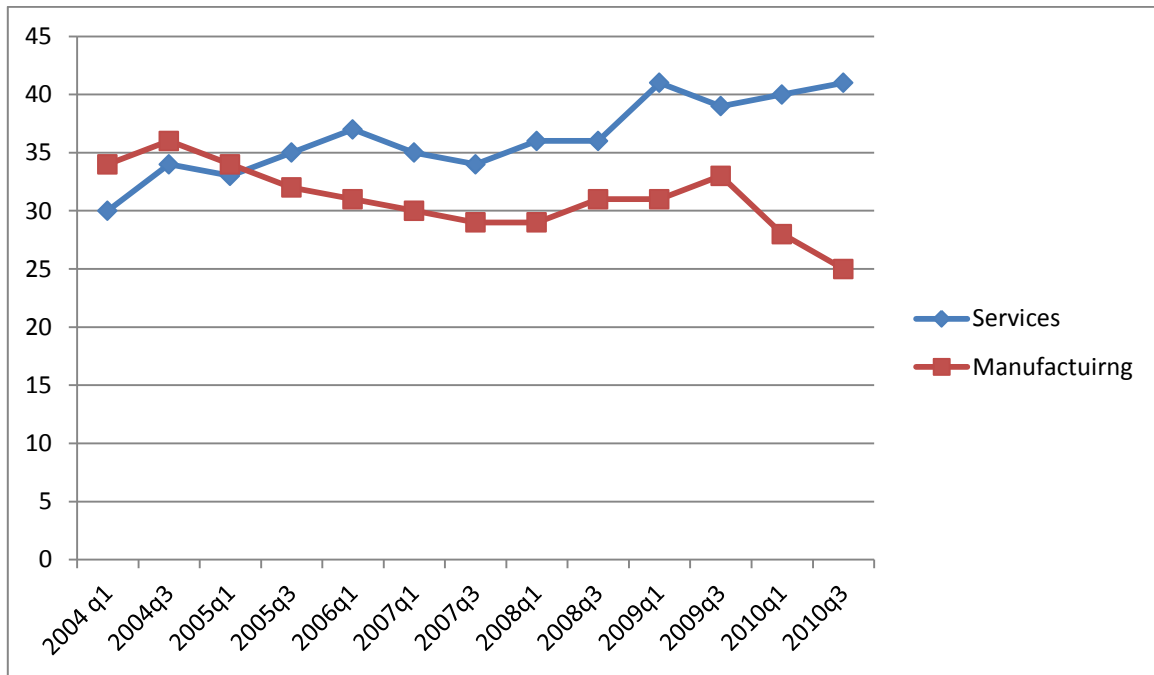


Figure 2.

NACE 26: *Manufacture of Computer, electronic and optical products*

NACE 62 & 63: *Computer Programming, Consultancy and information Services*

As can be seen from the above chart that is contained within the report (2011), manufacturing in terms of employment began to lose jobs, whereas, the programming, consultancy and information sector began as steady increase, even into the current teeth of the recession.

In December 2012 Minister for Jobs, Enterprise and Innovation, Richard Bruton launched a government supported Cloud Computing Centre located at Dublin City University (Journal.ie, 2012). This initiative is supported by a number of multi-national’s such IBM and Microsoft and with approximately 10 SME’s involved. The Centre has been developed with the goal of developing Ireland as a “World Leader” in the technology sector and lead to a significant contribution to jobs and economic growth.

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The ICT sector is mostly export orientated with over € 50 billion worth of exports being directly attributed to the sector (ICT, 2011) Goods are exported with the export figures for 2012 reached € 182 billion (DEJI, 2013) with Computer Services being the largest services export category accounting for € 36.5 billion in 2012 all of which are very significant figures as over 84 % of Irish goods are exported. A very important figure in this report shows that Computer Services accounted for 40% of the value of Irelands Services Exports in 2012.

Commenting on the figures within the report, Minister Bruton TD, said:

“Today’s figures also show that the ICT sector, which is a particular target in the Government’s plans, is performing extremely strongly with a 15% increase in computer services exports in 2012. Since we have taken office more than 11,000 jobs have been created in the ICT sector and today’s export figures show that we are well placed to continue this jobs growth”.

The “Action Plan for Jobs” report (2012) the Government has identified opportunities for this sector as a broad and dynamic, encompassing areas such as hardware and software applications, systems and middleware development along with the sector services such as data processing, outsourced IT services and IT consulting, electronics hardware and communications services. The ICT market is expected to have an annual growth rate of 5% with Internet Communications having a potential growth rate of up to 20% per annum over the next ten years and growth in social media networking should drive innovations and revenues for companies of all sizes and information (data) security is an area emerging as key areas of activity. The Government believes the “Cloud” is a major opportunity for the ICT sector and other sectors as it evolves, that it will be a driver of innovation and growth and “Cloud” applications will improve and enhance productivity having the potential to create more than 8,000 jobs by 2014.

The Report lists the key areas of opportunity as being:

- To emerge as a Global Leader in Cloud Computing both as a provider of the services and software support and other related hardware and to lead as an early adopter throughout the enterprise and public sector and to realize any productivity gains.
- To develop a centre of excellence for software engineering and development in the high growth areas such as telecoms, cloud computing, natural language programming, security and financial services.

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- Take advantage of the shift towards “Software as a Service” SaaS and the increased demand for hosted and managed services such as electronic records and data management services such as green data centers.
- Maintain Ireland as a key location for the manufacturing and R&D for semiconductors.
- Increase niche equipment manufacturing in low and medium niche equipment manufacturing in low and medium volumes, particularly for IP sensitive and tech sensitive products, for example, nanofabrication
- To take advantage of opportunities arising from convergence leading to niche intensive manufacturing and services in areas such as e-health and Green IT.

2.3 The Digital Gaming Opportunity

Digital Gaming is seen as a particularly strong niche market by the Government, one that has the potential to generate significant growth in employment. As the global economy moves towards more digitally orientated business and social environments, opportunities exist for the development of digital services and businesses as global growth will be fuelled by a shift to online and mobile distribution via more online interactive casual and socially connected online gaming that caters for a much larger demographic with the belief that the “Games as a Service” is becoming a reality that has been enabled by “Cloud” technologies and mobile devices.

The Global games market is expected to rise by some 8% between now and 2015, from US\$ 55 bn to US \$ 82 bn.

The Forfas report (2011) estimates that this could double employment in the sector from 2,500 to 5,000 by 2014 provided the correct action is taken to support growth. The gaming sector in Ireland employs approximately 2,200. Future growth will benefit from the supportive IP (Intellectual Property) regime, the R & D tax Credits and the many enterprise supports and the sustained Government investment for science, technology and innovation within research institutions. The challenges faced by the games sector centers around uncertainty, one of the key challenges for Ireland in the gaming sector is that of the ongoing need to ensure availability of appropriate skills, including the technical skills such as programming, e-engineering and ICT design along with relevant support skills including languages and customer supports and the need to have the management skills for such complex business models.

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These main areas of ICT Hardware and Software, Cloud Computing and Digital Gaming have been identified as a high potential opportunity for growth in the Irish economy by the Irish Government within the action plan for jobs (2012).

Microsoft Ireland (2011) believes that “Cloud” computing can create up to 8,000 new jobs by 2014. These figures agree with Governments Figures.

Paul Rellis, Managing Director of Microsoft Ireland, believes that as Cloud Computing is in its infancy that Ireland has a wonderful opportunity to be a leader in Cloud technologies, by creating cluster of skills and talent to support growth and be prepared for the next wave of “Cloud” based businesses. Cloud computing could be the silver lining in Irelands competitiveness challenge and estimates are that Cloud computing sales by Irish Firms could reach € 9.5 per annum by 2014 due to low operating cost as opposed to the capital outlay, it could lead to the formation of more than 2000 new small to medium enterprises outside of the Information Technology sector.

2.4 Challenges facing the Irish ICT Sector

According to the report of the innovation task force (2010, p28), which is made up from a diverse range of advisory groups, including the Expert Group on Future Skills Needs (EGFSN) and the national competitiveness council along with key enterprise and professional bodies such as ICT Ireland and Engineers Ireland, all recognise the need for Ireland as a community to raise its level of mathematical achievement at both primary and secondary level to ensure that as a country, it will continue to successfully compete with other economies in an effort to fulfil the governments vision of a “Smart Economy”.

However, the Expert Group on the Future Skills Needs (2012) reported that, *“recruitment difficulties relating to high-level ICT skills within the ICT and other sectors such as international financial services, have been reported through the EGFSN”*.

In response to this concern, the EGFSN supported by the IDA and Enterprise Ireland, engaged with a specially selected range of the Irish and foreign owned companies to establish the nature of the jobs involved and to discover the reasons for such difficulties in recruitment with a view to identifying measures to help the situations. The findings of the EGFSN research was published in a paper called *“Addressing high-Level ICT Skills Recruitment Needs”* that was published in January 2012.

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The main findings showed that recruitment difficulties are due mainly to three areas:

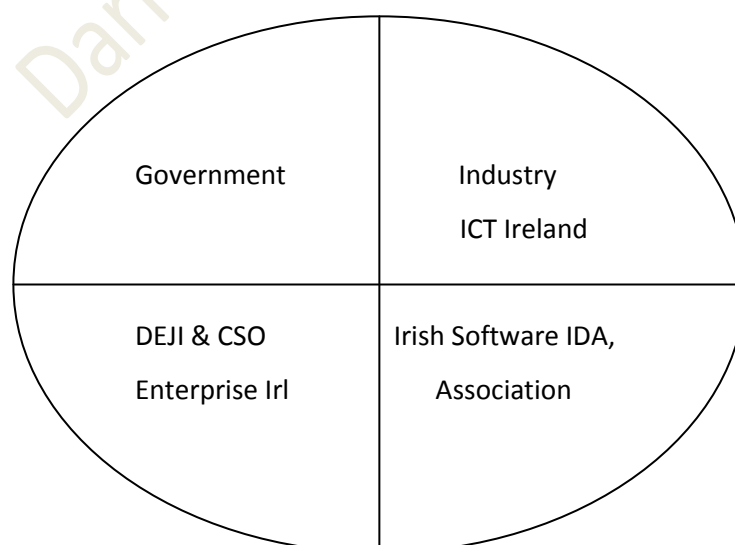
1. *Graduate-entry level (NFQ Level 8);*
2. *ICT professionals with 2-8 years experience; and*
3. *ICT professionals with 8+ year's experience*

As a result of the skills shortage, companies are now sourcing up to 55% of the skills supply that is needed to fill the vacancies via inward migration.

The difficulty with the high level skills recruitment issue is confirmed in the European Commission's annual Digital Agenda Scoreboard that shows more than half of Irish businesses that tried to recruit IT specialists in 2012 reported difficulties in filling the vacancies, with Enterprises in all countries reporting difficulties in recruiting ICT specialists. Those firms who recruited in 2011 that had reported hard-to-fill vacancies over those that did not report difficulties in recruitment were the highest for Ireland, Luxembourg, Austria and Sweden.

The EGFSN is constituted by a number of experts that come from disciplines of Government, Industry, Education and a number of development agencies and it was formed in 2008 to address issues surrounding difficulties in the Irish ICT sector around a skills gap that was becoming more and more apparent.

The EGFSN Framework



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Another challenge that Ireland currently faces is the broadband issue. David Elkin (Business & Finance, 2011) reporting on OECD (2010) released figures on broadband use in each countries and he noted that these results made for interesting reading from an Irish perspective with Ireland ranked 22nd out of the 31 countries, with only 20.3 connections per 100 people compared to the Netherlands who topped the chart with 37 connections per 100 people. According to Elkin, "The perilous state of Irish broadband was recognized in 2008 leading to the National Broadband Scheme (NBS) being introduced by the Department of Communications, Energy and Natural Resources that year as a means to develop broadband in targeted areas around the country".

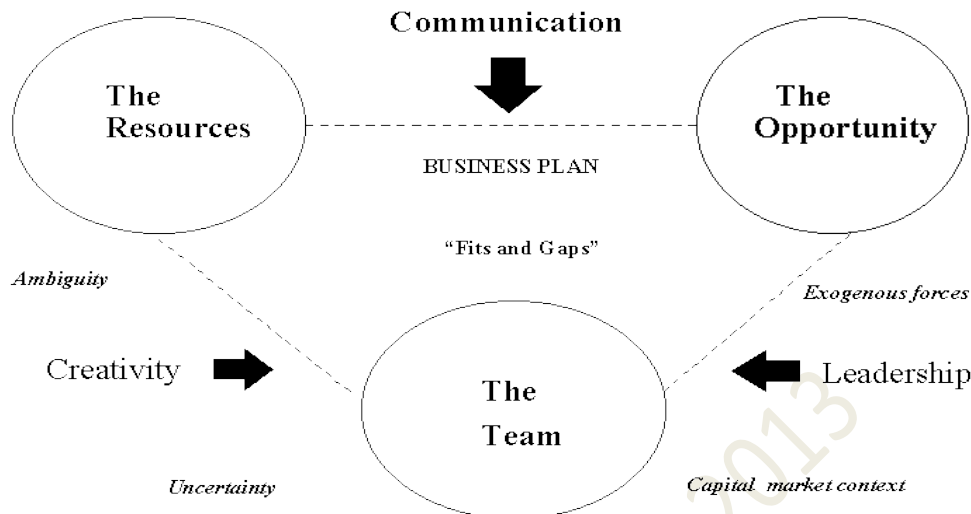
3 Defining the Entrepreneur

The micro-firm owner / manager can also be referred to as the modern day Entrepreneur.

Peter Drucker (1970) described entrepreneurship as being about taking risk, where as Schumpeter (1965) defines entrepreneurs as those who exploit markets through technical or organisational behaviour. Trait theorists have put the focus on the personality and / or psychological building blocks of the entrepreneur yet such approaches are limited as there is an implication that individuals may already contain many of these traits due to their upbringing, experiences and culture. Traits have been subjected to vast amounts of research by many different business and collegiate bodies all striving to find the core of the entrepreneurial mind or spirit and it can be so difficult to define an entrepreneur.

Cunningham and Lischeron (1991) note that vast amount of studies may have left some researchers believing that "Entrepreneurs" are nothing more than simply "Small Business Owners" and that some of those who think they are "Entrepreneurs", may not even fit some of the academic definition's that are now proposed.

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Timmons Model of the Entrepreneurial Process

Timmons Model (1994) Model and the characteristic of an entrepreneur.

The Timmons model (1994) describes the Entrepreneur as opportunity driven. When an entrepreneur finds a good opportunity they can take it to the next level by shaping it as a “*High Potential Venture*”. It is the entrepreneur who gathers the team and resources needed yet often risks all to do so. The Timmons model considers the opportunity, the team and the resources and places the entrepreneur at the centre. In order for the Micro-Firms in the ICT sector to not only survive but to grow, it is important to understand some of the entrepreneurial traits of the individuals who are the driving force behind them.

Some of the Key Characteristics used to classify an Entrepreneur:

Calculated risk taker, need for achievement, not afraid of failure

Can handle stress and uncertainty, are committed and persevere

Holds a huge belief that they will succeed, enjoys change and diversity, enjoys responsibility

High levels of energy, high levels of confidence, desire for notice and feedback

Creative thinkers, ultimately they are optimistic, visionary and motivated

Problem solvers and problem creator, great networkers, strong communications skills

Can be single minded, decisive, can recognise opportunities, future orientated

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Stephenson (Entrepreneur.Com) believes that investment into oneself is a very important aspect of what it takes to be an entrepreneur and looking at how top entrepreneurs invest in themselves through buying and reading business books, magazines, reports, journals, newsletters, websites and industry publications, and that they to improve their understanding of business, marketing functions and others skills. According to Stephenson, entrepreneurs join business associations and network with other business people in hope of learning the secrets to success and the top entrepreneurs attend business and marketing seminars, workshops and training courses, even if they are masters of the subject already and they do so because they know that education is an ongoing process and that this leads them to doing things better, in less time, with less effort and therefore less cost and resource requires. Stephenson believes that top entrepreneurs never stop investing in the most powerful, effective and best business and marketing tool at their immediate disposal—themselves.

3.1 The Role of the Entrepreneur

The innovation taskforce (2010) states that Entrepreneurs play a key role in driving innovation and in particular within the start-up environment and high potential growth companies of small to medium size. The report also states that,

“In an increasingly competitive world, entrepreneurial individuals have been shown to stimulate innovation within and provide transformation in established firms”.

The taskforces approach is to place the entrepreneur at the centre of the innovation ecosystem and that the entrepreneur underpins their “Six Principles for Success” (p.23) which they believe are fundamental to their goal of transforming Ireland into an international innovation hub.

3.2 Entrepreneurial Orientation

Entrepreneurial orientation is the strategy orientation of the firm and in small firms it is the owner / manager who drives this orientation. Covin et al. (1990) discuss entrepreneurial orientation as being those practices that are reflective of the firm’s innovativeness, pro-activeness and willingness to take risk.

Small firm owners / managers who demonstrate this entrepreneurial orientation are more prone to implement growth-orientated activities (Kim and Mauborgne, 1997).

Although entrepreneurs are characterised as highly determined with drive and possessing high levels of motivation, their success and the success of their firms also depends upon their ability as leaders to create a strong core team comprising of motivated, capable, skilled and market

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orientated individuals as noted by Kuratko (2007), entrepreneurs expect nothing less from the people they employ and this places an emphasis on employees who are able to take the firm forward. This leads to practices that relate to abilities (particularly in the selection of employees) which are most likely to be used by entrepreneurial owners / managers.

This approach means that it is less likely that entrepreneurs will adopt motivation and opportunity practices. Owner / Managers with an entrepreneurial orientation instil in their employees a sense of belonging to and being part of a “winning team” (De Clarcq and Rius, 2007).

According to Liu et al (2003) it is the entrepreneurial orientation of the owner / manager that energises motivation and acts as a substitute for formal high performance work practices (HPWP). Giving consideration to entrepreneurial orientation, Barringer et al. (2005) looked at growth orientated and non-growth orientated firms and found that growth orientated firms invested more in training and development, which is one of the focuses of this study.

4 Today's Graduates, are they work ready?

In a Gradireland blog (2012), Penny Kiley reported on the Association of Higher Education Careers Services (AHECS) biennial conference that was held in Limerick and included in the debate was graduate employment. Speakers from the Higher Education Authority and Forfas, were joined by a number of national, regional and local graduate employers that included HP and KPMG to name but a few. At this conference a major recurring theme was whether or not, Irish Graduates are “work-ready” and what or how the role of Colleges and Universities are positioned.

Kiley reports that, *“The current rhetoric at policy level suggests that this is an important plank in the country's economic recovery, but there were some dissenting voices – as well as some interesting debate about what ‘work-ready’ actually means”*. A belief amongst those attending the conference is that part of being ‘work-ready’ is that the graduate skills must have employability and employability at the simplest level is said to be an awareness of how to contribute in a workplace. Kiley terms this as, *“having the street wisdom and confidence that result from a long-term, relevant work placement and the problem-solving skills to apply your knowledge in the real world”*. According to Kelley's blog, *“One recruiter suggested that graduates needed to be ‘employer-ready”*, this simply asks has the Graduate performed research to understand what specifically the job involves and that they need to, *“Know what you want BEFORE you get to the interview”*.

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What is proving to be more controversial is the question around the supplying of expertise required to fill the current skills gaps. This was termed as *"Industry-ready"*. This area of the debate notes that although basic skills are important, industry needs continue to morph and competitive economy need flexibility to adapt. As a result of this *"Lifelong learning"* is as important as what is learned at university. A belief that presented itself at this conference is that certain abilities may be more important than specific modules and that with having only basic grounding in the modules, knowledge can be built up over time and well-rounded graduates will find their niche later.

This, according to Kiley, drew the debate on how much employers can reasonably expect from new graduates when they start employment with a view from the careers service arena believing that it was unrealistic for employers to expect graduates to be ready for action immediately, this is quickly becoming a rationale for graduate training schemes. Kiley noted that some of the employers present tended to agree, one commenting, *"We hire for attitude and train for skills."*

Employer expectations surrounding the emphasis on academic achievement was also countered, with some recruiters losing out on good candidates by insisting on higher grades. This possibly means those with a 2.2 don't get past the early selection phase.

Derek Daly, outgoing President of the University of Limerick Students' Union, pointed out that a lower grade may be simply because a student had to work their own way financially through college and that, *"This work will arguably improve their employability skills, possibly at the expense of a 2:1. This example highlights the dichotomy between qualifications and skills that faces both graduates and employers"*.

Daly states that some anecdotal evidence that not all graduate employers make the most of the talent that they recruit and when he spoke on behalf of the graduates, he made a provocative point: *"I'm not sure that all employers are graduate-ready"*.

In an article in the Irish Times (Aug, 2013) Mark Fielding, Chief Executive of the Irish Small and Medium Enterprise association (ISME) said that universities were *"failing industry"* and he also said that third-level need to stop paying *"lip-service"* to entrepreneurship education and that it should form part of their *"core"* and he continued to criticise universities for,

"Large classes, poor teaching methods, dry academic content and a lack of relevance for real business life. The result is a graduate unfit for work, ill-prepared for business life and error prone,"

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Fielding further contended that,

“The number of complaints we get from members about the abilities of the young people coming out who just don’t have it,” he said, they were not “job ready. A little more interaction with industry would help”. Fielding continued to recommend that there should be a more structured approach to training, mentoring and on the job experience.

Irish universities according to the article have rejected these claims that third-level education here was delivering graduates ill-prepared to enter business.

A number of third level bodies such as DCU and UCD counter this view and refuted this claim by ISME Chief Executive, Mr Fielding by highlighting a number of the significant programmes that involved entrepreneurial studies and work placement as part of their continuing efforts to provide a college to work reality, such as the programme that offers undergraduates help to set them up and launch their business ideas and that the financial support of J P Morgan Chase Foundation existed with some eight student teams already working within the programme. (Irish Times, 2013)

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Literature Review**1. Strategic Human Resource Management & Human Capital Development in the SME environment.**

The history of Human Resource Management appears back in the 1980's when the term Human Resource Management began to replace the term used for so long to describe the department responsible for the management of staff, that term being "personnel department".

Human Resource Management is now the term most widely associated with all the activities involved in managing the employment relationship, with Storey (1995) defining Human Resource Management as a *"distinctive approach to employment management that seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an array of cultural, structural and personnel techniques"*.

However, not all agree the concept of HRM is all that it is conceived to be, some take a critical eye in terms of what it can deliver and how expectations may be undeliverable in the working environment.

For example, Guest (1991) states that it is *"an optimistic, but ambiguous as a concept, it's all hype and hope"* and Willmott (1993) considers it be a form of managerial control, providing control of the workforce via *"Control via compliance"*, whereas Mabey et al.(1998) refer to the potential outcomes of HRM as being *"almost without exception unrealistically high"*, in terms of what it is expected to deliver yet conversely, Armstrong (2009) believes that HRM cannot be giving credit or blame for *"change that would take place anyway"*.

However, small firm and micro-firm owner / managers are faced with the same problems that need to be address by those running larger corporations (Robbins, 2000) with consideration to elements such as the chain of command and departmentalization with levels of control all having to be identified.

In the micro firm environment, Matlay (1999) believes that HRM structures are a crucial element of the overall business strategy and highlights Management style in that environment as having an effect on the HR function, including areas such as recruitment policy, training and development, pay bargaining and grievance procedures.

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One of the major difficulties for the micro-firm is the amount of resources that it has at its disposal and in turn this affects the amount of time devoted to strategic planning, often it is the case that the owner/ manager is focused solely on the day to day running of the business.

As a result, when it comes to the HR role, owner / managers tend to place more emphasis on the hiring and the retention of competent, capable employees as hiring an employee who is incompetent is potentially much more harmful to the small firm than that of a larger firm (Mondy et al. 2002) and in respect of Human Capital, Beardwell & Claydon (2007) believe that the recruitment and selection process is about indentifying and attracting the right people who can meet the needs of the business HR requirements and selection of the right candidate.

Today the importance of HRM and its link to strategic development is now believed to be very much intertwined. Armstrong and Baron (CIPD, 2001) define Strategic Human Resource Management as,

“providing the all-important framework for applying people management practices to achieve business outcomes” and that *“It is concerned with the intentions of the organization on the overall direction it wishes to take in order to achieve its objectives through people.”* They define this concept further stating;

“Strategic HRM addresses broad organizational issues relating to the changes in structure and culture, organizational effectiveness and performance. It endeavors to match resource to future requirements, the development of distinctive capabilities, knowledge management and the management of change and it is concerned with both Human Capital requirements and the development of Process Capability”. (CIPD, 2001)

Harrison and Kessel (2004) have defined SHRM as incorporating the specific practices, formal policies and overarching philosophies whereby an organizations workforce is secured, deployed, retained, rewarded and nurtured and that in this regard, that HRM is an umbrella term that covers the function of HR that includes planning, recruitment, selection, training, appraisal and development, incentive schemes and employee relations and they define HRD (or Human Capital) as *“an organizational process that comprises skilful and facilitation of formal and informal learning and knowledge processes and experiences, primarily but not exclusively in the work place, in order that organizational progress and individual potential can be enhanced through the competence, adaptability, commitment and knowledge-creating activity of all who work for the organization”.*

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They look at what role ICT plays in the knowledge process and HRD, and in an increasingly knowledge based economy with increased competition, believe it essential that organizations apply ICT to its learning process and that HR develop effective structures between IT and knowledge productivity. The HRD professional must have the skills to fully engage the workforce using ICT technology to acquire new skills and be flexible approach to ICT and evolving technologies (2004).

Huselid (1995) looked at the role and influence employee's skills have when matched with a reliable and valid selection process and notes this will have "substantial influence" over the quality and type of skills that new employees possess, what they can bring to the firm in terms of their skills and knowledge. Motivation is a key factor for ensuring effectiveness and he believes an employee's motivation should be linked to performance appraisals linked to incentive programs. The concepts of work place culture and various personal requirements of the employee, such as job satisfaction and expectations can also affect and influence a firm's turnover.

The key factor here, according to Huselid as a result, is increased output.

McGunagle (2012) states that educational investment is needed to provide basic and advanced skills to manage modern complex business systems, along with interpersonal relations in the workplace and ongoing training are required to keep the employee productive and motivation is a key factor with employee attitudes through motivation is often being overlooked. Managers that invest in motivating staff can get higher productivity and improved performance, greater competitiveness and profitability.

According to Porter (1990), the HRM function is the backbone of organizational strategy and competitive advantage and Matlay (1999) believes that the HRM function in micro firms is considered to be one of the most important elements to the overall business strategy.

Summary:

It is clear that the function of SHRM is best served through the recruitment process however, micro firm owner / managers may struggle due to resourcing issues. It appears in the literature that these processes are geared more towards the medium to large enterprise in terms of structure and Organizational culture. Although not all authors agree, since the 1980's the HRM function is now considered to be important not only in the identification and selection of candidates through a robust recruitment process but education and training plays a key role in the function of SHRM and therefore a key role in developing a competitive advantage.

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2. Defining the Concept of Human Capital Development.

Mankin (2009) refers to Human Resource Development as encompassing a range of organizational practices that focuses on Learning, be that training, learning or development, workplace learning, career learning or lifelong learning.

Pfeffer (1994) argues that success in very dynamic and hyper-competitive markets is much less dependent on the advantages associated with industry and access to capital and is much more dependent on innovation, speed, and adaptability and points his argument to the latter as sources of competitive advantage that is mainly derived from a firms' employees and how they are managed, believing learning and development are important to equip employees with the skills required to carry out their work effectively, and to demonstrate an organization's commitment to developing its employees and that this puts the company in a position of strength.

Whitaker and Wilson (2007) see human capital as economic theory as oppose to management theory as a result of needing to economically measure progression in developing countries and quote the following definition, "an approach to people management that treats it as a high-level strategic issue and seeks systematically to analyse, measure and evaluate how people policies and practices create value". Examining another definition:

"Human capital is the skill, experience and capacity to develop and innovate, that is owned by individuals" (CIPD, 2006) and they report that human capital impact is measured and managed after and the terms are used interchangeably (meaning management and measurement), and

according to the report, although complementary, they are fundamentally different and the indentify Human Capital as the "Talents, skills and knowledge of the employees" whereas, human capital management is concerned with how these capabilities are developed and applied to deliver business performance and strategic goals and it is the role of Human Capital measurement to focus on how the management strategies are analysed and to report on how effective these have been", acknowledging that Human Capital is going to be more prevalent in the coming years as management focus more on the "intangible asset" as a result of how people in the organization contribute to the bottom line.

Summary

In summary, Human Capital Development is primarily focused on the skills, knowledge, experience and abilities of those who form the work force, in other words, the "*intangible assets*" and it is believed that these can be enhanced and improved upon through education and training programmes on an ongoing and constant bases.

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3 The Micro-Firm in Ireland and factors affecting learning and education

3.1 Defining the Micro-Firm

As we have seen earlier there are a number of definitions for micro, small and medium firms. These have been based on the size of the firm, its total turnover, the total number of employees and various other aspects. Definitions are usually defined via a European context (Lange et al., 2000) with the EU defining a micro-firm as a firm that employs less than 10 people.

Stanworth and Gray (1991) state that a micro-firm relates to a business that employs less than ten people and this is consistent with the definition as provided by the European Commission (2003) with Irish Government bodies adhering to the EU definition from an Irish Perspective.

Prior to the European Commission's definition (2003) micro-firms had previously been included into the definition of the Small to Medium Enterprise (SME) and this gave the impression that they could be compared to large firms. Research has shown however (Gibb, 1983) that the problems that are faced by the micro and small firm differ greatly and in particular the manner in which problems and issues are reacted to.

3.2 Ireland and the Micro-Firm

The Central Statistics Office (2012) states that SME's accounts for 99.8 % of all the active enterprises in Ireland and they employ almost 70 % of the Irish workforce which contributes to 51.4 % of the total turnover in the Irish economy. In 2006 employment levels in the SME sector alone was 1,046 million, however, that number has since fallen to 854,500 in 2010, a drop of almost 19 % against the high of 2006 (CSO, 2012).

This report on SME's breaks up the descriptor to include what they term as "Micro Enterprise's" or companies that employ less than ten people. Out of the 195,000 SME's over 90.8% of the SME's in Ireland employ ten people or less and as previously discussed, these are classified by the European Commission as "micro-enterprises". The statistics show that Micro Enterprise's engaged 27.2 % of the workforce with Small providing 23.1 % and Medium providing 18.8 %.

It is clear from this report that the services sector clearly provides the largest number of employment, accounting for half of the activity in all business activity in Ireland 2010.

One problem for micro-firms in Ireland in the current economic climate is that of growth (O'Dwyer & Ryan, 2000) and access to capital to fund such initiatives that would promote growth at the same time, Devins et al. (2005) highlight the importance of an economy having a robust small to medium

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business sector in an economy. Devins et al. (2005) suggest that high failure rates and relatively modest growth are particular characteristics that are common to most micro-firms with up to 40% of these failing within the first three years and with no or little difference being drawn between those firms that had failed against those that are just about surviving. (Smallbone, 1990).

3.3 Micro Firm Culture and the influence on learning

A number of elements can affect the manner in which learning and education is adopted by a micro-firm. A key element is micro-firm culture and its organisational structure, the perception and beliefs of its leaders / owners with regards to learning and education in the micro-firm environment.

A micro-firms organisational structure has been described by Mintzberg (1983) as “simple” whilst the role of the owner / manager in that simple environment is seen as a multi-task role where they (the owner/manager) is quite often seen as the “business” (Lean, 1998) and with such a simple organisational structure, the micro -firm often bypasses the need to develop a formal management development system, hence leading to much more informal management structures (Hannon et al., 2000).

According to Lange et al. (2000), the result of such informal structures existing in the micro-firm, owners / managers and the employees must be multi-skilled in order that they can manage and work their various roles and Schaper. et al (2005) believe that the skills of the owner / manager of the micro-firm is often as a result of trial and error experienced in the day-to-day running of the business. Lean (1998) highlights the importance of the owner / manager to developmental education whereas Curran and Blackburn (2001) refer to the owner / manager as a major influence of the education process within the micro-firm environment.

Down (1999) believes that a key part of survival for small-firms are the abilities, knowledge and skills that the owner/manager possess, whilst Gibb (1983) believes that they (owner/managers) are a source of powerful influence in the area of development and training in the micro-firm. At the other end of the scale however, earlier research has shown that changing the attitudes of owners / managers towards the benefits of training can be difficult (Lange et al., 2001) with owner / managers having a negative outlook towards specifically management training and development.

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3.4 Barriers to learning and education in the Micro Firm.

There are other barriers to the learning / educational process within the micro-firm environment such as resource poverty, human resource constraints, time constraints, financial constraints, external constraints and lack of awareness that can all have an effect on the ability of the micro firm to adopt a positive training and development environment.

This theoretical perspective refers to the ability of means (time and money) and its influence in the implementation of HR practices. The resource-poverty perspective (Welsh & White 1981) describes how the means are constrained by limited access to both financial resources and time, of which both are more readily available to larger firms with more employees. In a learning context, this is an important differential between resources of large firms and micro firms.

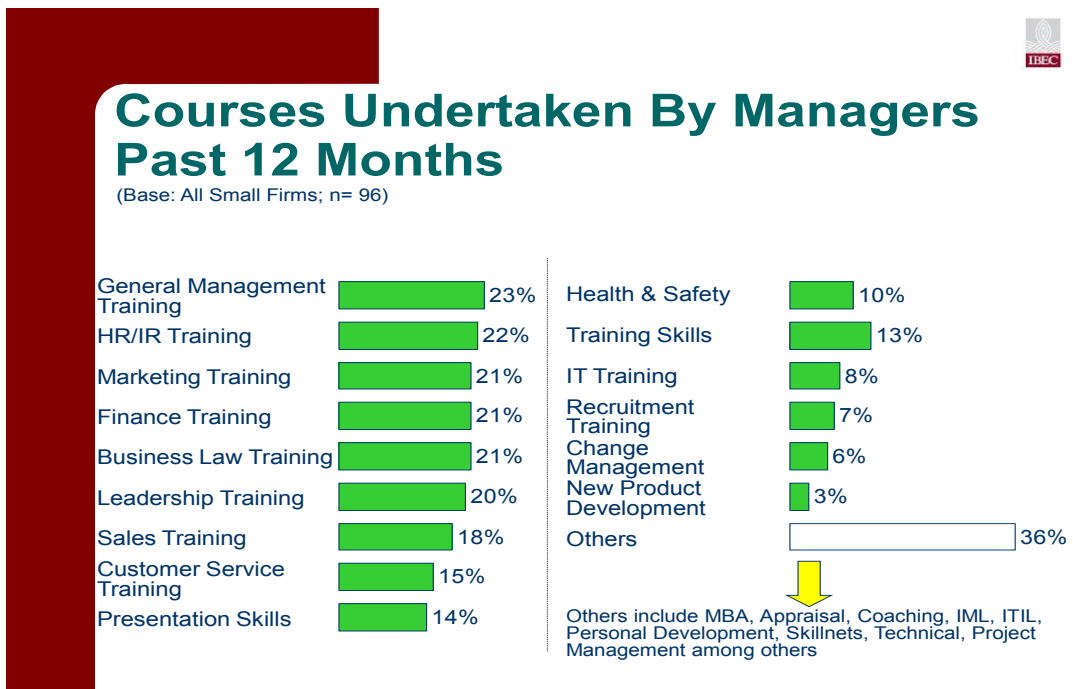
Human resource constraints may be major factor that can affect the attitude towards learning in a micro-firm environment. As we have already seen that the owner/manager is seen as a powerful influence (Gibb, 1983) in the area of development and training, however, Lange et al. (2000) believe that learning may be constrained as a result of it's (the micro-firms) inability to function with one less member of its workforce, particularly if the learning to be achieved is off-site.

Time constraints in the micro-firm environment are one of the main reasons that development and training may not take place (Lange et al., 2000). Mainly due to many broad and varied aspects of work that must be undertaken by the owner / manager on a daily basis and the removes focus from training and learning as a priority and as a result of this time poor constraint. Any opportunity is removed for the owner / manager to engage in any reflective processes (Cunliffe, 2004) and this coupled with the financial constraints that, according to Gibb (1983) is experienced by micro firms and termed as "limited" when trying to obtain capital and limited finances often means limited training in the small firm arena (Schaper et al., 2005).

Small Firms Associations Results of Training Research Amongst Owner/Managers 2006

According to a report into training of Owner / Managers commissioned by IBEC, there number of factors that have been identified. This report that that examined the level of training which owner / managers participated in over a twelve month period and shows the areas of skills that managers had trained in.

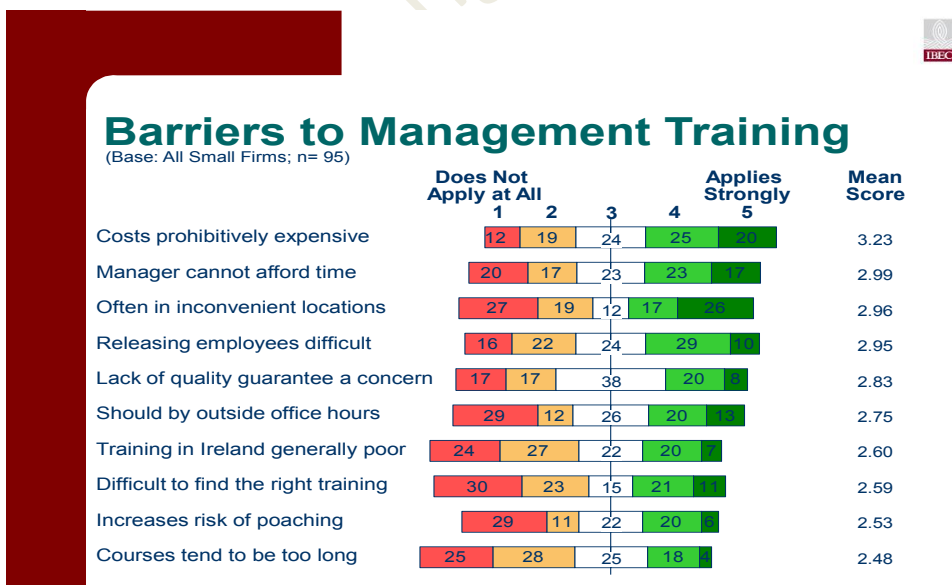
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Source IBEC Report, 2006

Figure 3.

The author of the report, Kerry Gillespie, noted the results of 96 respondents and the results focusing on what owner / managers thought of as barriers to “Management Training”.



Source: IBEC Report, 2006

Figure 5.

According to the research carried out by IBEC, costs top the poll as being the main barrier to performing additional “Management Training” with the cost of time off of the job, the location, the

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requirement to release staff and not having the training take place out of hours all proved to be the main concerns and barrier to training.

This fits with Avison's (2002) belief that the SME owner / manager is much too caught up in the day to day activities of the business to give full consideration to strategic advice such as further training.

3.5 Attitudes of owner / manager towards development & learning in the micro firm

Learning from and through experience is classified by Burgoyne (1995) as "knowledge that is learned through interpretation of the experience and not by absorbing previously created knowledge" and is as a result of learning in a collective basis (group) as opposed to through individual experience.

Previous studies have shown that the size of an organization is also a factor that determines the level of management development in the small business environment (Thomson and Gray, 1999). However development of managers in the micro firm environment is regarded to be very important to the future development and strength of the business (O'Dwyer and Ryan, 2000), yet evidence (as seen previously in this section) points to the fact that micro firms may not have the structural elements in place to allow for a considered approach to management development (Thomson and Gray, 2000).

The approach to education and in particular training in a micro firm setting has been referred to as "Ad Hoc" (Lange et al. 2000) as a result of the many constraints within the operations of a micro firm, education and training must be flexible.

Micro firm managers are willing to engage in learning and development to improve their own individual skills to ultimately help improve the business (O'Dwyer and Ryan, 2000) but they may be unrealistic in the expectations of return.

Lean (1998) refers to a lack of awareness regarding specific training programmes as a barrier to skill development within the micro, a view that is shared by Schaper et al. (2005), with this in mind, it may be the owner / managers own beliefs or attitude towards training and development in a micro-firm setting that act as the barrier.

Summary

The identity of the micro-firm is concerned with its size and turnover, ten employees or less and less than two million in terms of turnover as a maximum. This in turn means that the micro firm difficulties it faces are far different to those experienced by larger firms.

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In terms of importance to Ireland and its economy, it is clear that the value of micro firms within the SME sector is indisputable both in terms of employment and to the exchequer revenue, but this is not without its challenges for the micro firm community including that of a high failure rate.

The culture of the firm and the attitude towards learning is placed firmly on the shoulders of the micro firm owner / managers, with their beliefs and attitude towards education and training playing a pivotal role in the micro firm, yet changing attitudes towards the benefits of education and training can be difficult.

A large factor influencing the attitudes of the owner / manager is that of resource poverty. The micro-firm environment such as human resource constraints, time constraints, financial constraints, external constraints and lack of awareness that can all have an effect on the ability of the micro firm to adopt a positive training and development environment with a belief that the SME owner / manager is too caught up in the day to day activities of the business to give full consideration to strategic advice.

The major influence would appear to be that of the owner / manager, however, the approach to education and in particular training in a micro firm setting has been referred to as “Ad Hoc” (Lange et al. 2000) as a result of the many constraints within the operations of a micro firm, education and training must be and remain flexible.

4 Human Capital Development & Competitive Advantage:

Over the last few decades there has been much more emphasis placed on Human Resources in terms of how Strategic Human Resource Management is adding value to companies through further development and investment into their human capital development, and how they, the companies who do so are able to gain and maintain a sustainable competitive advantage.

According to Hoffman (2000) the term “Competitive Advantage” or more accurately, “Strategic Competitive Advantage”, first came to being when “Porter discussed basic types of competitive strategies firms can possess to achieve SCA (low-cost and differentiation)”, Hoffman notes, “Interestingly, no formal conceptual definition (referring to SCA) was present in his discussion”.

According to Porter (1990), the HRM function is the backbone of organizational strategy and competitive advantage and a particular aspect of strategic Human resource management that has gained much more attention is that of human capital development.

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Lawler (2008) acknowledges acceptance of human capital and has noted that it has gained momentum as a primary source of gaining a competitive advantage and literature surrounding human capital development has started to focus more on the “intangible assets” as being of more value to the market as being more important than the traditional tangible assets (Stiles & Kulvisaechana 2012, Pfeffer 1994). In other words it is the elements that can't be seen or clearly measured, such as the benefits of staff training, further development and up-skilling.

Porters five forces model is perhaps one of the most widely used methods for performing such analysis.

Porters model looks from the “outside in” and as strategic tool, it is used to determine the attractiveness of an industry by examining those five forces to put a value on that particular industry being examined.

Porters model looks at how easy it is for new entrants to gain a foot in the market, the risks that are associated with substitutes in that market should the product or service can be easily substituted, and examines other buyers bargaining power and how that can it influence the selling price and similarly with respect to suppliers, are there enough supplier in the market to ensure that there isn't a monopoly and enough to reduce the risk of no supply in the event that a supply folds.

According to Aaker and McLoughlin (2010) companies are now beginning to examine their own work practices and process's much more deeply via a SWOT analysis at both an external and internal level in order to benchmark themselves against the best and worst in the market and to understand where their owns strengths and weakness are and how best to develop and improve.

Aaker & McLoughlin (2010) define competitive advantage as the elements or combination of elements that provides for a meaningful advantage over existing and possible future competitors. They look at the assets and competencies of business as a means of competitive advantage provided that they, the company develop and retain the necessary skills.

According to Pfeffer (1994) methods of gaining a competitive advantage have primarily been a function of the strategic planning and research, innovation and marketing. Traditionally companies have used methods to analyse target markets at which to aim products or services through researching the socio-economic factors, age profiles, age demographic, geography and other common characteristics, such as cultural differences and desires and by examining their

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competition and imitating what they do or through process innovation to prevent them from being imitated.

Pfeffer (1994) asks a hypothetically question,

“If you had to choose five companies that provided the greatest return to stockholders of twenty years given that most of the books on competitive advantage weren’t written, how would you approach the question”.

Pfeffer believes that using Porters Five Forces one can determine the ability of a firm to earn above average returns and he points to a list of companies with the largest market share or dominant forces and states “you would be successful had you turned this conventional wisdom on its head” and looked back on the top five stocks from 1972 to 1992 and highlighting the top performing firms and their percentage returns.

He notes that the firms involved in these high returns where competing in massively competitive markets that had very little barriers by the way of unique or proprietary technology and there existed readily available substitutes in both product and service and at a time when huge losses and bankruptcies where occurring and that none of these firms with the highest percentage returns held the highest market share.

The point here is not to discount traditional conventional strategic analysis, but more to note that “competitive advantage has always shifted over time” (Pfeffer, 1994) and this is why it is “how” the workforce is organized and managed that has become increasingly more important to achieving competitive advantage.

The search for a competitive advantage has brought a shift in the belief that it is the “intangible assets” of a firm can now provide for a level of competitive advantage.

Barney (1991) in his resourced based view of the firm identifies three basic types of resources that are responsible for and needed for competitive advantage. Those resources in question are the physical (Plant Premises Machinery), organizational (Structures and policies) and human capital resources and as seen previously. Barney (1997) believes that it is possible for human resources to provide a source of sustained competitive advantage as long as four basic elements exist. 1) they must add value to the production process (2) and that the skills sought by the firm must have a “Rare” or unique aspect to them (3) and that these cannot be easily imitated by rival firms (4) and finally, that these skills and knowledge or human capital cannot be readily or easily be replaced by technological advances or substitutes and he believes that firms who invest in firm specific human capital that this can decrease the likelihood of imitation by rival firms but it must

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deliver qualitative differences in the skills and knowledge between its own employees and the employees of competitors. He defines competitive advantage as a firm's actions within an industry or market create economic value and when few competing firms are engaging in similar actions and *"firms gain competitive advantages when their theory of competing in an industry or market is consistent with the underlying economic processes in that industry or market and when few other firms share this theory or can act upon it completely"* (Barney 1997). Porter believes (1990), that the HRM function is the backbone of organizational strategy and competitive advantage whilst Matlay (1999) believes that the HRM function in micro firms is considered to be one of the most important elements to the overall business strategy.

According to Schultz (1993), the term "human capital" has been defined as a key element in improving a firm's assets and employees in order to increase productivity as well as sustain competitive advantage. To sustain competitiveness in the organization, human capital becomes an instrument that can be used to increase productivity. Human capital refers to processes that relate to training, education and other professional initiatives in order to increase the levels of knowledge, skills and abilities, values and social assets of an employee which will lead to the employee's satisfaction and performance, and eventually on a firm's performance.

Lawler (2011) examines four areas, corporate boards, leadership and HR and information practices and how organizations must attract and retain the right people as well as organizing and managing them effectively if they want to make human capital a source of competitive advantage.

Summary

The term "Competitive Advantage" is relatively new, as is the term "Human Capital Development". However, regardless of how youthful the terms are, there is a general conscientiousness forming amongst academia that in order for firms to gain a sustainable competitive advantage within the market in which they compete, they need to begin to align their HRM policies to the strategic planning of the company.

Porter acknowledges that HRM has become the backbone of any organizational strategy and competitive advantage, whilst authors such as Lawler acknowledge that Human Capital has gained momentum as a primary source of gaining a competitive advantage and how organizations must attract and retain the right people and how managing them effectively if they want to make human capital a source of competitive advantage whilst Schultz (1993), defines human capital as a

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key element in improving a firm assets and employees in order to increase productive as well as to sustain competitive advantage and that this is achieved through training, education and other professional initiatives that increases the levels of knowledge, skills and abilities.

Barney (1997) points to four basic elements, 1) they must add value to the production process (2) and that the skills sought by the firm must have a "Rare" or unique aspect to them (3) and that these cannot be easily imitated by rival firms (4) and finally, that these skills and knowledge or human capital cannot be readily or easily be replaced that leads to a competitive advantage.

5. Problems of Human Capital Measurement and the Philips Model

Hueslid et al. (2005) look at the metrics challenge and immediately acknowledge that the volume of metrics that could be used may well be overwhelming with literally hundreds of different methods of measurement. They even go as far as stating that some metrics may even be counterproductive. To be effective in measuring human capital improvement to the firm, the metrics must be practical (data can be collected) and easily understood and finally actionable. According to Hueslid et al. these metrics also need to provide benefit to the overall value chain so that all levels of the organisation benefit. In order to give a balanced view of human capital development and output measurement, it is important to look at some of the pros and cons of human capital measurement. Sherman et al. (1998) lists some issues as:

- The potential danger of reporting externally – meaning that the information may be sensitive and how it may be of value to competitors.
- Multinational HR functions are localized – can lead to problems of information integration
- Lack of time or not a priority.
- Return of Investment in the report is unclear – how do you indentify the value of the human capital investment, how do you measure its measurement.
- The status of the HR functions – does it command a high or low status, is it perceived as providing value.

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Method's analysing, measuring and evaluating how human capital practices and development create value can be identified by some of the following metrics

- 1) Workforce Profile
- 2) Turnover
- 3) Retention Rates (Staff)
- 4) Absenteeism
- 5) Employee Performance and productivity
- 6) Employee engagement
- 7) Training (Amount, Cost and effectiveness)
- 8) Leadership / Career Development
- 9) Revenue/ profit per employee
- 10) Remuneration Policies

These are all important aspects to consider however, there can be no absolute in terms of how the benefits of education and training can be recognized as an important factor in leading to a competitive advantage. They are purely indicators that can be attributed to the overall success of the business. However, there is well recognized method for evaluating the proposed contribution of human capital development program or training that may exist

Phillips Model (Metric) for Evaluating Human Resource Development and Training

Phillips Model (2003) is thought to be one of the most credible and most accepted methods of measuring the return from human capital development. Phillips model is based on a practical method of forecasting the return of investment or potential payoff of any proposed training and can be used before the training has been committed to.

At a basic level, the Phillips ROI calculator is a ratio devised to show the net benefits of any investment on training compared to its costs.

The formula for Phillips ROI is:

$$\text{ROI} = \frac{\text{Total Program Benefits} - \text{Total Program Costs}}{\text{Total Program Costs}}$$

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Phillips ROI Model measures outcomes on five different levels of:

1. Reaction, Satisfaction, and Planned Action
2. Learning
3. Application & Implementation
4. Business Impact
5. Return on Investment

Return of investment is the ultimate level of evaluation as it compares the monetary benefits against the cost of the program and this is usually present in the form of ratio

Intangible Benefits Considerations

In addition to monetary benefits, training programs can have intangible, non-monetary benefits. These intangibles are measurements that cannot easily be converted or recorded in monetary terms.

Phillips points out that, *"In some programs, such as interpersonal skills training, team development, leadership, communications training, and management development, the intangible (non monetary) benefits can be more important than tangible (monetary) measures. Consequently, these measures should be monitored and reported as part of the overall evaluation. In practice, every project or program, regardless of its nature, scope, and content will have intangible measures associated with it. The challenge is to efficiently identify and report them."* (Phillips 2003)

Typical ROI Results

Evaluations can be made on a large variety of training programs that have been implemented in organizations. According to Phillips, "it is not uncommon for training programs to show high returns on investment. In fact, investment in training programs often results in higher returns to the organization than many other investments such as capital equipment or technology".

But not all programs result in positive ROI and it is believed that a key factor in gaining positive ROI is the extent to which the training or HRD program has been aligned the strategic business goals of the organization. However, a negative ROI result from the any training investment should be able to identify which link in the chain was broken and actions.

Phillips recommends an 18-step process that in a systematic form travels through the key evaluation and development steps that range from needs assessment through to the program objectives

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development, evaluation strategy, evaluation instrument design, data collection, analysis, return on investment calculating, and reporting. (Philips, 2003)

Summary

Although it is noted by various authors that the measurement of Human Capital Development improvements is not exactly an exact science. Huselid et al. (2005) believe that the number and volume of metrics that can be used to form some level of coherent analysis as to the benefit of that investment made is simply too big and Shearman et al. (1998) list some of the difficulties with such measurement, one of them being that Return of Investment and although the Philips (2005) model deals with this very subject of the proposed return of investment, he acknowledges that not all training examined using the model will return a positive result. The model itself with the broad varied steps involved can be tedious to use.

Chapter 3 Research Methodology

3.1 Research Rationale:

Over the last two decades there has been much more emphasis placed on human resources in terms of how strategic human resource management (SHRM) is adding value to companies through further development and investment into their human capital development (HCD), and how they, the companies, who do so can gain and maintain a sustainable competitive advantage (SCA).

This particular aspect of strategic human resource management that is gaining much more focused attention is that of Human Capital Development.

Lawler (2008) acknowledges that acceptance of human capital has gained ground as a primary source of gaining a competitive advantage and literature surrounding Human Capital Development has begun to focus on the intangible assets (human resources) as being of more value to the market and than the traditional tangible assets (Stiles & Kulvisaechana 2012, Pfeffer 1994). In other words it is the elements that we can't see or accurately measure, such as the benefits of staff training, development and up-skilling of employees.

As a result of this changing attitude, the rationale of this research is to look at how micro and small ICT firms in Ireland may encourage competitive advantage via investment in human capital development (HCD).

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3.2 Methodology

3.2.1 Philosophical Perspectives (otherwise referred as “Research Positions”)

Philosophical perspectives are considerations about the social world and how it can be investigated. As part of the methodology surrounding the research questions, there are a number of philosophical or “Research Positions” that should be considered in the order to develop a research position based upon the findings of the research.

There are two main perspectives or dimensions that exist, they are known as the “Nature of Society and the nature of Science” (Burrell and Morgan, 1979).

According to Collis and Hussey (2009) there are four main research positions to be considered which are:

3.2.2 Ontological Perspective (Research Position)

The development of a research position that is rooted in an individual’s world view is otherwise known as “Ontology” or an Ontological view.

Collis and Hussey (2009) state that “Ontological View” are concerned with the nature of reality.

Positivists in the regard believe that social reality is objective and external to the researcher, and therefore there is only one reality. Interpretivists on the other hand believe that social reality is subjective as it has been socially constructed and therefore each person has their own sense of reality and that there are multiple realities.

My own personal ontological view is that there is no one single unified theory that explains everything. I firmly believe that not everything can be measured purely in exacting mathematical terms and the very best that we, as human beings, can do is to arrive at some form of approximation.

This in turn means that those who believe in one single theory tend to adopt a more Quantitative approaches to research. These individuals have what is referred to a Single Reality Ontological Reality (View)

It is my own personal view that there is more than one reality and that there is more than one possible interpretation of the same reality that can exist. It is my belief that within any given circumstance that multiple realities exist and many possible interpretations of those realities also exist.

For example, my view of this theory based research is derived from being involved in the research setting and I have given commitment to a “multiple reality ontology” and as a result, the

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type of research approaches and methods used in this study are predominantly if not totally “Qualitative” in character.

3.2.3 Epistemological Perspective (Research Position)

The second consideration in developing a research position is that of “Epistemology”.

Epistemology is concerned with assumptions surrounding knowledge and how it can be obtained and communicated to others (Burrell and Morgan, 1979). This refers to the distance between (or how far removed from) the researcher and the subject of the research.

With a quantitative study there is usually some distance between the researcher and the subject being researched and this may be as a direct result of the method used such as a Questionnaire or survey or statistical approaches and usually leaves a very objective and factual method of reporting.

However, with a qualitative approach to a study, the researcher is much more involved in the problem from the perspective of the research subjects. This means that the chosen research method dictate the researcher being close to the subjects through in-depth interviews, deep case study etc.

Given that a qualitative approach is the approach being used in this study then the research methods employed, that of a semi –structured interview, mean that the researcher may be close to the subjects and this could infer that the research may well become more subjective and objectivity may be compromised is as a result.

3.2.4 Axiological Perspective (Research Position)

This third consideration in the development of the research is that of Axiological Position.

This very simply means understanding whether or not, the research is value laden or value free.

In Quantitative Methods, the researcher is much more detached from the research, so therefore, any response to or interpretation of survey methods for example is usually very detached, distant and often very objective.

Qualitative methods have much more of a subjective perspective and dimension as oppose to the quantitative method referred to above tend to allow the interpretation of the responses to be more value-laden. In other words, the researcher is much more likely to attach his / her own world view (or Ontology) into the interpretation of the findings or analysis of the data.

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To put it another way, the experiences of the researched may very well affect how they feel about the results of any analysis and this “sentiment” may well be reflected in the findings.

3.2.5 Rhetorical consideration

The final consideration in the development of the research position is Rhetoric.

Quantitative research approach requires a style of language that is usually in the 3rd person where it is objective and distant, whereas the qualitative approach tends to use a more involved and subjective style of writing and this often comes through in a manner that is a more personal and reflective first person manner. I prefer to write in the qualitative manner, one that is subjective and this is the method that I have chosen to use for this research.

3.2.6 The Methodological Perspective

The Methodological assumption is concerned with the process of the research (Collis & Hussey, 2009). The term “Method” had been described by Jankowicz (1991),

“as a systemic and orderly approach taken towards the collection of data so that information can be obtained from those data”.

Collis and Hussey (2009) describe a positivist approach to the methodology as being concerned with ensuring that any concepts can be “operational” or described in such a way as they can be measured, where as they describe the interpretivists approach as concerned with examining a small sample over time to obtain different phenomena and will seek, “to understand what is happening in a situation and on looking for patterns which may be repeated”.

3.3 The two main research methods used: Qualitative and Quantitative:

According to Collis & Hussey (2009), the approach adopted by the researcher can also differentiate research.

For instance, some research is performed by taking a quantitative approach to address the research question and the design of the research is to use quantitative data (or qualitative data that can be quantified) and to analyse this using statistical methods.

Those who take a qualitative approach to addressing the research question or questions prefer to design a study that involves collecting qualitative data and analysing that data using an interpretive method (Collis and Hussey, 2009) but some have argued that the main difference between the two methods is purely the methods of measurement and collection (Hakim, 2000).

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3.3.1 Qualitative Approach

Saunders et al. (2007) describe qualitative data as referring to all non-numeric data or data that has not been quantified and can be a product of all research strategies. It can range from a short list of responses to open-ended questions to more complex data such as transcripts of in-depth interviews.

According to Patton (1990) one of the strengths of this method is that it attempts to a more holistic understanding of the phenomena being investigated. Hill and McGowan (1995) report that this method offers the ability to capture unique aspects of entrepreneurial small-firm.

According to Collis and Hussey (2009) there are a number of challenges that are faced by those performing qualitative research, with one problem is that there is no clear and accepted set of conventions for analysis corresponding to those observed within quantitative data and that, “despite the proliferation of qualitative methodology texts detailing techniques for conducting a qualitative project, the actual process of data analysis remains poorly described” (citing Morse, 1994, p23).

One of the strengths of qualitative research is that it focuses upon actual practice in situ (Silverman, 1998) and although qualitative research focuses towards people it is not focused on the individual (Hakim, 2000), instead it looks to indentifying patterns, attitudes and related behaviours that emerge from research interviews.

A benefit of the qualitative approach is that it allows for responsiveness in its design as the patterns of the research phenomena become more apparent (Patton 1990) and this is the approach that will be used to investigate the research question in this study.

Distinction between Quantitative and Qualitative data:

Characteristics	Qualitative Data	Quantitative Data
Meaning	Based on Meanings derived from Numbers	Based on meaning expressed in words
Collection	Collection results in numerical and standardised data	Collection results in non-standardised data requiring classification into categories
Method	Analysis conducted through use of diagrams and statistics	Analysis conducted through the use of conceptualisation

Source: Saunders et al (2007, p.472)

Figure 5.

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3.3.2 Quantitative Approach

Saunders et al. (2007) describes quantitative data as referring to simple counts such as frequency of occurrences to much more complex data such as test scores, prices and rental costs and there are quantitative techniques ranging from simple diagrams or tables to using statistical tables such as indices to facilitate comparisons to complex statistical modelling.

Saunders et al. (2007) describe data types such as categorical data that refers to data that cannot be measured numerically but can be classified into sets. Descriptive data is a further sub-set of categorical data and is used when it is impossible to define the category numerically. Quantifiable data is data that can be measured numerically as quantities whereas continuous data is data whose value may take any value within a specific range (cites Morris, 2003).

Quantitative data is described as a deductive approach that places the emphasis on quantification in the collection and analysis data and as a method is very objective by its nature. Patton (1990) states that the quantitative approach needs to use standardised methods.

Burrows and Curran (1989) suggest that the current quantitative data research offers only a vague view of the small firm and its issues with Morrison and Teixeira (2004) believing that the capacity to communicate is limited.

Based on the above beliefs and findings, the researcher decided that the quantitative method was not the best methodology for conducting this study as it removed the emotive and subjective perspective of the subject.

This is an exploratory examination using a qualitative methodology to the research question in an effort to gain an insight and understanding of whether or not entrepreneurs who own and run Micro-Firms (firms with ten people or less) in the Irish ICT sector believe that Human Capital Development (education and training) leads to a competitive advantage.

Having explored the literature relevant to the ICT micro firm in terms of the SME environment in which they operate, the profile of the ICT sector and the challenges faced within it, the characteristics of the people behind the micro firm through examination of the characteristics of entrepreneurs and factors associated with learning in the micro firm such as the barriers and attitudes to learning that exist a qualitative methodology was chosen as the preferred method.

A qualitative methodology allows the research to remain flexible and will enable the dismissal of unproductive areas of the research plan as the investigation via one to one interview unfolds and new issues and questions of importance that may arise can be added.

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4 Semi-Structured Interviews

The qualitative research used in this study will be based primarily on key informant interviewing using semi-structured interviews with effort to build a rapport with the informant yet not influence the outcome of the answers.

Saunders et al. (2007, p312) calling semi-structured and in depth (unstructured) interviews non- standardised interviews.

According to Saunders et al. (2007, p 312) “in semi-structured interviews the researcher will have a list of themes and questions to be covered, although these may vary from interview to interview” and the “order of the questions may also vary depending up the flow of the conversation”, with unstructured interview being very informal and used to explore a general area in which the research is interested with no predetermined list of questions to work through and the interviewee is given an opportunity to discuss freely about the subject. Saunders et al. (2007) refer to this type of interview style as “non-directive” or “informant interview”, as the interviewee’s beliefs and perceptions will guide the conduct and information of the interview.

Interviews, depending upon the availability of the interviewee were held on a one to one basis, between the researcher and a single participant, “face to face”. However, if the interviewee is unable to attend, it may be necessary to perform the interview via email or via telephone or both if possible.

Using semi-structured interviews that are respondent interview by style (Saunders et al. 2007) the researcher hopes to identify the beliefs that surround the concept of human capital development and to be able to evaluate and identify if the micro firm owner / manager feels they gain a competitive advantage and to interrogate these findings by drawing a comparison between my own research and research carried out in the sector.

4.1 Ethical considerations of research

Blumberg et al. (2005) define ethics as, “moral principles, norms and standards of behaviour that guide moral choices about our behaviour and our relationship with others”.

Theodore Roosevelt:

“To educate a person in mind and not in morals is to create a menace to society”,

Saunders et al. (2007) clarify this in a research context when they state that, “Research ethics therefore relates to questions about how we formulate and clarify our research topic, design our research and gain access, collect data, process and store data, analyse data and write up our findings in moral and responsible way”.

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4.2 Deontology and Teleology

Saunders et al. (2007) highlight two dominant philosophical viewpoints in business and management research, that of the deontology and teleology. The deontological view argues that ends of the research can never justify the use of research which is unethical. The teleological view argues the opposite in that the ends served by the research justify the means and the benefits of the research would be weighed up against the cost of acting in an ethical manner.

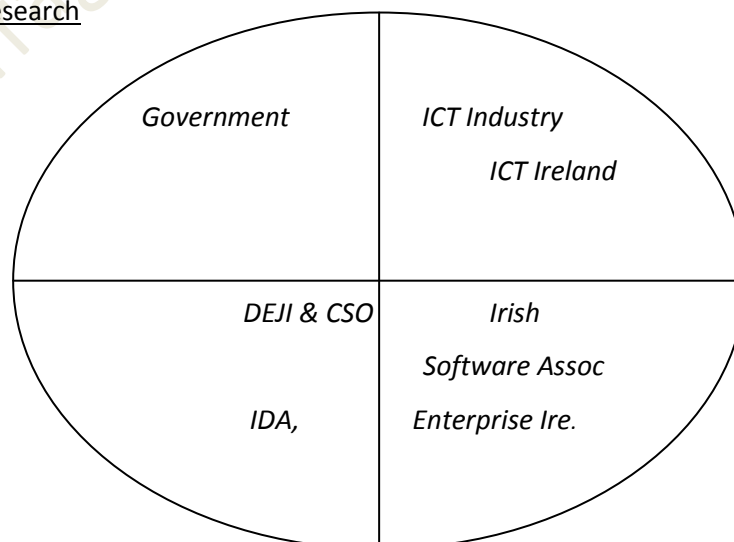
Collis and Hussey (2009) discuss a number of ethical considerations such as voluntary participation, in that no one individual should be coerced or forced to take part or rewarded and in principle, anonymity and confidentiality should be offered to all participants, however, this can lead to a dilemma should information be received that the researcher may feel important to pass on.

Collis and Hussey (2007) discuss further dilemmas as informed consent, dignity and publication all as issue to consider when designing research.

In light of this, ethics is a major consideration for interviews with companies within the ICT sector as they are not ready to give out information on what they perceive to be avenues of their own competitive advantage. Assurances were given to all participants of the interviews that no information or opinion that they requested to be omitted would appear in the research.

From this perspective the researcher decided to take a deontological perspective towards this study.

4.3 Framework for the Research



The EGFSN Framework

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The framework for the research in this study used sectors that have already been identified by the Expert Group for Future Skills Needs (as illustrated above) report.

The data that they produced not only gave a detailed view of the issue within the ICT sector

4.4 Interview Schedule

Prior to the beginning of each interview, the researcher provided a definition of Human Capital Development (as stated by Schultz, 1993) in order to ensure that there was no confusion over the concept and the relationship of the questions being presented in the interview.

As the interviews are semi-structured, then the list of questions below remained flexible and this allowed for the researcher to ask further questions dependent upon the responses received throughout each interview.

A pilot interview was performed with one of the ICT Micro Firms in order to provide feedback regarding the relevance of the questions and to refine further the questions for all subsequent interviews. *(The interviews have been transcribed with the detail of each contained in the appendices.)*

The interviews within this qualitative research will, as discussed earlier, take the form of semi-structured interviews. One goal of the researcher is to allow the questions to remain “open” in style as it is felt that “closed” questions will lead to a limitation of the breadth of knowledge that those being interviewed will have to offer.

The questions are not to lead, but were designed to probe into the beliefs of those interviewed. This was done in an attempt to keep the informant on topic.

4.5 Sample questions for interviews

Below is a list of questions that were used to start the interviews. It should be noted the questions were not always structured in any specific order in an effort to allow for the interviewee’s answers to flow.

What is human capital?

According to Schultz (1993), the term “human capital” has been defined as a key element in improving a firm assets and employees in order to increase productive as well as sustain competitive advantage. To sustain competitiveness in the organization human capital becomes an instrument that can be used to increase productivity. Human capital refers to processes that relate to training, education and other professional initiatives in order to increase the levels of knowledge, skills,

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abilities, values and social assets of an employee which will lead to the employee's satisfaction and performance, and eventually on a firm performance.

The Interview Schedule:

- Q.1. What do you understand by the "Term" Human Capital Development?
- Q.2. What do you as a HR professional and educator believe are the main benefits of human capital development to the micro firm/to the organization in which you work?
Can you elaborate on these benefits?
- Q.3. Do you believe that the micro firm can improve its competitive positions by investing in education and training? If so how exactly? Can you give some examples?
- Q.4. What do you believe to be the barriers micro firms face when it comes to investing in the education and training of staff?
- Q.5. Do you believe that talent management is something that micro firms should be concerned with?
- Q.6. How do you view the importance of recruitment selection, in adding value to the organisation and helping it build 'competitive advantage'? Can you elaborate/give examples to support your answer?
- Q.7. What processes should the micro firm consider when recruiting and selecting staff?
- Q.8. Do you think there is a risk that training and development may cause staff to:
A) look for higher pay? B) Leave the company they work for after being trained ?
- Q.9. What do you believe to be key elements of staff retention - what tools would you advise?
- Q.10. Does SHRM lead to better to human capital development and is there evidence supporting this?
- Q.11. In your own experience, does HCD lead to better productivity?
- Q.12. What evidence is there to support that HCD leads to competitive advantage?
- Q.13. What tools within the business environment can be used to measure education and training benefits?
- Q.14. Is your company's HRM linked to the business's market strategy?
- Q.15. What advice would you give to owner / managers of micro firms who may be contemplating investing in education and training?

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4.6 Using the Framework of the EGFSN to define the sample

Using the framework as used by the EGFSN to identify possible samples, a number of interviews (of which are transcribed in the Appendices) were held with those listed below. The primary focus included people operating ICT business's within the micro sector and bodies involved with the ICT Sector, such as the Small Firms Association and ICT Ireland as well as government bodies such as Enterprise Ireland.

A request was put to Edward E. Lawlor III for an international perspective and as a recognised expert in the field, however none was forthcoming.

4.7 The Experts Interviewed

The ICT Industry Representative Bodies, Government Bodies, Enterprise Ireland and the Small Firms Association and three micro -firms operating within the ICT sector. The interviews can be seen in the appendices section of this research. Those interviewed consisted of a panel that was identified via the EGFSN framework and each interview has been transcribed and forms the appendices of this study.

ICT Ireland and ISA Ireland, Paul Sweetman, Director.

Paul is responsible for the overall management and co-ordination of ICT Ireland and the ISA. The ICT works with the industry at both micro and macro level to deliver and lobby for sector by keeping the industry and academic circle. Paul has been involved in many aspects of the Government's action plan for jobs and is acutely aware of the skills issues that face the industry at all levels of the ICT community. ICT Ireland is the representative lobby group for the high tech or knowledge sector within IBEC (Irish Business Employers Confederation). The association represents over 300 companies, both foreign owned and indigenous.

Small Firms Association of Ireland, Avine McNally, Acting Director:

The Small Firms Association (SFA) is the national organization exclusively representing the needs of small enterprises (i.e. those employing less than 50 employees) in Ireland. Avine has worked with the SFA for nearly 16 years and she is perfectly placed to discuss the issue facing the micro to small firm. Avine represents over 8000 small firms, many of which fall in the micro sector category although she could not provide an exact figure.

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The SFA is described as the voice of small business in Ireland and they set out to provide valuable information to small firms that help and assist the owner /managers run the business on a day to day basis by providing support, direction and advice in an ever challenging market place. They provide a large platform for business's to network and set up specific learning opportunities through the current "Business Bytes" program.

Enterprise Ireland, "New Clients Skills Unit", Jerry Moloney, Director.

Jerry Moloney has been working within in the Business Development arena for more than thirty years. Jerry originally worked with FAS up to the year 1999 when he then joined Enterprise Ireland and then he was based in the human resource development area for client companies and since 2000 he has been managing the activities for human resource development in client companies within the industrial markets area.

Jerry's main role is to assist companies develop their management teams and develop programs and client skills development and to help them to grow and skill the business.

In 2010/11 a further split took place, the HRD unit became a "management development activity" within the organisation and we devised a "New Lean Offer" for client companies to become much more lean and efficient in their operations, whether that was in the services or manufacturing. This is believed to be a fairly comprehensive lean space and client management development programme.

ICT Micro Enterprise Owner / Managers

Lanmark.ie, Ken Kelleher, Proprietor and Managing Director of Landmark.ie.

Ken is an accountant by qualification who pursued a career in the IT sector after he found a passion for the business after leaving school. He set up Landmark.ie over sixteen years ago and today has over 1,000 clients whom his company provides ICT services and online back-up systems to. Ken has positioned landmark as a small to medium business ICT services provider and see landmark as the perfect "IT partner" for many of the clients his company serves. Ken is perfectly placed to discuss the challenges that face the micro-firm in and ever expanding market and he talks candidly about the issues that face the Irish ICT micro-firms today. Kens approach to the interview was very open and

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he was more than confident in his discussion as to what he believes to be the issues to be.

Landmark.ie operates as a managed service provider.

Ken and landmark have seen the economy from a period of boom to bust and this places Ken in the perfect position to give an experts opinion to the questions.

DC Networks, Max Colmer, Managing Director and Partner

Max Colmer of DC networks background was initially in the tourism and hospitality industry. However, after deciding upon as career change, Max retrained into the ICT sector and today is co owner of DC networks based in Santry, Co. Dublin. DC Networks is a relatively new business operating for approx nine years.

Max is well place as a micro business owner who has set up his business in some of the toughest times economically that this country has ever been through and puts Max in the perfect position to look at the questions from the perspective of a relatively young business. DC Networks continue to grow and hope to be out of the micro sector environment in terms of number over the next two to three years.

DC networks operates as a managed services provider with almost 1,000 clients on their books.

Nostra Technologies Ltd, Kevin O'Loughlin, Founder and Managing Director

Kevin O'Loughlin founded Nostra in 2007 and within its first year trading achieved turnover of just under € 1 million. Kevin has no official or formal IT qualification as he decided that the college route was no longer for him after a three month period at UCD studying programming. He decided to take the entrepreneurial route. His company was set up in the teeth of the Irelands worst ever recession. Kevin first introduced visualization to the Irish market. Today, Nostra's main focus is to become the leading business IT support company in Ireland by specialising in outsourced business IT support. Nostra believe that most businesses do not require their own IT department, and that their IT support can be outsourced to a business IT support company and allow businesses access to its shared resources.

Nostra hope to maximize the delivery of technology and services over the internet and to deliver technology solution at more affordable prices. Nostra Systems is focused on the Managed Client Services sector within the ICT sector.

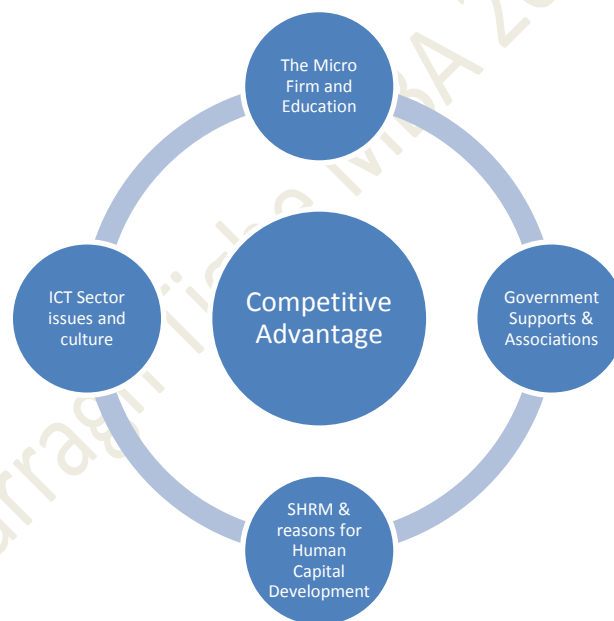
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4.8 Data Analysis & Management

The data used in this research is primarily that from the background research and the literature review as well as the data collected from semi-structured interviews with the experts involved within the industry. The data has come from six semi-structured interviews and details of the interviewees are available in the methodology section and the transcripts of the interviews can be seen in the appendices section starting on page 85.

Saunders et al. (1996) state that qualitative data is not collected in standardised manner due to its very nature and method of collection. The main data collection tool used in this research was that of semi-structured interviews.

4.9 Conceptual Framework Model



After having reviewed the aspect of the micro firm environment through various literature and through a series of interviews based on the EGSFN framework, this conceptual framework was designed to assist the researcher to conceptualise the research and to direct the focus of the research around what the researcher believed would provide the best insight into core issues surrounding the micro firm, human capital development and competitive advantage.

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Chapter 4 Research Findings

The findings in this study are based on a qualitative methodology using semi-structure interviews with experts who work in the micro-firm environment of the ICT sector and supporting industries. The interviews do not form part of the main body of this work, however, all interviews have been fully transcribed and are recorded in the appendices section and it should be understood that they form a very important and integral part of this study.

Research Findings**4.1 Overview**

The findings will show that there is a definite skills shortage concern among not only those who work in the ICT micro-firm sector but also for those that work in the supporting sections of the industry such as Entre Ireland. Another concern was that of the work readiness of college graduates and how there is a belief that graduates leaving college are not work ready and take further on the job education to realise their full potential.

Human capital development is regarded by all as an important means by which micro firm may achieve a competitive advantage.

4.2 Owner / Manager Qualifications & Entrepreneurial Traits

During the course interviews all owner / managers interviewed for this study displayed characteristic's that could be classed as classical traits of an entrepreneur with one interviewee stating that,

"During these particular jobs I was always interested in setting up my own business, but I had not really formulated how exactly I was going to do that".

All owner / managers displayed a sense of belief in their abilities and in their approach to business with not much regard for whether or not they themselves where qualified in the profession with one stating that,

*"I went for the Hardware Managers Job and was P***** off when I did not get it, even though I know I did not have the relevant experience" and pursued the goal of working in the ICT sector simply because " I showed a bit of talent for it".*

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Two possess no formal qualification in the field of IT and this did not concern them with one commenting that,

*"I have absolutely no formal training in terms of the nuts and bolts of hardware support"
Only one has secured recognised ICT qualification, however, this was after having chosen and entirely different career to begin with and commenting that,
"I found I just needed to change career after seven years as a chef".*

Two have gained most, if not all of their current knowledge through experience whilst working in the industry and learning on the job and working with other people who possess the skills they don't have,

*"I just worked my way up, never actually getting formal training at all" and
"Well I technically am completely unqualified" another commenting,
"I dropped out after three months and I got a job on a helpdesk"*

During the interviews there was a sense of uncertainty when discussing the early stages of setting up their companies with one commenting,

*"I wasn't sure what I was going to do", however all those interviewed presented a large level of self belief and confidence in what it was that they wanted and that mostly involved wanting to set up their own business,
"I wanted to take the deals and set up own business"
"Something just said to me I can't work for somebody else anymore and I decided that I was going to go off and do it myself"*

All interviewees presented a level of consciousness towards innovation with the ability to recognise new technologies that could build a business around it, one example being,

"So virtualisation, which was a relatively new technology came in the early part of 2000 or 2001 and it was becoming mainstream and nobody adapted it in Ireland",

All look to the future and believe that the future focus of the ICT sector is going to rest firmly in cloud computing with one interviewee taking it even further,

"I would see that within three of four years, you will get a mobile phone and you will be able to work away on it all day, you will come into the office, you will plug it into a docking station and you will have a key board, monitor and mouse and you phone will now act as your PC".

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4.3 The Importance of Human Capital Development to the Micro-Firm

All of those interviewed who are involved in either directly by working in the industry or as a government agency or firms association all agreed that the development of human capital played a significant role in the firm,

“The human capital side of our business I feel is very, very important”
and most taking the perspective that is was favourable in terms of winning new customers
“I now see it as an important method of retention of our customers”
“I need to have the best staff possible in order to do that and
that’s what it feeds back into”

and it can bring new skills to the company as a result;

“It can bring expertise to the company that the owner / manager may not have”
“The very fact that you have qualifications makes it much easier to attract new customers”

All hold a belief human capital development is focused more on the “intangible assets” as being of more benefit and value to the firm and very important as it served to make the firm much more effective and efficient,

“without proper training, people generally go the long way around doing everything”
“The most effective and economical way that we have of running our business
efficiently is to have the team educated and given the tools to do the job properly”

Out of the owner / managers interviewed, all of them reported to use systems in their work place that would give access to their employees to up rate their skills through on them job training programs.

“There is an acknowledgement that it is important, that it is vital, it’s finding the time”
One interviewee believing so much that his system gave such a considerable advantage in terms of training and development that he would not give the name of the programme stating it was part of his “secret sauce”.

Others have changed their outlook on human capital development entirely and have even restructured their business around it and the role it plays within their firm.

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“Over eight years ago, I would not have taken that approach, but today we have a structured approach to our training and our delivery”

4.4 Barriers to Education and Training (HCD) in the Micro-Firm

Across all of those interviewed the two greatest reported barriers to training today is that of cost and of time. The barriers reported here by those within the industry and operating around it are consistent with resource-poverty perspective, particularly when describing how in the context of the micro-firm, finance's and time are a major consideration.

“It can be difficult to let a staff member off for a day or two to let them go training because there is a cost involved, an indirect cost”

“I do recall that the barriers that a lot of companies reported was the time commitment, allowing the person time off”

“It generally comes down to budget”

According to one interviewee, the relevance of the course detail that was delivered in the educational arena did not appear to fit to the micro firm sector requirements,

“Some of the relevance of the course's was deemed not entirely suitable for the micro firm environment”

When development did not take place, this put down to the fact that broad and varied nature of the work makes it difficult for owner / managers to give priority to training and development,

“where we fall down is the consistent training of people”

with most agreeing that it was an area that training would suffer when the levels of business demanded it or it interfered to heavily with the running of the business, as an example of this,

“That from a micro firm perspective that I would struggle to see how many can afford the time it takes to get training done, because when you are training and the amount of training required in IT is quite substantial, if you are not getting it you are in trouble, but, if you have a team of say ten people in an organisation and five are engineers, to take 14 days by 5 people out of the annual schedule is a massive hit and it is tough for a business to absorb”

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4.5 Benefits of HCD to the Micro-Firm

The question was asked of all interviewees and all interviewees expressed a belief that human capital development was of benefit to their micro firm, although they differed in terms where the real benefits lay, some reflected on the staff perspective,

“I now see that training is a good method of retention for staff”

“The biggest advantage in the ICT sector at the moment is that if you have a development process for individuals for skills in business, you have a better chance of retention”

Whereas some seen it as a method of measuring the quality associated with their business,

“Turnover of clients is very, very low and that therefore means we must be giving a quality service”

One referred to the most efficient and effective manner in which roles and jobs are performed

“I would say the speed and efficiency with which engineers work”

Those in the sector supports believed that it contributed greatly to the profitability of the micro-firm,

“Ultimately it is going to contribute to the benefits of the business and ultimately the bottom line, and that is where the benefit of all training comes”

However, one interviewee was able to provide an insight into how the benefits could be measured through a formula known as the “Philips Model” which provides for a projection of the financial returns against the cost of the training, thus giving a more detailed insight into the benefits of training and works out a rough calculation of the benefits of training as being,

“It, as a method, is a relatively sound basis’ for doing it in one sense and then on another sense, you could argue the toss, that this is simply supposition, that there is no objective analysis to say that this is the outcome you have got, but the average return accredited to this and this is across many journals and books on training is that on “training return” there is generally a return of seven to one”

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With only one providing a concrete evidence the benefits of training others reported what they perceived and believed to be true and the interviewees views were based primarily on anecdotal evidence.

“A lot of People take the view that ok, it is giving me benefit, although I am not sure how many times the value it is worth, but ok, I can accept it”

Another interviewee measured the benefits of training against the number of clients lost in the year, stating,

“On a monthly basis we hold a management meeting and one of the things we measure is lost customers / customers gained and we can measure the number of sites that we lose on an annual basis,”

Training was also viewed as a method to product diversification in the industry with one interviewee stating what he thought to be one of the major benefits,

“The more training you can give to the staff the more exposure they have to new products and technologies and therefore it gives us far more strings in the bow to be able to sell and supply more services”

4.6 The link between HCD and the Business Strategy

Those interviewed believed that there is a definite link between the human resources function in terms of human capital development and that of the strategy of the business.

“Yes, it is linked directly to it so that we can move the company a certain direction and that involves new technologies and we have to build the training for staff around all of that”

In particular the role of training on the job is viewed by those working in the industry as a major element of the link between their own HRM practices and policies and the business strategy, an example of that being,

“We are engaging with them to provide professional, something like CPD, Continuous professional development, so that they can go on micro-soft course and cisco course’s that they chose, the course’s are related to landmarks business”

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Those who support businesses in the sector, such as Enterprise Ireland believe that the direction the company wishes to pursue should be more closely linked with the training and development programmes that the firm adopts.

“They should be, they are not as closely linked as they should be”

Both the ICT and Enterprise Ireland interviewee’s discussed a possible gap existing within the firm if the HRM is not linked to the strategy of the business,

“Often the gaps occur if you don’t have your HR closely linked to your business development strategy, you can have this mismatch(of skills) occurring”

Owners who referred to the connection between the HRM and the business strategy looked at it from the perspective of growth,

“What is preventing my business from growing and the key thing that kept coming back to me was quality of staff”, “So I said right, I need to invest in the right type of Staff”

With those supporting the industry reporting that,

“As long as your HR team is focused on delivering the skills that are needed for the next phase of growth in the business, then everything works well, but if they become disjointed and uncoordinated, you can get a wasted effort at some stage in the process”

Strategy is concerned with the intentions of the organization on the overall direction it wishes to take in order to achieve its objectives through people, through staff, those interviewed believed that talent is all important;

“We actually went out and started buying the talent, who already had the training and had a couple of years under the belt and also had the right attitude towards customers and towards the business, basically professionals”

and in the micro firm environment, human resource management structures are a crucial element of the overall business strategy and highlights management style as having an effect on the HR function with one owner manager stating that;

“Today we have a structured approach to our training and delivery”

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4.7 The Recruitment and Selection Process in the Micro-Firm

The general feeling amongst those interviewed, whether they are involved at an advisory capacity or directly working in a micro firm environment is that the recruitment and selection process in the micro-firm is very important to the overall health of their firms, but there were challenge surrounding it,

“The main Challenge that I always have and that I continue to have in landmark is around staffing and around recruitment”

When it came to hiring the right staff with the right skills, one even purports to pay a higher salary to get the right skills,

“Rather than recruiting someone and paying them a low salary and hoping that they learn the skillset that they need to deliver the job over the next twelve to six months in a completely unsupported and unmanaged way, that clearly did not work for us, we decided that we had to recruit people and pay the proper rate for people who already had the skills and experience”

This is mainly due to the current skills demand and the apparent difficulty in recruiting staff.

“There is a skills demand issue that everybody is faced with and the next thing is that the smaller companies find even harder to get at a limited pool of talent, and if they do find someone and trains them up, they can often be pulled to the away by an MNC”

All agreed that one should hire the best staff possible, at the value that you can afford. Those working in the industry believe that is about selecting the right candidate with the rights skills.

“Ideally and I have had this said to me many times by people working in the smaller business arena, you should always hire people who are “Smarter than yourself”

All believe that the recruitment and selection process is about identifying and attracting the right people who can meet the needs of the business.

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4.8 Staff Retention and Human Capital Development

When it came to discussing retention, not all expressed it HCD as being helpful in this regard, with only three out of the six interviewee's expressing a real concern for retention, however, the feeling amongst them was that they views training and education as one of the few ways that they could keep motivated and interested the staff that they have,

"I now see that training is a good method of retention for staff"

"So the new approach is to actively bring people along with the business and to share the business with them as well in terms of profit share and things like that"

The best way of retaining them along with letting them know that they were valued and creating an environment in which they could contribute to and learn from the business.

"Your retention of those working with you is linked to the skills development that you are going to give them and the development opportunities that you are going to give them within the business"

It was felt that educational investment could provide the basic and advanced skills along with an environment that promoted good interpersonal relations within the workplace could keep the employee productive and motivated.

"I think that staff morale and staff retention is very much about creating an environment that is conducive to actually having a bit of fun and looking out for customers".

Some felt that as employers they wanted to give more, in recognition for staff contribution in terms of financial reimbursement,

"We try to look after them (the staff) the best way we can and being a small business it is you want to give everyone a pay rise, but it's always as easy as that".

However, most felt that introduction of human capital development programmes could be used as a method retain staff in the current markets "Skills Shortage" as long as opportunities existed for staffs further educational and training development and the ICT sector was believed to have an advantage in that regard;

"The biggest advantage in the ICT sector at the moment is, that if you have a development process for individuals to go there for skills in the business, you have a better

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chance of staff retention and retention is important in the current environment, and sometimes staff will stay if they see a career path for themselves to develop their skills”.

4.9 Concerns of Training and Education Staff in the ICT Micro-Firm

When discussing areas of concern regarding training and development, one of the concerns that came to light is that of the potential increased risk of other companies poaching staff or that staff would take advantage of the costs involved and leaving after they had received training,

“I suppose the fear for any of us in the sector is that you invest in all of this training and the next thing is they (the staff member) up and leave you after forking out thousands”
“I have been reluctant to do this over the years because there is a tendency to feel, well why train somebody as they are only going to get up and leave you”.

Not all interviewees agreed with the SFA representative believing that had the recession not hit that it would have been able to possible to break down such concerns even more so than has already been done,

“Development in small and micro enterprises we were beginning to change the whole idea of, you know, if you train somebody up, that they will leave to your competitor, or that they would not stay or they would want to be paid to much, we had kind of started to break down that barrier”.

The ICT industry representative felt that a concern for the smaller companies was that there staff could be attracted to look to work for a multinational corporation who would then benefit from the training;

“The smaller companies find it even harder to get at a limited pool of talent and if they do find someone and train them up, then they can often be pulled away by an MNC, so it’s an incredibly hard thing that makes it more difficult for companies “.

However, measures such as an agreement to stay with the company for a contracted period of time could help prevent staff from leaving,

“But there are ways to try and get around this”

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One interviewee had no concern for it this at all, believing that the environment and attitudes in his work place was enough to retain employees and two of those out of the four that expressed concerns, also felt that today, there was no real threat.

“No, neither would bother me, when I started Nostra, three people came from where I used to work to join me and they are still here and the majority of people who are here I don’t feel want to leave”.

Perhaps one of the most relevant concerns that appears from the finding is that of entrepreneurial orientation of the owner / manager. It is recognised that the owner / manager possesses a strong influence in the area of training and development in the micro firm, in that if he / she see it as a priority and believes in it, then they tend to encourage it, if not, they appear to discourage it.

4.10 The Skills Shortage in the ICT Sector

All of those interviewed agree in the absolute that there is without doubt a massive skills deficit in the Irish ICT sector, with jobs almost impossible to fill. In fact one interviewee openly admits to having given up looking for qualified staff in certain roles.

“I would see that there is a huge lack of systems guys, these are guys who can actually take a windows server and build it up and run it in a data centre. We have actually given up looking for them”.

This skills shortage and the fact that there are currently places to available to fill in this space, has led to one interviewee to adopt a policy that means even if he has not got a full requirement for a full time employee, if he finds what he calls a good fit, then they will hire that person even though the workload may not exist to merit another full time employee;

“There are loads of jobs, I think 2,500 in the ICT sector that cannot be filled and that stat I heard from ISME, I concur with this, and the reason I concur is that we may not have a need today, but if we see someone who may be a good fit for us, we will take them on, we don’t mind having that little bit of overage on staff”.

As a result of this skills shortage, difficulties relating to high level ICT skills within the ICT sector and other sectors such as international finance and, firms are now sourcing up to 55% of the skills supply needed to fill these gaps from abroad.

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“What’s now happened is that it has become a simply supply and demand issue, so many companies have come and the growth has been so rapid, that the talent coming out of the colleges has not been able to keep pace with that growth”.

Countries throughout Europe are experiencing the same difficulties as Ireland in terms of trying to source workers within the ICT sector,

“I mean the ICT sector at the moment in Europe I think is showing a deficit of nine hundred thousand jobs or skilled individuals at the moment”.

The findings show that more than half of Irish businesses who tried to recruit IT specialists in 2012 have reported difficulties in filling vacancies and recruiting IT specialists.

“We find it very hard to find and attract talented staff”

“It would appear certainly from research, not conducted by ourselves, but from research that I have seen recently, there are skills shortages out there, certainly, ICT is one but also in the financial sector”.

And this skills shortage has led to a deficit also in the standards and calibre of candidates coming forward for roles with the ICT sector, which is clearly evidenced by one interviewee's perspective;

“What I would say is that when you are trying to look at employment, maybe more technical, but if we were advertising to get an engineer, the quality when you go to the recruitment companies, the quality of what they are sending in is not, well it’s not great to be honest.”

Paul Sweetman of ICT Ireland when discussing the skills issue, referred to the EGFSN report and believes that,

“The skills issue was probably the biggest issue to come out of that report”.

4.11 Today’s graduates and work read

In terms of work ready candidates, that being college graduates who were coming out of college and going straight into the jobs market, there appears to be a gap between what employers in the micro firm environment feel is being produced at college and what is actually coming to the market in terms of what industry needs.

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ICT Ireland believes that,

“Yes, the idea of the people coming out of third level institutions may not be exactly what companies are looking for as work ready candidates so companies have to do a bit of work with them”.

When asked if they thought there was a work ready issue the micro firm owner / managers took a very strong view that this indeed is the case;

“Well having personal experience of this, you can spend two years, three years or five years learning everything to do with a particular subject, certainly IT, but when your put out in front of a problem, a real live problem, you don’t get taught a lot in college when a server blue screens of the system is dead”.

One interviewee when asked a similar question takes a much stronger position stating that he would not hire a graduate today due to the lack of experience;

“I think it would be fair to say that I would not currently hire a graduate. That might sound mad, but I wouldn’t because the most important thing for us is practical hands on experience and if somebody is coming in as a graduate level, they are two years away from being able to run and operate IT here”.

When asked what was his understanding of work ready, the Enterprise Ireland representative, said that;

“Basically, it is really to plug into and deliver on the levels required in a business”.

And he believes that the issue that currently exists is within the individuals themselves.

He also points out that there has always been the debate between education and training over the years as to whether or not you educate someone to perform a job or train them, but he does clearly believe that the expectation of firms is now requiring more than just a degree in an academic sense, stating;

“Business’s are now getting to the situation where they now expect that people are closer to delivering what they (the firm) require when they arrive on site”.

He also believes that the view of some small firm owner / managers;

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“That some institutions are putting out graduates that are not ready for the practical application of what it is they are expected to do and require quite a bit of induction training to get them (the graduate) up to the required level”.

There are a number of beliefs on how this may be improved, but the main theme that appears is that the industry feels that the third level institutions are not hearing what is being said by industry.

4.12 Human Capital Development as a Source Competitive Advantage

All participants felt that human capital development was without question as source of competitive advantage. All those interviewed from the micro-firm sector has strong convictions towards having competitive advantage over competitors. In respect of how it provides that advantage did differ, with one commenting on how it provided his with the business a means of ensuring efficiencies;

“So in terms of competitive advantage, absolutely, it just makes everything so easy for us in terms of capturing our hours to make sure that we are billing properly” and “making sure our customers aren’t getting to much at least we can put ourselves in a win-win situation with them, that their contracts are effectively priced and that we are not losing money on them”.

A belief that training and education provides competitive advantage through consumer confidence was also present;

“If you have your engineers trained, we might come across situations were clients would ring in and ask what certification do your engineers have, could you provide cv’s of your engineers”.

This view was shared by more than one owner / manager;

“Absolutely yes, I would say that things people really like about Nostra is that one, our engineers are very highly qualified, so most our testimonials actually refer to the fact that they can onto an engineer and they deal with my issue and that I am not being passed from person to another”.

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The SFA state that a clear benefit attributed to Human Capital Development in terms of competitive advantage, is that of a better bottom line for the company that develops their training and education programmes,

“An awful lot of the systems and training and learning and processes that these firms put in place, they could ultimately attribute the benefit that it gave to the company to the bottom line and this is part of the core of any of the examples”

Whilst not been able to present any case's of hand, the SFA representative when ask if she could provide evidence of the same stated,

“It would be naive to think it doesn't, for the simple reason that if you have the skills, if you have the knowledge, people are going to be smarter and more focused in how they work and they can bring new ideas to the company and ultimately at the end of the day all of that has to be better for the company in delivering what they do”.

ICT Ireland director believes that without question, HCD leads to a CA for the micro firms operating in the sector, when asked whether education and training could lead to a competitive advantage,

“Yes, definitely, I mean the case in point is that everything that we are working on, 90% of it, is about human capital development, in terms of either developing the staff and resources that you have got and trying to bring in new talent, so, I suppose I would put it another why, in that if you don't that, then you are at a competitive disadvantage and you (the firm) will really start to suffer”

He also believes that talent and the continuous development of our human capital is a critical factor to remaining competitive,

“So it is certainly is crucial to competitiveness to have the right talent and keep it, to develop it and if you don't have that, for the SME's, they are going to find that their business is going to struggle and for the MNC's investment decisions, will go to where the talent is”

One of the most important findings is that of the standard and quality of training must be focused to the activity of the business and that the training must be focused to provide solutions for the firm, and when asked if firms can improve their CA by investing in HCD this became apparent,

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“You can only get results from training, if the training is focused on delivering a target. Unfocused training gives you nothing more other than a good happy feeling and slightly more intelligent people than they were than when they started, but if you indentify a need that is causing you problems and find a solution that addresses the problem, if you train people to do it, then yes, there is a return on investment for you.

5 Conclusions and Recommendations

5.1 Discussion of Findings

An element of HCD leading to CA is evident in these finding is that of the owner / managers entrepreneurial orientation. The belief's of the owner / manager is an important factor as to whether or not training is a priority. The entrepreneurial orientation of the owner / manager will usually dictate the philosophy surrounding the importance of HCD in the micro firm. Schaper et al. (2005) whilst they agree with this belief that the attitude of the owner / manager towards training and development in a micro-firm setting can also act as a barrier if they do not value it.

This is consistent with the finding in that if the needs of the business come first, then training will take a back seat. Lange et al (2000) list time constraints within the micro-firm environment as one of the main reasons that development and training do not take place and put this down to the fact that broad and varied nature of the work makes it difficult for owner / managers to give priority to training and development.

The findings also reflect that the micro firms are restricted in terms of the amount of training that they can carry out due in the main to constraints of resources and this is consistent with the literature in that barriers reported by those within the industry and operating around it are consistent with those reported by Welsh and White (1981) within their resource-poverty perspective, particularly when describing how in the context of the micro-firm, finance's and time are a major consideration and the findings are also consistent with the report carried out by the Small Firms Association (2006) that found that, the top two barriers to management training centred around cost and time.

Even though these barriers are present in both the literature and are the views of those interviewed, all believed that there was definite benefit's of investing in HCD from that of a better return of investment, which is consistent with the literature (Philips Model, 2003).

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Evidence in the findings suggest that HCD is closely linked to the strategy of the micro firm with participants expressing comments about the future direction of the firm relying on the skills that were present and how the role of training was viewed as a major link between their own HRM practices and policies and their business strategy. This is consistent with the literature, with Armstrong and Barron (CIPD, 2001) referring to the connection between the HRM and Business strategy as being that *“it (HRM) is concerned with the intentions of the organization on the overall direction it (the business) wishes to take in order to achieve its objectives through people”*. Matlay (1999) believes that in the micro firm environment HRM is a crucial element of the overall business strategy whilst Gibb (1983) believes that owner / managers are a powerful source of influence in the area of development and training in the micro firm.

The findings clarify the recruitment and selection process and comments was noted as being very important to the overall health of their firms however challenges currently exist with getting the right candidates with the right skills that are relevant to the micro firm and this is consistent with the literature, whereby Beardwell and Claydon (2007) believe that recruitment and selection process is about identifying and attracting the right people who can meet the needs of the business.

To a lesser extent HCD was seen as method for retention with only three out of the six interviewee's expressing that they felt HCD was a method they could use to retain staff and viewing training and education as one of the ways that they could keep motivated and interested the staff, this perspective agrees with the view of McGunigle (2012) who educational investment is needed to provide the skills to manage modern complex business systems, along with interpersonal relations in the workplace with ongoing training required to keep the employee productive and motivated. Others felt the best way of retaining staff was to creating an environment in which they could contribute to and learn from the business.

Concerns exists around HCD in that most participants would have viewed HCD as a possible concerns of losing staff, not all conformed to this belief, and evidence of this concern exists in the IBEC (2006) that reported on barriers to management training, one of those reported was that it (training and development) potentially increased the risk of poaching.

The findings report that of major concern to the industry on a broad basis' is that of the skills shortage with all participants in all sectors commenting on the difficulties being experienced by the ICT sector in terms of securing a skilled workforce, with one even commenting that they had given

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up on trying to locate certain types of skills. These findings are consistent with the EGFSN report in 2012 which showed that recruitment difficulties are mainly due to three areas,

- 1) Graduate-entry level
- 2) ICT professionals with 2-8 years experience
- 3) ICT professionals with 8+ years experience

With this report showing that companies are sourcing up to 55% of the skills that are needed via inward migration.

These findings show a further concern amongst all participants that there exists a gap in the work readiness of college graduates leaving the education system. These beliefs have been expressed by all participants and are consistent with a recent view of ISME (2013) whose report that suggests that universities are “failing industry”.

Participant comments centred around the ability of graduates when they would leave college, with one micro firm owner expressing that he would not hire a graduate as he would have to invest up to two years in bringing the graduates skills up to the required level. The main finding in this regard was the belief among the micro firm owners and those involved in supporting the industry is that there are people coming out of third level institutions who may not be exactly what companies are looking for as work ready candidates so companies have to do a bit of work with them.

These findings show that there has always been the debate between education and training over the years as to whether or not you educate someone to perform a job or train them, but now expectations of companies has increased whereby they are now getting to the situation where they expect that people upon leaving college will be closer to delivering what they require, the company, requires as soon as they start to work.

Regardless of the concerns and difficulties faced in the micro firm sector, the findings clearly indicate that all participants feel that HCD is without question as source of CA to the micro firm and this view is shared in the literature with Lawler (2008) acknowledging that HCD has gained momentum as a primary source of gaining a CA and that the focus is now much more on the “intangible assets” of a firm as being of more value than the traditional “tangible asset” of a firm.

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The finding shows that all participants believe that continuous development in HC is a critical factor to remaining competitive but not all agree from where the major benefits are derived.

A strong belief that continuous training and education provides competitive advantage through the HRM function when it is closely aligned to the strategy of the business is both evident in the findings and the literature as Porter (1990) believes that the HRM function is the backbone of any organizational strategy and competitive advantage this view is shared by Armstrong and Barron (CIPD, 2001). Literature and journals have over the last number of decades clearly begun to point to the human skills and knowledge within a firm as being a major source of competitive advantage.

Finally the findings of this study suggest that human capital development can play a central role for the micro firm in the Irish ICT sector wanting to develop a competitive advantage in the market, however, there are certain considerations and difficulties that are present when in the micro-firm environment that must be overcome in order to achieve that advantage.

5.2 Conclusion and Recommendations

The aim of this study was to understand if investment in HCD leads to a CA for micro firms in the ICT sector. This was achieved by carrying out background research into the importance of the micro firm sector within the ICT sector to the Irish Economy and examining some of the main issues that surrounding the sector in today's economic climate.

A literature review was carried out on subjects relevant to the micro firms sector and semi-structure interviews were held with micro firm owner / managers and industry representatives.

It is clear from the literature review that there is a multitude of benefits and advantages that can be gained from investing in HCD for the micro firm. However, it is also clear that there are a number of obstacles and difficulties for the micro firm must first consider in order that they attain those benefits.

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5.2.1 Principal Findings

- The ICT micro firm that employs ten people or less is a major contributor to the Irish Economy with over 90% of SME's in Ireland being classed as a micro firm providing over 850,000 jobs.
- The ICT sector accounts for 97,000 jobs in Ireland at present and it is estimated that this has the potential to grow to 170,000 jobs by 2020 should current structures be adhered too. The ICT sector alone account for more that € 50 billion of Irish Exports in 2010 with the average output per employee rated at € 177 k in GVA
- Entrepreneurial orientation is seen as one of the most significant factors in terms of human capital development within the micro firm. The Owner / Managers who demonstrate a drive towards practices that are reflective of innovation and have a willingness to take risks are more prone to implement growth orientated activities within the company but it this is dependent upon their ability as leaders to create strong teams comprising of motivated, capable and skilled people who are able to take the firm forward and the owner / manager with an entrepreneurial orientation is more likely to instil in their employees a sense of belonging to and part of a winning team. It is believed that owner / managers who have a growth-orientated focus.
- There is evidence from many sources that there exists a skills shortage that could potentially affect the growth of the ICT industry and it is placing particular difficulties on firms, micro and multinational alike in securing the level of talent that is required to fulfil the needs of the business. This in turn could potentially affect the attractiveness of the industry in Ireland and may reduce the country ability to reach for its target at becoming the Cloud centre for Europe. According to some sources, there are presently 2,500 jobs in the ICT sector that remain unfilled with reports that certain roles cannot be filled at all.
This problem however is not unique to Ireland with one source reporting that throughout the whole of Europe there is an estimated 900,000 ICT jobs going unfilled.

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- The findings clearly show that there is a growing concern amid the ICT industry that graduates are not work ready when they leave college and from the interviews held it appears that there is a certain level of frustration being levied at third level institutions with those representing the industry such as ISME, that they are not being listened to in respect of what skills they need graduates to have.
Indeed, the findings report a perception that not all the training programmes and courses are of any real relevance to the needs of industry and there is a belief that, although more controversial, is the question around the supply of expertise required to fill the current skills gap, from this the term “Industry Ready” has emerged and from this the debate that for the graduate to be work ready position when they leave college, skills must have employability.
- Despite the perceived difficulties, the findings of both the literature review and from the semi-structured interviews indicated that CA was a direct result of the HCD invested in the workforce. HCD in the form of education and training and it is widely now accepted as leading firms to a competitive position as long as the link between the HRM of the business and the orientation of the owner / manager holds that belief and links it to and drives it towards the strategic position of the company. Today, in order to achieve that competitive advantage, the focus is now directed more towards the “intangible assets” of a firm as being of more value than the traditional “tangible asset” of a firm.

5.2.2 Three main themes identified

Firstly, there exists a skills shortage in the ICT sector that is affecting not only the micro firm but also the multinational corporations, not only is this an Irish problem, it is also a European problem, there simply is not enough qualified and skilled people to fill all the roles that are currently open.

Secondly, there is an increasing belief in the industry that a “work ready” gap is appearing in the skills of the graduate currently leaving college today. The graduate appears to have a set level of skills but industry requires more and as a result tensions have emerged between those representing the collegiate and those representing the needs of the sector. Both appear to want the same thing, but are not sure of how to get there.

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Thirdly, among those interviewed, journals and the literature, HCD is only growing in stature and is gaining ground amongst professional in all industry that investment in education and training has many benefits, however, the micro firm has many barriers and obstacles to overcome and may even need to change its culture in order to benefit from such investment and possibly need to sacrifice others goals in the short term to achieve that advantage. Despite the barriers and obstacles that they might face such as resource poverty, the orientation of the owner / manager plays a very clear role in the micro firms approach to HCD and is often the reason why micro firms do or don't pursue HCD activities.

5.3 Recommendations:

Closing the skills shortage is extremely important to the entire ICT industry and the Irish economy as a whole.

The government have already recognised that there is not enough being done with the subject of mathematics at both primary and secondary level. However, it appears from discussion, that second level school leavers are misguided in their understanding of what exact area of the computer industry it is that they wish to work in or even study. It is therefore recommended that industry and third levels institutions compile a schedule outlining exactly what course of study leads to what career path within the sector. This should then have allocated to it, resources that would present this information to those in third year of secondary school and through continuous investment into transition your students. All of this is with the goal of reducing the numbers that drop out within their first year of college due to having chosen the wrong study path.

The "work ready" issue appears to be creating more of a divide between the ICT industry and the third level institutions. The opposite approach must be taken to ensure that this divided does not increase. A clear and concise understanding of what one wants over what one can provide is needed.

A taskforce should be compiled of both leading ICT specialists and representatives from the third level institutions should be formed to review the educational programmes on offer and to ensure that the core subjects are relevant to the requirements of the industry. It may be considered that ICT course could be structured so as to be ranked in order of company size, an example would be that

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course's for the first two years IT cover all the requirements of the micro / SME firm advancing skills to that of the MNC's requirements after years three.

This would serve to allow students to take time out between years two and three and perhaps gain more practical experience and understand what it is industry required.

5.4 Conclusion

Does HCD lead to CA for the micro firm in the ICT sector?

Overall those that participated in this study demonstrated a real commitment to the concept the HCD is in fact a source of competitive advantage for the micro firm.

All participants recognised that the time spent on education and training in the micro firm environment would return many benefits to that that firm.

As with all firms the culture of each firm is different and therefore the approach to HCD is going to be different. However, due to the current economic climate and the pressures that owner / managers now find themselves facing in terms of competition, HCD is becoming more important to the micro firm as a result of the ever increasingly difficult market place.

As a result of the opinions expressed in the interviews and through the literature and with the growing recognition that it is the "intangible asset" that is now becoming more important than the traditional "tangible asset" of a firm.

It is therefore, possible and reasonable to conclude that Human Capital Development can lead to Competitive Advantage for the micro firm operating in ICT sector.

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Appendices

Appendices Note:

The researcher started the interview by expanding upon and defining the concept of Human Capital Development and its relationship to Competitive Advantage order that the context of the questions could be clear and concise.

The researcher cited a definition as provided for by the CIPD (2006), "human capital is the skill, experience and capacity to develop and innovate, that is owned by individuals" that in recent times, Human Capital Development was becoming more relevant. The researcher further cited Lawler (2008) as acknowledging that acceptance of Human Capital has gained favour as a primary source of gaining a competitive advantage and literature surrounding Human Capital Development has begun to focus on the intangible assets as being of more value to the market as being more important than the traditional tangible assets (Stiles & Kulvisaechana 2012, Pferrer 1994).

The researcher highlighted that in this instance that Human Capital Development as "the processes that relate to training, education and other professional initiatives that increase the levels of knowledge, skills, abilities and social assets of an employee and that effectively what is being dealt with is the intangible assets within a small to micro firm environment via the skill and abilities of the people within that environment.

Appendices: Expert Interviews within Industry & ICT Entrepreneurs Interviewees

Interview 1

Ken Kelleher of Landmark Technologies acted as a Pilot Interview for this research, the author of this research wished to develop from this interview a series of questions to put to those who would subsequently be interviewed.

Reason for Selection:

Ken Kelleher is the owner and managing director of Landmark Technologies Ltd. He has owned and operated since 1997. He has 8 staff in total making him the perfect subject in which to explore the micro-firm owner from both a practical.

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Interview Transcription:

Q. I asked Ken to give a brief outline of the history of Landmark IT, his own background and he found himself as an entrepreneurial ICT micro-firm owner and to give a run-down of where he finds himself today and any issues that he may have.

Ken Kelleher:

I suppose that I will start with my own background first. I left school, I was in a CBS school and I did not have any real direction as to what I wanted to do or whether I wanted to go to college or not. At the time I recall saying to myself that no matter what I wanted to do with my life I would need some clue as to computer systems and IT, even he said, if I was working in McDonalds I would need to be able to operate the tills etc.

So I registered myself on an accountancy computerisation course, which was a very basic course when I look back on it now... but that enabled me to get about six to nine months of experience and training on basic spreadsheets and word processing....email wasn't even around back then... and entry level accounts systems, from that course then I got a position with as it happen to be, an IT services company that where one of the very early credit card payment companies.

I worked in there under the financial controller as an assistant accountant of all things, as at stage of my life I was also going to accountancy college which was part of my employment with that company.

So I followed that route for a while and I increased my computer skills and I went through the chartered institute of management accounting.

That company then went into liquidation and I found myself out looking for a job role and I thought that I would try to become a software business consultant, working in the software industry.

So I managed to get a role with a small IBM, small but very, very successful IBM reseller called Notly Cahill Systems and the initial job role there was to consult with their clients on the application of their business software, so it software called amercron, which would have been a precursor to the likes of SAGE and this involved going out consulting on the implementation of this. What they wanted to do with me initially was to put me into the hardware support or the HWMD (Hardware Maintenance Department) as it was called so that I could get some skills in computer networks and computer hardware and I absolutely loved it in there, and.... I showed a bit of talent for it because I ended up fixing equipment and then I ended up growing that role rather than being a software consultant, to actually being an IT hardware engineer and it came to the stage where I was that company for a couple of years, where I had started had started on the repairs bench to within a couple of years going onsite as a site engineer travelling around the country on various projects installing hardware and rolling out large projects.....

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Q. Did you go back to college to study IT?

Ken Kelleher:

Absolutely not, no, at this stage I was still studying my CIMA, my chartered accountancy and I finished that off, but to clarify, I have absolutely no formal training in terms of the nuts and bolts of the hardware support, I learnt it very much on the job, and I absolutely loved the environment and I was working with some great people.

In fact, what happened was in terms of my training was that I developed a training course for the other staff to train them on the likes of Novel and stuff like that, so that they knew what was involved in the likes of Novel Networking, so this is going back twenty odd years.

So at this point I have worked for Notly Cahill for a good few years and I felt that I could not really expand anymore and in my naivety as a twenty two year old, I went for the Hardware Support managers jobs and was very pissed off when I didn't get it, and it was obvious that I wasn't going to get as I did not have the relevant experience as a manager, and there was guys who were in their Forty's who were obviously going to get to the role and did not want to have a twenty something looking after.

So at this point, I said goodbye to Notly and ended up getting a job in Dell, which as it turns out, was probably the busiest two years of my life. I spent every waking hour and every weekend in Dell where I was running their IT services for their Bray call centre.

This job entailed catching up with the business as it grew from around 400 hundred users up to 1,000 users, so that was everything from PC's, Servers, to maintenance to install the whole thing. This was really a baptism of fire but it was also a massive learning curve. The time then came to move on from Dell as basically there was no opportunities for me to move into management and the sort of next step up would have been too much more of the same over the next couple of years.

So I left Dell and I went to work in a completely different environment in a sales role for a company called trinity technologies and again, this was another baptism of fire and this is where I learned to... ah sell and to account manage clients etc.

All the while, during these particular Jobs I was always interested in setting up my own business but ah... I had not really formulated how exactly I was going to that or what I was going to but there was always something there, and I felt that having the business skills, the accountancy skills, the technical skills and now, the sales skills, that the would all help.

From trinity I moved to Lake Communications after having been head hunted and then lake was sold, so at that stage then, I had a couple of deals on the table and I approached my sales manager at the time and I told him that I wanted to take the deals and set up my own business. He

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gave me his blessing as they weren't going to get the business anyway as they were going to be sold, so he let me go and they basically became my first clients.

Landmark.ie was set up in 1998 with the goal I suppose of landmark or the goal of the business if you like, is to put myself in a situation where it (Landmark) can provide a level of income and a comfort of living for me and my family, but to also, act as a mechanism for me to get involved in other business's and explore other opportunities, so since 1998 I have been growing landmark, which has always been a slow steady growth and I have been involved in everything from the ground up.... to making the tea, to sweeping the floor all the way up to recruiting staff.

The main challenge that I always have and that I continue to have in landmark is around staffing and around recruitment. We have always had these challenges with customers and we always will in terms of...we may have customers who may not be a good fit for us or be bad payers etc... were we might have to recommend them onto another IT company..... but the biggest challenge has always been getting staff. We find it very difficult to find and attract talented staff.

There is absolutely no issues with getting bodies on board, but that's not what we are about, its always been about talented staff.

In terms of our own staff we now have a great team and we have recently hired an operations manager who is now running the show basically on the day to day basis' and we have two senior engineers who are excellent in what they do and we have a couple of mid level engineers and we have other support staff such as account and sales etc.

But as a customer support business, the Tech Support team is the key to us, the key to our success. Currently we have a total number of staff of eight.

We also believe firmly in using technology to deliver solutions, so while we have on average 7 or 8 staff employed, we actually support alot of users, in number terms, its about a thousand users around the greater Dublin area and I know for a fact that other companies who are supporting similar numbers would probably have 12 to 14 staff.

The reason we are able to operate with reduced number is because we use technology to automate alot of what we do, so we actually spend the equivalent of a senior engineer's salary on our own internal systems every year,

To me, this feeds into the Human Capital side of our business, which I (Ken) feel is very ,very important. A couple of years back, we bought into an American software package to run the business and this has really helped us to identify....ah.....how efficient and effective, and these are words that most employees don't like to hear, but it effectively records how efficient and effect they are in terms of doing their job.

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For example, we know that a job should be budgeted for four hours and through the software we know that it took X 6 hours, so through this technology, we know exactly the timescales involved in jobs. This enables us to ensure that from a resourcing perspective, that we have the resources we need and it gives us the ability to plan.

Where I suppose as a micro business.....were we fall down is in the consistent training of people...am...which is something that we are addressing....but it is something that I have been reluctant to do over the years because there is the tendency to feel....well why train somebody as they are only going to get up and leave you.....but now, actually, I see now that training is a good method of retention for staff and even more importantly, I now see it as an important method of retention of our customers, as at the end of the day, in order for us to service our customers to the best of our abilities and to give them the best service possible, I need to have the best staff possible in order to do that and that's what it feed backs into.

One of the things that we are doing is, and it's in connection with this American company, is we are engaging with them to provide professional, something like CPD, continuous professional development, so that they can go on micro-soft courses they can go on Cisco course's, so they (the staff) can go on any courses that they choose to do as long as they, the course's are related to Landmarks business and they can take some extra time off to achieve those. So they (the American company Landmark engages with) provides us with an all you can eat buffet in terms of training at a particular cost, and that this is something that is relatively new to the market and we would see ourselves as early adopters of that technology.

Q. I asked Ken if he was willing to divulge the name of the company

Ken stated at this point that this would be as he sees it commercially sensitive information and declined to offer me the name of the company to which he was engaged with a he stated it was part of the "secret sauce" that he works with. Ken did refer to the fact that he is only one of four company's in Ireland that use this company and he believes it adds to his competitive advantage and would like to keep it to himself.

Ken continued:

This company has users all over the world and we have been engaged with their services in training for about three years now. In all honesty, it has been one of my better business decisions in getting them on board. It brilliant software, it effectively runs the business.

Q. Do you use this as part of your Human Capital Development Programme or do you use it to solely help you run your business"?

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Ken explained:

What it is and its very clever to be honest, and if truth be known, we are trying to model some of the things that we do based on it, by the understanding the way they do their business is.... well it's what they call a PSA which stands for a professional services automation software. So effectively what it is...its finance, its sales, its CRM (customer relation management), its tech

ticketing and it is everything that a business like ours needs to automate itself in one package, which is great... its a bit like SAGE line 50, but it does everything else that your business needs.

Now, what this company have done, is rather than just providing the software, they have actually provided a whole community around it, so for instance, when a new member of staff joins us, we can have this person log onto the software and we can set up that member of staff as a user and from this we can assign courses to that new engineer, so that the member of staff we hire, can get the skills up to the standards that we need them to be at in relation to his job, through this software, and there are tests related to the training as well, so at the end of the first week, we know that through the induction training as we call it....well we know that that new member of staff is trained up to a particular skill level via this company's software.

We this is really fantastic is that it trains the person to the standards required relating to our business so there are no excuses such as, I did not know this, I did not that etc and what makes this very clever, it that the company we use offers this as part of the solution at no additional cost for this, so not only are they providing us with a great piece of software but they also provide this large level of community support around that.

The other side if that is in terms of ongoing Professional Development, as I mentioned earlier, we can do the likes of Microsoft training etc and the plan would be to make sure that the staff are trained up in a particular way so we have various systems that we use internally that the engineers must be skilled up on before they even touch them and thats just how it works. You wouldn't send a bus driver out to drive the bus without putting him through some sort of a comprehensive training programme, and thats the way we, Landmark operate as well.

In the past however, we never did that and it definitely caused us problems because people logged things differently, approached work differently, there was no uniformity, yet in our business it is all about a consistent approach in the workplace.

Q. Would you view that as giving you the edge over your competitors?

Ken Kelleher:

Absolutely, yes, absolutely, I meet up with other people who use the software that we do, what it terms as the user group, once a year in America. There are about 2000 people who attend the forum and this gives me a great opportunity to have a chat with other people who own

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business's and to chat to them about their challenges, and there all the same, it does not matter where you are in the world, the challenges are generally the same.

I also get involved in the quarterly user group meetings in the UK which has helped me do business with other people over there, so it has been a fantastic success for us., so in terms of competitive advantage, absolutely, it just makes everything so easy for us in terms of capturing our hours to make sure that we are billing properly, down to even knowing how many hours an engineer is putting in during the week, is he doing a thirty hour week, is he doing a forty hour week down to is he doing a fifty hour week, then why is he doing a fifty hour week ? and it helps us ask the questions, what is impacting him, what is taking him so long ?. making sure that certain customers aren't getting to much, or at least that we can put ourselves on a win-win situation with them, that their contracts are effectively priced and that we are not losing money on them etc. So that is in terms of how we use it to run the business.

Now I am always open to training, but it can be very difficult to sometimes let a member of staff off for a day or two to let them go on training, because there is a cost involved, an indirect cost, but it has to be done.

One of the big development areas for us now and we are actually in the process of doing it at the moment, is Cloud and Cloud infrastructure, so for instance this Monday coming we have got one of our first half day training sessions before we even start to deliver this cloud solution to any of our clients, we are going to be fully trained up on it so that we know exactly what it is about.

Over the years, say eight years ago, I would not have taken that approach, I simply would have said get stuck in, get to know it on the job, make the mistakes and learn from them, and the next time around we would have learned from those mistakes, but now, it is just to crucial, to competitive and to important to us now to have that approach. Today we have to have a structured approach to our training and delivery.

Q. What changed your mind over this period of time, from initially thinking that you could just get stuck in, too, o.k. I now have to invest in this, in training?

Ken Kelleher:

I think I had a good look at the business maybe five or six years ago and I found that we were having the same issue over and over again, and i recall meeting a very successful IT guy who had set up a software company and made so much money that he went off and bought an island, but one of his things was that he used to sit down with a spreadsheet and write down "what is preventing my business from growing?". So I did the same, and the key thing that kept coming back to me as to what was preventing landmark from growing was quality of staff. It wasn't our sales, it wasn't our

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offering, it wasn't me, it was purely to do with our support staff. So I said right, I need to invest in the right type of staff. So rather than bringing someone in for what, 30 k a year and training them up, we actually went out and started buying the talent, so we were buying people with the experience, who already had the training and already had a couple of years under the belt and also had the right attitude towards customers and towards the business, basically professional's.

Q. Elaborate on what you mean by buying the talent?

Ken Kelleher:

O.k., rather than recruiting someone and paying them a low salary and hoping that they learn the skill set that they need to deliver the job over the next 12 to 6 months in a completely unmanaged and unsupported way, sink or swim if you will, well that previously did not work for us, clearly it did not work for us and what we decided to then was that we had recruit people and pay the proper rate for people who already had the skills and experience.

So, we simply sat down with a blank piece of paper and we wrote down what our ideal senior engineer would look like and what attributes they would have, what skill sets would they have, what attitude they would have and we went out and we said ok, in order to get the person on board, we are going to have to give them a minimum of a 45 k basic, we are going to have to give them a bonus, basically, a package that would be worth 60 k to 70 k and that's what we did.

So we had two options, develop our internal training etc or go to the market and actual hire in those skills already, so that's what we did and then we could "Landmarkitise" them, in other words we could very quickly train them up on our own internal procedures and that brings us back to the training software that we use and things like that.

Q. After you did that, were you able to measure the increase in effectiveness in terms of return of the investment that you had made?

Ken Kelleher:

Yes, on a monthly basis we hold a management meeting and one of the things we measure is lost customers / customers gained and we can measure the number of sites that we lose on an annual basis, which at present stands at one. So our turnover of clients is very,very low and that therefore means that we must be giving a quality service. We don't do any scientific measurement of it, but I know from my own stress levels, I know from the fact that I am able to take time off, weekends off and that I am able to sit back a bit and be less stressed about the business, is because we have got very, very good people working now in there.

It has taken us a while, it took us six months to recruit our operations manager and the plan there is to develop this person into operations director. So the new approach is to actively bring people along with the business and to share the business with them as well in terms of profit and directorship and things like that.

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Q. From where you are sitting today, what now for the micro firm in the Irish ICT sector do you see as the main challenges?

Ken Kelleher:

Staff, I will always put staff I think in any business, is attracting the right staff, recruiting and retaining staff is absolutely the first and foremost challenge. There is business out there, it is very

competitive, but if you have a great team behind you, then you can go out confidently & approach that business and to possibly win that business and I think that the story that landmark has to say in terms of the offering that we do in terms of managed services and developments such as cloud, I think we are at least two to three years ahead of everyone else in the market place and I suppose the other challenge that we would have is marketing our business, as we are probably not that strong at marketing the business, but to me, staff is the number one issue for business.

Q. From a competitive advantage perspective where would you position the role staff ?

Ken Kelleher:

Actually that's a difficult one, because..... well people build up a great rapport and relationship with staff and I always get great feedback from clients or I am asked to send out a particular person to do a job because the client trusts them etc and you can feel that if the staff member was to leave, would you lose the business?, you probably wouldn't as its what I call an overall.... well there are a number of things that go together to make the secret sauce, staff for sure is very very important, but is also how we manage the business in terms of our people, our training process's and our technology, that to me is the three ingredients.

Q. What supports do you think the micro firm in the ICT sector could benefit from?

Ken Kelleher:

Other than the obvious rent and rates cuts, lower insurance, I don't know, I have been many years in business but I have never gone to the likes of the government looking for any supports or anything like that. I think that if you are start up you might get more support but as we are fifteen years in business, I don't think we are entitled to much.

I think overall the government strategy needs to centre around technology. Ireland has got an excellent workforce, a very skilled workforce and we should be a tech / pharma centre of excellence around the world, so I think that the government need to start developing back to education systems and introducing people into the technology field.

You know for a long time people went to university and studied engineering and construction related trades, now though, there is a glut of people trained in the technology area and the government should be looking at schooling at all levels to ensure that we are producing

sufficient candidates to feed the demand, because at the moment, there a loads of jobs, I think 2,500 in the ICT sector that cannot be filled and that stat I heard from ISME. I concur with this, and

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the reason I concur is that we may not have a need today, but if we see someone who may be a good fit for us well we will take them on. We don't mind having that little bit of overage on staff as we need it and will use it.

In terms of support to business, well it's difficult for me to answer as we never had any supports from any of the governments. We use FAS website to recruit etc, but it's a case of we never had it so we don't miss it.

I have been told recently that you can get a five thousand euro grant to get your website redeveloped, but I would say by the time that you filled out the paper work we would have lost interest in getting the website redeveloped, the point I am making is that we would move much faster than the pace of the government bodies.

The only other things I would say is that we don't go near tendering for public sector work as we feel the tendering process is just for too much and to high level for the micro firm. For example, the indemnity required for some of the contracts is up to 15 million euro and it is just too high and costly in terms of time and money to try to engage for those contracts.

Q. The Future of the ICT industry, where do you see it going?

Ken Kelleher:

Simple, it is all going into the cloud.

We are what is known as an MSP (managed service provider) and about three years ago realised what is going to happen to the industry and have been preparing to becoming a CSP (cloud service provider) since that time. I think we are very well placed to start delivering these packages to our clients. I am attending the cloud success road show presentation today, and yes basically, the Cloud is where it is all going to be at.

In terms of infrastructure, the days of when I started off 20 years ago by taking parts out of peoples pc's and replacing them is almost gone and will soon be unheard of. Your pc will soon become a device that you throw out when it's broken and you get a new one in.

This brings with it massive challenges with it as the likes of Microsoft are now offering those cloud services directly and in fact what they did with Microsoft did with office 365 was to offer those services to their Microsoft partners to keep the billing relationship directly between them and the end user, side stepping their partners eventually.

So we have gone out and research the market and found two options, the high end and low market in terms of cloud and we are going to brand that and sell that as the Landmark Cloud solution and we are about two years into that, already. But we are moving towards that quickly and that were the ICT sector is going to have to live. IN THE CLOUD.

End of interview:

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Appendix 2:

Interview 2

Avine McNally, Acting Director of the Small Firms Association

Reason for Selection

As head of the SFA who works with over 8,000 business that represent firms under 50 employees, Avine is perfectly placed to report on the issue that affect the small firms today and what methods are available to those working in the micro and small firm environment.

Avine has over 20 years experience in this field and the researcher would consider her experience invaluable to the research question

Q. The Researcher asked Avine to give a brief outline of her background and the back ground of the small firms association to start the interview:

My name is Avine McNally and I am currently the acting director of the SFA and I have been working with the SFA for around 16 years.

One major part of the work that I have done over the years is to have been working with a “Centre of Excellence” which is a training process that we (The SFA) did in conjunction with Fas.

Giving just a very basic outline, the SFA only represents small businesses in Ireland and those companies that employ less than 50 people, and that covers from the one man, to micro right up to small firm with 50 employees. We (the SFA) are not sector specific and we represent any firm as long as they don't have more than 50 employees, and we deal with exporters, importers, manufactures, distribution, you name it, any firm or professional can be a member of the SFA. Currently we have around 2,500 member companies, who would be direct companies accessing ourselves.

These are all based throughout Ireland with a vast majority of those based within the Dublin region but we do represent firms throughout Ireland.

The Services we provide is really advice and assistance on the day to day running of the business, anything from every aspect of HR right up to any other aspect or concerns that they may have regarding their business, be that policy, government affecting or other issues that they may have with banks or revenue issues.

We are one stop shop for advice to help them through all sorts of events.

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Q. With regard to the Small Firms Association, what best do you understand by the term Human Capital Development?

Avine McNally:

For me, it represents the growth of the individual who works within the small firm, and that would be both learning a physical qualification, going back and doing some more formal education, may be through the third level, or general training programmes that may be offered through the employer or groups such as ourselves or other organisations and bodies who offer training, but what is really important, it's the on the "On the Job" learning,

Which I think in a lot of small firm's that this happens almost by default, because on minute you have to do x and this could be your core job, but you may have to move over and do something else if something were to arise and I think in a small business in particular, there is a lot more "learning by doing the job" and learning "hands on" and using in house training, albeit its not formal, it not recognised on qualification, but it is actual learning on the job and you could refer to it as the coach kind of experience.

To me this kind of training takes place mostly in small firms as oppose to, in my opinion, the training that takes place in larger or bigger firms, because it is just part of the necessity when you have a smaller team, that you need to be able to turn your hands towards a majority of the work in the company.

Q. What do you believe are the main benefits of Human Capital Development within the Micro Firm environment, and do you have any examples ?

Avine McNally:

Examples would be difficult off the top of my head. I suppose realistically the benefits, well we all know the huge benefits of training certainly in a small business, it can bring expertise to the company that the owner / manager may not have, so it could be in an area of HR expertise, it could be financial expertise, it could be many various areas.

First of all it is essential that somebody in the team is up to speed with the skills and knowledge and it can bring obvious things like more efficiencies to the firm interms of being more cost effect in terms of more effective and efficient methods of doing the same things, it can be more cost effective by people being quicker and more able to perform their job, they have more knowledge when doing the job, but equally, competitiveness and certainly it has to lead into that, because if you have a more educated, knowlgable, focused team in all vital areas of the business, we that is ultimately going to contribute to the benefit of the business and ultimately to the bottom line

and that is where the benefits of all of the training comes. The problem sometimes is getting people (owner / managers) to see that.

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Q. Do you believe that Micro Firms that promote and take part in HCD programmes improve their competitive advantage position?

Avine McNally:

Without a doubt, for a while I was involved with Fas, “Excellence through People Programming” and although I can’t think of any specific examples, there were many small firms who went through that process and an awful lot of the systems and training and learning and processes that these firms put in place, they could ultimately attribute the benefit that it gave to the company, to the bottom line and this is part of the core of any of the examples.

The challenge as I am sure you have come across, is trying to get that “mindset” in to the small business mindset of the owner / manager, if that makes sense to you, in other words , often people have to be in this system to see how beneficial it can be, but getting them into the system of learning and training and ongoing education can sometimes be something that they find quite difficult to give the time up for, both personally, in an owner / manager perspective , and that is a criticism we have had of the small business environment for quite a long time,.....but equally, if they (Owner / Managers) are not buying into it, then they can find it very hard to send their staff and team away or encourage them to go or even allow for that time off, because, whilst in their heart of hearts they may know the benefits, it is very difficult for them sometimes to allow that time and commitment to focus to be given.

But when they are in that cycle, they can see the benefit, but it is getting them into that cycle to see the benefit that can sometimes be the leap they need.

Q. What do your members report as the main barriers to Human Capital Development, the Education and Training aspect, when it comes to making an investment in the same?

Avine McNally:

What I can really help you with is that we carried out a very extensive training survey a couple of years ago and I would be happy to share that data with you if you wish to have a look at it, and although I can’t recall the stats of the top of my head, I do recall that the barriers that alot of the companies reported was the, the time commitment, allowing the person the time off, the cost element wasn’t as high as you would think it would be, but more where the courses where was raised as an issue and raised as a barrier for people to actual allowing themselves or the team to undertake a course and also, I think if I recall correctly, some of the relevance of the course’s was deemed not to be entirely suitable for the micro to small business environment.

I may have those not in the exact order, but from what I can recall these are the general concerns that came out.

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If I recall correctly the cost of the training did not come up as high on the list as I would have originally thought, even though it was a contributing factor.

Q. Although the SFA are not sector specific, the ICT industry is reporting a skills shortage, within the broader sectors of the micro and small firms, is there evidence to support that other sectors are experiencing shortages or is there a shortage of skills in general?

Avine McNally:

It would appear certainly from research, not conducted by ourselves, but from research that I have seen recently, yes there are skills shortages out there existing, certainly, ICT is one but I also know that the Financial Services is also another sector that is having challenges in relation to filling the skills that they need, and this would include the banking sector and other financial institutions and bodies.

The other area where we have a skills weakness as well is in the area of languages and that can affect some of the companies that are looking at exports and imports, but also some firms involved in the customer based and focused, you know some of the companies in IT like Google and that sort of thing. They say that they face a challenge in getting people with a very good fluency in certain languages and that a weakness that we have actually had in Ireland for a fairly long time anyway.

Q. Do you believe that talent management is something that the micro firm should be concerned with?

Avine McNally:

I think they certainly should be, the problem is that it is one of those items that I would say they have on the "to do" list the spreads into the future.

Q. From whose perspective, the Governments, SFA or Industry ?

Avine McNally:

To be honest with you, it comes from my dealings with these business's everyday. I mean a lot of them are really fire-fighting to survive and to keep going and you know, to get paid, to deliver product or deliver a service and win contracts and win new clients, and they are really struggling, now some are doing very well, but there is still a percentage that it is a battle and a fight to keep the business and to keep the doors open, and I would imagine, having talked to a number of them, they all recognise how important it is (talent management), it is finding that time and giving that commitment, that perhaps they don't give as much focus as they should and what frustrates me

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quite a bit to be perfectly honest with you, is that a couple of years ago, there was extensive finance made available to support both management development and development in small and micro

enterprises and we were beginning to change that whole idea of, you know, if you train somebody up, that they will leave to your competitor or that they are not going to stay, or that they want to be paid too much, so we had kind of started to break down that barrier.

It was a pity that, that the management development report that was produced about four to five years ago, was produced at a time when unfortunately, expenditure was completely cut, meaning that a lot of the proposal's in that report never really came to life and I think that's a pity cause I think we had started to make progress in the importance of talent management and ongoing education and ongoing training to the benefit of a business, and then suddenly, when the support and programmes weren't there, I think we lost a little bit of ground, personally on that, because business went into survival mode and they were focusing any spare finances on the business survival and that fight, rather than on, what they may have perceived as been very beneficial, but what would have been probably been seen as a luxury (training and education) to be honest in the eyes of companies over the last couple of years anyway.

Q. This appears to have been just down to bad timing, have any of the programmes come to fruition?

Avine McNally:

It was to be honest with you, Patricia Callaghan our director was heavily involved in it and it was unfortunate, but one or two of the recommendations in it have come out of it, for example management works has been established through skillsnet, which is specifically focus on management training and development in the small business sector and that is currently wrapping up its first year and the feedback has been excellent, and the programmes and training have been excellent and hopefully the funding will be there moving into the future, so there has been one or two of the recommendations that have been taken and activated, albeit under a reduced and much more limited budget, but again if you were familiar with that report you would see that there was a lot of recommendations that unfortunately never really got built on and I think that we lost, personally, it's a view point, that we did loss ground, others may disagree, but in the small business environment in relation to education and training, I would think that we lost out on further learning, if you like, in the workplace.

Q. Do you feel there is a reluctance among entrepreneurial owner / managers to invest in human capital development?

Avine McNally:

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My answer would not be a no, but it would be more a case of “do they have it”! and that is being perfectly frank. First of all I would say couple of things, one I don't think that entrepreneurs put enough of their own investment back into themselves in terms of their own ongoing personal development and again often, this is a criticism that has been lobbed at the small business sector, is

that there isn't that, you know strategic knowledge, forward planning, sometimes a lot of those management skills we don't have in abundance at the small to micro firm level and that has been a criticism that has come through from various reports over the years, so what I would say is that I don't think they see the investment in themselves and then if they do have the spare cash they probably would have invested in staff (in the past), the problem is in the last couple of years, when spare cash is there, the training and upskilling of staff is probably not high on the list, if , they have a list of ten things that need to be done, its probablnt not going to come to the top of the pile as easily as other aspects of the business that need the focus or investment.

Q. In this current economic environment is therefore the priority that is place on training and development greatly reduced?

Avine McNally:

Yes.

Q. What benefits do entrepreneurial owner/managers report from any Human Capital Development programmes that they have taken part in?

Avine McNally:

Yes definitely, I know under a lot of the extensive training that we are ourselves used to take, the buy-in that you would get from people who were on the programme from themselves for further education or for them to send colleagues or to encourage other people to go, it was huge, it was massive and I know even some of the management works, which was an interim report produced, and again as with any of these thing you get people involved, you get people back into that learning environment, focused learning for themselves and for the business or whatever it might be, the buy-in is huge, I mean they keep coming back and keep coming back and they will also encourage other people to attend.

The difficulty is getting them involved, that is really your challenge, but when you get them involved, the vast majority will maintain that level of trainging for themselves or again they go back and encourage others to get involved be that there own team or someone else that they would know.

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Q. Within the SFA membership, do any report issues with regards to staff retention in this climate?

Avine McNally:

Yes, I know that we would have seen the levels of retention levelling out we would have lost a lot of employees in the Small Business sector in the last while, we are now maintaining, there was

around half the private sector workforce employed in the SME environment, there has been a huge loss, but we are seeing those retention levels level off, though and we are beginning to see less jobs being lost and more being retained with less moving to part time and short time that sort of thing, we are still not out of the woods yet, although there are positive signs there that growth will improve.

**Q. A further question on retention levels:
Are owner / managers concerned that people will take value of the training and education provided and then move to the competitor? Is that a concern?**

Avine McNally:

Yes, this concern would have come out in the survey that we conducted a couple of years ago and I know reports over the years have always reported that this is a fear, sometimes it can be sole anecdotal evidence, rather than actually focused, concrete research evidence, that if you train somebody up they will move. I think that that mindset has been broken, but we would be naive to think that it's not still there in some shape or form, you know, but this would tend to be more anecdotal evidence. I don't recall reports recording such, but I recall reading the notes and this fear that if you trained somebody up that they would go.

Again it a very different time and maybe in Celtic Tiger times when people would jump from one job to the next, it may have been more of a concern, now though, I don't think people will jump careers as easily as they have in the past and I think if people are involved in training, that firms are getting cute in relation to maybe signing people one to stay a certain time afterwards, say with the company for a year or two, those type of things, but equally, I think people are seeing that if a company is willing to invest in their further education be it through financial support or time off to study, you will tend to find that the loyalty is given back by the individual by staying with the company.

Q. Is there any evidence that supports that education and training can actually act as a provider of competitive advantage to the micro and small firm?

Avine McNally:

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We (the SFA) have never conducted such research and to be perfectly honest with you I have never seen any reports on it, but as I said at the beginning, it would be naive to think it doesn't, for the simple fact that if you have the skills, if you have the knowledge, people are going to be smarter and more focused in how they work and they can bring new ideas to the company and ultimately at the end of the day all of that has to be better for the company in delivering what they do, so personally I would say, yes, in my mind but I would not have any specific research that I could direct you to on this subject. So there's no research that I am aware of in this particular area.

Q. What in your professional experience is the general feeling surrounding education and training within the micro firm environment?

Avine McNally:

I think again, there is an acknowledgement that it is important, that it is vital, its finding the time and resources to allow it to happen is where I think you will find that the main issues and challenges occur, for example, from an SFA perspective we ran an awful lot of subsidised training for quite a long time and we have found when that subsidy finished and we tried to run the training programmes, we found it quite difficult for people to give up that time to commit, now we tried them with everything, we tried half days, we reduced cost, we did everything we possibly could, so we took a different approach to this and came up with a programme that is run once a month called the "business bites" programme, and once a month there is an hour focused on information and advice and learning on a particular business topic, now that could be on a new piece of legislation that is coming down the track or may be on information from revenue, it could be on debt management, we try to give a one hour focused training if you want to call it that, on a particular area, for companies that want that and they come in for an hour and they get an expert who is going to talk about the topic and give them information on it, then there is a more informal hour when people can chat. But each month we try to address a new topic, that may or may not be relevant to everyone, but is also still giving them ongoing learning and knowledge in areas that may not necessarily have in depth knowledge on. We don't expect them to walk out experts, but we want them to have a general overview and if they need to know more, then they know where they can get further information from.

However, now that the subsidies have finished it is much more difficult to encourage training.

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Q. What Tools would you say are best used to measure competitive advantage?

Avine McNally:

Really I suppose the tools that you are looking at in the small firm would definitely be in the areas of your productivity, your turnover, your sales and your customer numbers. A lot would still tend to look at those internally and for their own benchmarking.

Q. What supports does the SFA provide for owner / manager who are contemplating investing in education and training programmes for their staff?

Avine McNally:

Other than the business bites that we have, and the management works programme, there is still a lot of good that comes from that. We still run some half day training programmes ourselves through the training unit here in IBEC or alternatively we may find a particular skills area that we find people are looking for a lot of information on and then we run specific programmes for that.

However, we don't have any more formal structures like what we had a few years ago such as that suite of programmes over the course of a year that people could go along to and pick and choose really.

Q. Is that as a result of the budget cuts?

Avine McNally:

Yes.

Q. From your professional perspective, what do you think could be done better overall within Irish Business and Government structures that would help the micro firm.

Avine McNally:

I think there are a couple of things I would say on this particular area:

I certainly think there has to be support given back and it does come down a little to financial support and subsidies that should be given in relation to the continuous upskilling, but this is as much at management level as well as throughout the organization, particularly in the micro area, because, as I have mentioned earlier, people could be very good at producing x but a lot of them may not have the business strategy, forward planning or thinking, even down to the financial skills to be perfectly honest with you, this has been an area of criticism again that has been put back to the firms in the micro area. Through no fault of their own, it is just on foot of various things, through banks and you know, we think we know a business, but there can be aspect of it that people don't have the knowledge in.

The other area that I would say, in relation your question about the skills shortage, is that, and there needs to be much more work done on this, but that the skills and training we are giving

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now, meet the needs of the future and I think that this discussion has happened for a long time, but it's now time that really need to see more action now than chat, particularly in light of youth unemployment.

When it comes to skills, we need to make sure that it's what the business need, that's number one, but equally, the apprenticeship programmes and as much of this would be to do with hands learning within the environment of the business rather than in the class room so that they can hit the ground running when they do enter a business.

Q. Do you think that the criticism's that are put against the micro and small firms within the Irish Economy, considering the numbers the employ, justified?

Avine McNally:

I think people will always lob criticism at, well to be honest, I think it sometimes simply people having a whine for the sake of having one. The point I made in relation to the financial expertise, I think that we have to face up to, particularly in light of the financial crisis and credit crisis for the SME, there was faults on both sides, and faults on the SME side, alot of business were so used to walking in an getting the credit that they didn't have the knowledge and expertise in, particularly in relation to cashflow, forward planning profit and loss, you know they didn't have that expertise as it wasn't their area and sometimes you have to acknowledge some of the concerns that were raised from the banks and the department of the business community, but not all business's are at fault, but assistance can be given to ensure that they (micro firms) have a better understanding of their own business financial standing so that they are no waking up one morning wondering where things may have gone wrong.

End of Interview:

Appendix 3: Interview with Paul Sweetman of ICT Ireland and the Irish Software Association:

Start of Interview:

At the start of the Interview, Paul was asked to give some of his background and the back ground of ICT Ireland.

Paul Sweetman:

I look after two groups in here, one is ICT Ireland and the other is the Irish Software association. The software associations tends to look after the indigenous technology companies and

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they tend to be a lot smaller, so, you might find that there are companies with less than ten employees up to a couple of hundred.

The ICT Ireland companies consist of all the Multinational Corporations who are employing thousands of people. Essentially what we do is we lobby, represent and do advocacy work for all those companies based on what they feel the pieces are that are hindering them or their competitiveness or pieces that can enhance their competitiveness.

Q. So you lobby Government?

Paul Sweetman:

Whoever is the policy maker or controls it.

Now some of the stuff that we do as well is we try to build up networks and engagement between the companies and that is very important for the smaller indigenous companies.

The structure that we have is a couple of council's for each association and they tell me and my staff what the issues are that they want us to deal with and interestingly enough the biggest problem at the moment is the skills issue.

So you got this case now were the sector is grown and you see lots of job announcements and what's happen is the companies are saying that we can't find the right people to fill those vacancies.

Now it's a nice problem to have, in the sense that it's a growing sector, a lot of the other sectors in Ireland are not growing.

But the problem is still as serious when your not able to find staff as when a company cannot find customers to buy products. Its currently a case were companies might say look, we are not going to make an investment in Ireland if we can't find the right staff and we will go somewhere else. Now the only thing that I would say is that every technology jurisdiction around the world is having the same problem.

Q. So this problem is not unique to Ireland?

Paul Sweetman:

No it's not unique, but what is unique to Ireland is that we have moved the quickest and probably the best as trying to solve this problem, so that has actually turned what could have been a disadvantage into a very strong competitive advantage. We do have a couple of other issues that we deal with as well, but that has been the predominant issue over the last few years, solving that skills demand issue and how that affects the competitiveness. This all stems down to skills and skills training and there are particular nuances between the SME's and the multinationals as to what might work best for them.

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Q. On that basis within education and training, do you believe or is there evidence that this can lead to a competitive advantage?

Paul Sweetman:

Yes, definitely. I mean the case in point is that everything that we are working on, 90 % of it, is about human capital development, in terms of either developing the staff and resources that you have got or trying to bring in new talent, so, I suppose I would put it the other way, is that if you don't have that, then you (the firm) are at a competitive disadvantage and you will really start to suffer.

For example, you might find that, from two angles, from the multinational corporation, they feel that the human capital is probably the most important thing for them in making an investment decision, after ticking the boxes of taxes etc and can we do business in this environment, in this country, so if you don't have good access to the skills or the human capital if you prefer, the problem there is that the investment won't come.

On the other side of the coin, is the SME's, if someone wants to start a company in Ireland and they can't get the right skills, then that company won't grow, it won't be able to develop and access new markets and they won't be able to match the customers need and the other problem you will find there is that when an SME does get the right talent and then they start to further develop that talent, you might get into a situation where the SME's come in a start to poach key individuals and maybe key architects and software guys from those companies. This becomes a massive hit on small companies, because when you take one key person out of the firm within who has only ten in the company, that company has suddenly lost so much of a resource and they might not recover from that, because the problem on the other side is that you can't get skills due to demand as everybody is looking for the top talent, so a small business is going to find it even harder to replace that person. So it certainly is crucial to competitiveness to have the right talent and keep it, and develop it and if you don't have that, for the SME's, they are going to find that their business is going to struggle and for the MNC's investment decisions will go to where the talent is.

Q. Sitting in the centre of the skills shortage issue between industry and government, what do you understand to be the main issues behind the skills shortage?

Paul Sweetman:

Yeah, I think it's pretty simple, it's that Ireland is a very attractive location to grow a technology business and that has been recognised by a lot of companies who go right, we are going to start investing in Ireland. What's now happened is that it has become a simple supply and demand issue, so many companies have come and the growth has been so rapid, that the talent

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coming out of colleges has not been able to keep pace with that growth, so a lot of changes have been made to try and satisfy that demand, but essentially it has just been a case of a rapidly growing industry that needed a supply that was not there to meet that demand. It is probably as simple as that, it was kind of coming out of good story in that the sector was growing, but the talent just wasn't there to satisfy the need.

But there are now quite a few solution in place that companies are seeing as solving the problem and those solutions are, well some of them are no longer unique to Ireland any more, but certainly we were at least 18 months ahead of the next best country in terms of satisfying the demand.

Q . The Government has placed a great deal of hope on the ICT sector, as evidenced in the EGFSN report of 2008, and the micro sector in particular. How do you think this can be realised?

Paul Sweetman:

I think it is already happening, it can be realised, but the skills issue was probably the biggest issue that was identified in that report and that if we satisfied the need for the sector, then the companies will just naturally grow and I think that since 2008 we have seen that growth happening, if I was to look back on figures going back to January 2010 up to now, we have had 16.5 thousand jobs announced in the technology sector. Now that is a mix of indigenous and multinational announcements. The kind of success envisage has already started to be realised and there is a view that this can be even stronger, and that we now have this great critical mass and we can build on it in the sense that we no longer have just an indigenous sector that is separated and a multinational sector, we can now actually look to bringing the two together and they can start to leverage off each other.

One person from a multinational has described it, in that the MNC's tend to deal with black and white, were they have a very strong structure and system to make whatever product or service that they want to deliver, but the way technology is going now is that there needs to be a greater amount of flexibility to respond to what consumers are demanding and they are expecting quicker results. So a degree of flexibility needs to be introduced for those gray areas and the indigenous companies or the small companies have this ability to be flexible, so what is now happening is that larger MNC's are working more closely with small indigenous companies because they can then have that greater mix and response to consumers demands, so, what you are seeing is that there is a convergence between the sizes of the companies and that I think is our next great step.

That is to say that we are going to have to say, right we are going to have to harness the MNC's here and create a very strong indigenous sector and also, the beauty of that is that the closer they get to each other, then the harder it is for the multinationals to make a decision to perhaps pull out of the country as they might not find those relationships in other jurisdictions or other countries, are if they could they would have to invest more time again into.

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Q. You mentioned flexibility within the smaller indigenous company, is that based on the higher skills level within those companies?

Paul Sweetman:

I would say it's more the actual structures of the organisations, I mean, you can turn and make decisions a lot more quickly in a smaller organisation that are fundamental to what the product and service is, compared to a larger organisation. I think that is the flexibility is very strong, but then the disadvantage is that because of your size (small) that you can't call on as much technical expertise and resources and if you do start to lose people, you haven't got the buffer zone in the small firm of other people that you can rely on while you wait to fill the gaps.

Q. What programmes does ICT Ireland offer in terms of further education and training?

Paul Sweetman:

Essentially we are a lobby group and an advocacy group, but we do get involved with the delivery of specific programmes and the way we do that is there is a programme called Skillnets, that provide funding from the employers training fund that every employer contributes to and there is a pot of money that is available to skillsnet ltd and any group can then apply to draw down that funding on a yearly basis's.

Skillsnet is all about employer led training, so what we do. Is we have two groups, ICT Ireland Skillsnet and the other is the Irish Software Association Skillsnet. We apply for funding every year and we secure roughly around a million euro of funding and with that funding we set up a number of programmes and using steering groups for each of those and the steering groups are made up of industry leaders, usually they are the training managers within the companies who know what the sector needs and what is missing out there in terms of offerings. We then go and design programmes and work with universities and colleges and IT's etc.

We say right these are the kind of programmes that we need to deliver, here are the industry experts who will design those for you and we then go out to tender and see if someone can deliver that programme for us. Over the past couple of years, we have move from shorter training courses into substantial diploma and masters courses, one example is that, we found a gap in the area of training for product managers and what we seen was there was nowhere for product managers to get trained as product managers, so we said right, let us see what we need in that type of course, we did that and we had a few experts from within the steering group said this is what it should look like and then we went out for tender and DIT are now delivering a diploma in product management. This is the first of its kind in Europe and it has been turned into a masters programme.

That is the kind of things we do. The most valuable part of the skillsnet for us is that it is industry led and as a result we develop programmes that most likely have not existed before that and that is filling the industry need.

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On the other side for example with ICT Ireland we have developed a masters in applied software and technology and we piloted that with Ericson and what they was to say, right, here is all the stuff that we need from a graduate in this programme. It turned out that this was a master's programme and they interviewed everybody for that programme, they went for tender again and an IT is presenting programme and they (Ericson) guarantee anyone, who completed this successfully, a job with them for two years.

So we get involved quite specifically in some programmes that are all around either enhancing the capabilities of people who are currently employed within companies or for the want of a better word, the conversion type of programme and there are a few other examples of those type. They have worked quite successfully.

Now in saying that, they are the programmes that we are directly involved with ourselves, but we also lobby government to make funding available for more general conversion courses and for a lot of other programmes that we feel would allow people from out of field to come in to the tech sector and they are at varying levels, such as entry level or maybe some more senior positions, depending on what the programme is delivering.

Q. Do you feel that developing all of these programmes has put the ICT sector in Ireland in a competitive position against other competitors?

Paul Sweetman:

Partly, the conversion programmes are very valuable and the companies do like that, the skills issue won't just be solved by that, so we have been involved in other lobbies, and example would be, one that is different to the conversion programme is the visa reform lobby that we were involved with. So we lobby Government with a couple of other groups to make it more attractive for people from outside the EU to come in a start to work in this sector, so, we are saying, look this is a global technology sector that we have here, it's a global footprint, so the workforce is going to have a global feel about it and be global in nature, so we have to make it easier for people to get in and fill that gap, so you will more people coming out of the conversion courses and more people coming through the visa programme and in addition to that, we are also looking at a much larger, much more abundant number of people coming out of the education system here.

We tackle that in two respects, we want more graduates coming out of Irish universities and IT', so what we do is market the tech sector as a career to people who are in school (second level) and say look this is a very strong career, here are the choices you should be making for your leaving cert to get in and then convert those choices into the tech sector.

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Q. So you start at the second level?

Paul Sweetman:

Yes, we start at the second level to try and get people involved and to think about the tech sector as a career, now that's a longer play in terms of conversion courses and the visa is the more immediate in terms of people coming in, but we work at that second level to try and make sure that that talent pipeline..... well that the volume of people going through this increases, and that might manifest itself in 5 to 6 years time when you see more people going through the technology related courses in third level.

We have seen some good results so far, so we got involved in smart futures campaign and then the finish of that year we saw that on average tech related course applications went up by 20%.

What we did as well is that, the bonus points for maths was a major lobby for ourselves, so we pushed the universities to re-introduce bonus points for maths.

Q. Was maths seen as an obstacle to making this work?

Paul Sweetman:

It was seen that if you want a career in the tech sector, then you need have strong analytical abilities and a lot of other kind a characteristics of the maths and higher level maths would lead you down that route, so we believed that the more people we had doing higher level maths, then the greater pool of graduates there would be who would go into the tech related courses and as a skill itself, higher level maths is important for the tech companies. So if we can encourage more people to take that paper then we will do that. A lot of these things all feed into the skills agenda and it won't just be one piece, so the in house training as such, the development of human capital along with the conversion programmes, they form a part of the wider piece of trying to address the skills agenda.

So when I say that Ireland has been head and shoulders above other countries in addressing the problem, I am talking about all of those pieces together.

So when you can put that in front of a board coming in from America saying that we a bit spooked about the skills agenda, that we know Ireland is fair in tax and all its other competitive advantages, but we can't (The hypothetical Company) figure if we come here will we be able to satisfy our talent demand, and what we often notice is when we spend 10 to 30 mins with them going through all the pieces that are going on, and the closeness that Government and Industry have in terms of trying to tackle the issue, they go from being sceptical to often being jealous, because they go, god we couldn't actually do this at federal or state level in the US and so they go from saying right we are unsure about this, to rthis is a great place to do business.

So again, out of a potential problem, a lot of companies find that we have reacted and adapted to it very well, and that has definitely tipped people over into making a positive decision for Ireland for investment.

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Now on the indigenous side you have a problem that is another layer to the skills piece, is that if someone has chosen to go into a tech career, they go right, I am going to work the google's or Dell's and lets say they don't get the job here, in Ireland, with one of those MNC's. they (the job hunter) feel well they are the only companies that are out there, so they will follow the companies. They say right, I will go off to the states or Australia and try follow that company to get a job there and what they tend to ignore is that there are a huge number of indigenous technology companies that will offer just as powerful a careers, but perhaps because they are not household names, people actually don't even acknowledge that they are there.

Q. With that in mind, do you believe that the micro firm or small firm recruitment process plays an important part in competitive advantage?

Paul Sweetman:

I think in this regard, those companies need to try a lot harder. Again this is where it can be a difficult cycle, because they have to try, and first of all there is a skills demand issue that everybody is faced with and the next things is that the smaller companies find it even harder to get at a limited pool of talent, and that if they do find someone and train them up, then they can often be pulled away by an MNC, so for the small firm it's an incredibly difficult thing, and that makes it all the more difficult for the companies.

Now there are ways to try and get around this and again we are trying to do work around that to show that Ireland is a location for tech talent and so come to Ireland, don't just think about what company you can work for, think about what country you are going to work in. So you know, if you are a consultant and you have McKinsey on your cv, that's great, but if you're a tech professional, don't just think about saying you Google on your CV, think about saying I have worked in Ireland, because that is now like saying I have work in Silicon Valley. That is the kind of thing that we are trying to market Ireland as. Then you can market on top of that the attractiveness of a great indigenous sector, so you have to try and push that a little bit more, which is in the end of the day, because the multinationals that are here, they see the value of a thriving indigenous sector which is mainly made up of SME's, they see the value of supporting that as well. We have a case now were we are trying to work out how the MNC's and indigenous companies can come to together to try and market Ireland as a destination for people to come and work as tech workers.

Again its marketing, you have to make people aware that there are strong opportunities out there.

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Q. You refer to talent management as being a key success factor to the industry, can you elaborate on that point.

Paul Sweetman:

Yes, I was saying that companies have recognised the most valuable piece within their organizations is that they develop their human capital, that they have right skills, that they have the people who can do the particular tasks that are necessary and without that, then their companies won't be able to innovate and won't be able to meet the demands of the customers.

So in the tech sector they have really copped on to that very quickly and they are very much involved in that (human capital development). It is not a case that companies have an advantage because they have realised this before others, but it is that they do it better than others. So everybody is fully committed to the idea of talent management and talent development and it is those that can do it best and retain and hire the best staff that are going who do well.

Q. Current barriers if any for ICT firms to invest in human capital development, work ready was mentioned previously.

Paul Sweetman:

Yes, this was the idea of the people coming out of the third level institutions may not be exactly what companies are looking for as work ready candidates so the companies have to do a bit of work with them, so I think the barrier, that is starting to break down though, is the idea that the communication between the companies and the third level institutes isn't probably ideal right now in terms of what the companies can say to the third level institutions of what it is they should be delivering in their courses. The better the communication that is there between the companies and between industry and academia, I think would certainly enhance the skills and the work readiness of the candidates coming out and that would mean that the companies are able to have staff that are coming in that are ready to hit the ground running a lot more quickly, so that is probably one of the biggest pieces right now that needs a bit of improvement.

Q. Is that trying to reduce the gap in terms of the skills the graduate has at the end of studies and what is required by industry?

Paul Sweetman:

Yeah, its about making sure that what the graduate is being taught in the university is relevant to what the industry needs, that they aren't teaching old programmes or programmes that are no longer relevant, teaching the graduate the right skills that are relevant to the way the world works and is going in the tech sectors.

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Q. According to the report by the EGFSN, it states that the ICT sector is employing up to 55% of migrant workers, is that still the case today?

Paul Sweetman:

I haven't seen figures on the break down, but then I would not be surprised if there was some companies with a very high proportion of workers that have come in from abroad, only because companies themselves are dealing with customers that are all across the continent, if not the globe, so they need people who have even native language skills and who can deal with those customers along with having the technical expertise as well.

Again, its a global footprint in the tech sector in Ireland and therefore you would imagine that the workforce is also going to be global.

Q. What government supports exist for ICT firms wanting to invest further in Human Capital Development?

Paul Sweetman:

There are a number of supports that exist, for example the conversion programme, you have the likes of springboard, you have the skillnets programme which allow for incompany training and you have got other investment things such as euros, that is for finding talent across Europe for companies, so there is quite a lot of support both from converting people , from training people who you have got in the sector already and then recruiting the talent.

Q. Are there any studies or research that indicates investment into human capital development (i.e. Education and Training) that leads to improving competitive advantage that you are aware of:

Paul Sweetman:

I haven't had a strong look for studies that highlight that, I think it more intuitive among companies that they know they need to develop their staff, that they have a demand for skills and it just needs to be met, if they don't do that, they can't satisfy the needs of their customers.

I could not point you to a paper, but I am sure there out there, but I would be focusing on the idea that we need more people and that we need to try and figure that one out first, that has been the target.

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Q. From your own perspective, what do you think the micro firm or small firm could do better with ICT sector.

Paul Sweetman:

I think that they need to market themselves much better, they need to let people know that they are there and that there is a very strong career available to people in the indigenous sector and also, when they are looking for people, they need to do simple things, like knowing what they are looking for in the job specs, not being vague, being specific and targeting what they want, so they are two areas that I feel they micro and small sector could improve.

Q. Do you think there is any more the government bodies working around them could give to the sector.

Paul Sweetman:

Definitely, I think that particularly on the marketing side of the sector, it is very difficult to ask companies on their own to do that, but as a collective, I think there really does need to be support for the sector to be able to market themselves, as much as you would see the likes of the

IDA marketing Ireland for investment, I think there also needs to be a type of marketing drive for working in the tech sector and in particular the indigenous sector as well, because of all the difficulties added onto the skills demand that the indigenous sector is finding. It is very hard to ask a company to do it on their own given their size.

End of Interview.

Appendix 4:

Interview

Jerry Moloney of Enterprise Ireland's Skills Unit.

This Interview took place over phone:

I outlined the purpose of the research and study to Jerry by outlining the current concept of Human Capital Development and some of the thoughts that exist today in academic circles regarding the belief that it can aid in Competitive Advantage.

This new skills unit has been set up by the Government through Enterprise Ireland in response to the EGFSN's 2008 report regarding the ICT sector.

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Q. I asked Jerry to give me an insight to his professional background?

Jerry Moloney:

Originally I worked with FAS up to 1999 when I joined Enterprise Ireland and then I was based in the Human Resource Development area for client companies and from the year 2000 on I was managing the activities for Human Resource development in client companies in the industrial markets area.

Q. So your skills are based in Human Resource's?

Jerry Moloney

Assisting Companies on developing their management develop and client skills development to grow and skill the business.

Q. What is your own professional Qualification?

Jerry Moloney

I have a BA from UCG.

Q. That is in HRM?

Jerry Moloney

Yes ,

Q. Could you give me some background on this new skills unit within Enterprise Ireland and what its goals are?

Basically the formation of the development of Human Resource Management within Enterprise Ireland came in 1999, this is when the organisation was formed, about 24 staff transfer from FAs at the time to service the business.

I suppose to bring you back into that sort of space, the FAS business services unit was one of the first consultancy groups in Ireland that serviced industry and in the early days was actually a fee paying service.

A company was looking at paying up to five hundred euro or punts as it was at that time per week for consultancy at the time on a variety of areas from construction, engineering , electronics, ICT, so depending upon the specialism you were looking at. The Irish productivity centre would have a similar remit on sort of a private / semi-private basis in later years and there was a view then that FAS should not compete with them and that aspect was wrung down from a commercial entity to being a service provider to clients that was non- fee paying.

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At its height it was about 100 to 150 people in that unit up to the time that part of it was transferred into Enterprise Ireland in 1999 and the staff numbers went down to about 85 staff of which 24 of us then transferred in this one stop notion of the Trade Board.

The HRD element from ourselves, the technology element from Orlas and the financial elements from Furbas as it was at the time.

We were a new entity to that offer, so initially when coming into the organisation we had to form the basis of what our offer to clients would be and what our offer in programme development would be for clients as well.

So the whole thing runs from management development through to the specific skills development at client level and at operative level was developed over that period from 1999 onwards.

We then formed a unit called the "Client Management Development Unit" within the organisation to develop skills at a generic level that would be delivered by the IMI or DCU or by DIT or whomever to deliver some of these programmes and then on a one to one basis with Client Companies.

In 2010/11 that was split to a situation where the HRD units were taken out of existence, the CMD unit became a "management development activity" within the organisation and we devised a "New Lean Offer" for client companies to become much more lean and efficient in their operations, whether that was in the service or manufacturing area. So the team were transferred to that space the programme development was left within the "CMD space".

So in the last two years we have discovered that while the lean is offering solutions in the lean operations space and that is Lean from the front door to the back door of the business, so it is a fairly comprehensive lean space and the CMD offer programme, that there was certain "Gaps" appearing in the Clients requirement in skills development, that we probably weren't addressing because of our move away from the "One to One" activity in the client companies.

So the Client Skills Unit was formed to look at addressing the Client skills needs that are there in addition to what Forfas had identified through the EGSM report, and to look at what we offered, to see what gaps were there and to find solutions to fill those gaps that appeared as areas of "Skill Inhibition" and "Skills Deficit" that were inhibiting our clients potential to grow.

So that's what the focus of the Client Skills unit is, is to fill that gap between the generic programme solution that we are currently delivering and the lean offer that is there in relation to the focus on the company side.

So we are looking at a bi-sector, starting with ICT and Food. We want to do an analysis of the sector from the space that looks at what are the current requirements of the sector, what are the gaps that are currently appearing in relation to the sector and what solutions are currently available to close those gaps and then we look at what is "not available" to address those gaps currently. Then to get providers either at third level or others who are willing to provide those services to that sector.

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We will then fund those providers to fulfil that offer, we do this on a commercial basis's , so for example, if IMI want to run a programme, or DCU want to run a programme or Trinity want to run a programme say in ICT for specific focus, that we think is covering a curriculum that has got a deficit or a gap that is relevant at the moment, we will say fine, we will now "give you a pipeline of clients", that we will encourage to attend that programme and we will subsidise the client to send an attendee to the programme

Q. Is that subsidy a large subsidy?

Jerry Moloney:

You are looking at approx 70 to 75 % of the cost of the programme. So basically, if you have company who has a skills deficit in some areas of ICT or some areas of the food industry or some areas of the engineering, whatever is the current need that has to be addressed with a solution.

We look to can we give you a solution here that will cover that gap, so we say ok. We will convince DCU that if they can tweak their programme to do the following in addition to the current curriculum that you have, we think that we have 50 clients in the pipeline in say the Dublin area that will want to attend, so you now you have a ready-made pipeline of client activity, so you can (the University) charge the commercial fee for the programme and we will assist you to fill it.

Q. What exactly is the name of this new unit?

Jerry Moloney

The Client Skills Unit

Q. Within the Client Skills Unit what do you believe are the main benefits for client firms investing in Human Capital Development?

Jerry Moloney:

Well, the basis' of this, and as I said I am in this space now for nearly thirty years at this stage now, the basis of "return of investment" and training, for core skills training that is key to your business , is something that has been through the holy grail of the space for many years, but there was a guy called Jack Philips in the states who did an ROI on training.

He wrote a number of books in that particular space, if you take your parties four levels of evaluation and assessment, he would put the fifth on it, which was the ROI as his evaluation in relation to it.

He did a calculation on training which basically was "soft" , you know, you could not do hard measurements because there was so many variables in relation to what you did and what the other external determining factors were.

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So what he did was to ask the manager how confident were they that the improvement they got in the business could be attributable to the training that you gave to the employee.

Q. That name is Jack Phillips, is it?

Jerry Moloney:

Yes, Jack Phillips, if the manager came back to say that he was 80% sure, he would then look to take the view of the trainee and ask them how much do they think their performance was attributable to the programme, and say if they said they were 50% sure, then you multiply one by the other and you get the basic value, say 80 by 50 equating to 40% improvement was attributable to the training.

He did his calculations in order to give an ROI on the investment in training. It, as a method, is a relatively sound basis' for doing it one sense and then on another sense, you could argue the toss, that this is simply supposition, that there is no objective analysis to say that this is the outcome you have got, but the average return accredited to this and across many journals, and books etc on training is that on "Training Return" there is generally a return of seven to one.

Q. So to clarify, that is for every Euro invested, you get seven back for the one that you put in?

Jerry Moloney:

Correct! But the issue with it is, how do you substantiate it, and that is where the issue arrives with it and with training in the sense that, if I were to give you a training course in ICT and you do an ICT training course in programming and in certain key areas in programming in relation to it, and I say ok, now your productivity has gone up by 50 % and your return to the business for that is going to give X, which maybe have your salary or twice your salary, or whatever its going to be, and you can say well what is the cost of the training going to cost you and what is the return on investment. Well some can turn around and say, "oh yeah, well there is more to this than just the cost of the training, they got a new machine as well, and they got assistance and got two other people also had input in relation to the works and they all had cost whatever".

Then you calculate the whole lot out, you can actually do a calculation to work out the "presume benefit" to the firm. Now it is not the same as you do a financial transaction on say a cost benefit analysis, it is not that neat a calculation.

"A lot of people will take the view that ok, it is giving me benefit, although I am not sure how many times the value it is worth, but ok, I can accept it".

Now the guys working in the lean space will tell you that on a lean programme that there are doing at present, that takes place over five days and cost about 5 k, but the average value return on to the business, and this is the business telling our guys what they have got from it after a six month period in savings is approx 120 k.

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Now, the question is, is that training? Is that cost management improvement? Is it process improvement, is it alterations to machine, whatever, you can attribute a lot of it around them, but even taking a rough calculation that is 24 times return on your investment through that lean process improvement, and the strip that back and look to see how much of that is attributable to the training process, you know seven times wouldn't be illogical to think that it is possible.

Q. With that in mind, do you believe that firms can improve their competitive advantage by taking a step towards investing in Human Capital Development?

Jerry Moloney:

Yes. I think that the basis of a business and of where it is going in relation to development. If you focus your activity, and now I will qualify this.

You can only get results from training if the training is focused on delivering a target. Unfocused training gives you nothing other than a good happy feeling and slightly more intelligent people than they were when they started.

But if you identify a need that is causing you problems and you find a solution that addresses the problem, if you train people to do it, then yes, there is a return on investment for you.

Q. In that case, do you think that the human resource management and human capital development are closely linked?

Jerry Moloney

Ahh..... they should be, but in most business they are not as closely linked as they should be.

Q. Where do you see the gaps here?

Jerry Moloney

Often the gaps if you don't have your HR closely linked to your business development strategy, you can get this mismatch occurring.

Q. Is this a case that the skills don't match the requirements?

Jerry Moloney:

Amm,... the company doesn't have a process for the skills that are linked to the strategy of the business going forward, there might be a miss match, as long as your HR team are focused on delivering the skills that are needed for the next phase of growth in the business, then everything works well, but if they become disjointed and uncoordinated, you can get a wasted effort at some stage in the process.

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Q. Do you think that talent management is something that firms should be concerned with?

Jerry Moloney:

Ah... in the current environment in the ICT sector, absolutely, because it is hard to get people of the standard you require and if you don't give them the proper development you won't retain them.

Q. What barriers do you think that may exist that may prevent firms from investing in their human capital ?

Jerry Moloney:

Ahh. Mmn... COST, people don't perceive the value and that can be a part of the issue or the individual is too busy doing projects, that they don't want to take the time out to train people up on certain areas.

Q. Do you think that there is a lack of education on behalf of the owner / managers, say for example, not understanding the benefits of training and education.

Jerry Moloney:

Am.... Certain people always have the view, but now, in the technology space it is not that bad. ICT is slightly unusual in that most of the guys in there are graduates, and therefore there is a good appreciation of the requirement to have a good academic base and a knowledge of where you are going. But the development of new processes and new programmes is something that is developed in house. A lot of the universities would not have the up to date knowledge required to get you to the level that industry now expects in certain categories. .

So some companies will know that they have to train people up, but they are so busy trying to get the work done, that they haven't time to give the person who is capable of training, time out to give the guys training who require training, because they could not afford the lost time in production activity. 17.51

Q. What advice as a professional give to owner / managers who are contemplating investing in education and training?

Jerry Moloney:

They need to have a plan as to what the growth the projections are and what areas require need and to look to the next six to twelve months of where you might be? And what then your likely requirements are going to be, because you are going to need that time frame to develop or recruit people to fill the gaps and if you haven't you could end up fire fighting and then you don't get the headroom or ability to plan and deliver what you want to deliver in those areas identified.

So it boils down to forward planning, would be the biggest issue for most.

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Q. What do you think the main benefits of education and training to any firm in the ICT sector?

Jerry Moloney:

The biggest advantage in the ICT sector at the moment is, that if you have a development process for individuals to go there for skills in the business, you have a better chance of retention and retention is important in current environment and sometimes staff will stay with if they see a career path for themselves to develop their skills.

Q. When you refer to retention, are you referring to staff retention?

Jerry Moloney:

Staff retention yes. I mean the ICT sector at the moment in Europe, I think is showing a deficit of nine hundred thousand jobs or skilled individuals at the moment, if you take that into account as the environment that you are working in, and you have a person working with you who is capable, then you need to retain them, and how do you retain them in relation to it, well you compete on price or you compete on the experience they gain or the culture and work environment that they work in or in a small business you might have equity share or profit share, whatever the case may be, that they might not get in a larger organisation.

The larger organisation often can offer better career progression and generally speaking if guys have the ability to look at and go there or they can have a situation where the base salary is maybe 10% to 15% higher than a small (micro) SME may have.

So I would suggest they look to their infrastructure, a more structured HR package, a retention package to be in place and a development package possibly. What you do have in the small business is you have greater variety and more interesting aspects of business that the guys can do and there are not "Silloed" as much as they would be in a multinational environment.

Depending on the career path and what motivates individuals, your retention of those working with you is linked to the skills development that you are going to give them, and the development opportunities that you are going to give them within the business when you might not be able to give them financial recognition as to what they might get working for a multinational in a comparable space.

Q. With retention in mind, are there any considerations that should be giving to the recruitment process?

Jerry Moloney:

Ideally, and I have had this said to many times by people working in the smaller business arena, you should always hire people who is "smarter than yourself".

As a simple moto, you don't settle for somebody who will "do for now" because in an expanding business they will quickly become redundant in the function because the function will

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have moved on and if they are not capable of moving with it, you now have a problem in your business in that you now need to get rid of somebody and it is going to cost you money on redundancy or whatever and it is also going to leave you in a situation where you now have to retrain somebody up to fill the work that was done, and this is a cost that is often buried and hidden in the business.

But get somebody up from an initial stage up to full operational capacity can take you three to six months. If you take that person who is un-capable out of the business and you take someone else in, you could have lost maybe a year between both individuals to get back to where you were in the first place.

Sometimes companies don't take this in as an actual cost of business but it is a big cost to business.

Q. Is it a result of short sighted management or is it a result of management not thinking it through.

Jerry Moloney:

In some cases it is a result of "beggar's can't be choosers" and that the best that you can get at the time and in other cases its a matter of being short sighted in, "I can get this guy for 25 k and the other guy is going to cost me 35 k", and they take the guy for 25 K because they view it as more affordable for me right now. Now if your business is growing and you need to skill up in this area,

And say, I project this business in twelve months time to be at x scale, can this individual deliver at that space. Not many managers can actually plan that space and the ones who are more successful are the ones who always believe that you recruit guys that are smarter than yourself, because they can actually adapt and grow with the business and you don't have those bottle necks appearing.

Q. ISME reported that there seems to be a, " Work Ready" deficit amongst graduates coming out of college, would you agree with that?

Jerry Moloney:

Ah yes, companies would say there is definitely, yeah.

Q. What is your understanding of "Work Ready"?

Jerry Moloney:

Basically, it is really to plug into and deliver on the levels required in a business environment. The issue that exists is within the individuals. There has been a big debate between education and training over the years, do you train the individual to do the job or do educate the person to do the

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broad generic role and that then the function of the business it to then train them to job within that role.

“Business’s are now getting to the situation where they now expect that people are closer to delivering what they (the firm) require when they arrive on site”.

Some colleges are very good at the academic aspect but they might not be so good at the practical and you need to get the mix between what the practical and academic requirements of what the business are.

So the ones that are capable of delivering the practical functions quicker are the ones (Graduates) that are valued higher by the employer and at the moment their view is that some institutions are putting out graduates that are not ready for the practical application of what it is they are expected to and require quite a bit of induction training to get them (Graduates) up to the level required.

Q. Is there any evidence that HCD leads to competitive advantage that you are aware of?

Jerry Moloney:

Well..... it is very hard to be scientifically precise on the because of.... well the analysis of the return of investment on training is much more a black art than it is a science. There is too much subjectivity in it for some people who would say that, “it’s grand they are the figures that you have but they are subject figures and how can you prove them”.

The main issue is that you can’t prove them because there are so many variables in the space, is the individual capable when he is starting, what is the quality of training to be given, what was the location of the training, who provided the training, you know, what way have these impacted on the outcome at the backend of the process.

Or what are the other factors, was it that you got new machinery, new computer or are they personally happier and happier as a result in the workplace, you know, what is the effect and impact of that improvement. Did they get more turned on in the job, or they are more in tune with where they are or did the training that you gave them that caused that process of change. So it is very hard to say which it is, but the evidence will show that those who don’t receive training and those that do receive training, then the ones who do receive training have the “higher productivity”.

Q. Productivity meaning a higher output as such ?

Jerry Moloney:

Yeah!.

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Q. With your background and your years of experience, if there was one piece of advice that you could give the owner / manager of a micro-firm, what would that be?

Jerry Moloney:

Ah.....recruit the best person you can afford for the job that you are looking to have filled and map the strategy of the business and look to and decide where you want to be in six years and constantly review the key positions you need to fill and ask when you are going to recruit people to fill the strategy.

End of Interview

Appendix 5

Interview

ICT Micro Firm - Industry Interview: Max Colmer of DC Networks,

Q. Could you give a description of your own background?

Max Colmer:

I used to work in the Hospitality industry, I was a chef for about seven years, but I found that I just needed to change career, simply for family that was likely to be on the way and I wanted to have my weekends back to some degree.

So when I came back from Australia after having work as a head chef in a Hotel over there, I decided that I was going to change industry, but I wasn't sure what I was going to go into. A couple of my friends were actually in the IT sector and networking and they actually suggested that I give it go.

So I went straight in and did an ECDL course in FAS just to break the Ice. I did that at the very beginning and then I followed that on by taking a Cisco course which was fairly niche at the time.

They are very common now, practically everyone is doing them now, but at the time that I did the course, we would have been one of the earliest group of people doing them. This was mainly because you had to pay a lot to do the course.

I went there and not knowing anything about IT at all, although part of the course requisites were that you had to have IT experience, but they let me in anyway and I basically worked hard on this, as I knew if I didn't I would be back in the Kitchen again.

Out of 48 people taking the course, I came top in the class in the course.

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Q. And you knew nothing beforehand?

No, no, but that came from four or five hours of study a night afterwards and i was actually still working in the kitchen at the time, three days on and two days off and then three days a week in college, and so that was really it.

Whilst in college a couple months before we finished, I began looking around for work.

Q. Where was your course held?

Max Colmer:

It was held in Seimens on Lesson Street, and it was through the Centre for advance technology training, (CATT), but I was looking around for work before anybody else, and bearing in mind that this is 2001, so there was obviously the big crash in IT, so there wasn't a lot of jobs around and alot of people ni my class were saying your mad, it is to early to be looking around for a job, but I was out sending CV's out there and I was knocking on doors.

Eventually I did get in and was given an opportunity with a company called Brandon Consulting, and they said, look, you can come in, the boss at the time couldn't understand how or why I was changing from cooking in IT and he was fascinated by it, and said "look I am giving you a chance purely on that basis.

I went in and they were a tough company to work for, but I gained a lot of knowledge and huge experience in two years.

Q. What was their main function in the sector?

Max Colmer:

They were providing managed services for clients, very much similar to what we do here as well, It Services, support, managed services, maintenance, that type of things as well.

I went in there (Brandon Consulting) as the only Cisco Engineer and again only having experience from a class environment, it is a lot different when you get out, but I got through it. I was dedicated and I did want to prove myself in there, which I did.

I had good customer skills as well, I suppose just from the personality that I have and the likes of working in the catering industry, which does help, which to me is key when you are working in any service industry, I could get on with the customers and I could talk to them in English, not in computer language, which went along way and they actually commented many times to my boss that by saying, "Send Max back in here again, he can talk to us in a language that we understand".

So I did my two years with them, but there was a bit more to working there, they treat you tough there and I just decided it was time for a change.

So I answered a job ad in the paper and met a recruitment company and they got me into another company called Ck business solutions and CK is were I met my now business partner, who was already an engineer in that firm.

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Q. Can you give me some background on DC Networks and how it evolved?

Max Colmer:

Sure, we were working for almost two years in CK both as engineers and I went off to get married and when I came back, something just said to me that I can't work for somebody else anymore and I decided that I was going to go off and do it myself (set up his own business)

I did not know how I was going to do it, but I just said, I am just going to something and I talked to my now business partner about and I said that I am going to be moving on and he said would you be looking to take somebody else with you. I said obviously two heads are better than one and he is a good engineer so, we had a meeting in the omni carpark down the road ironically, at 8 pm on a Monday evening. He had children already and I didn't so in that sense it was a big move because you are going from guaranteed employment to starting off with a couple of small contacts that we had at the beginning and that is really how it all started.

So, we bit the bullet and set up the company and we have just gone into our 9th year of incorporation on the 24th July 2005. We started with a couple of contacts in the bank and other contacts that help us set up the business and we managed to get a bit of an overdraft, which helped, because you could not get any credit from any of the companies, for instance Dell, everything had to be paid up front, until you had built up a credit history with them.

We then went out, leased two vans and two laptops and off we went. In the first years it was just the two of us trying to grow the business and trying to maintain the few clients that we had at that stage. We had a lot of clients that followed us from our previous employment, none that approached directly, but they found our numbers and said that they would like to look after their accounts as they were with the previous company as a result of us in the first place, so we would like to give you the business, so we inherited some of that business and I had some contact myself and a few bits and pieces here and there.

After a year, we needed to get somebody else onboard, another engineer and Rob, my business partner, asked me did I know anyone and the one person that I thought of was actually the guy that I sat beside in college, and so we approached him as I knew all the potential he had and all he needed was the opportunity, so we met up with him and he said he was willing to move, and he has been with us now for nearly seven years. He has gone from being an engineer to making all the big IT decisions within the company.

Q. Is the world of ICT, from a micro level position, is it a fast moving world in terms of the pace it changes?

Max Colmer:

Yes, absolutely, anything in IT, you just can't ignore what is happening and what is changing.

Even since I started in IT 8 years ago up to now, you have the cloud, Desktop sales are on the decline, even laptops, everything is evolving, and even how IT is managed, I mean ten years ago, twelve years ago, remote support was pretty much non-existent and if it did it was terrible.

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Now we have three full time engineers and all they do, day to day is remotely support clients around the country and even in the UK as well.

Q. You have been able to expand your borders?

Max Colmer:

Yeah, Yeah, we have couple of clients in the UK using our cloud solution, we don't physically need to be there to offer them a solution, they are working off a hosted desktop that we have invested heavily in and that runs out of a centre.

Q. Have you heard the term "Human Capital Development" before today?

Max Colmer:

I haven't heard of it before your outline of it today, but from what you have said it is based on the skills within a company and the skills development.

Based on that, what we have in here is we have a number of engineers with different skills and knowledge within different areas of experience, so one will be very strong with the Microsoft end, some others will be strong on various different aspects of IT, and really being a small business you have to be a jack of all trades nearly, you need to know and you need to understand that you need to have a bit of everything and then you develop from there.

For example, when you are going into install a system, say a Microsoft server, you need to install other systems around it, so you need to know how to build a whole system from scratch and if something goes wrong you need to be able to repair it.

Q. Do you promote training and education?

Max Colmer:

Yes, we have always said to the staff in here if there is something that they would like to learn, as long as it is something that we can associate with the company. But if they come in and say

I want to do a course on say something that we will never sell and never support, then we generally won't do that. But if they say they want to expand knowledge and once we can see that there is a benefit to the company, we certainly will investigate taking it to the next level.

Q. Talent management, do you have any programmes that you use, any in house?

Max Colmer:

We don't have anything official. We have a skills matrix on an excel spreadsheet somewhere and we would have sent this out to the engineers quite some time ago and it would have covered all the different areas that we do in the business. They would fill out between 1 to 5 how they feel they are positioned, so on micro soft products for example, 1 as having no knowledge at all and 5 is expert at consultant level, they would fill out how they feel and view there level of skills, and what we do then is too analyse that and see where engineers and all should be. If they say I am falling

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down on the micro-soft, we ask how we get can them up to that skill, but it may be at a very basic level.

Q. What, if any, do you believe to be barriers to micro-firms when it would come to investing in education and training?

Max Colmer:

It generally comes down to budget, it also comes down to, you know, when you have a couple of staff here, and to the right training can cost a lot of money, so we can be favouring just one particular employee or engineer, we have to dish it out fairly but we also have to see that if we are going to pay and invest in that, that the engineers who are willing to do it are not just willing to do it for the sake of it. The need to do it for the betterment of their own education and also to the benefit of the company.

Q. Would you have any fears about educating and training staff?

Max Colmer:

Well I suppose the fear for any of us in the sector is that you invest in all of this training and the next thing is they up and leave after you forking out thousands. Thankfully that hasn't happened and we know the staff that we have and we know them well enough as a lot of them have been here a long time, but you just have to have a level of trust.

Q. Have you experienced any problems with staff retention?

Max Colmer:

It hasn't been a problem, any of the staff that we have here have been here since the beginning, with most of the guys here for seven years to five years. We try an look after them the best way we can, again being a small business it is very hard to, you know you want to give everyone a pay rise every year, but its not always as easy as that and bearing in mind that when the recession hit , we never gave anyone a pay cut where as a lot of other companies did and we had staff that actually approached us and said that they understood that it may be necessary to give us a pay cut, now we could have exploited that, but we didn't . We took the view that there would be no pay cuts at the moment, but we knew that we had to sit tight and see how things went. But we had no pay cuts.

Q. With that in mind and the approach that you have, what do you believe to be the key elements of staff retention?

Max Colmer:

I suppose it is making sure that you don't turn the job into a job that is monotonous, that the staff are doing the same thing every day, try to break up the weeks a little bit to give them different things to do like preventative maintenance or office work of software work. Sometimes the team members like to come back here and do a day here just to be doing something else.

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So what we are trying to do is to change their roles in here a little by which the helpdesk guys go out and do some call outs and this gives them exposure out on the road and we get some of the field guys coming in here as well. But again, we do try to look after them, we do try to pay people accordingly and there have been pay rises here. We try to pay them what they are worth.

Q. Do you have a HR function?

Max Colmer:

We don't have an in-house HR function, we outsource that.

Q. What elements of HR do you outsource?

Max Colmer:

We outsource all of the employee related items such as staff handbooks, contracts and basically anything that would involve staff issues of which we have had one or two that we have had problems with and we brought in the expertise to deal with these items along the lines of discipline processes. If we did not have that, it would and could turn the other way. HR issues are tricky situations.

Q. In terms of education and training, do you treat that as being a HR function?

Max Colmer:

We just outsource that, it is more cost effective for us to outsource that, it would not be financially worthwhile to have a HR person here looking after that, it is just too small.

Q. Is ongoing education and training linked to your business strategy?

Max Colmer:

Yes, it is linked directly to it so that we can move the company a certain direction and that involves new technologies and we have to build the training for the staff around all of that, so if there is a new Microsoft product that is doing something around say, the cloud, we have to get and we are in the process of getting the engineers trained up in that. But what we do from time to time is to bring in the engineers early in the morning here and they present to each other on screen and they will train the rest of the team as well, to pass on the knowledge.

Q. So you have your own staff take a programme and then throw back that information?

Max Colmer:

Informally the guys will go through things with some of our more junior engineers through our more senior engineers who go through things with them and share their wealth of knowledge with some of the less experienced engineers.

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Q. Do you have any methods of measuring the benefits of the education or training that you put in place?

Max Colmer:

Apart from the skills matrix that we use to identify who is weak where, for example security products and we need him to improve here, then we would only recognise that through the skills matrix.

Q. Are you aware of any IT packages that exist that would give you the opportunity to manage the skills needs?

Max Colmer:

I am sure there is, but we don't use them though.

Q. Giving your perspective, from where you sit, what are the main challenges for the micro firm operating in the ICT sector?

Max Colmer:

I suppose the biggest challenge with any business big or small is competition, and there are obviously the costs of running it, especially being a small business as well. What we are finding is that wages are going up, which helps us makes sure that everyone is looked after, but what is happening is that we are finding that we are having to reduce our prices on contracts in order to be more competitive, so one is coming down, the other is going up and that is the balancing act.

Q. What is driving up the wage costs? Is it demand for staff or a company policy ?

Max Colmer:

We don't pay people on what is happening outside. We try to pay people accordingly based on their level of expertise and if we have someone who does not want to progress, and are happy to just do what they do, that is fine, but they won't receive more in money terms either. We have to justify costs and therefore have to redeem the cost of pay in other ways.

Q. When paying for those additional skills accordingly is there an expectation of higher productivity.

Max Colmer:

It's more a level of management ownership as well. For example, one of the help desk managers here, we had brought him up to the level of help desk manager, so along with his pay rise and some additional benefits, he has to take more control and responsibility for the management of the staff. If a customer rings in with a problem, he has to that call, it doesn't come directly to Rob or I anymore, although it probably still does alot of the time, but we are trying to move away from that and to let other people take responsibility.

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Q. What would you believe to be the main benefits of additional training and education?

Max Colmer:

The more training you can give to the staff the more exposure they have to new products and technologies, therefore it gives us far more strings in the bow to be able to sell and supply more services.

Q. Is that with a view to growing the business? Where would you see yourself in five years time?

Max Colmer:

What we have said and we have always said it, is that we never want to, we never have and never want to be the biggest IT company in the country. We would rather grow organically and make sure that the service level with our existing clients never falls, you have got to remember that if you just focus on getting new business in and letting the existing business suffer, then you will lose all your business, and that is why we have invested in more helpdesk engineers, because so much of the calls that are coming in here are calls that are coming into the office with problems that need to be sorted either by phone or by remote. It is looking what we have.

Q. Are you yourself aware of any evidence that would support that education and training can act as a method for providing competitive advantage?

Max Colmer:

I think it comes down to, I mean, if you have your engineers trained, we might come across situations where clients would ring in and ask what certifications do your engineers have, could you provide CV's of your engineers. So we would be highly certified with all the major vendors, we are a silver partner with micro soft and we are a silver partner with HP as well.

What you have with most vendors is that most IT companies can become a registered partner for which you simply fill out a form, but in order to get to a silver or gold standard, you have to guarantee revenue, what you are going to buy or sell of their product, you have to have a certain amount of certifications as well, so you can't just continue holding your Silver Certification, you need to do your certs every year, and that is sales and technical. It prevents you from going out to sell things that you don't really understand and you have to do the exams.

Q. Do you believe that this level of certification within your workforce is providing you with a competitive advantage over firms?

Max Colmer:

Well it would do. Because I am going into prospective clients and they say that with their existing IT company that they don't know what levels of certification that they have, whereas we can prove that we are a silver partner with HP, with Microsoft, and we only found out last Thursday from Sonic Wall, who have now been bought out by Dell, would be a big security vendor and we deal in their firewalls, but not all of them, but we found out from Sonic Wall when they came over to us last

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week they showed us that out of 300 registered partners, we are now 5 on in the country. I couldn't believe it, and they said we could even be number four and it is measured on revenue. They look at the revenues that all partners bring in so we are the 5th biggest revenue provider to Sonic Wall in the Irish market, which for us is fantastic. Sonic Wall is such a big product out there, especially in the small (micro) to medium sized sector. The main thing that we sell of theirs is their firewalls

Q. With that in mind, what tools do you use to examine or measure your level of competitiveness, do you benchmark yourselves?

Max Colmer:

We don't, no, I mean we don't do market research and find out officially, but I think Ireland is a small place as well, and you will generally know, for example, run off a few names of other IT companies, you would know that they are a small company as well and they might specialise in cloud or they might specialise in a particular area. It is different than the likes of the UK where it is a much bigger country, for example you mentioned a name earlier and I would know that they are in the same category as ourselves, in terms of size and numbers.

Q. Therefore, would a lot of the evidence that you have been anecdotal?

Max Colmer:

Pretty much, yes.

Q. The EGSFN report of 2008 reports that there is a current skills shortage within the ICT sector, would you have experienced any of this reported skills shortage?

Max Colmer:

Not directly, but what I would say is that when you are trying to look at employment, maybe more so much technical, but if we were ever advertising to get an engineer, the quality when go to the recruitment companies, the quality of what they are sending in is not, well is not great to be honest with you. In order to get the right engineers, the money that these engineers would be looking for is way beyond budget, they would come from different roles more in-house IT and are looking to change.

On the non-technical side, to employ a sales person, like I have had two sales people in here who are both gone. They come in and say that they will have no problem in selling everything, but when they actually come it is very hard to, so in order to get a sales person is incredibly difficult.

Q. Do you have a recruitment strategy?

Max Colmer:

With the recruitment strategy, we had tried recruitment companies in the past, but the level of success has always been very poor and it is costly as well. You don't mind paying for something when it gives you a return, but when it doesn't work out, you are down a big recruitment fee, plus the 6 to 12 months of a wait is a case of waste.

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Q. What advantages do you think that the micro firm has over the medium to large firm?

Max Colmer:

I think in most case's you will find that there is a closer relationship with the smaller business. The Larger business when they go into to ask a company, do you know who the directors are of the company? they (clients) often say no? Have you ever met them? No.

All of these things, you are just, they will know the engineer, they will know the account managers as I know everyone of my clients and they all know me by name and face and if they have a problem, they can ring me directly, they will have my mobile number, so I think it is giving an extra customer service, that is easier when being a small business than being a larger one. That goes back to my early point that when I mentioned, we don't want to be the biggest IT firm in the country, because if we do, it is incredibly difficult to know everyone of your clients directly and one person can only be in so many places at any given time, and you can only manage a certain amount without getting out of control and I think that is part of the reason that we believe smaller is better in a way.

Q. Are you happy with the level of growth that you achieved and are you happy to stay at that level?

Max Colmer:

Well what I will say is that we are not planning to stay at ten in terms of the level of staff for the rest of our careers I mean the company could grow to 20, 30 or maybe 40, but it won't be 200, 300 or 400 staff. Grow gradually, we would never have case were we are going to go right, next month we are just going to take on three sales guys and three engineers. A) it would be very hard to fund that and B) it would be very hard to manage it as well.

Q. Do you have a forward planning process for where you business is going to be in two of three years?

Max Colmer:

Yes , we have a business plan, again we use an external consultant who has work in the IT sector for many years, particularly in the software side of it and he is an independent consultant who has essentially helped to us to get to where we are and he has helped us with business plans and with where we are forecasting to go in the future.

In other words there is something on paper to say where we would like to be and what we are driving towards.

Q. An article in the Irish Times last week stating that ISME believe that Graduates are not, "Work Ready", what is your opinion on this? Do you think that graduates coming out of college currently are work ready?

Max Colmer:

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Well, having personal experience on this, you can spend two years, three years or five years learning everything to do with a particular subject, certainly IT, but when you put out in front of a problem, a real live problem, you don't get taught a lot in college when a server blue screens or the system is dead, and this is where your experience and your understanding of "Google", if your good with Google, any engineer will say you are a good engineer because you are constantly trying to look up what the problem is and how quickly can you sort it out. You can't sit there with a text book and say oh yeah, I did that two years ago. You have got to the system up and running no matter what, and that is really what happens. So we are fire fighting, it is really like I suppose a surgeon with someone dying on the table, you know your job is to get the person back to life. It's the same with systems, you might have a dying server out there and your job is to make sure that you either bring it back to life or prevent it from dying.

That's what can separate the..., we have had that in the past in here, engineers who have come and gone, they simply come in with all this knowledge from college, but when you put them in front of a computer problem, they just crack. It can be stressful.

Q. Would you say then there is a "gap" between the theory of what the learn and the skills that they bring to the real world.

Max Colmer:

Absolutely, there is no doubt. Look all the theory that you learn will benefit you in the long term and in the broader scale of being an engineer, but ask any engineer and they will tell you that a lot of the problems that you come across are things you don't get taught in school. You are taught the principles of IT and how IT works, but it does not teach you about certain problems when they happen, because you can't teach everybody every single problem. There could be ten different problems associated with one initial problem, you know, you can often say things like, I saw something like this before, but it is different now. You even today, I am getting error messages that I would not have seen before.

Q. Do you think Industry and Colleges could work more closely to resolve this "Work Ready" issue?

Max Colmer:

I think certainly that you have graduates that are coming straight from college and the first thing is that they come in and do a graduate placement programme. We do that in here, we actually take people trying to get in through the work placement programme and the jobs bridge through FAS as well and we currently work with that. We were due to have someone start today and anyone who has come through it, and we have two staff who have gone through this and one is now help desk manager here. We took both on because we told them at the very beginning that it was a nine month work place placement, we told them that they should leave us in a position after nine months were we have to employ you, in other words, if you come in and do a really good job, then we will have no choice but to employ you.

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It gives us a chance to see how good they are going to be but also, it also lets us show them how good they are as well and for whatever reason, if they did not work out, there is not a huge contract that you are trying break out of. It simply work experience and its a good way to gauge the people whom you taking on.

Q. Do you know if other IT firms at the Micro level who have taken this approach?

Max Colmer:

Oh yes, a lot of them do, a huge amount of the do?

Q. As a Government Programme, do you think it is helpful to your sector?

Max Colmer:

Yes, but I think a lot of sectors use this but I also think a lot of them will abuse it as well, that they take people on and spit them out again, we don't do that, we give them a fair chance to have a job here at the end.

Q. What do you think the future of the ICT micro firm is going to be like in Ireland? Where do you see it going?

Max Colmer:

Depending on over what time scale, but I think it is gradually evolving onto more online systems, cloud based systems, hosted desktop, and that is something that we have recognised for a couple of years and you find that a lot of IT Companies are well, everyone is talking about cloud at the moment, even clients who don't understand the basics of IT are saying, I read this in the Sunday Business Post about cloud, but cloud as you know is a very broad term , Gmail is cloud, you know something that physically is not in your office is cloud. Anything that is hosted off site, hotmail, gmail, online backup, all of these things and application's. What we have done is we are providing hosted desktop platform to our clients, to new and existing. We have invested heavily in this on behalf of our clients.

Q. Is there anything that the Government could to do to help the micro firm in the ICT sector?

Max Colmer:

One of the things that I think most companies would say is that they could probably do with one or two extra staff, the problem is that it is very expensive to employ somebody, so as much as I would love to have another engineer and another sales person, there is always the costs involved and even though after a few months it would probably start to pay for itself, it is that initial set-up, so perhaps some tax relief or further incentives there to help you. Perhaps a jumpstart to say look there is PRSI relief or something like that just to help you along the way, I think that would certainly benefit alot of the smaller business's. Bigger business's hve more resources associated with this and it appears to be easier for them to do it.

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Q. Finally, what do you think is your companies competitive advantage over other micro firms in the industry?

Max Colmer:

As I said earlier, it is definitely our close relationship with all our clients, they know everyone in here by name, do they know the directors and we have a very close relationship with all of our clients in here. I think that that, when you are in the service industry, there is no point in having all these clients and they are paying you and you think that's great and you move onto the next, you have to, they way I would like to feel is that I am now just a number, it is to with our customer service, skillset and the ability to deliver a solution and to fix a problem on time. End

Appendix 6

Kevin O'Loughlin of Nostra is only 6 years in operation but has already built a successful firm since that time and is responsible for bring the visualization to Ireland in the mainstream.

Q. Give a brief history on your own back ground and qualifications?

Kevin O'Loughlin:

Well I am technically completely unqualified. I would have started out in DCU doing computer applications and I hated it, I absolutely hated it and I dropped out after three months, so I drop out and I got a job with a company called Tagtech as a help desk person and effectively I just worked my way up and never actually getting formal training at all along the way and probably in 2003 I stop all my technical type training moved more into a sales, and I was in sales then for three years before I started Nostra.

So from a certificates point of view, I have an honorary degree in business from DIT , but other than that I have no formal qualification's. School of Life.

Q. Can you give me some background on your company Nostra?

Kevin O'Loughlin:

I started Nostra really in 2006 and started trading in January 2007. Nostra's goal is very simple, we started out as a company whose exclusive goal was to reduce the cost of IT to businesses.

In simple terms where it came from was I worked in IT selling IT solutions to companies and I was going in selling email servers, selling file servers, selling application servers, sage account servers, whatever different servers that you could have and you would have companies who could easily be buying 10 to 15 servers at 10,000 a pop and that company simply would not have had enough money to buy out the servers, but Microsoft and other companies insisted that each application have its own server, and if you bought the likes of sage accounts it had to be on its own server, and if you bought another accounts package, it had to be on its own server or if you bought an email solution, it had to be on its own server, the two of them would not work together. So

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virtualisation, which is a new technology came in the early part of 2000 or 2001 and it was becoming more mainstream and nobody adapted it in Ireland.

Q. Can you clarify what Virtualization is?

Kevin O'Loughlin:

Virtualization is where you take multiple servers, the physical boxes and you basically turn them all off and you take one server and up load 10, 15 or 20 applications like Microsoft windows etc, so technically you have 20 systems operating off one box (hardware) at the same time. Because you have individualised the operating system, the software is no longer conflicting. Each piece software actually thinks it is on its own server and you are effectively emulating having multiple physical hardware machines. So just as a very brief example, if you had 12 servers, you might come down to one server, so that is 110 k saving in most cases, the software only cost 20 k, so you still into a 90 k saving and then you could get 2 servers, still with and 80 k saving and put it in another location and you have a full disaster recovery scenario and you are saving 80k.

Q. And on that basis' you set up Nostra ?

Kevin O'Loughlin:

Yes, that is the first thing that we wanted to do, was to actually bring in the solution and make it mainstream in Ireland.

Q. How do that approach go down in the Industry?

Kevin O'Loughlin:

Well, it went down extremely well, the industry would now be probably 60% virtualized across the world. Every large company in the world will have some form of virtualization in place. Our client base would all have virtualization in place, so 100% of our customers would be on a virtualized slimmed down environment.

Then that moved on to I suppose, when cloud technology came along, that was taking it a step further, so now, rather than buying a new server, Microsoft or Nostra or whoever would build a virtualization platform in a data centre and now, because even the virtualized server you were not using all of it.

Now go back to the initial thing, if you had an email server, say for a company with a 100 people, and the email server was capable of 10,000, and that might sound like a lot, but in reality, the smallest email server you could buy ten years ago, would have been capable of 550 users, so if you have 10 people you are wasting 540 positions.

So what we decided to do back in 2007 was to build an email server ourselves and then literally build one for say 5,000 people and then rent to each company individual mail boxes. They would save 50% and we made a larger margin on it.

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Q. At present what would Nostra systems main market be?

Kevin O'Loughlin:

Our main....well, I suppose what we are known best for is our virtualization and cloud based computing, with cloud being the later of the two.

However, where we make our money and what our business actually is, is being the IT partner for our customers, so we charge a monthly fee to our customers to actually provide IT support and services and effectively become their IT manager.

Q. With regard to education and training, what do you understand by the term, "Human Capital Development",

Kevin O'Loughlin:

Well Human Capital Development is a term that I did not hear past half an hour ago. But education and training is something that I see as extremely important. All of our engineers are qualified to Microsoft's standards, which basically means that each year they have to pass seven exams which takes them about a week to two weeks per exam to study for and then they get two days off per exam, so there are 14 days a year to focus study and actually do the exam. So they do that every year and I see that as absolutely imperative, because without that its simple, we waste time. So if someone who is completely new and fresh faced in here, it might take them three times as long as a fully qualified engineer to do the same job. They don't earn three times the wage, but from our point of view, the most effective and economical way that we have of running our business efficiently is to have our team educated and to be given the tools to do their jobs properly.

Q. Following on from that, what would believe are the main benefits to the micro firm environment, do you have any examples?

Kevin O'Loughlin:

There are obviously a number of benefits, one would be the very fact that you have qualifications makes it much easier to attract in new customers and that's an absolute given and certainly in our case that is a huge, huge element. The second d thing I would say the speed and efficiency with which the engineers work, once they have received formal education , is much greater and lastly I would say that, working certainly in a technical environment, without proper training means that people generally go the long way around doing everything, because there is a process that has been designed by somebody and it has to be shown to somebody else so they now know how to do it.

Hand-me-down training in my view is just to slow and it is also to expensive. For example, if you have somebody coming in here and they are being trained by somebody else, then that is costing me a full resource to train somebody, where as sending them on a training course works out generally much cheaper.

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I would say though, that from a micro firm perspective that I would struggle to see how many can afford the time it takes to get training done, because when you are training and the amount of training that is required in IT is quite substantial, if you are not getting it, you are in real trouble, but if have a team of say 10 people in an organisation and five are engineers, to take 14 days by 5 people out of the annual schedule is a massive hit and it is a tough one for a business to absorb. So the economies of scale which might not allow for them (micro-firms) to do the level of training that they need to do.

Q. In relation to your recruitment process, would the level of training to which a graduate is coming out with, is that important?

Kevin O'Loughlin:

I think it would be fair to say that I wouldn't currently hire a graduate. That might sound mad, but I wouldn't because the most important thing for us is practical, hands on experience and if somebody is coming in as a graduate level, they are two years away from being able to run and operate the IT here, and that is two years that I can't afford. We are too busy and they also take a huge amount from the existing team, so you know, we are a busy company that is operating in a very difficult environment and getting paid and everything else and we have to be very careful about any resource that we take on.

Q. Would you agree or disagree with the statement by ISME that came out only last week that graduates coming out of mainstream academia are not "work ready"?

Kevin O'Loughlin:

I would absolutely agree with that, yes 100% and I think that if I was somebody who was coming out of, and I think jobs bridge is a superb model, because we have taken one or two graduates on through jobs bridge, they came to us and said hi, I'd like to work in your firm, I can do it through jobs bridge, I can get paid through it and I will come in and work for a year and add a little bit of value to the business, not enough to justify a paid role, but generally, within a period they might actually get there, but that gives a company enough of a window to actually take somebody on who will add a little bit of value and then the cost for the first nine months is through the programme, and I think that that is a very valuable tool, but I would say that all the courses in my view, and particularly in the IT sector, need to have a practical work placement as part of any course.

Q. In the current economic climate, have you increased or decreased expenditure on education / training for your staff?

Kevin O'Loughlin:

I have increased. As a micro firm, I would have been focused on hiring people with the skills that I needed and then either letting the skills deplete unfortunately, but when you are under ten in employee numbers, you can't invest, you can't do it.

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Q. Developing your Human Capital through education and training, at present is that a priority at present?

Kevin O'Loughlin:

Yes, absolutely. We have achieved Microsoft Gold standard status and that actually means, apart from having it, we have to maintain that level that we achieved two and half years ago, so this year again, we have to get one or two more people completely trained up into MCS and MTIP Microsoft certification and we have to get the existing team to upgrade their skillsets to 2012. So there is a huge amount of exams that are going to have to happen here before the end of next year.

Q. Do you believe that such an investment can provide your company with a competitive advantage over your competitors? Would you have any examples ?

Kevin O'Loughlin:

Absolutely yes, I would say that things people really like about Nostra is that one, our engineers are very highly qualified so most of our testimonials actually refer to fact that they can get onto an engineer and they deal with my issue and that I am not being passed from one person to another.

Everyone is at the same level inside (referring to the engineers in call center) so everybody is in a position to work on any problem.

Our Gold star status definitely has an impact and even in terms of getting new business in people go onto Microsoft's website and they look up Microsoft's gold partners and they have only four to chose from, one of them being us, Nostra. So yes, I think it makes a huge impact.

Q. Would you have any concerns regarding Talent Management within you firm.

Kevin O'Loughlin:

Would I have concerns with talent management, no I don't think so, no I think we have an extremely good staff retention, we pay for the exams, we give them time off to do it and I think that is a huge part of staff retention is that training really does encourage guys to stay and I think that is a hugely important element.

Q. As an owner / manager what concerns would you have when it comes to training and educating you staff? Do you think they might leave to competition or look for further financial incentives?

Kevin O'Loughlin:

No, neither would bother me, I think that the team that I have, for example, when I started Nostra, three people came over from where I used to work to join me and they are still here and the majority of people who are here I don't feel don't want to leave. We are a good company to work for

And I think the training that we provide. We are probably not the highest in terms of pay in our market segment, but we provide a good working environment, we provide good practice in staff management and we look after them on a personal level.

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Q. I noticed a book on your shelf, 1001 ways to reward your staff, what other than pay and a good working environment do think is important in terms of rewarding your staff?

Kevin O'Loughlin:

I think to be honest with you is to have an environment where staff, A) can approach you if there is a problem, but also, B) have an environment where they can actually have a bit of craic and they can be good friends. Our staff are extremely good friends and when we have a social night out we nearly a full attendance and its a really good fun group of people.

So I am very slow to hire and when I do, we hire people as much based on personality as much as qualifications. For example if I had someone who lacks a little bit on qualifications but had a personality that would fit in well here, I'd be inclined to hire them.

But we also give people time off to deal with mortgages, banks etc, lots of people bought property through the boom so, we have brought in financial advisors to sit down and go through the elements of their finances and we have paid for this.

I think staff morale and staff retention is very much about creating an environment that is conducive too, actually having a bit of fun and looking after our customers.

Our customer is number one and we are an extremely ethical company, so in far as, if a customers over paid us, we would let them know.

I have seen environments were that does not happen and the customer has to come looking for it. Our clients, well for example we had an incident were a client was overcharged, ,they rang in, got a quote for a product and we sent it through, it had a largely inflated price that they had and they asked us to match it. It was matched by us, they got a new product, the invoice went out and at the end of the month, we were looking at our margin reports, and there appeared this rediculus margin on this one item. So when we question it, we established where it came from. Firstly we rang the customer, gave them a full refund and we gave him the product at cost and secondly, we disciplined the person who overcharged them.

So in our view you must look after the customer, they will always discover things so if you are straight and upfront, they will respect and deal with you.

Q. You mentioned tools for measuring company performance, what, if any do you use to measure performance at a staff level.

Kevin O'Loughlin:

On the service side, we monitor all our service engineers through a system called Autotask, and Autotask creates every single job that every goes into it, the system gives each job in the system a ticket, and each ticket needs to add up to 7.5 hours a day, and tickets are then billed to certain customers. So our tracking effectively looks at what did someone do for the last 40 hours of last week, it will show me how many hours they worked on installation, how many hours they did on service calls, or whatever the jobs they were doing. I then call into a customer and see how well we

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have performed against that customer's maintenance contract over the last week and again this all feeds back into the one system.

So with engineers we purely track them on time, we also track them in terms of getting jobs done with this use of a predication system that tells us how long a job should take. It is an easy system to use and it links to their iphones and I involved them in the process of choosing the package.

In terms of sales we monitor purely based on results and numbers. The sales team is a small team they have been there for the last five to six years so it's a solid team.

Q. Can the Autotask system be used to identify training needs?

Kevin O'Loughlin:

No, not at the moment. I think in our industry, training needs are fairly blatant and there is probably not a system can tell us what is required there.

The service team here really identifies the training need of the team through work issue and particularly how long it takes to get a job done. So yes, it probably does to a certain extent, but most training needs are reported back by the engineer themselves.

Q. How fast does the ICT sector move?

Kevin O'Loughlin:

This might surprise you, but I don't think it moves fast at all.

If you take 2006 we were looking into virtualization and we had started to deploying virtualization early in 2007. In 2008 we built the first cloud in Ireland, which was built on a Microsoft platform. Now the evolution of that product although we have added extra features over the years, but the evolution of that product by in large its the same thing.

Take a look at what a computer did ten years ago, well its not very different to what it use for today, ok it can do a lot more, but what we use it for is still the same, you know, word, excel, email, sent email, using the internet, has this evolved, yes the image quality has got better and all that kind of stuff. But no, the evolution I think is quite slow. The next major leap will be an interesting one in my view and the next major leap is where a server is no longer required at all and a company no longer requires a server at all, but we are not there yet.

I am probably saying that this is five to ten years away where you can literally have a computer that you turn on and today you will operate a Mac the next day you will operate a pc and all your data is stored on cloud and you are just literally accessing it.

But that is only useful were you have got good broadband, you can't use it for example in the west of Ireland, you can't use it on an aeroplane or must train stations.

The limitations of that technology means that if you are using that today, it only works if you are in the office, but you can't travel with it, so therefore you need a laptop, and if you need a laptop, there is a brain in the device, so the evolution in the technology space is quite slow.

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For example, we were talking about cloud back in 2008 and yet the first time it really hit mainstream media is the end of 2011, three years after it is out.

So the technology is there, its discovery by media lags behind though.

Q. Nostra's Competitive Advantage, do you think that is down to the staff or the strategy of the business.

Kevin O'Loughlin:

I would put it down to the staff. I would say that our business is our staff, no question. We do have a strategy, absolutely, but our staff are fully aligned to that strategy and that strategy within our tagline is "simplify your IT", that our goal, make it simple, cut out the stuff you don't need and get rid of as much hardware as possible (old technology) and that is an important thing, but it is the staff who deliver it.

I have more customers because people like my engineers and my sales team and if I bring someone in and they don't like them, we start losing customers, so it does not matter what your strategy is, unless you have the proper team you are going to lose.

Q. What would you view as the current barriers to the micro firm sector and the ICT sector in terms of education and training?

Kevin O'Loughlin:

I think the biggest barrier in any industry at the moment is funding. It is just absolutely ridiculous.

For example, we are a company this year heading for 2.5 million in turnover and for example, our fuel bill monthly averages 3 k to 4 k per month, and that is just to put in into perspective, and we couldn't borrow 1 k Euros from a mainstream bank.

There is no funding available from SME's unless you give personal guarantees and a personal guarantee is not just signing a piece of paper, it is an actual asset. If you want borrow a 100k in bank funding, you need to give them 300 k of an un-mortgaged asset to cover it.

So basically, you have to have it to borrow it, so for a company like us that started in 2007, funding has to come from private enterprise, or from directors or investment, and again that is not easy to achieve in this day and age, people want to invest in companies like Facebook who are worldwide and have potential. We are a service based business, so you don't have that potential, but still we are a business that does very well and the more we grow then the less problems we seem to have in terms of cashflow and debtors.

Q. What supports do you think the ICT sector could benefit from be they from the Government, ICT Ireland or the SFA for example, where do you see it coming from?

Kevin O'Loughlin:

I mean the SFA I see as a marketing body, and I find that they have their role, but I don't value that role as I don't see them delivering anything other than sort of PR when stuff goes wrong.

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I think the Government talks about the fact that it has funding in place for business's and all the rest, but, if you go and meet a bank manager you almost get a synical approach and I would expect. Look a two to three years ago, we had only got a third of today's turnover, and we would have been a loss making company and you understand a bank manager not being happy, but the response was synical, not even a supportive business wish, like I can't loan you money, best of luck. It was almost like , "I Look forward to you coming in and handing me the keys when company has shut down".

I have found the banks just impossible to work with and I just detest them. We had funding in place, and they pulled it all in 2008 on us over night and they did not expect us to survive, but we did, and we have not got anything off them since 2008.

They simply took away our overdraft facility in July 2008 overnight.

Q. Did you have any support when trying to get that back.

Kevin O'Loughlin:

The reality is I did not have the time. The reality is you have a six month window to deal with stuff like that, but we would not have had a company if i had have focused all my energise into trying to get the overdraft back from the bank. So I went a different process and raised investment to stay going, which we did. But banks would certainly not be supporting business in any sector at present. They don't think commercially anymore.

I got a piece of advice from a senior guy working in a main pillar bank, was you need to apply to be refused, to appeal to be refused, to go to a ministerial review so that you can appeal again and you might have some chance. You know this is mad, you have to jump through hoops that you should not have to jump through using up energy. At the end of the day, if you have a company that is generating profits at the end of every month, with a good balance sheet, you should not need to jump through hoops to get an overdraft.

Q. A report by the EGSFN positioned towards the ICT sector, reported that there is a "Skills Shortage" in the sector, would you concur with that?

Kevin O'Loughlin:

Yes absolutely, yes.

Q. Where do you see the skills shortage existing?

Kevin O'Loughlin:

I would see that there is a huge lack of systems guys, these are guys who can actually take a windows server and build it up and run it in a data centre. We have actually given up look for them.

What we now do is we bring guys in who have skills on desktop or skills on Dell, we now take those types of guys in skill them up, so at least we can get value out of them at a certain level for a year or two and then we get them to where we need to be.

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However, a lot of our customers need developers in Java and different programmes and those guys are extremely scarce. For example, one of our biggest customers who has just opened an office in London purely because they feel they are in a better catchment area to get the type of skills they need.

Q. What do you think that could be done to address this issue in the short term?

Kevin O'Loughlin:

In the long term, I think there is a serious lack of career guidance for our students doing their CAO application and leaving cert. I think they are literally handed a book with hundreds of courses and people pick college courses based on what their classmates are doing, there is no, in my view at least, real careers guidance doesn't exist, but to me this should one of the biggest and most important subjects in your sixth year. I would believe that an awful lot of very good people end up doing arts degrees because they don't want to be associated with the "geek" part of the college and I think that they College Course's are very poor generally from what they spit out in terms of people and I think that it gives them a core understanding of the technology but not actually, well you know, I would say that anybody who has just done a course in college couldn't actually come out and with unlimited funding, actually start any kind of a business, and that would be my view.

I think that they don't get the four years, which by the way is a mammoth amount of time to learn, and I don't think that they get the practical experience that is required.

Q. In your opinion is there a big divide between what is produced in college at an academic level as to what is actually required when they sit behind the desk?

Kevin O'Loughlin:

Absolutely, but look don't get me wrong, I think college is a hugely important element for what people need to do. I think from a social point of view, to a writing point of view, to simply understanding how to communicate and present and all those elements are very important and the time span in college is important.

However, for what a business needs, I think the last year of college should be very much focused on a single one year course, with the view, right, your going to hit the ground running next year, what course do you want to do, what job do you want to get and then they have a very specific one year course or program with six months of training and development, and a full six months placement in an IT business, that could be month on, month off etc.

Take anyone straight out of college and put them in front of a computer and say right here's the business problem, find me a solution, will I just don't see them delivering.

Q. From your viewpoint, what could the ICT sector do better that could help manage that?

Kevin O'Loughlin:

Well if you start at the very beginning, I would say that the ICT sector or the ICT community need to get together and actually educate the guys doing sixth year in school and actually help them

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pick a technology course that suits them. I am the perfect example of somebody who pick the wrong course. I choose computer applications, because I like computers, but when I actually got in, I didn't like developing software for computers, I actually like building them and making them and with the most basic understanding, I certainly received very little in terms of guidance. We have two people who worked here for the summer, as an example, who have both done their leaving cert. One who feels that they have picked the wrongs course already and he is only a couple of months in and the other person has picked computer applications and his Dad has been developing software for years and he has definitely picked the right course., but when you speak to them regarding what guidance they got from the schools, NONE.

Your know, what advertising are the ICT sector doing to encourage young people to go and do this, you know, there is a cool element to all of this, take a look at the likes of Demon Ware and all these companies who do the games, I mean that is all done in Ireland and those companies should be put out and say look if you want to end up here, this is the course that should do.

There is almost no association between the end job and the starting of a computer course.

Q. Are you saying that the links between the course and the career are missing?

Kevin O'Loughlin:

Yes, exactly, I remember sitting in a lecture in DCU and the guys standing up and telling us, you know, if you work very hard and you really well, you will end up with a 25k job.

I was thinking to myself, 25 k at that time when computers where 2 k a pop, and used to make 700 to 800 euros profit making them and selling them, well I thought right, that's only three computers a month and why would I spend the next four years in college when I could make than that tomorrow. I had no understanding at that point of the link between them, and again most people don't. For example, someone goes into do commerce in UCD, what course are they going to do at the end of it, someone does computers applications in Trinity, you know, what's the difference in terms of where you actually end up out of those courses and I don't think there is a great link between course and career.

I think that is a challenge and I think the ICT sector could go through all the different roles in it and go and educate the market for the courses or have a generic website for people to go to to look up what course leads where. 36.00

Q. Taking the College out of it, I note that you have a number of different titles on successful entrepreneurial management, another on creative visualization. Do you believe that the philosophy of the Owner /Manager towards education and training is a factor?

Kevin O'Loughlin:

Yes I do.....(long pause on thought), I would certainly be massively into, well apart from training in terms of IT, I would be personally into people trying to understand themselves and their own personal goals and I try to tie into their personal goals and I think that is all very important.

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I think a lot of people bury their head in the sand when it comes using new technologies and business and they literally just go gung ho, they set up a business and ten years later they are doing exactly the same thing and then the business dies in the water. You know we have had to evolve at least twice since we started and we are going to have to evolve three or four more times as time goes on. We started with virtualization as being our main bread and butter business, Microsoft now deliver virtualization for free, so the software we used to make a fortune off, is now free, so we had to evolve and change at that point and to adapt a new model and our business model is going to consistently change. If we went in with a closed mind to what's out there we would very much be dead.

Now as an example, we invest very heavily every year in new technologies. I go to the Microsoft partners conference which is held in the US every year, it is a week's long conference, and that is what I see as my training and a look at what is coming down the track, an opportunity to meet all the different partners and vendors and people give their views of where the world is going in terms of technology and I think that is something that is massively important for people to do.

But again as a small company, when we have ten people and I would be away, that hurt us, because I took myself out of the business for two weeks and I came back to a complete mess, that we almost did not recover from for a whole number of reasons. You know when you have a small team it is very difficult to get time away. Now when I am away it is the same as if I am here as we have enough technology to get the work done.

However, from a micro perspective, training in one of those things that you can cut if need to cut something, and certainly in our early days we would have lots of training days organised, with guys booked into to do course at € 250, but if the customer rang and said I need somebody out and we have nobody except the guy doing the training, then we would cancel the training and put the training off for a month, then another month and if we did not cancel, it would have been less revenue.

That is the problem with training and development but as you become bigger, economies of scale do kick in, and you know, companies with less than ten people, very few make a lot of money and often it is month to month in terms of their operation in cash flow.

Q. Where do you see the ICT sector in Ireland going? Where do you see future of it?

Kevin O'Loughlin:

We are in a very lucky position in some respects. Microsoft has picked Ireland as the cloud centre for Europe, so all of Microsoft's Cloud is based in Ireland for the whole of Europe, so that puts a lot of technology here and it also puts a lot of faith in Ireland as it stands.

I think the tax, the current tax regime I would imagine had a huge impact on that, but also the availability of at the time was made of the skillsets required to run it and Microsoft's head office is in Ireland, so I am sure that there are lots of factors in that. But you know to base every single person in euro who gets a Microsoft email account, it comes out of a data centre in Dublin and that is a great win for us.

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I would say that within the next five to ten years we will be seeing much more in the emergence of phone technologies, I would see that within three or four years, you will get you mobile phone and you will be able to work away on it all day, you will come into the office, you will plug it into a docking station and you will have a key board, monitor and mouse and your phone will now act as your PC. Technically there is no reason right now that that cannot be done, there is no need to have two separate devices, so in some point, those two are going to merge into one for people who want it.

Where does Ireland fit in all that? Well Ireland is now and always has been a very innovative, and we will be one of the countries to adopt that type of technology first. I think we have very close links to Microsoft and I think we will be a country I suppose that will invite in and be..... for example, take face book, they have basically picked Ireland for their European headquarters, why is that, Tax, you know there is no other reason for it, but they also talk about the availability of workers.

That is going to become more and more or less and less as time goes on, but Facebook are based here, Microsoft are based here, VMware are based in Cork, EMC the storage company who provide all their stuff who are based in Cork, you have Trend Technologies who are based in Cork, you know you have all these companies who are consistently coming in and using IT, Irish resources and Irish people to manage technology and I think that if Ireland does its job right, it could become known as the European centre for Cloud and that is very much in my view where we want to be, because I think there is a good ten to fifteen years left in Cloud before it moves onto the next thing, whatever the next thing is.

End.