

An investigation of International Operational Best Practice, in Global Incubation Centres, and their possible application to the Innovation in Business Centre (iIBC) at Galway Mayo Institute of Technology (GMIT)

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To Niall

I don't cry because your life is over, I smile because it happened.

'Cheers bro!'

To Sarah and Oisin

*There's no thrill in easy sailing,
When the sky is clear and blue.
There's no joy in merely doing
Things which anyone can do.
But there is some fulfilment
That is mighty sweet to take,
When you reach a destination,
You thought you couldn't make.*

**'I could never have got there without you!'
Thank you so much**

Table of Contents

DEDICATIONS	1
TABLE OF CONTENTS	3
LIST OF APPENDICES	6
ABSTRACT AND EXECUTIVE SUMMARY	7
CHAPTER 1 - INTRODUCTION	9
1.1 INTRODUCTION	9
1.2 SMALL IS NOW 'BEAUTIFUL'	9
1.3 DISRUPTIVE INNOVATION	9
1.4 CONCEPT OF INCUBATORS	9
1.5 RATIONALE FOR INNOVATION CENTRES	11
1.6 THE NEED FOR INNOVATION CENTRES	12
1.7 DEFINITIONS OF 'INCUBATION'	13
1.8 CONFUSION WITH RESPECT TO THE MEANING OF INCUBATION CENTRES	14
1.9 INNOVATION IN BUSINESS CENTRE AT GALWAY MAYO INSTITUTE OF TECHNOLOGY (IIBC)	14
1.10 THE ABSENCE OF BEST PRACTICE BENCHMARKING	15
CHAPTER 2 - LITERARY REVIEW	18
2.1 INTRODUCTION	18
2.2 BOOK REVIEWS	18
2.3 INTERNATIONAL & CROSS INDUSTRY JOURNALS, REPORTS AND STUDIES	19
2.4 WEBSITES	19
2.5 INTERNATIONAL GOVERNMENT AND EUROPEAN PUBLICATIONS	19
2.6 INCUBATION CENTRE ORGANISATIONS	21
2.7 UNIVERSITY PUBLICATIONS	22
2.8 IRISH PUBLICATIONS AND REPORTS	23
CHAPTER 3 - RESEARCH METHODOLOGY, OBJECTIVES, LIMITATIONS, TARGET POPULATION, TECHNIQUES AND METHODS USED	24
3.1 RESEARCH OBJECTIVES	24
3.1 RESEARCH METHODOLOGY –A DATA BASED QUALITATIVE STUDY	24
3.2.1 WHY WAS THE RESEARCH WORTHWHILE? HOW WILL THIS RESEARCH ADD TO THE EXISTING BODY OF KNOWLEDGE?	27
3.2.2 THE SCOPE FOR FURTHER STUDIES	27
3.3 DIFFICULTIES IN ACHIEVING RESEARCH OBJECTIVES	29
3.4 TARGET POPULATION	31
CHAPTER 4 - RESEARCH FINDINGS ON BEST PRACTICE: CLIENT ENTRANCE AND EXIT STRATEGIES, CORPORATE GOVERNANCE, FINANCE & SELF-SUSTAINABILITY & LEVERAGING INNOVATION	33
<u>4.1 CLIENT ENTRANCE AND EXIT STRATEGIES</u>	33
4.1.1 INTRODUCTION	33
4.1.2 INCUBATION CENTRES - THE RIGHT TO CHOOSE NEW ENTRANTS	33
4.1.3 CAPABILITIES AND LIMITATIONS OF A CENTRE AS A DECIDING FACTOR	33

4.1.4 DIVERSE CLIENT BASE	34
4.1.5 INNOVATION IN SELECTION	34
4.1.6 SELECTION CRITERIA	35
4.1.7 NEEDS OF NEW INCUBEEES NEEDS TO BE ASSESSED	37
4.1.8 SELF-ASSESSMENT CRITERIA	37
4.1.9 EVALUATING A COMPANY'S EXTERNAL ENVIRONMENT	38
4.1.10 LEVELS OF DETAIL	39
4.1.11 MONITORING CLIENT PROGRESS	40
4.1.12 GRADUATION PROCESS	42
4.1.12.1 IS THERE A RIGHT TIME FOR COMPANIES TO GRADUATE?	42
4.1.13 THE IMPORTANCE OF MEETING TARGETS	43
4.1.14 COMMUNICATING GRADUATION POLICY	43
<u>4.2 CORPORATE GOVERNANCE</u>	44
4.2.1 CORPORATE GOVERNANCE AND INNOVATION	44
4.2.2 CORPORATE GOVERNANCE AND SARBANES OXLEY	45
4.2.3 CODES OF CORPORATE GOVERNANCE BEST PRACTICE IN IRELAND	45
4.2.4 MISSION STATEMENT BEST PRACTICE	46
4.2.5 THE NEED TO CONSTANTLY UPDATE THE MISSION STATEMENT	48
4.2.6 STRATEGIC AND BUSINESS PLANS	49
4.2.7 STRATEGIC & BUSINESS PLANS AND FINANCE	50
4.2.8 THE IMPORTANCE OF A WELL DONE PLAN	50
4.2.9 BEST PRACTICE CONTENTS OF A BUSINESS PLAN	51
4.2.10 PLANS SHOULD BE RELEVANT TO NATURE OF THE CENTRE	51
4.2.11 BOARDS OF DIRECTORS	53
<u>4.3 SUSTAINABILITY AND SOURCES OF INCOME</u>	54
4.3.1 INTRODUCTION	54
4.3.2 REASONS WHY CENTRES ARE NOT SELF-FINANCING OR SELF-SUFFICIENT	55
4.3.3 THE IRONY OF SELF-SUSTAINABILITY	56
4.3.4 SOURCES OF INCOME EMPIRICAL EVIDENCE	56
4.3.5 THE RISK OF BELOW COST RENTS	57
4.3.6 POTENTIAL REVENUE SOURCES	57
4.3.7 FUNDING AND POLITICS	59
4.3.8 SUBSIDIES AND INCUBATION CENTRES	60
4.3.9 MINORITY GROUPS SUBSIDIES	60
4.3.10 PARTNERSHIPS FOR FUNDING ALTERNATIVES	60
4.3.11 EQUITY SHAREHOLDINGS IN CLIENT COMPANIES	60
<u>4.4 LEVERAGING INNOVATION</u>	62
4.4.1 INTRODUCTION	62
4.4.2 HIGH PERFORMANCE START-UPS (HPSUs)	63
4.4.3 STATE BIAS TOWARDS INNOVATIVE COMPANIES	63
4.4.4 LEVERAGING INTELLECTUAL PROPERTY RIGHTS (IP)	63
4.4.5 BEST PRACTICE ADVISES USE OF IP DATABASES	64
4.4.6 LEVERAGING BY JUST BEING PART OF A CENTRE	65
CHAPTER 5 - RESEARCH FINDINGS ON BEST PRACTICE:	
CLIENT SERVICES, STAFFING, SOCIAL NETWORKING & PROGRAM EVALUATION	67
<u>5.1 CLIENT SERVICES</u>	67
5.1.1 PRE-INCUBATION SERVICES	67
5.1.2 MARKETING SERVICES	68

5.1.3	MARKETING AND NETWORKING - A VALUABLE COMBINATION	69
5.1.4	INNOVATIVE MARKETING SERVICES	71
5.1.5	MARKETING PLANS IMPLEMENTATION PRACTICES	71
5.1.6	COACHING AND ADVISORY SERVICES	73
5.1.7	OUTSOURCING SERVICES	73
5.1.8	TRAINING COURSES	74
5.1.9	NETWORKING	75
5.1.10	VIRTUAL INCUBATION	75
5.1.11	ACCESS TO CAPITA	76
5.1.12	ACCESS TO CAPITAL IN IRELAND	77
5.1.13	POST INCUBATION SERVICES	78
5.2	<u>STAFFING</u>	79
5.2.1	STAFF LIMITATIONS	79
5.2.2	ADVANCED SELECTION TECHNIQUES	79
5.2.3	PERFORMANCE AND GOAL ALIGNMENT	80
5.2.4	VOLUNTEERS ASSISTANTS	80
5.2.5	THE TRAP OF ULTERIOR MOTIVES OF VOLUNTEERS	80
5.2.6	INTERN AND STUDENT ASSISTANCE	81
5.2.7	MATCHING STUDENTS AND INCUBATION COMPANIES	81
5.2.8	MANAGEMENT AND STAFF COMPENSATION	81
5.2.10	RECRUITMENT AND SELECTION CODE OF PRACTICE	84
5.2.11	HIRING AND TRAINING ADDITIONAL STAFF	84
5.2.12	NETWORKING FOR RESOURCE MAXIMISATION	84
5.3	<u>SOCIAL NETWORKING</u>	85
5.3.1	SOCIAL NETWORKING IN THE WORKPLACE	85
5.3.2	SOCIAL NETWORKING TRENDS	87
5.3.3	DRAWBACKS OF SOCIAL NETWORKING	88
5.3.4	SOCIAL NETWORKING AND INCUBATION CENTRES	89
5.3.5	TWITTER AND LINKEDIN- 2 SOCIAL NETWORK GIANTS	89
5.3.5.1	TWITTER- GENERAL INFORMATION	89
5.3.5.2	LINKEDIN	91
5.3.6	THE FUTURE OF SOCIAL NETWORKING	92
5.4	<u>PROGRAM EVALUATION</u>	93
5.4.1	EVALUATION CRITERIA	93
5.4.2	OUTSOURCING PROGRAM EVALUATION	93
5.4.3	POST INCUBATION MONITORING	94
5.4.4	MONITORING AND FUNDRAISING	94
5.4.5	EVIDENCE ON LEVELS OF TRACKING	95
5.4.6	UKBI 'INSPIRE' PROGRAMME	95
5.4.7	BENCHMARKING DATA FOR PROGRAM EVALUATION	97
5.4.8	IMPORTANCE OF QUALITATIVE DATA	98
CHAPTER 6 - CONCLUSIONS AND RECOMMENDATIONS FOR THE IIBC AT GMIT		
6.1	CONCLUSIONS	99
6.2	RECOMMENDATIONS FOR IIBC AT GMIT	102
BIBLIOGRAPHY		109
APPENDICES		121

List of Appendices

- Appendix 1 UKBI - *Quality Benchmarks for Business Incubators*
- Appendix 2 Cowen - *'Building Ireland's Smart Economy'- Executive Summary*
- Appendix 3 Innovation Governance- *What is innovation Governance?*
- Appendix 4 OECD- *Governance of Innovation Systems*
- Appendix 5 Jaiya - *Best practices in providing intellectual property services to beneficiaries of business and technology incubators*
- Appendix 6 Harbour- *Use Procurement process to 'leverage innovation'*
- Appendix 7 GMIT- *Graduate Enterprise Programme entry form 2010*
- Appendix 8 GMIT- *Strategic Development Plan 2010 – 2015*
- Appendix 9 Strickland- *What are the pros and cons of social networking sites?*

Abstract and Executive Summary

'Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local and national economies'.

(NBIA 2010)

All incubator representative organisations have different standards that they believe, business incubators should reach, in order to become models of best practice. However, at the moment, there are no internationally recognisable and comparable benchmarks. The information on innovation and incubation is vast and varied. This study found that there was little specific information on internationally recognisable benchmark criteria used in incubation centres (chapter 2).

The study undertaken was a qualitative data based study, based on publically available information (chapter 3). There was limited information available from individual incubation centres. The study specifically avoided critiquing the activities and operations of the IiBC at GMIT, to avoid any harmful or incorrect assumptions being made. The scope of the study did not allow for the benchmarking of different centres, but an investigation of some of the components of best practice in operation in different global centres, and recommend their possible application to the Innovation in Business Centre at Galway Mayo Institute of Technology.

The findings of the study were that best practice could be generalised into eight main benchmark headings (chapter 4 and 5). The study went on to highlight examples of best practice in these areas that may be of particular interest to the

liBC- some of which could be implemented immediately and others with the co-operation of other centres.

The study concludes (chapter 6) that without incubators coming together to agree benchmark criteria, they are losing out on potential synergies. Most of the recommendations would be easier to implement with the co-operation of other centres, locally, nationally and internationally. Networking alone, with other incubators, could offer benefits on benchmarking, marketing and resource utilisation.

The report also puts forward numerous recommendations for implementation at the liBC. In the absence better networking, and thus better benchmarking, the achievement of corporate goals is the most powerful benchmarking tool that is currently available at the liBC. Corporate governance, and the importance that the GMIT, and the liBC at GMIT places on governance, should assist greatly in this process and should insure that the liBC always strives to become a model of best practice- no matter what benchmark criteria this is being compared against.

Chapter 1

Introduction

1.1 Introduction

As the emergence of new technologies in a global economy has increased in importance, so has the investment in R&D, to improve competitiveness (OECD, 2008). Knowledge based economies are seen as the way forward for economic development (Interdepartmental committee on science, technology and innovation, 2004) (Dahlman et al, 2001) (Leydesdorff, 2006). Knowledge and technological advances are seen as essential ingredients in order to allow companies to respond to the fast changing global economy and market place.

1.2 Small is now 'beautiful'

Promoting new technology ventures is necessary for companies to survive in the market place. Incubation is one of the best ways of doing this. In the past, investment in large R&D projects was seen as the way forward. Now, given the current economic climate, and the desire to promote home-grown entrepreneurial talent, small is now 'more beautiful' (Gaynor et al- Ernest & Young, 2009). The promotion of SMEs is now becoming an essential element in the development of technological innovation and the whole support system for innovation has given rise to the exponential growth of innovation over the past number of years.

1.3 Disruptive Innovation

Christensen, a Harvard Business School professor, coined the phrase 'disruptive innovation' where a new market entrant, or a variation of a current market item, revolutionises market through in terms or price or quality (Christensen et al, 2008). Smaller companies, whose owners have far more reliance on the survival of the company can react to disruptive innovations, and alter their products to create their own 'disruptive innovation'.

1.4 Concept of incubators

Business incubators provide entrepreneurs with a support system to help them establish and develop their products and services. The concept is that by providing a single, facility sharing location to entrepreneurs, costs can be greatly

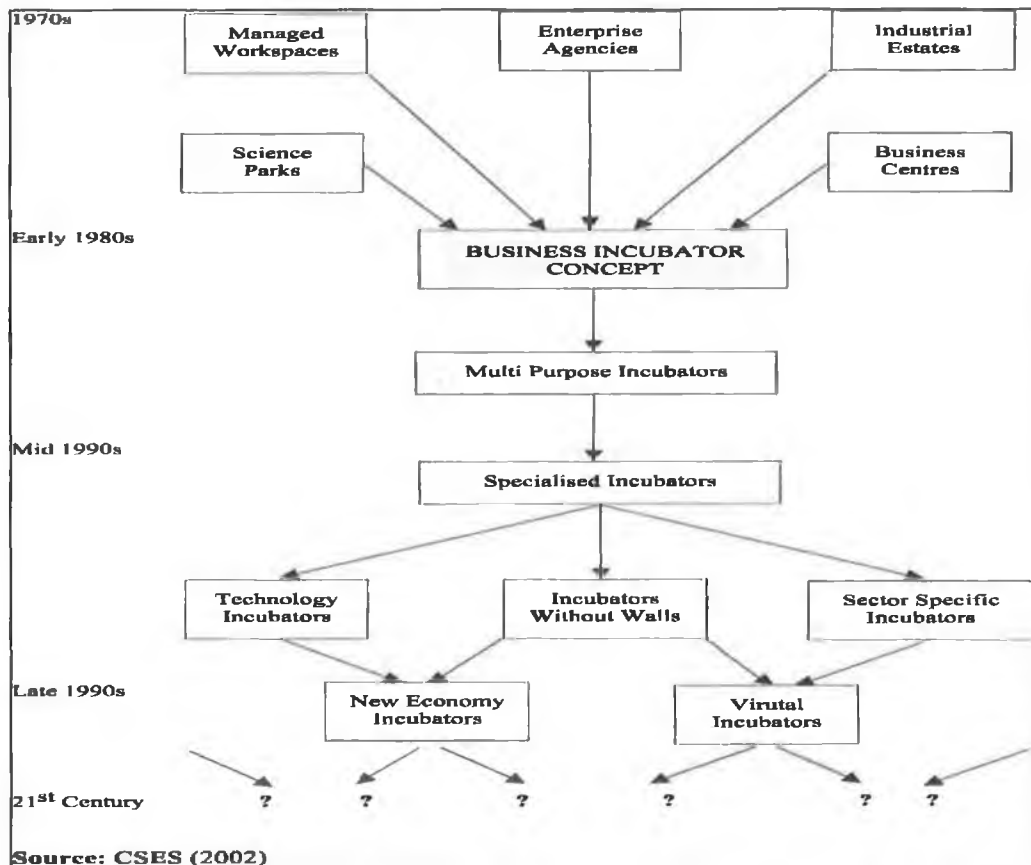
reduced, and pooled information can be shared. If the costs of new product development are reduced there is a greater chance of survival.

The concept of business incubators traces back to Western industrialised countries in the 1970's and 1980's. Rather than look at organisations from a 'top down' approach, governments started looking at organisations from a bottom up approach. Incubators began their life as facilities to support innovation and technology transfer. The incubation concept was described by Lalkaka to the Belgian government as follows:

The 'first generation' incubators in the 1980s were essentially offering affordable space and shared facilities to carefully selected entrepreneurial groups. In the 1990s, the need was recognized for supplementing the work space with counselling, skills enhancement and networking services to access professional support and seed capital, for tenants within the facility and affiliates outside. This has led to the 'second generation' incubator, although many in the developing countries are still stuck in the original mode. Starting in 1998, a new incubation model emerged in parallel. This is intended to mobilize ICT and provide a convergence of support, towards creating growth-potential, tech-based ventures.'

(Lalkaka, 2001)

Today the rationale is quite similar. While there are no exact figures for the number of business incubators in the world it is estimated that there are over 5000 incubators of one type or another (Global forum on Business Incubation report, 2009). Incubators today, also serve as important catalysers for the commercialisation of research.



The evolution of the business incubator concept (Hannon, 2005)

1.5 Rationale for innovation centres

The rationale for business incubators was described by Dr Hausser in a paper he presented to Lord Mandellson on business incubation. He said the rationale for business incubation was as follows:

- *The specific role of Technology and Innovation Centres (TICs) varies according to the innovation system and economic and social landscape of the countries they operate in.*
- *However a shared rationale exists for developing TICs that bridge the gap between academic discovery and commercial exploitation.*
- *It is common for TICs to be focused on sectors or technologies which capitalise on local and national strengths rather than have a wider spread of institutes in many technology or sectoral fields.*
- *Most benefit from long-term, sustained and predictable flows of public funding, although the level and type of funding varies significantly.*

- *The workforce is recruited from the academic and private sector and possesses research, technology development and commercialisation skills.*
- *The TICs are expected to supplement core funding by winning additional income from public and private sector contract research, and through the commercialisation of IP.*
- *Strong governance structures are in place in many to provide strategic direction and ensure the quality of services provided to business.*
- *Almost all operate with a high degree of autonomy to manage the achievement of their objectives.*
- *A strong brand has been found to reinforce a TIC or network of TICs by making them a more attractive partner to the private sector and for international collaborations; and*
- *International collaborations are widely undertaken with many within the EU leveraging significant funding from the Framework Programme’.*

(Hausser, 2008)

1.6 The need for Innovation Centres

According to the evaluation models put forward by Gundry and Kickul in 2007, management in innovation centres need to possess a lot of skills to advance their products (Gundry and Kickul, 2007) (UKBI 2003). If one looks into the theories of Christensen (Christensen et al 2003) and Schumpeter (Schumpeter, 1942) and creative destruction, innovation faces a lot of potential problems. This is particularly true where new technology is involved. New technologies can cut the life span of a product instantly. Technological life cycles can be quite short (Tushman, 2004).

There is also the issue of market evaluation - how can a new market be evaluated? How can companies convince investors to get behind products based on forecasts that are totally subjective? If one looks at the theories of Schumpeter and creative destruction, the potential for failure is great. However, with the assistance of business innovation/incubation centres the chances of success are much greater. But what exactly are business incubators?

1.7 Definitions of 'incubation'

The term 'business incubator' refers to the range of services, offered to entrepreneurs, to help them bring their project from inception to commercialisation. The term incubator also refers to technology parks, technology centres, business and innovation centres and organisations that do not have a fixed location, but instead offer a number of services off-site. This service is often called 'incubation without walls.' The evolution of the business incubator concept is summarised as follows:

The Entrepreneur magazine (The Entrepreneur, 2010) describes business incubators as

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

The NBIA define business incubators as

Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local and national economies.

(NBIA 2010)

The definition adopted by the UKBI is slightly different to the others. While the provision of space is again an important factor, the provision of other services appears to be as important.

'Business Incubation is a dynamic business development process. It is a term which covers a wide variety of processes which help to reduce the failure rate of early stage companies and speed the growth of companies which have the potential to become substantial generators of employment and wealth. A business incubator is usually a property with small work units which provides an instructive and supportive environment to entrepreneurs at start-up and during the early stages of businesses. Incubators provide three main ingredients for growing successful businesses - an entrepreneurial and learning environment, ready access to mentors and investors, visibility in the marketplace.'

(Burki, 2001)

1.8 Confusion with respect to the meaning of Incubation centres

Central to the whole concept of business incubation is the concept of advice and assistance. Regardless of the definition used, the definition still leads to a lot of confusion among the public (UKBI, 2009) with respect to the word 'incubation'. The oxford dictionary defines incubation as follows:

'The process of incubating eggs, cells, bacteria, a disease, etc: the chick hatches after a month's incubation' (Oxford Dictionary online 2009)

There is no mention of its application to business or any form of business advisory service in the name. It is this that leads to confusion about the name.

1.9 Innovation in Business Centre at Galway Mayo Institute of Technology (IiBC)

The IiBC at GMIT was established in accordance with the strategic plans for the college (1994-2009) in late 2005. The IiBC at Castlebar was also opened in line with the strategic plans at the same time.

The objective of the IiBCs at GMIT is primarily to support and foster new entrepreneurs to get their 'innovative' ideas to the market place in a

commercially viable manner. A secondary objective is to forge business links between the college (and its different schools) and industry at large (GMIT 2010).

The IiBC at GMIT offers a range of practical and physical supports. Through the contacts of the IiBC and the expertise of the management team, personal and business supports, at all stages of the innovation to commercialisation process, are available.

The physical buildings, and associated office spaces offer well equipped office environments. Another of the main benefits of the IiBC is the network of entrepreneurs that locate in the centre, and the 'networking' opportunities that exist between them.

According to the IiBC website the IiBC has the following aims for start up companies

- *Increase number of high potential start-ups*
- *Improve early stage survival rates*
- *Accelerate company/job growth*
- *Enhance links with GMIT and SMEs/MNCs*

(GMIT, 2010)

The IiBC goes on to say that the benefits it offers for start-up companies include:

- *Incubation space for company start-up*
- *Desk space for individuals researching a concept or idea*
- *Business development supports such as Sales, Marketing, Finance, Intellectual Property*
- *Mentoring, Networking, Legal, Export Development*
- *Access to research capability*
- *Access to graduates and postgraduates*

(GMIT 2010)

1.10 The absence of best practice benchmarking

In a study carried out by The UN in 2009 before it embarked on the process of supporting incubation centres in Africa a number of key findings were highlighted (The UN - Economics and Social research council, 2009). The main findings of the study were that internationally there was no single model for the establishment of incubation centres and that they could be large or small, private or public, for profit or not for profit. Furthermore the study concluded that all centres offered a wide range of services, with different levels of service being offered for the different services. Interestingly the study found the main reason that centres are successful, is as a result of their image, profile and cost of rental space to new companies.

While there have been attempts to benchmark the success of incubators, little success or consensus has been reached on criteria to decide on success factors. A study in Hungary to assess the success of Hungarian centres concluded that there were only two factors that can be used. The first factor was the achievement of corporate goals and the second was the success of its companies that have incubated (Szirmai, 2008).

There are 2 fundamental problems with this for benchmarking. How do you compare the success of companies with different corporate objectives and goals, especially when a UN report concluded that all centres are fundamentally different, and not comparable? Secondly, by what criteria should incubated companies be judged by and what about the stages of development of companies currently in incubation?

Some studies on benchmarking centres have been successful in general terms. A study in Denmark managed to benchmark incubators offering specific specialised services against similar centres in the US (Department of Commerce- Denmark, 2002). But this study was only possible because the benchmark criteria was narrowed down, quite specific, and was comparing centres similar to each other.

The European Business and Innovation Centre Network have just gone one step further. Before incubators are allowed to join the network they must meet specific entry criteria, against which their performance can be constantly monitored against, and benchmarked to other centres. The National Business Incubator Association (NBIA) in America has just released their latest publication on Best Practice (NBIA, 2010) and the United Kingdom Business Incubator (UKBI 2003) association have their own different recommended benchmark criteria (see appendix 1). But, to date, no agreed framework for benchmarking centres locally, nationally or internationally exists and so no basis for international comparisons can be made.

Chapter 2

Literary Review

2.1 Introduction

Innovation has grown exponentially over the last years (Innovation Zen, 2006). The word innovation is branded all over the media. According to Bill Gates, founder of Microsoft, the foundation for the success of the American economy has been 'innovation', and that American government policy, in favour of innovative practices, was the backbone of the success of the American economy. (Washington Post, 2007) (Anderson, 2005).

2.2 Book Reviews

Despite this popularity, innovation is still seen as a relatively new science (Innovation Zen, 2006). Schumpeter, Drucker, Porter, and Anderson & Tushman are recognised as the most important people in the field of innovation. Their opinions vary. No definitive theory on innovation has been put forward by them or any other theorist.

Michael Porter in his book 'Competitive Advantage' (Porter, 1985) explores the factors that give rise to competitive advantage in firms. He breaks the different elements of firms' activities into what we call a 'value chain'. The value chain is then used as a basis to diagnose and enhance competitive advantage. Research into the work of Porter (1985) and also his work, published in 2008 'On Competition' (Porter, 2008) determined whether or not best practice relates to the theoretical model of innovation. Most organisations strive to maximize their competitive advantage. The IiBC at GMIT is no different. Porter's findings were used as a basis of identifying potential competitive advantage at the IiBC at GMIT.

Peter Drucker (Drucker, 1985) outlined the seven sources of innovative opportunities. They included items that lie within an organisation ('the unexpected, the incongruity, innovation based or process needs and changes in

industry and market structure') and sources that are external to the organisation. ('Demographic changes in perception, mood or meaning and new knowledge'). This framework provided a theoretical understanding on the recruitment and selection of new businesses. It also allowed for an assessment of whether marketing and promotional activities are directed at the correct market segments.

The economist Josef Schumpeter asked a question over 40 years ago - 'Why are we better off today than our parents?' The simple answer was because of 'innovation' (Anderson, 2005). Schumpeter's simple answer is just as relevant today. Modern society is a living testament to the success of innovation, and in particular technical innovation. Schumpeter had many different insights to innovation in particular with respect to the different types of innovation.

He also had opinions on why incubators 'clustered' in certain areas. Clustering had a marked effect on the life cycles of the products (Fagerberg, 2005). According to Schumpeter clustering and networking were essential ingredients in the success of innovation. The findings of Schumpeter (1883-1950) are described in detail in Anderson and Tushman, as are the findings of many other theorists.

There are many theories on innovation and there are many factors that contribute to the success and failure of innovative ideas. Tidd and Bessant, in their publication 'Managing Innovation', analyse the different stages of innovation and how innovation can be most successful in practice (Bessant, 2004). Both Anderson and Tushman and Tidd and Bessant have an important role to play in the definition of innovation and assisted the overall study.

Published books are only one of the sources of information that have been used in the research. We have already stated that incubators are a relatively new science. While there is a multitude of published books on innovation, there is still a void of books on innovation centres. As a result a lot of information was obtained from the internet.

2.3 International and cross industry journals, reports and studies

Reports from different areas of the world form an important part of international best practice. A number of these reports clearly illustrate the different thinking and rationale for operations in different countries (Isaken - Norway, 2009), (Jayai et al - India, 2007), (INZ- Incubators New Zealand, 2006), (OECD- Business Incubation in Australia, 1999), (Department of Finance- USA, 2010), (East Asian Bureau of Economic Research - India, 2009).

Reports also cover different business sectors and not just international boundaries (IT Governance (I.T.), 2009), (Department of Environment (Mexico), 2007), (D'Agostino (education), 2008). Many other journal and internet articles were used as a reference. Features on Innovation in The Entrepreneur, The Journal of Production Innovation Management contain articles on the classification and analysis of incubators (Dilts, 2007).

2.4 Web sites

The contents of the web sites and/or printed literature can be the difference of new companies making contact with a centre or not. Printed materials can also form the basis of most of the information that potential companies will have with their market and the business environment within which they operate. This data formed the basis of marketing and promotional comparisons and whether their activities are adequately represented in the material.

2.5 International Government and European publications

Government and European publications provided much of the regulatory and current policy information. Europe has played an ever increasing role in the innovation process over the past number of years. Innovation policy, according to the European Commission, is about helping companies to perform better. It is about contributing to wider social objectives such as growth, jobs and sustainability. There have been many reports into the future direction of innovation and also the success of previous innovation policies. (European Commission, 2009), (ESSA, 2008), (Microsoft (Europe), 2010), (New Europe,

2010), (The European Space Agency, 2010), (The European Commission on Environment, 2009).

The rationale for European innovation policy is strongest where it is oriented toward addressing the most significant challenges facing society today. The main current Community innovation policy is the "Broad-based innovation strategy for the EU" (Europa Summaries, 2009). The strategy singles out ten priority actions in a roadmap for action at national and European levels.

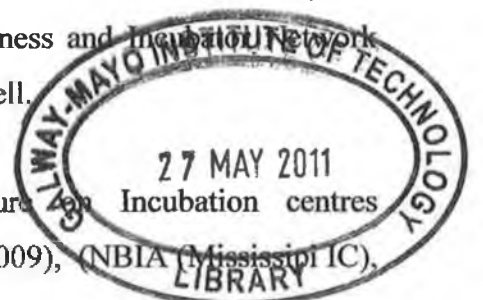
The Commission plans to encourage the emergence of "lead markets". Public authorities facilitate industry-led innovation by creating the conditions for a successful market uptake of innovative products and services. The primary innovative targets are e-health, internal security, eco-innovation and eco-construction.

As a majority of the incubators are in the EU it will be important to assess where individual incubators differ from European policy, and whether the agreed best practice objectives of the EU are being implemented. The European Business Network has published information that has helped with the European context of innovation (European Business Network, 2010). The EBN is not the only representative organisation for incubation centres that has been used.

2.6 Incubation Centre Organisations

The innovation policies and objectives of Europe and its individual countries are reflected in the policies and operations of the business incubators, and their representative associations. The two main representative associations used in the study of innovation centres are The National Business Incubation Association (NBIA) in America and their United Kingdom equivalent - United Kingdom Business Incubation (UKBI). The European Business and Incubation Network (EBIN) are also used as for reference purposes as well.

The NBIA have published their own literature on Incubation centres (Cammarata, 2003), (Wolfe 2001, 2007), (NBIA, 2009), (NBIA (Mississippi IC),



2010), (NBIA, 2010) and the rationale for establishing them and what they recommend as best practice for them. They also have issued 'principles and guidelines for best practice' (Boyd, 2006) and 'best practice in action' (Colbert et al 2010). As the recognised authority for incubation centres in America the best practice principles and guidelines can be compared to those in use, and from these, conclusions as to their application to the IiBC at GMIT are drawn.

Over the years the UKBI have commissioned numerous reports into the establishment of innovation centres in the UK. Given the relative similarities of both our economies these reports provided useful research information (UKBI, 2009). The UKBI use a lot of more general reports as part of their best practice model and issue very little information to the public domain. Numerous UK reports (British Library Business & IP Centre in London , 2008), (DETE, 2009), (Dilts, 2007), (Hausser, 2008) were also consulted.

2.7 University Publications

A large proportion of incubation centers have direct affiliations with University and Colleges. Consequentially there are a large number of reports from universities that were also reviewed to form a basis of best practice (Coventry University, 2010), (Cardiff University, 2010), (Georgia State University, 2010), (Melbourne University - Centre for Program Evaluation, 2006). Harvard Business School have also a number of publications that have been reviewed. Their expertise in the whole area of business and academics was also very useful (Harvard Business Press, 2003), (Harvard Business Review, 2006).

The practices of individual centres was also assessed to see how recognised best practice has being applied in their centres and how their operations (NUIG, 2010), (Hellington Park Innovation Centre, 2010), (Oxford Innovation Centre, 2009).

2.8 Irish Publications and reports

On an Irish perspective, policies follow on from European directives. In December 2008 the Irish Government published 'Building Ireland's Smart Economy: a Framework for Sustainable Economic Renewal'. The report outlined its strategy for medium-term economic recovery based around the concept of the Smart Economy in Ireland (Department of the Taoiseach, 2009) (see appendix 2 for executive summary). This, and other, government reports gave an excellent contextual framework of the Irish innovation setting.

Enterprise Ireland, on behalf of the Irish Government is the administrator of most of the financial assistance to innovators in Ireland. They administer grants under what they perceive to be 'best practice' criteria. The IIBC, at GMIT, were themselves assessed against these criteria to determine how they operated and promoted the innovation categories put forward by Enterprise Ireland. (Enterprise Ireland 2009).

In Ireland, the Department of Enterprise, Trade and Employment have also issued a number of reports on the impact of innovation. Other funded organisations such as the IDA and Enterprise Ireland have issued reports as well. These reports were used to assess the Irish incubation context (Department of Enterprise Trade and Employment 2009), (Enterprise Ireland, 2010), (Ireland's Innovation Performance: 1991 to 2005, 2008), (Ireland, 2009).

The Central Statistics Office (CSO) has published numerous reports on innovation. One of the most relevant is the 2008 survey into the innovation activities of Irish and European Companies. (CSO 2009). The Economic and Social Research Institute (ESRI) have also published reports on Ireland's innovation process (ESRI, 2008).

Chapter 3

Research Methodology, objectives, limitations, target population, techniques and methods used

3.1 Research Objectives

Primary objective of the Study

To carry out a data based, qualitative investigation, of operational best practice, in selected global incubator centres, exhibiting best practice, and to recommend policies that could possibly be implemented by the liBC at GMIT.

Secondary objectives of the study

- To investigate the different operational best practices that are in use in selected global incubation centres.
- To assess how successfully best practices proposed by the Incubation Centre organisations are applied in these centres
- to investigate whether or not social networking would be of benefit to the liBC as a pipeline source
- To put forward international best practices that could be applied to the liBC at GMIT.

3.1 Research Methodology – A data based qualitative study

Initial investigative work has shown that individual centres were not willing to participate in the study. After a series of emails and telephone calls it became clear that the centres do not divulge their own operational experiences and practices to the public. It was not possible to get specific information on certain aspects of the liBC at GMIT for a number of reasons. Consequentially a full

investigation, on published data, was deemed the most appropriate study methodology to analyse the key determinants of best practice. A data based qualitative methodology was adapted for this study.

The issue of business incubation is a vast and wide subject. Incubation centres span the globe and are influenced by different factors, no matter where they are located. Research has shown that developing a quantitative methodology comparing, benchmarking or critiquing an incubation centre or a group of incubation centres is next to impossible. The primary objective of the study was to achieve a deep level of understanding and illustrate and identify international best practice in operations of selected global incubation centres.

While there would have been a lot of merit of having detailed interviews with incubation centre managers internationally, to try and get a more meaningful basis for comparison, the apparent unwillingness to divulge information on the running of individual centres, for privacy and operational reasons, would not allow this to happen.

Qualitative research excels at generating information that is very detailed. The data recovered in the research has shaped the content of the report. One of the limitations of analysing a company at any 'point in time' is that it only represents a 'point in time'. The success or operational practices of incubation centres should be assessed over a period of time, and the findings should relate to experiences and practices of centres over time. While qualitative research, by the very nature of what it does, generalises data, due to time constraints, and the very broad subject matter, generalisations, for this study, had to be made.

The data collected in the study was, as previously discussed quite 'raw'. Using selected findings from the data review identified general key best practice headings. While the decision to use the best practice headings was subjective, this approach was adapted to allow for general illustrations of best practice in operation to be shown, forming the basis of their potential application to the IiBC at GMIT.

3.1.1 Phase 1 Initial research (February to May 2010)

Research was carried out in a number of different phases. The initial phase was to determine what constituted best practice. It became evident, as this phase of research was being carried out, that there were a number of key variables that were prevalent in all best practice studies. It also became clear that there were deviations between what different countries and incubation centres deemed as what constituted best practice. International boundaries also played a part in the variations of best practice that were used in practice. Towards the end of phase 1 it also became evident that what constituted best practice in one centre, may not represent best practice in another.

3.1.2 Phase 2 Identification of best practice variables (May 2010 to June 2010).

Using the operational best practice headings set out by international studies, reports and by the organisations that represent the incubation centres, eight key operational best practice variables were identified, each containing a number of sub-variables. As the best practice variables were agreed by recognised authorities on operational best practice, it was concluded that these variables legitimately represented 'operational best practice'

3.1.3 Phase 3 Best practices in operation (July 2010 to August 2010)

The literature review highlighted different examples of best practice in operation in different global centres. The investigation and reporting of these centres as well as other centres featured in the literature review was the next phase of the study. Particular emphasis was placed on centres with University affiliations or centres that showed innovative or unique practices that may be applicable to the centre at the IIBC.

The findings and conclusions of the study are drawn from the data reviewed. The information, because of the lack of quantifiable and useable benchmark data, was qualitative in nature. Inferences had to be drawn from qualitative data to allow for some form of generalisations to be made.

The time frame for the completion of the report was 31st August 2010.

3.2.1 Why was the research worthwhile? How will this research add to the existing body of knowledge?

“In our highly competitive and rapidly changing global markets, success is hard earned, establishing a high performing team with strong technical, managerial and leadership skills is critical to being able to build new products that lead in the marketplace. This makes a genuine contribution to the advancement of Ireland and of Ireland in Europe”.
Jim O’Hara, General Manager, Intel Ireland and Vice President Technology Manufacturing Group

(IDA Ireland, 2009)

As we can see from the comments of Jim O’Hara, successful innovative policies have a major role to play in attracting some of the world’s top multinationals to Ireland. SMEs account for 97% of companies in Ireland (Finfacts, 2008). The fostering of this talent, and ultimately the impact of the centres on the economy is of great importance, locally, nationally, and internationally.

We now live in a Global economy. In a worldwide context the Irish Economy may not be large enough to sustain new business innovations for potentially large enterprises. Resources and skill pots are more international. Barriers to setting up business abroad are now not as difficult to pass as they were. Consequentially the success of Irish IiBCs has not only been judged by Irish standards but also by International standards.

The only comparisons that can be drawn are by innovation centres that have been established under the guidance of some of the blanket organisations. However, this does not provide any assistance when trying to compare and benchmark International IiBCs. This study has allowed for international best practice incubators to be identified. This best practice research highlights a number of areas that the IiBC can improve their operations by their application to their centre.

3.2.2 The scope for further studies

The level of data available assisted and hindered the study. While there is a lot of printed data in one format or another, most of the data was generalised. The decision was made to classify the study findings into a number of key areas. The research did highlight the lack of specific studies into the whole area of business incubation and best practices for the operation of these centres. This study dealt with operational best practice, in a very general way, but clearly there is scope for further studies to delve deeper into the operations and rationale for incubation centres, benchmarking and their ultimate existence.

3.3 Difficulties in achieving research objectives

Time was the biggest limiting factor for the completion of this study. The final research project was presented in September 2010. This also limited the scope of the study.

There are hundreds and thousands of articles, studies, reports and other published data on innovation and the need for innovation. Modern economies have adapted a pro-innovation approach to getting themselves out of the economic difficulties that they find themselves in at present. Given the level of detail and information available on innovation, and the time limitations present, it was not possible to put forward a theoretical basis for innovation. The study concentrated more on the actual operational practices and the rationale for their use, where applicable.

Best practice may be very relevant for some centres, but not relevant at all for others. The study identified a small number of centres that excel in individual or some areas of best practice implementation. As a result, an in-depth analysis of best practice theory and practice of the entire population of centres was not part of the study objectives. This research also focused on international centres to allow for as many international best practices to be highlighted, as was possible.

Numerous reports have been commissioned that have shown that innovation centres are not networking enough. Networking would allow the centres to share a vast array of information. Centres do not issue information about their own centres and prefer to keep incubation centre information private to themselves, to leverage their own position. The result of this is that there is limited information on individual centres. There is some more general information that has been released by organisations such as the NBIA and the UKBI.

As there are no agreed benchmark standards and rating system for incubation centres (though some centres are now trying to agree benchmark criteria in cluster environments) it was not possible to draw accurate conclusions between different centres locally and nationally. Drawing international comparisons and establishing benchmarks would be even more difficult. The objective of the study is to investigate international best practice and how best practice may be

applied to the IiBC at GMIT. It is not the objective of the study to criticise or comment on the management or operations of the IiBC.

There are a number of reasons for this.

- As previously stated, for operational reasons, centres prefer not to publish their 'modus operandi' and how the centre operates on a day-to-day basis. Jeopardising the integrity of the centre for this reason would be unwise and unfair to all the stakeholders in the centre.
- The study will be relying on public data and reports that may or may not reflect the actual operations of the centre. It would be inaccurate to assume that the reports accurately reflected the IiBC at GMIT or any other centre.
- Assuming that international best practice would work in the IiBC at GMIT would not be a safe assumption to make. Similarly assuming that practices at the IiBC are incorrect would also be inaccurate. Validating information would not be possible.
- Drawing incorrect conclusions may have very serious implications for the IiBC and its personnel.

One of the secondary objectives of the study is to provide recommendations to the IiBC on how International best practice may be applied to the IiBC at GMIT. Despite the success of the 'Innovation Centre' concept there is no data on how firms undertake the innovation process and what are best practices are for different centres. Best practice guidelines are available from the associations. But best practice guidelines are not compulsory.

Operational issues and variations between centres may not allow for best practice guidelines to be implemented. The selection and recruitment processes may also be influenced by macro-economic factors other than the innovation centres themselves. Success factors may vary from region to region and from country to country. It is not the objective of the study to assess the likelihood of success of international best practices in the IiBC.

Given time limitations, and that the study is on the incubation centres, and not on the individual companies, reasons for choosing (or not) incubation centres may not be controllable by the centres. Language and meanings of phrases and data in different countries may not be consistent, and assumptions may need to be drawn. Studies referred to in the study were only English language studies and reports.

The basis for comparison will be primarily qualitative and based on the principles of inference, as exact comparisons will not be available. Theoretical references will be drawn from, among others, the works of Schumpeter, Porter and Drucker. For IiBCs, the theoretical findings of experts should form the starting point for their targeting organisations. Targeting the correct market is critical to their success. Critical success factors need to be defined, not alone in practice but also in theory. Marketing and promotional success is very dependent on proper targeting. Macro and Micro economic factors, while they may be referenced in the report, will not be researched as part of this project.

Regulatory factors (and supports) may also influence the policies and practices of the centres. While some reference will be made to the financial limitations it will be outside the scope of the project to do a full regulatory comparison. Financial and logistical constraints will mean that most of the research will have to be carried out by telephone and email.

3.4 Target Population

The primary objective of the study is to investigate international operational best practice in incubation centres and to assess how they may be applied to the IiBC at GMIT. The sample incubation and innovation centres for the study was determined by the information available from centres and organisations and from different studies that have already being carried out with respect to best practice.

The population will also include the Associations (NBIA, UKBI and the EBN). As they are the experts in the field of innovation centres, their participation, as representatives of many other centres, will be of enormous benefit in achieving both primary and secondary objectives. There is insufficient current data

available to allow comparisons to be drawn and benchmarks to be established. Data from NBIA and the UKBI both provide guidelines and best practice on incubators. Innovation Centres, by the nature of their very being, do not disclose information on their operations. The target population was further identified by analysing reports and studies.

Chapter 4

Research Findings on Best Practice: Client Entrance and Exit Strategies, Corporate Governance, Finance & Self-sustainability and Leveraging Innovation

4.1 Client Entrance and Exit Strategies

4.1.1 Introduction:

The objective of most business incubators is to maximise their impact on the community in which they operate (Lender et al, 2007), (OECD, 1997). Having a detailed and well planned entrance strategy is an important factor in the success of incubation centres (NBIA, 2010). Innovation centres are lucky in the fact that they have the right to decide whom they do and whom they do not accept to the incubators. In the USA, Small Business Development Centres (ASBDC, 2010) are required by law to take in all companies that are looking for assistance. In effect, this means that companies are entitled to stay in the business development centre parks for as long as they are able to pay rent.

4.1.2 Incubation Centres - the right to choose new entrants:

Business incubators select their own criteria for accepting potential clients (Lumpkin & Ireland, 1988). According to the NBIA, some of the criteria used for selection include coachability, growth potential, viability, industry sector and stage of development (NBIA, 2010). Best practice incubators go one step further than just selection of clients - they enforce strict criteria for all client companies who remain in the centre.

4.1.3 Capabilities and limitations of a centre as a deciding factor

One of the first stages of client selection has to revolve around the capabilities and the limitations of the incubation centre (Kirkpatrick (New Zealand), 2010), (Pankaj et al (India), 2003), (Dumains et al, 2008). Being able to match the resources of the centre to the needs of new companies offers the most potential for success of the incubation centre.

Wright, in his paper, explored the *incubation* strategies for spinning out new *companies* used by European Research Institutions. He found that different incubation centres and different incubation models have different resource competencies (Wright et al, 2005). Incubators want to be as successful as possible in the achievement of their targets and goals. Being able to target their limited resources into the companies, that they feel, are truly committed to the success of their company, while being complemented and assisted by the available resources of the company, is critical to their success.

4.1.4 Diverse client base

Having a diverse client base is also critical for a number of reasons. One of the main reasons for diverse companies is to ensure that companies are not in direct competition with each other. The other reason is that communities will be better served by a cross section of business. It also minimises the risk of total failure of the centre if some form of creative destruction arises and gives the incubation company limited chances of success.

In a study of business incubators in the UK, an examination of university incubators found that they were more successful when they had a complex and dynamic client base (Murphy et al, 2005). Hytti et al, in their study on why companies succeed in innovation centres, found that incubatees are different in age, size, industry and phase of development (Hytti et al, 2007).

4.1.5 Innovation in selection:

Some centres have adapted unique and innovative ways of selecting companies for their centres. Innovacorp in Canada have an annual competition to determine what companies will be allowed to enter their centre. The competition, called I-3 (idea/innovation/implementation), is not a business plan writing competition but one that Innovacorp uses to assess what company has the best business idea (Hessian, 2007).

The Perdue Institute adapts a different approach and runs a number of student days for senior and junior students to foster the idea of innovation in the students (Hosea, 2009). The scheme has a logo - 'talent driving prosperity'. The result

has been that students with an idea are given some 'virtual vouchers' for use in the business incubation centre to advance any ideas they have. The centre, depending on the project and the student, can then put the student forward for state funding to realise the student's business proposition, in their centre.

4.1.6 Selection Criteria

Some centres have very detailed criteria where demand is at a premium, other centres are less formal in their selection process where excess capacity exists. Regardless of what the state of demand for the centre is, there are a few basic criteria that should be included in the selection criteria.

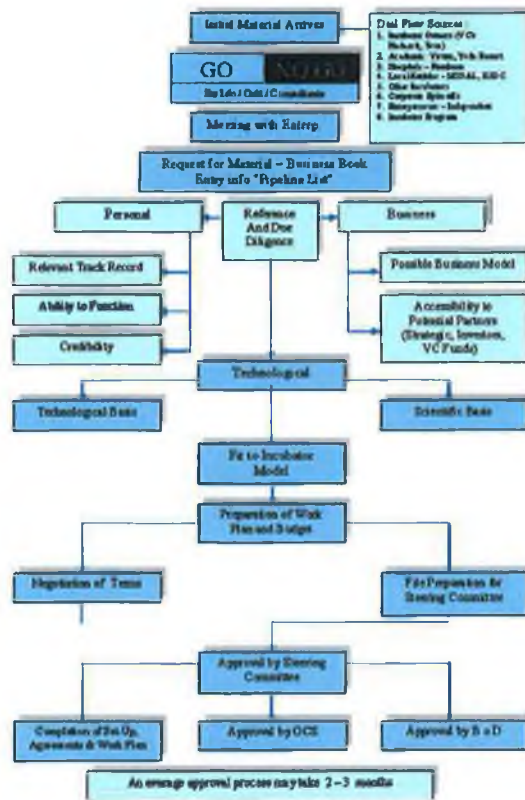
- They should ensure that the companies in the center are diverse to avoid them having to compete directly and to ensure that as much synergy as possible can be created among client companies (Yammal et al- World Bank, 2009).
- Ventures should be for-profit ventures unless the terms and reference of the centre are to promote non-profit ventures (Power & Hill, 2010).
- The incubation company should be suited to the nature of the incubator and should be in the early stage of their development, usually within 2 years of starting is a good guide (National Endowment for Science, Technology and the Arts, 2008).
- The new company should, ideally, be able to make use of the affiliations of the centre, such as attached universities, research facilities and any other strategic partnerships that the incubation centre has. (Banaras Hindu University, 2008).
- The new companies should be viable and financially sound and be able to pay fees and charges to the incubator while in incubation (Wolfe 2001).

- As with all new business ideas, they should have the management skills necessary to deal with the selection and operational aspects of the new business. They should also be willing to listen to the advice of the personnel at the centre (Cammarata, 2003).
- There must be a reasonable expectation that the company should provide an economic benefit to the local economy through job and/or service creation (Johnsrud, 2002).

Some of the private centres adapt different ways of evaluating selection criteria. Innovacorp (Innovacorp, 2007) have a five-stage selection criteria in use. While they classify the criteria into five distinct categories (Stage of development, people, barrier, market and fundability) the overall objective is still the same - selecting better candidates for the centre.

Meytav incubator in Israel have also a five-stage selection process - but their process is very different to the other private centre of Innovacorp. Their five-stage process uses the assistance of outside agencies (some paid as consultants and others as volunteers) to determine suitability. Their process includes the following phases and is shown diagrammatically as follows:

- Go or no-go
- Initial meeting
- References and due diligence
- Work plan
- Approval by board



(Meytavi University, 2010)

4.1.7 Needs of new incubees needs to be assessed:

Another of the important factors that must be considered by incubators is the needs of the potential company. Most new companies do not actually know what they need, or in what ways the innovation centre can assist them.

4.1.8 Self-assessment criteria:

Another important factor in the client assessment procedure is self-assessment. New companies must assess where the company fits in in the context of the larger business environment and how it compares to other companies and other customers. This can be used as a very valuable tool by incubation centres in deciding what companies should be accepted into the centre. This analysis can also serve as an important tool when looking for investors, and convincing them that the business is worthwhile and that any investment will be worthwhile in the long run.

4.1.9 Evaluating a Company's external environment:

In their book *Crafting and Executing Strategy*; Thompson, Strickland and Gamble (Thompson et al, 2009), they outline key questions should be answered in order to strategically evaluate a company's external environment

Stage 1

What are the industry's dominant economic features? All industries are different. They can differ quite substantially with respect to market size, growth rate, the number and size of buyers and sellers and the scope of competition and rivalry to name but a few factors.

One of the best tools to use to assess these factors was devised by Michael Porter (Porter, 2008). His tool (known as Porter's 5 forces model) holds that the state of competition in an industry is a composite of competitive pressures operating in five areas of the overall market (Thompson et al, 2009, page 60).

Stage 2

The next stage is for companies to assess what the driving forces in the industry are. Companies must assess what are the main catalysts for change in their industry? The most common driving forces include changes in the long-term industry growth rate, globalization of competition in the industry, emerging Internet capabilities and applications, changes in buyer composition, product innovation, technological change and manufacturing process innovation.

Identifying the forces is not enough on its own. More importantly companies must decide what impact these forces are having on the industry and whether or not they are making the industry more or less attractive to be operating in.

Stage 3

Deciding the relative strength of competitors in the market should be the next stage for companies. Strategic group maps are an excellent tool in this process and allow companies to cluster and rate competitors that have similar market

approaches and market positions (Forgang, 2001- page 62). The end result of strategic group mapping is to reveal which competitors are in fact close or distant competitors to you.

Stage 4

When the strategic group map is completed it will help companies to identify what potential strategies that companies are likely to make next, and allow companies to act to counteract their next move.

Stage 5

The penultimate stage is to determine what are the critical industry success factors. If a company can leverage the success factors better than its competitors it has a better chance of success.

Stage 6

The final stage is to assess, after reviewing all the reserach that has been completed, whether or not the industry is going to remain profitable and whether or not there is going to be sufficient profits in the industry to sustain the company long term.

(Thompson et al, 2009)

4.1.10 Levels of detail:

How much information you need to provide in this section depends on several things: whether your company is local or national or even international, whether you are looking for a loan or investors in your company, and whether you are looking for a lot or a small amount of money.

For companies that are just looking for a small amount of assistance, whether it is financial or otherwise, you may only need to do a small amount of research and industry analysis. Simpler analytical tools such as a SWOT analysis may even suffice in these circumstances. A SWOT analysis is a simple framework

that a company can use to assess its strengths, weaknesses, opportunities and threats (Ferrell and Hartline, 2008, page 119).



Sample SWOT chart for a Library

Companies with a long term, fast growth strategy in mind will need to prepare a lot of information to justify their case for investment.

Smaller businesses, at both pre-incubation and at incubation stage should be able to do the research themselves. However, they may also be able to use the resources of the centre or affiliations with colleges and universities to assist them in the process.

4.1.11 Monitoring Client progress

One of the most important benefits of carrying out an analysis of the company and the position of the company in the market-place is that, if updated, it can be used as a tool to assess how the firm has evolved over time and whether its corporate position is improving or deteriorating over time.

Taking an objective view of the position of their client progress should be an integral part of the job of the incubation. Companies may have gone off-track and have little chance of graduation. On the other hand, companies may be progressing far better than planned (may be down to the centre itself) and they

may need less or different assistance as their development had progressed faster than planned.

There are countless numbers of criteria that can be used as a basis for assessing the position of a company. Industry and company analysis tests are one good measure. However, other checklists are used throughout the incubation world as basis of assessment. The European Innovation Network advises companies to carry out their own self-assessment (Innovation Europe, 2009). They offer members a self-assessment tool to assess their own position before they go looking for funding from the EU innovation fund.

There are several entrepreneur assessment tools available. While no tool can accurately predict your success as an entrepreneur, or the success of your company, they can be quite valuable in helping you understand your company's position. (Georgia State University, 2010), (The Business Development Bank of Canada, 2010).

Georgia State University places a lot of emphasis on the actual 'entrepreneur' and their own personal attributes. The NBIA however uses a much broader self-assessment checklist, such as the one in use at the Oregon Technology Business Center, as their model of best practice (NBIA, 2010, page 77).

The main criteria headings include

- Opportunities
- Market
- Management
- Products/Services
- Competition
- Business Objectives and Strategies
- Marketing and Sales Plan
- Finance
- Risk
- Funding/Exit strategy

(NBIA, 2010, page 77)

Regardless of who carries out the assessment (the incubee or the incubation personnel) a marking scheme for the items should be agreed. The San Juan College Enterprise Centre use a points marking scheme. The points for each of their assessment methods are agreed between the centre and the client. They reward the clients with the highest points by giving them awards and 'vouchers' to be used in the centre. On the other hand, companies who do not meet minimum points' requirements are placed on probation. Failure to improve results will result in ultimate expulsion from the incubation centre.

4.1.12 Graduation process

4.1.12.1 Is there a right time for companies to graduate?

But the biggest issue is that there are no accepted criteria globally to determine when the best time for companies to leave the centre is. Lumpkin and Ireland (Lumpkin & Ireland, 1988) could not agree on the correct stage for exit of a client company in Canada, in their 1988 study. All those who do not meet the criteria are removed from the centre to ensure that there are no wasted resources of the centre being pumped into companies that are no longer suitable for incubation.

One study found that these companies are more likely to succeed if they do not remain in the centre for more than two years (Hytti et al, 2007). Their findings go on to say that all incubators should enforce a maximum two-year threshold on companies in the centre.

The primary objective of a majority of incubation centres is to create wealth for the local areas in which they operate through job creation, employment and tax revenue (OECD, 1997, pages 2 - 7). To do this incubators add value to the services and project ideas of its incubees. When the time comes that the incubator cannot add sufficient value to its clients, there must be an agreed graduation policy from the incubators (Apache Software Corporation, 2010).

Virtually all companies are different, at different stages of development and have a different position in the marketplace (Thompson et al, 2009). Therefore, there is no magic formula or time frame for when companies will reach their corporate maturity. While the recommendation is that companies should remain in incubation for no more than 33 months on average (Knopp, 2007), the reality is that some companies are going to need more or less than 33 months before graduation. All centres should adapt their policies to suit their mission and objectives, as well as the needs of their clients.

4.1.13 The importance of meeting targets:

For example the technology centre in Birnin-Kebbi, Nigeria, does not have a stated graduation time, however it does rely on the incubated company to meet certain guidelines and targets, which ultimately result in graduation (Nuhu, 2010). The Ashfield Business Park in the UK, on the other hand, encourages fast graduation to encourage new and emerging business (Ashfield Business Park, 2010). While it is good to move clients on as fast as is feasibly possible, time alone is not a good graduation criteria.

We have discussed in detail the different methods that incubation companies can use to evaluate their incubees. These criteria should all form the basis of graduation policy. Other factors may exist such as the company growing too big for the centre and the company having too many employees may also play a key role in the graduation process.

4.1.14 Communicating graduation policy

It is essential that this graduation policy is communicated regularly to its clients, so that they are fully aware of their position in the centre, and whether or not it is time to go looking for an alternative location to operate in. Some centres have even gone down the line of publishing graduation booklets and distribute them to their tenants when they enter the centre (Adams, 2007), (D'Agostino, 2008).

A graduation policy is also there to protect the centre when some of its clients fail or stagnate. Resources of the centre should not be tied up with such companies and they should have to leave the centre.

Corporate Governance

4.2 Introduction

Innovation does not just stop at new product development as there are many other forms of innovation (Harvard Business Press, 2003), (Tushman, 2004), (Tidd and Bessant, 2008). The problem for management is the management of the different sources of innovation. Without a corporate direction companies cannot operate and manage their strategic direction in an orderly and regulated manner.

Corporate direction is determined by its mission and strategic plan, which, much in turn, operates within the parameters of corporate governance regulations. Corporate governance legislation is the regulatory framework that ensures that the company acts in a responsible and ethically responsible manner (Smyth, 2010), (Appelby, 2010) and it is the Board of Directors of a company that is responsible for the governance of the company (Corporate Governance USA, 2008).

4.2.1 Corporate Governance and Innovation

Corporate Governance for innovation can be best defined '*as a system of mechanisms to align goals, allocate resources, and assign decision-making authority for innovation, both inside the company and with external parties*' (Innovationgovernance.net, 2010) (see appendix 3). A clearly defined vision is essential for incubators for a number of reasons. One of the main reasons is to assist incubators with their corporate governance obligations. Once their goals and objectives are aligned with, and incorporate governance regulations, centres will find it easier to meet their obligations. Without a clearly identified vision, mission and strategic plan incubation centres cannot survive (NBIA, 2010).

As innovation is constantly evolving, the way we think about innovation is also evolving. So should the way we think about governing innovation as well. New codes of practice have been drawn up in most countries around the world to

control how companies operate. In the UK there is a combined code of corporate governance.

4.2.2 Corporate Governance and Sarbanes Oxley

In the US the situation is a bit more complex. However, in the aftermath of the collapse of Enron, the Sarbanes Oxley Act of 2002 was introduced. This act had very serious implications for officers of companies. Compliance with regulations became mandatory (IT Governance, 2009). The three most important sections of the Act are outlined below

Sarbanes Oxley Act Sections 302, 404, 409

	302	404	409
Required:	<ul style="list-style-type: none"> · Quarterly certification of financial reports · Disclosure of all known control deficiencies · Disclose acts of fraud 	<ul style="list-style-type: none"> · Management annually certify internal controls · Independent accountant must attest report · Quarterly change reviews 	<ul style="list-style-type: none"> · Monitor operational risks · Material event reporting · ‘Real-time’ implications - 4 business days for report to be filed
Responsible:	<ul style="list-style-type: none"> · CEO · CFO 	<ul style="list-style-type: none"> · Management · Independent auditor 	<ul style="list-style-type: none"> · Management · Independent auditor

(SEC , 2010)

Regardless of the country of operation, the purpose of these codes of best practice is to increase transparency and accountability in the manner in which companies are governed.

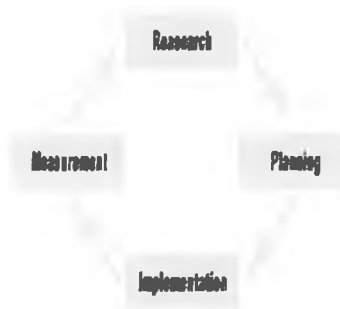
4.2.3 Codes of Corporate Governance Best Practice in Ireland

In December 1999, the Combined Codes of Corporate Governance were adopted by the Irish Stock Exchange which annexed the Code to its Listing Requirements. Listed companies must now report on how they implement codes of best practice. They must also explain why they did deviate from the code, should deviations occur (Appelby, 2010). Stakeholders can then decide what action should be taken if such deviations occur. The public sector has also its own financial compliance guidelines that must be adhered to. They are treated in the same way as all the other codes (Department of Finance, 2010) and breach of the codes can have very serious implications.

4.2.4 Mission statement best practice:

The OECD in a study on the Governance of innovation centers found that there was a real need for flexibility in centers (OECD 2010) (see appendix 4). To ensure that the incubation centre is compliant it is incumbent on the board to clearly define the mission of the incubator and the role it has. But this mission must be flexible to allow for changes in the business environment.

By identifying the role of the incubator, the centre is more likely to gain support from all stakeholders of the centre. Furthermore the board should ensure that there are quantifiable objectives to ensure that the mission can be achieved (Entrepreneur Zest, 2010). Entrepreneur Zest use measurement as one of the important variables in their business strategy cycle.



(Entrepreneur Zest, 2010)

The importance of a clearly defined mission statement for incubation centres is the same as it is for normal companies. Often the mission statement is developed

as part of the feasibility study for the centre (Debiaso, 2007), (European Commission, 2008). Well written mission statements also provide criteria that can be used when deciding whether or not the objectives of the centre are being achieved (International Development Research Centre, 2006).

This centre goes on to identify some of the key roles of the key stakeholders of the centre and uses this as a basis to assess whether or not the mission statement is being satisfied.

Co-management Plan and Agreement.	
Stakeholder	Role
Fisher/fisher organization	<ul style="list-style-type: none"> • Participation in negotiation and planning • Provide input into formulation of goals and objectives • Provide information and feedback on plan • Mission and vision setting • Conduct small group discussions • Participate in co-management organization • Build community consensus
Other stakeholders	<ul style="list-style-type: none"> • Participation in negotiation and planning • Provide information and feedback on process
Government	<ul style="list-style-type: none"> • Provide basic policies, legal and planning framework • Participate in negotiation and planning activities • Assist in identifying revenue sources • Participate in co-management organization • Conduct community meeting • Clarify implementing responsibilities
External agent/CO	<ul style="list-style-type: none"> • Facilitate process of negotiation and planning • Provide technical assistance and training • Ensure participation of organizations and other stakeholders • Convene stakeholders and groups for planning • Assist in establishing co-management organization • Train in negotiation and planning processes

- Assist in mission and vision setting
- Build consensus

(International Development Research Centre, 2006)

4.2.5 The need to constantly update the mission statement

As stated innovation changes, so can the mission of the centre over time. It is important to revise the mission statement in due course to ensure that the company can strive to achieve its current implied mission rather than its previous stated one. Following a study carried out by the OECD and National Academy Press, they concluded that one of the reasons for the failure of the public health system in America was because of the failure of Government to clearly state the mission of the service (National Academy Press, 1988). Innovation centres should avoid this and ensure that they don't fail because of a failure to clearly state their mission.

4.2.6 Strategic and business plans

We have already discussed the importance of a mission statement. A strategic plan, which in turn should result in the drawing up of a business plan, should be the next stage in ensuring that governance of the organisation is not compromised. The Certified General Accountants of Ontario in their publication 'Grass Root Governance: Governance and the Non-profit Sector', state in their mission statement that they want all their members to ensure that their clients have the highest 'performance and disciplinary standards', (The Certified General Accountants of Ontario, 2010). They feel it is their duty to put whatever practices and procedures in place to ensure that all their clients are compliant with whatever voluntary and non-voluntary rules and regulations there are. Strategic plans are one of their vehicles for achieving this.

4.2.7 Strategic & Business Plans and Finance:

Before a business plan can be implemented or even drawn up, the financing model of the centre has to be agreed. Is the centre to be self-sustaining or are the costs going to be covered by other sources? The European Business and Innovation Centre Network see the contribution to the local economy as a key objective and not necessarily self-sustainability (European Business Network, 2010). However, studies in Australia have found that the most successful centres are self-financing (OECD- Business Incubation in Australia, 1999). The result is that different centres see their self-sustainability in very different lights. Once the financing model has been agreed it is important that all centres sit down and do business plans.

4.2.8 The importance of a well done plan:

As with all businesses the importance of realistic, well written business plans cannot be understated (Igartua et al, 2010). Updating the plan at regular intervals, in particular with respect to finances and client services, can allow for better management decisions.

Innovacorp in Canada rewrite their business plans every 4 years, and base their plans on the findings of a 4-month management review with all their client managers (MacDonald, 2010). Innovacorp helps high potential early stage companies commercialize their technologies and succeed in the global marketplace.

The William M. Factory Small Business incubator in Washington advises that companies rewrite their business plan every 5 years, with their finance model being done annually, and narrative updates being included as often as necessary (Strege, 2010).

Good business plans may also enable the centres to seek additional financing from outside investors (Angels Corner private equity investors - Silicon Valley, 2009), (Suite 101- E Commerce investors, 2009). Whether political or private funding is being sought, being able to show clear business plans, objectives and working tasks are essential.

There is also a lot that can be learned by the incubation centres from the business plans of target companies. Silicon Valley has taken this to a new level promoting and sponsoring business plan competitions to stimulate innovation (Dodt et al, 1999).

4.2.9 Best practice contents of a business plan

Business plans should include some or all of the following headings:-

- Mission and objectives
- Client focus
- Organisational structure
- Legal structure
- Board composition
- Services and programs to clients
- Marketing and PR plan
- Client application, selection and graduation process
- Staffing (and outside assistance) plan
- Facility services
- Budgets

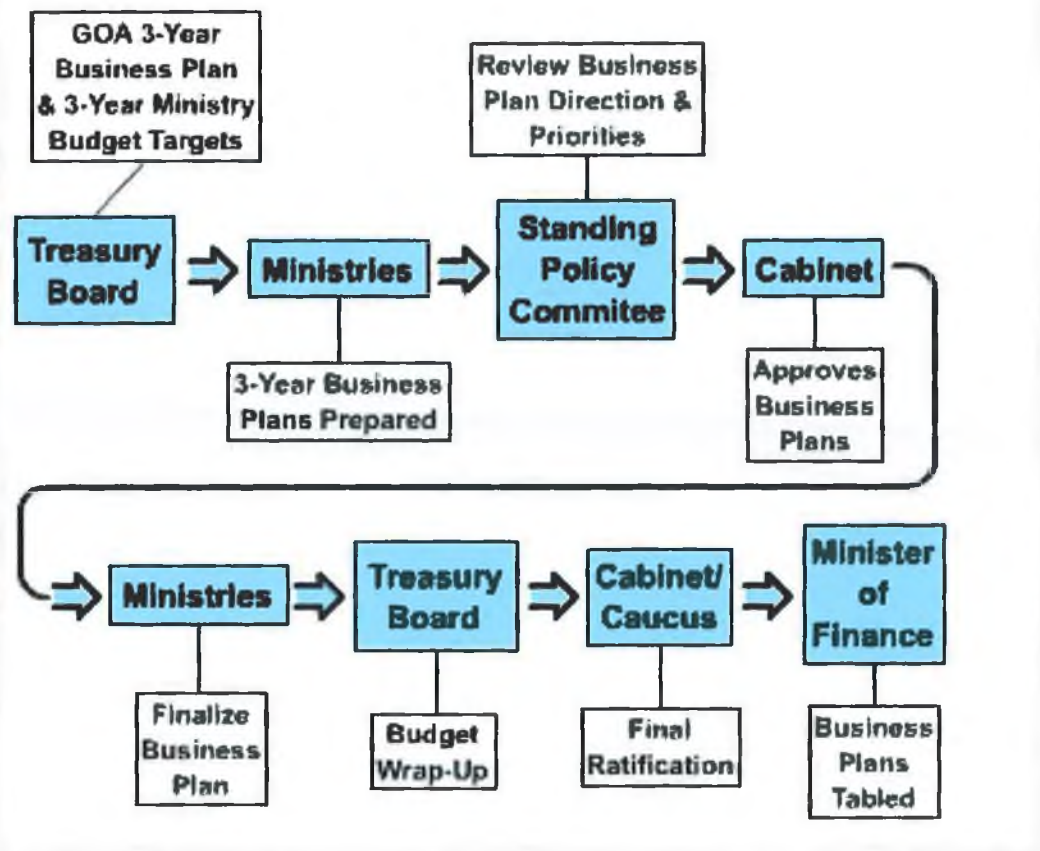
(NBIA, 2010), (Tidshaw, 2009)

4.2.10 Plans should be relevant to the size and nature of the centre

Business plans can be very complex documents for some organisations or can be very simple for others (*Bplans.com*, 2010). If we take an example of a state body in Canada the procedure for writing a business plan for the Treasury department had to go through the following steps before it could, in some way, be deciphered into a useable document.

Treasury Board Fiscal & Ministry Business Plan Decision Model

The Treasury Board, after discussing issues with the Minister, sets the 3-year financial targets for Ministry business plans, within the fiscal guidelines approved by Cabinet and Caucus. The Minister takes the draft business plan to the appropriate Standing Policy Committee for review, and the Committee's recommendations are sent to Cabinet for approval. Business plans are finalized by Ministries and consolidated into the Government business plan by Treasury Board. Cabinet and Caucus give overall ratification to the fiscal plan and Government business plan.



(Model and text taken directly from the Alberta Online Encyclopedia, 2009)

The most important element of the plan is that the level of detail is relevant to the size, nature and mission of the centre. The Northeast Indiana Innovation centre has adapted a one-page plan approach (Dave Craine - The One Page Strategic Plan, 2009). All the relevant information is contained on one page to ensure that

all stakeholders and personnel would not become bogged down with a huge amount of data that nobody would read. While, together with Fort Wayne and Perdue university, they have a more comprehensive document entitled 'Strategies for Excellence 2008-2014 (IPFU Strategies for Excellence 2008-2014, 2007). According to Karl lePan (centre director) the single page approach has been very successful in keeping all stakeholders informed.

4.2.11 Boards of Directors.

All directors of centers have very important roles to play in the governance of the centre. Not alone are they bound by law to ensure that the governance legislation of the centre is adhered to, they have a meriad of other roles that they must fulfil. The roles can include recruitment of key personnel, plan development, marketing, support of incubator companies, to name but a few. (NBIA, 2010).

Some centres have very large boards of up to 30 members (Innovation Depot, 2000) while others have much smaller boards (William M Factory 2010) to assist them in their roles. While there is no correct or optimum level, the increased assistance from a wide and varied board of directors can be of enormous benefit to the centre and their clients. Other centres operate with smaller boards, but have a number of sub-advisory boards (Louisiana Advisory Board, 2008) to assist the centre in fulfilling their mission objectives.

Taking the time to manage the relationship with all the stakeholders of an incubation centre is critical to the success of the centre. But the message they communicate is equally important. If the centre does not know where it is going the chances of success are limited. Strategic and business plans, well and conscisely written, should form the basis for all communication within the centre. By doing this the centre will not alone increase its chances of success, but ensure that all regulations are adhered to in an orderly and controlled manner.

Sustainability and Sources of Income:

4.3.1 Introduction

With the collapse of many of the world's economies there is a consensus that the sustainability of all investment projects must be assessed (The United Nations, 2004). However, there is a risk that the over-reliance on financial figures may get in the way of other corporate obligations (Elzen et Al, 2004). National organisations and institutes have to redefine their corporate responsibilities (The U.N. / Stiftung, 2010).

While a lot of success has been made in the whole area of environmental awareness and sustainability, other factors also exist. Innovation, and the transition towards innovative companies, is now a major part of corporate responsibility. India is the fourth largest economy in the world and now sees the importance of innovation in its long term plan for survival (East Asian Bureau of Economic Research, 2009). This sense of importance has also been mirrored throughout Europe (Ciolos, 2010) (The European Commission on Environment, 2009) and in Ireland (The IDA, 2010).

The World's Largest Economies

Ranking	Country	Approximate GDP- Purchasing Power Parity
1	United States of America	\$13,860,000,000,000
2	China	\$7,043,000,000,000
3	Japan	\$4,305,000,000,000
4	India	\$2,965,000,000,000
5	Germany	\$2,833,000,000,000
6	United Kingdom	\$2,147,000,000,000
7	Russia	\$2,076,000,000,000
8	France	\$2,067,000,000,000

9	Brazil	\$1,838,000,000,000
10	Italy	\$1,800,000,000,000

(Economy Watch, 2010)

Achieving self-sustainability is essential to an incubation centre's long term survival (NBIA, 2010). The NBIA study found that when incubation centres can reach self-sustainability they are capable of focusing on improving services on offer and implementing new ideas. The alternative is to constantly worry about where the short, medium and long term funding is going to come from.

4.3.2 Reasons why centres are not self-financing or self-sufficient

There are a number of reasons why incubators are not self financing. If we look at the *raison d'être* of incubation centres, the main reason they are in existence is to offer advice. They provide advice to clients who are generally very small in size and have little or no cash. By virtue of the costs associated with the centres, regardless of the labour costs of these centres, it would appear that it is nearly impossible to break even if a majority of the income is coming from these clients.

The market for incubation centres is dominated by subsidies of one form or another. Subsidies and funding allow centres to become established. In the case of the IiBC at GMIT, Enterprise Ireland provided a lot of assistance to allow the centre to open. This assistance has now run out and is no longer available to the centre (Mc Court, 2010). This withdrawal of assistance leaves centres short of finance and looking for alternative revenue sources. Incubators should look at exit strategies for themselves to deal with the lack of financial assistance.

This trend of supports falling seems destined to continue. In a report prepared for Lord Mandelson in the UK on the '*Current and future role of technology centres in the UK*' Dr Herman Hausser concluded that supports should only be for elite centres (Hausser, 2008). These elite centres were described as those that would

exploit only the most promising new technologies to give the UK most competitive advantage on the world stage.

The Bid-network for Entrepreneurs has gone a step further and concluded that centres get so much financial assistance at the start-up stage of their centre that they are not used to fighting for their survival (Saunders, 2010). This simplistic view does not appear to take into account the mission and objective of the individual centres and the rationale for their establishment. However, it is a point worth considering when assessing the long term viability of a centre.

4.3.3 The Irony of self-sustainability

It is somewhat ironic that incubators use, as one of their selection criteria, self-sustainability and economic viability, and at the same time cannot be viable entities in their own right. According to the NBIA (NBIA 2010), incubation units should be dynamic models or sustainable efficient business operations. In Australia, the most successful incubations are all self-financing (OECD-Business Incubation in Australia, 1999).

Incubation centres must be able to quantify the value of their services to all stakeholders. Extensive ongoing market research is an essential part of the process. These 'quantifiable values' must be able to be translated in revenues and guaranteed revenue sources (see section mission statement). Without this planning realistic budgets will not be possible.

4.3.4 Sources of Income empirical evidence:

A 'State of the Business Incubation industry report', commissioned by the NBIA, in 2006, found that 59% of the revenue that Incubation centres generate is from rent and client fees. (Knopp, 2007). Incubation centres must be able to budget the expected demand for their services and the potential rents that can be achieved from the demand for space. In Croatia, the greatest concern for incubation centre managers was the perceived lack of financial stability for the centres (Pfeifer et al, 2006). This is primarily because of the the lack of reliable financial information that can be used for budgetary purposes. For most of the modern

world economies, with more accurate financial reporting procedures, reliability should not be so much of an issue.

4.3.5 The risk of below cost rents:

One of the greatest mistakes that can be made by incubation centres is that below cost rents is charged. In the short term the centre may succeed in attracting new companies to rent. However, in the long term this may be unsustainable unless the shortfall can be met by other revenue sources. Where low cost entry rates are charged other financing sources must be available to centres.

4.3.6 Potential Revenue Sources:

Sources of funding can be categorised in many different ways. They can be broken down into very simplistic headings such as core funding, research funding, and private sector research funding (Hausser, 2008). Regardless of how one categorises the available sources of income, the potential for income depends entirely on the individual centres, and their position with respect to alternative revenue streams.

Potential revenue sources, according to Saunders (USA) include

- Fees charged for courses or sale of books.
- Rental fees for office space.
- Fees charged for individual consulting, coaching, and mentoring of the entrepreneur.
- Technical assistance (TA or advice) charged in the cost of financing. The TA cost is a fee charged on top of interest, principal or dividend payments. E.g. Business Partners International.
- Revenues from financing (interest, dividends)
- Revenues from carried-interests or equity stakes (shares) in the SMEs helped.
- Management fee (1-4%) over a fund managed to finance SMEs

- Advertising revenues from e.g. advertising to your SMEs the services of relevant suppliers
- Fee per result payments (e.g. Per SME formally registered) by a government agency.
- The result of the training programme can be sold to third parties. E.g. Agricultural vocational training schools in Paraguay sell their produce and thereby fully cover the cost of operations. (www.fundacionparaguaya.org)
- Membership fees - from SMEs;
- Membership fees from the business community and others;
- 'Donations' of waived interest on savings from savings account holders of a befriended bank;
- 'Donations' of waived dividend payouts of mutual fund holders of a befriended fund manager;
- A trust-fund endowment of a wealthy ex-entrepreneur;
- Start an Entrepreneur-Lottery from which the net-revenues are split into operating costs and fund for SME finance.
- Buddy-business-model. I.e. a sister business's earnings are used to cover the cost of operating the SME centre.

(Saunders, 2010)

One way that centres can assess the costs charged is to consider the market value of their services and assess what price new potential clients will be willing to pay for the services, and what the cost of offering the services are. Charging for services can only work if new start-ups can pay for the services. Where little assistance is needed, low, flat rate rent may be cost advantageous. However, where a lot of assistance is needed, it may not be economically or feasibly possible for centres to offer the services without compensation.

4.3.7 Funding and Politics

Politically the potential tax revenues, employment and benefits to the economy at large may be important investment factors. Politics also plays a key role in the selection of target companies. Where political assistance has been sought, political factors do influence the tactics and operations of incubation centres (Dyer, 1988). The NBIA recommend that while political figures should be kept informed about the success and needs of the centre, getting them involved in the operations of the centre can be unwise (NBIA, 2010). For some institutions there is no choice. Politicians feel that they have the right to sit on boards if they have managed to secure funding for the centre, in any form.

In George Mason University, economic students are being taught that the involvement of political figures in business should be treated with some suspicion (Hanson, 2009). Given the raft of criticism that politicians have received all over the globe this seems like a reasonable exercise in education. The NBIA president (Atkins 2009) has gone even further to say that she has seen centres close down because of the interference it received from different political figures.

However, for some institutions there is no choice. Politicians feel that they have the right to sit on boards if they have managed to secure funding for the centre, in any form. Some centres, such as the North East Indiana Innovation Centre, have managed to control this interference while having political involvement. Indeed the UKBI openly show their pride in working with political groups (Drapier, 2010).

Regardless of the level of political involvement, it is the management of the interference that is the key issue for centres. Once expectations of politicians, as is the case for all stakeholders, can be calibrated to what the centre can accomplish, there should be no problem for the centre. Furthermore, for some incubators they could not survive without subsidies and grants of some form or another.

4.3.8 Subsidies and Incubation Centres

The State of the Business Incubation Industry survey also found that 32% of incubators said that they received no subsidies but only 23% of the companies surveyed said that they would go out of business should they receive no subsidies (Knopp, 2007). Subsidies are very much under the control of the political forces in operation in certain areas of the globe or individual countries, and generally phase out over a number of years.

4.3.9 Minority groups subsidies

There is also the opportunity of getting state funding for assisting minority groups in a centre. The reason that governments are willing to provide such funding is that incubation literature in Ireland suggests that with support from innovation centres, minority groups appear have a greater chance of success (Treanor et al, 2009). Similar assistance is available in the UK through the UK resource centre for women (www.theukrc.org) and other similar groups. This also holds true for new companies run by minority people - being part of an incubation centre increases the chance of success.

4.3.10 Partnerships for funding alternatives

One way that incubators can limit the effect of falling subsidies is to take on project specific corporate and state partners. In the Netherlands, ESA's new Business Incubation Centre was recently launched in Noordwijk. Over the next four years grants and supports to the value of €50,000 will be offered to companies that bring 'space down to earth'.

This funding initiative highlights two main funding issues. The first is that the funding is only available to space related projects - decided by the politics of the EU. The second issue is that the centre took on a number of corporate partners for the project to ensure that long term funding was available (The European Space Agency, 2010). The ESA initiative clearly shows the viability of public, private partnerships (in the form of direct funding of sponsorship agreements).

4.3.11 Equity shareholdings in client companies

Equity stakes in companies may also provide medium and long term rewards, but by the nature of start-up companies the benefits may not be seen for some time. Equity shareholdings may offer potential returns in future, but for planning purposes there is generally no guarantee of the value of the investment - which may even result in no return.

There may also a lot of legal issues with respect to the duration of the equity stake and the role of the incubation centre in the long term planning of the company. Any operation that is outside the core goals and objectives of the incubation centre may jeopardise the running of a centre. Time and effort may have to be spent on graduated incubated companies.

There is also the distinct possibility that the new start-up will not succeed. While there are a number of critical high growth industries (particularly in the area of technology) the economic outlook for industry is not great. Grant Thornton forecast that the rate of failure is growing much faster than people realise and estimate that the failure rate will be up 1.4% in 2010 (Grant Thornton, 2010)

Leveraging innovation

4.4.1 Introduction

As the emergence of new technologies in a global economy has increased in importance, so has the investment in R&D, to improve competitiveness (OECD, 2008). Knowledge based economies are seen as the way forward for economic development (Interdepartmental committee on science, technology and innovation, 2004), (Dahlman et al, 2001), (Leydesdorff, 2006). Knowledge and technological advances are seen as essential ingredients in order to allow companies to respond to the fast changing global economy and market place.

Fortifying and promoting new technology ventures are necessary for companies to survive in the market place. Incubation is one of the best ways of doing this. In the past, investment in large R&D projects was seen as the way forward. Now, given the current economic climate, and the desire to promote home-grown entrepreneurial talent, small is now 'more beautiful' (Gaynor et al- Ernest & Young, 2009). The promotion of SMEs is now becoming an essential element in the development of technological innovation.

Technology incubators are now beginning to play their part in the technological world. Their output is continuing to add value and contribute to the world of technological development. Small companies, fighting more for their survival, are more ready to adapt to the changing industrial and technological needs of a modern economy.

Christensen, a Harvard Business School professor, coined the phrase 'disruptive innovation' where a new market entrant, or a variation of a current market item, revolutionises market through in terms of price or quality (Christensen et al, 2008). Smaller companies, whose owners are far more reliant on the survival of the company can react to disruptive innovations, and alter their products to create their own 'disruptive innovation'.

4.4.2 High Performance Start-Ups (HPSUs)

In Ireland, Enterprise Ireland has invested in over 800 start-up companies since 1989, giving employment to over 14,000 people and generating a return of over €1 billion in this period (Enterprise Ireland, 2010). In 2009 alone they invested over €21 million in 73 high potential start-up companies across a wide range of sectors. These HPSU companies are expected to create over 900 jobs and generate revenues of over €600 million in the next three years. So the importance of these new companies to the Irish economy is great. Enterprise Ireland recognises that, without support and assistance, these small companies will not be able to leverage their true innovative capabilities and turn business ideas into real value added services.

4.4.3 State Bias towards innovative companies

Some articles have been written that support the idea that the state should favour new and innovative companies in their procurement process, to give them a better chance to leverage their innovative capabilities (Harbour (MEP), 2009) (see appendix 6). However, economists, particularly those who support the Darwinian view of 'survival of the fittest' and a 'free market economy' would have a number of issues with this policy.

4.4.4 Leveraging intellectual property rights (IP)

But there are a number of ways that small companies, in their own right, can leverage innovation. One of the most important ways in which this can be done is the commercialisation of Intellectual Property (IP) (Jaiya, 2010) (see appendix 5). According to the World Intellectual Property Organisation (WIPO) (World Intellectual Property Organisation, 2010) intellectual property can be defined as:

Intellectual property refers to creations of the mind: inventions, literary and artistic works, and symbols, names, and images used in commerce.

Intellectual property is divided into two categories:

- 1) **Industrial Property** includes patents for inventions, trademarks, Industrial designs and geographical indications.
- 2) **Copyright** includes literary works such as novels, poems and plays,

films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs.

Rights related to copyright include those of performing artists in their performances, producers of phonograms, and those of broadcasters in their radio and television programs.

(World Intellectual Property Organisation, 2010)

Most universities own any intellectual property rights from products/services developed under the auspices of the college (Cardiff University, 2010), (Kennedy, 2010). This also creates a revenue source for the college. The affiliation with the college can also have very positive implications for the incubation companies when it comes to the reputation of the project and the incubus.

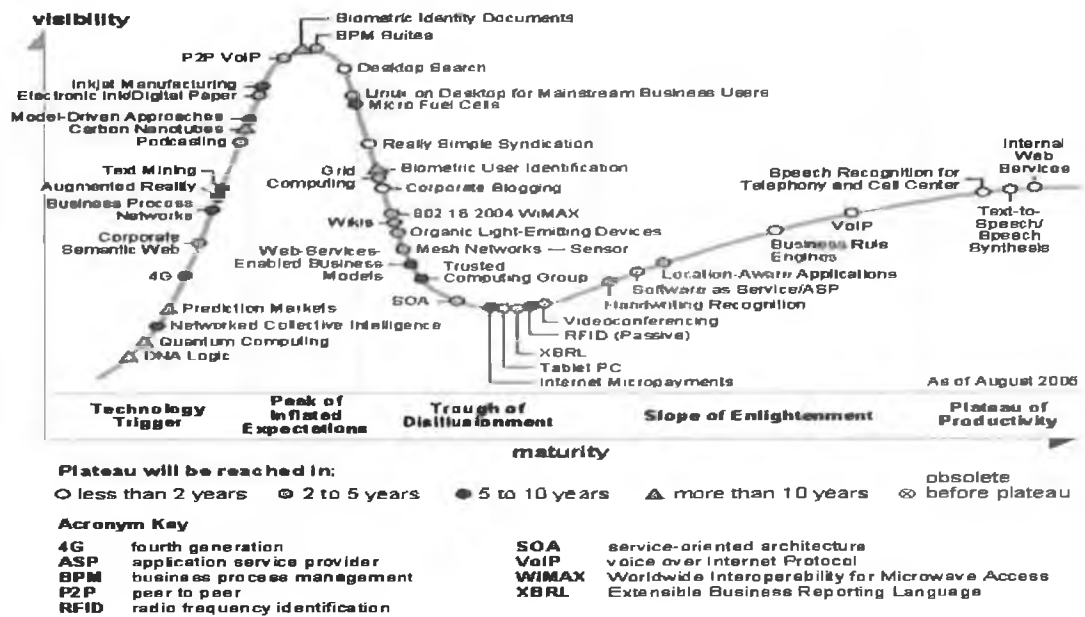
Companies need to be aware that having IP rights will not in itself guarantee that the project will be a success. It is when the project is a success that the intellectual property rights are valuable. Companies also need to be aware of the IP rights of competitors, particularly close competitors. There is always the risk of infringing the rights of their products and having to deal with the consequences of the infringement.

4.4.5 Best practice advises use of IP databases

Best practice would advise that companies consult IP databases. They can help in the area of defining what IP rights are out there already, and may also help in identifying new opportunities that may exist in the market place (e.g. <http://ep.espacenet.com>). Identifying new ideas is another 'real' and 'cost effective' way to leverage the innovative capabilities of companies. Innovation is not just about the creation of new products and services.

Tushman in his book, *Managing Strategic Innovation and Change* (Tushman, 2004), talks about the whole area of technology discontinuities that trigger periods of 'technological and competitive ferment' where companies compete until a period of industry standard and dominant design occur - until the next

cycle happens. Technology cycles can be very complex. Below is a technology cycle illustration for a Technology Hype Cycle.



(Gartner, 2007)

But the most important thing to know about a technology life cycle is that, at any stage, technological advancements can result in a period of ‘creative destruction’ (Christensen et al, 2008) that will render the technologies useless. The result of technological change is ultimately a warning for all new companies. While there is a lot that companies can do to leverage their innovative capabilities, external forces may ultimately render their project worthless. If they are not able to and not willing to adapt to these forces their project will not be commercially viable and will have to be wound up.

4.4.6 Leveraging by just being part of a centre

Apart from the technological side of leveraging their strengths, some centres advertise the fact that participation in their schemes can help leveraging by offering some or all or variations of the following services (Powerhouse Ventures New Zealand, 2010) (Mississippi Technology Alliance, 2010):

- **Overcoming cultural impediments**
- **Leveraging financial incentives**
- **Promoting better access and linkages between the university and the client**
- **Developing comprehensive support systems for their clients**

Chapter 5

Research Findings on Best Practice:

Client Services, Staffing, Social Networking and Program Evaluation

5.1 Client services

All incubation centres should put the needs and wants of their current and prospective clients first. Regardless of objectives, goals, business plans or stakeholder objectives, the needs of their customers must be their main priority. Every new and existing client has different needs. Some of the main services that incubation centres offer should include:

- Pre-incubation services
- Coaching and facilitation
- Outsourcing coaching
- Entrepreneur education
- Industry specific training
- Client networking
- Marketing assistance- outreach, networking and advocacy
- Mentors and advisory boards
- Access to capital-
- Coaching for investor presentations
- Post incubation services
- Maintaining graduate relationships- clients for life...

5.1.1 Pre-incubation services:

The whole concept of business incubation centres is that they provide assistance and expertise to allow incubation companies to grow. However they cannot guarantee the success of the idea or company. They provide a structured framework and support structure to allow entrepreneurs turn good ideas into viable businesses (The World Bank , 2010). New companies with new ideas need to understand what it will take to turn 'good ideas' into viable businesses.

The Vellore Institute of Technology, Technology Business Incubator (VITTBI) has established advanced business coaching for new ideas. The VITTBI is not unique in its offering and advanced pre-business incubation services are now an important component when bringing ideas to the marketplace. In the UK there are numerous advanced pre-incubation business coaching outlets.

Peter Thompson PLC (Peter Thompson PLC, 2009) is one of the largest private companies in the field of pre-business incubation services. The success of their program lies in the fact that not all ideas can find places in incubation centres. Peter Thompson PLC helps these companies do the necessary ground work to proceed to avail of the services of the incubation centres.

UNESCAP believe that pre-incubation services are some of the most important services that centres can offer. They believe that, without proper planning, product refinement and conversion into marketable ideas, incubation is futile (The United Nations economic and social commission for Asia and the Pacific, 2010).

Indeed, any applicant to an innovation centre will have to complete an application form requesting that some or all of the pre-incubation processes have been satisfied (GMIT, 2010), (NUIG, 2010), (Trinity College Dublin, 2010).

5.1.2 Marketing Services

Helping the incubation companies get their product ready for and to market is paramount in the success of the new companies. Marketing can take place in many forms (Chartered Institute of Marketing, 2010), but regardless of what form it takes it is all about getting your product to the marketplace successfully. Pre-incubation services should include a requirement to prepare a marketing plan for your new product (Jayai et al, 2007).

Costs and benefit analysis of different participatory marketing events (such as trade shows or industry evenings) can be very hard to gauge for companies when deciding on how to spend their limited market budget. One way that centres can

assist the companies is participation at special trade events as part of the innovation centre's corporate stand. The Department of Environment (UK) carried out a survey of incubators and found that a majority of centres do offer facilities for companies to participate in shows (Department of Environment (Mexico), 2007). Client companies can be charged a nominal fee for sharing the stand, making it more affordable to participate than having to participate on your own.

Technology has removed the international barriers that crippled international market exploitation (Etemand, 2001). You can now do business in many countries at very affordable costs. In fact, once incubators join an organization they are forming a marketing alliance where potential investors can see what you offer and what clients you have in your centre (e.g. UBKI, NBIA, ESA).

Some private innovation centres have joined forces to address the International marketing needs of client companies. One good example of co-operation between innovation centres is in Scotland where the Scotland IS and the Hellington Park Innovation Centre have joined forces for such a venture (Innovation Centre, 2010).

Their marketing and networking events are targeted at companies in the technology field that have little or no knowledge of how to target or market their products or services internationally, at cost effective prices. As most of the incubation centres do not have the necessary skills in-house, they outsource the services required to operate the marketing assistance programmes. Perdue Technology Centre in the USA has been offering marketing services for years and believes that it is a critical part of its success (Perdue Technology Centre, 2010). These services, both at pre-incubation and incubation stage, include writing and preparing press releases, preparing for news events, and news release distribution. It does, however, charge for some of its services to generate income to cover its costs, but not to make a profit.

Perdue Technology Centre looks at these services in a unique and positive way. It believes that the more it promotes successful incubation companies that the

reputation of the college and the innovation centre are enhanced, and will lead to more potential customer streams. Part of the incubation centre budget is allocated to the purchase of prime advertising space in local and regional media. Instead of using this space for their own benefit they give the space to their clients.

The EESA centre in the Netherlands offers similar marketing initiatives - targeted at a very niche market (EESA, 2010). The marketing support and marketing initiatives are directly as a result of European Community supports, recognising the importance of affordable marketing to incubation companies.

The National College of Ireland Incubation centre has taken the approach of employing high profile personalities to assist them in their PR campaigns (NCI, 2010). One of the most recent additions to their centre was Mark Little. The marketing and PR approach revolves around the concept of 'community of peers'. The NCI believe that without the assistance of 'peers' the work of the incubation centre will be unfulfilled. Businesses, both on-site and virtual, benefit from shared knowledge through group and individual knowledge sessions, the support of entrepreneurs, stage bodies and the academic community.

Indirect marketing support is also widely available to new and existing incubation companies. Representing their client companies, when on incubator business, is one of the most important forms of support centre personell can offer their staff. Most incubation centres represent their clients when neither the incubation company or the entrepreneur is present. Some incubation centres, with knowledge in specific fields, use this outreach facility as their unique selling point.

Northland Technical College promote themselves as an 'outreach' centre (Northland Technical College, 2009). They find out all they need to know about the companies and publically represent the companies to potenital clients and investors. The University of Durham have a similar outreach strategy. They have publically released their regional, innovation and outreach strategy to allow new and potential companies understand the University's mission, objectives and goals (University of Durham, 2007).

5.1.3 Marketing and Networking - a valuable combination

We have already discussed the networking capacity of innovation centres. As a marketing tool for companies it is invaluable. Whether events are pre-arranged public events, privately arranged events, or chance meetings, networking allows companies get to their existing or potential stakeholders. Networking can be direct with the companies, or indirect with the incubation centre representing their clients. Some centres have even started hosting large scale project meetings in their centres.

The reason is to expose their clients to the projects and project requirements. This allows them to see what the projects require and perhaps get involved with new and innovative services and products for the contracts. The William M Factory centre in Idaho offers one such service. The result is that its client companies have been able to avail of a proportion of the sub-contract work for the projects (Strege, 2008).

5.1.4 Innovative marketing services

Incubation centres also can assist in promoting companies by arranging novel and innovative business environments which can allow companies to promote themselves. Charity events and supporting local charities can attract more support than regular networking events (Central Valley Business Incubator, 2010), (British Library Business & IP Centre in London, 2008).

Competitions for incubation companies or with educational establishments can also raise awareness of the incubation centre and its clients (Sheffield University, 2010), (ESA, 2008). Competitions are a great way to raise awareness, and depending on the level of PR and the profile that the competition has, the awareness generated can be quite significant.

5.1.5 Marketing plans implementation practices

Regardless of whether the marketing support is direct or indirect, if companies do not implement marketing plans, they risk project failure. Some colleges have managed to use the resources of their associate universities to design and

implement marketing plans. San Juan College (San Juan Enterprise Centre, 2010) teams up with the enterprise centre to help its client companies get a hold on marketing.

Their campaign has joined links with the author of 'Marketing for Smarties' (Welch, 2010), a marketing based training company. The result is training courses, at greatly reduced costs, to assist in the identification, honing and communication of marketing messages, while completing marketing plans.

According to Welch (Welch, 2010) most companies fail because they fail to implement marketing plans. Companies have the message, know what message they want to get to the market but don't know how to get it to the market. Incubation centres offer guidance and a process by which the implementation process is made easier.

Working in partnership with existing companies, business owners and senior managers of existing companies can have significant advantages for new and emerging companies. A lot of innovation centres have a number of key professionals that sit on advisory boards, or that are available to advise the centre of client companies. Some innovation centres adapt the policy of graduates being 'graduates for life' (Hellington Park Innovation Centre, 2010). Regular events are arranged to keep the graduates up to date on the upcoming events or latest developments at the innovation centre.

Once graduates are kept on as supporters of the centre, their expertise can generally be relied on for new companies. Some centres also adapt a policy of industry specific graduate relationships (MIT Sloan Management review, 2010). Technology graduates can then be relied upon for technology companies and so on. Newsletters, E-Zines and email campaigns are very cost effective methods of communication.

5.1.6 Coaching and advisory services:

A major part of the pre-incubation services of centres is the whole area of coaching and advice to allow companies get to the incubation centre. When the companies eventually get to the centres the importance of this advice and assistance is augmented. Hellington Park Innovation Centre in Scotland (Hellington Park Innovation Centre, 2010) was awarded the UKBI Inspire status for best practice incubation.

They received this award in recognition of their outstanding advisory services that they offer their clients. The fact that such an award was given on the basis of advisory work clearly illustrates the importance of advisory services on offer by innovation centres.

‘Outsourcing isn’t about what you can subtract from a business but what you can add to a business’ (Accenture, 2010). For new entrants to the commercial market outsourcing is a very viable business proposition, especially where skills and financial restraints exist in initial years of operation. Understanding the market and where the skill sets are deficient is one of the greatest attributes of any innovation centre.

5.1.7 Outsourcing services

P&G is a fortune 500 multinational corporation who manufacture a wide range of consumer goods. They operate one of the greatest R&D facilities in the corporate domain - however they also outsource a huge proportion of their innovation process. The concept of ‘connect and develop’ is now a major part of their innovation process. They connect with the outside world of innovation through their own innovation centres (IBM, 2009). By doing this, not alone do they advance the current technology available, but it allows them to decide on what projects and products that they would like to finance for themselves. They then work on developing the products afterwards (Harvard Business Review, 2006).

This outsourcing of innovation model has become accepted by innovators, and innovation centres throughout the world (NBIA, 2010), (Innovation UK, 2010).

Innovation centre managers are in a unique position, particularly in regional areas, to know the know the business and entrepreneurial expertise in a particular region. Whether it be prospective investors, 'angel' advisors or business colleagues, outsourcing options for some or all areas of business innovation are more prevalent.

5.1.8 Training courses

Where outsourcing is not suitable for some ideas - particularly in niche areas, the provision of training courses and advising incubation companies on what training they require is very important. Companies will have to stand on their own two feet at some stage (post incubation). Unless the entrepreneurs have acquired the skills that are necessary to survive the commercial world, they have a greater chance of failure.

Coventry University are in the process of carrying out applied research in the whole area of education in innovation centres. The applied research has the objective of developing the expertise to support the teaching of enterprise and entrepreneurship (Coventry University, 2010). Though there are no findings in the area, the importance of getting the correct education is paramount to all innovators.

For most centres education can be short blasts of just one or two hours. Business fundamentals are usually the most taught business concepts (NBIA, 2010), though more in-depth courses are on offer in different centres. In the North East of England more detailed courses on offer include those on social networking, software venturing, being your own boss, marketing and guides to starting a business in different regional areas (North East Business Innovation Centre, 2010).

In Ireland similar and more varied training courses are on offer. Some private innovation centres offer more specific training for potential innovation partners. By allowing innovators establish their business in their centre, not alone can they take advantage of new and innovative ideas, but they offer the training to innovators to further develop their projects (IBM, 2009).

Why? The potential for partnerships or taking partial or complete ownership of new innovations can have very lucrative consequences for them. Training and education, in their own industry specific centre represent a unique and innovative form of innovation management for them. Microsoft (Europe) also use incubation training centers as part of their innovation process (Microsoft (Europe), 2010).

5.1.9 Networking

In addition to the wide range of direct services that innovation centres offers its clients there are a wide range of other advantages to incubator companies. The greatest one of these is, arguably, its ability to offer networking opportunities to its clients. Networking events tend to be very popular as companies and stakeholders have the opportunity to meet with potential clients and new and existing investors.

Evidence has shown that the clients do gain benefit from these networking opportunities (Oxford Innovation Centre, 2009), (Hellington Park Innovation Centre, 2010). The European Business and Innovation Centre Network list all of its members to allow for better networking and co-operation between its partners and clients (European Business Network, 2010).

Networking can result in contacts and relationships at all stages of business development - from business plan design to marketing, from finance to operations, and can also be the main source of contact from incubation companies working in the 'virtual incubation' world.

5.1.10 Virtual Incubation

Virtual incubation is becoming more and more popular. Technology advances, particularly in the area of communication, now allow people to join programmes without having to attend innovation centres. They get the benefit of being part of an incubation centre without having to attend the centre. They also get the advice of companies who have been through the incubation process. This advice can be of great assistance to companies - particularly at pre-incubation stage.

Established companies have experience that can help new companies develop and redefine their ideas.

5.1.11 Access to capital

Tony Addison and Wim Naude, at the United Nations University conference on 'responding to the Triple Crisis: entrepreneurship, innovation and structural change' said that the financial crises were going to have a very serious effect on entrepreneurship (Addison et Al, 2010). They argued that the reducing credit and financial opportunities for entrepreneurs will permanently slow down innovation.

The OECD would argue that the access to venture capital funds diminishes somewhat in boom times as returns can be substantially higher for private investors (Lerner, 2010). The converse of this argument is that the availability of venture capital funds is made easier during times of financial crises.

While both arguments hold true, it is the availability and access to the funds that poses the greatest problem for incubation companies. Access to capital is one of the most important types of assistance that incubation centres can offer its clients as companies will not be able to set up without access to different sources of capital.

Schumpeter, in his description of the forces of creative destruction (Schumpeter, 1942) described in detail the implications of companies not realising that for new product development to occur, other products ceased to be of value. The life cycle of technological products can be cut short overnight. If companies have no access to capital they may not be able to get their products to market in the time necessary.

Financial assistance is a necessary requirement for all businesses, especially for those at start-up stage. Funding may be required at all stages of the product life cycle, and will be required pre, during and post incubation. Finance comes in many forms for many companies. Grants, loans, equity funding, or a combination of these sources are the most common sources.

Regardless of the source of the finance, it is the role of the incubation centre to ensure that it is fully aware of all the sources of finance available to all the companies. (Renaissance Entrepreneurship Centre, 2010), (The World Bank, 2010). Incubation centres should have a list of contacts that facilitate the coming together of the sources of finance and the incubation company. Some incubation companies have managed to access funds by setting up relationships with the providers of capital, either directly or indirectly. Direct links can be created by allowing the providers of finance to sit on the board of the centre, or on the mentoring/advisory board of the centre (Chicago Booth University, 2010), (Technology Innovation Program's (TIP) Advisory Board, USA 2009).

Indirect links can be created between companies and financiers, with the incubator staff maintaining links with these finance providers in their networking activities. Some of whom often trust the decisions of the innovation centre to accept the company in the first place as a source of guarantee. Ultimately, incubation centres should be able to offer alternatives to traditional bank lending. By doing this they can have a significant positive impact on the chances of success of the client companies, and consequentially the centre as a whole. For other sources of funding businesses need to rely on private sources, bank finances and investor finance.

5.1.12 Access to capital in Ireland

In Ireland there are a number of state schemes to help new companies start in business. They can be divided into two main bodies. The first is city and county enterprise boards and the second is enterprise Ireland.

The County Enterprise boards provide assistance to micro-enterprises with less than 10 employees at local level. They provide direct grant assistance to promote entrepreneurship in the local commercial environment (County and City Enterprise Boards, 2010). As their funding is for local projects and start-ups, they are uniquely positioned to have a total awareness of local business requirement, and also some of the applicants and their history in business. Funding can be in the form of advice, mentoring, grants and supports for training and growth.

Enterprise Ireland, on the other hand, is the government department charged with the responsibility to promote the growth of Irish entrepreneurship on the world stage. Enterprise Ireland works with Irish companies to help them develop and expand in the global market (Enterprise Ireland, 2010).

Their corporate objective is to support sustainable growth and regional development, while providing secure employment for its regions as well. They also publish a series of reports and articles, which can be of great assistance to start-up companies looking for market information.

5.1.13 Post incubation services

The mission and objectives of the centre will determine the total extent of involvement of the centre in post incubated companies. However, maintaining links with the companies can further enhance the reputation of the centre (D'Agostino, 2008). By maintaining links the centre can help keep graduates in the community, offer additional revenue sources to the centre if the services are used again at a future date and increase the chances of success of the company. The benefits of maintaining relationships with graduates were found to be quite significant in a report entitle 'Coming Back to Give Back' (NBIA Review, 2005).

The Journal of Small business and Enterprise Development in the UK has found that not enough research has been carried out in the whole are of post incubation services and their impact on the success of the company or centres (Hannon, 2005). The UKBI with the Small Firms Enterprise Development Association have started to address the situation issuing guidelines for UK business incubators (UKBI, 2009).

Staffing

5.2 Introduction to Staffing

Apart from the costs of running the centre the greatest cost for innovation centre management is the wage bill (Dichter, 2009). Staff can be the difference between success and failure of some of the companies. While staff of the centre liaises directly with incubation companies, there are a vast array of 'contacts' that the companies have with people in the centre. From mentors to advisors, from research assistants to management, the quality of those who interact with companies should never be compromised (National Academics Press, 2009).

Both the UKBI and the NBIA list desirable characteristics that should be present in centre management. The most important attributes for incubator staff are the ability to grow-companies skills, excellent communication skills, and financial and business operational skills to ensure sustainability. Regardless of what spectre of the business world they come from, management must recognise their shortfalls and employ the assistance of outside staff to make up the shortfall (Ford, 2009).

5.2.1 Staff limitations:

In line with the centre's corporate and finance model, some of these services may be contracted, and charged back to client companies. The University of Bath have begun adding services to their current service list in line with their changing corporate position (University of Bath, 2010). Some centres have included all of the people who interact with the centre, as part of their resource pool, and treat them all equally. The Innovation Centre in Birmingham the best Innovation Centre in 2000 (Innovation Depot, 2000) encompasses all of the personnell that deal with incubation companies, in its workforce

5.2.2 Advanced selection techniques

Other centres use more advanced forms of incubation staff selection methods. In New Zealand, Powerhouse Ventures use entrepreneurial personality tests to select their staff (INZ- Incubators New Zealand, 2006) as well as their clients. As

well as this testing their selection process includes people with very high analytical and technical abilities.

5.2.3 Performance and goal alignment

The success of the centre depends, to a great extent on staff performance. Performance must be aligned with corporate goals. These goals need to be updated regularly and performance should be judged accordingly. Alignment with goals also enables management to be more vigilant observing corporate governance guidelines and regulations. The Indiana innovation centre asks their staff to establish their own targets, aligned with corporate goals and targets. They are also required to report back on their performance in relation to their individual targets (Ballard, 2010).

5.2.4 Volunteers assistants

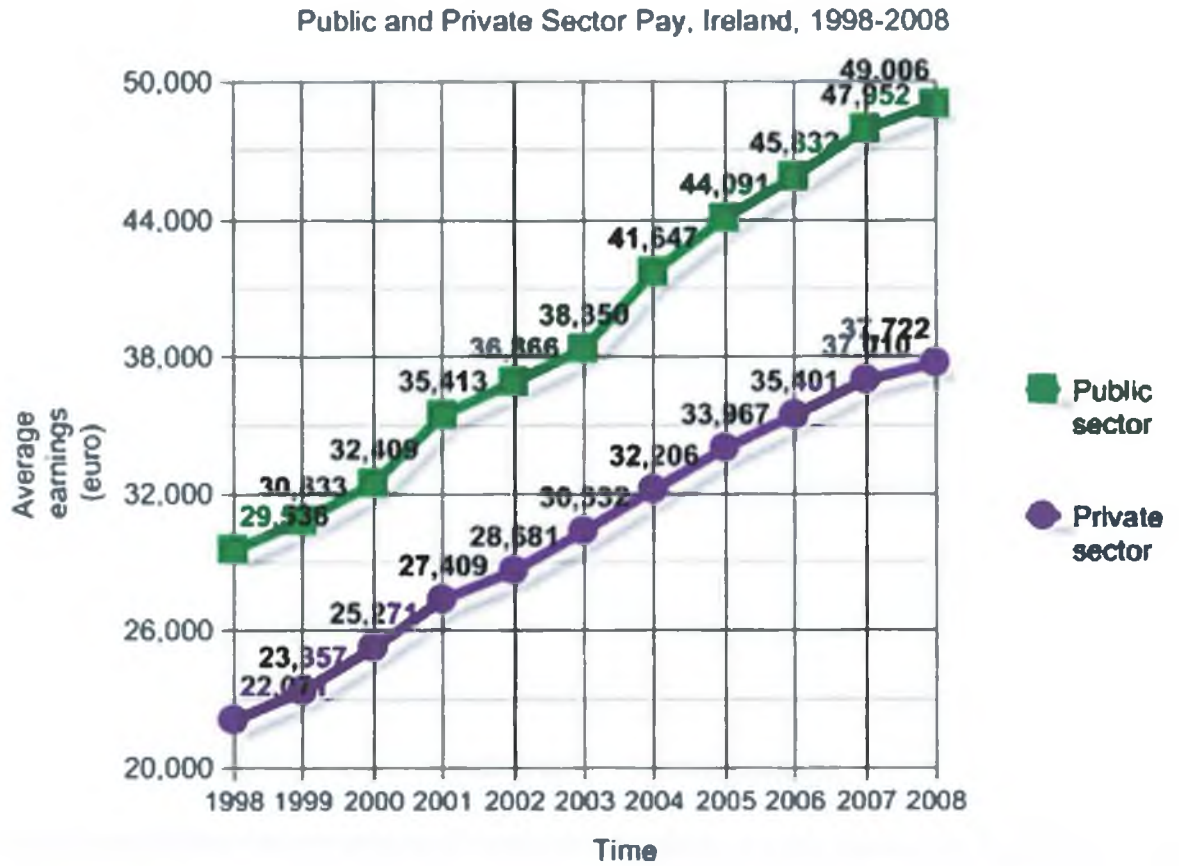
Most centres are lucky that they can rely on the services of the volunteers who given their time in interests of the success of the centre. Best practice suggests that the training of these people should be left to the centre manager or senior managers of the board of the centre.

Matching the attributes of these volunteers to the needs of the centre and its clients is a very important role of the manager- particularly in large centres where management must have the skills and knowledge to delegate some of their roles to others.

5.2.5 The trap of ulterior motives of volunteers

Centres should also be aware that some of the help that they get from outside sources may have an ulterior motive attached. Some of the business advisors may also be looking out for their own interests, which may not necessarily be in the interest of the centre or the client companies. Management must be careful to insure that their interests should be to serve the needs of their client companies. If there is a win for other parties that is a distinct advantage but that is not necessarily the objective of the centre.

The same is true of the Irish situation. Below is a graph of public and private sector wages in Ireland between 2004 and 2008.



Ronan Lyons, based on www.cso.ie

Graph of public and private sector wages, Ireland, 1998-2008

The key issues of the graph are that public sector wages were paid on average 30% more than their private sector counterparts and that this gap has widened in 8 out of 10 of the years. The graph also shows that the private sector's salaries were a number of years ahead of public sector wages. In other words what the public sector earned in 2003 was the same as the private sector earned on average in 2008 (Collins, 2009).

As the economies of countries detract and their tax revenues decline, so does the pool of funds available to pay public sector wages. In March 2010 the Irish Government agreed not to cut the wages of public sector workers in order to avoid wide scale strikes (Cowen, 2010). The country cannot pay for the services it offers and has to find savings through greater efficiencies or reduced staff levels.

The situation is also true for third level colleges and also the innovation centres attached to the colleges. The Entrepreneur magazine have come up with a SMART way to develop a pay plan to attract top professionals to organisations (Massad, 2005).

Overall, a good pay program should be SMART, meaning it should be

S = strategically based. When designing a pay structure, you should look at your company's goals and take its future business direction into account, while rewarding and recognizing employee performance.

M = Market tough. You should also look at the market and monitor what the market is doing to regularly attract and retain the best.

A = Analyzed thoroughly. You must analyze not only the market but also the jobs your employees are doing, and the jobs your employees will be expected to do in the future to maintain that competitive edge.

R = Reward results. Reward results and recognize potential. Most employers want to give incentives to encourage employees toward an expected end rather than fully paying out dividends based solely on potential. Integrating rewards with recognition strategies allows you to encourage employees to exceed performance expectations.

T = Transformative. You don't want a compensation plan that's totally out of line with what the business environment looks like today--your plan should resemble the times. Therefore, your practices and reward elements should constantly change with the times'

(Massad, 2005)

5.2.9 Potential application of staffing best practice to the IiBC at GMIT

Regardless of the economic model within which incubation centres work getting the right personnell for the job is essential, and the success of the centre could depend on the correct recruitment and selection polies in the colleges.

5.2.10 Recruitment and selection code of practice

The GMIT recuritment and selection policy, as agreed by its board of directors is a comprehensive document that deals in detail with all areas of the recruitment and selection. The selection process is agreed by all college peers and has being formulated to insure that the correct people are employed. The code of practice of the it is also the policy of the IiBC. Consequentially it is fair to assume that staffing procedures meet best practice standards.

5.2.11 Hiring and training additional staff

One of the biggest issues facing the college, given the difficult economic times which we find ourselves in, is the ability to bring in additional staff as is required, especially if they have to be paid, and the clients cannot afford to pay. Angel advisors and volunteers may be able to assist and managment must insure that the networking abilities of the managment and staff include a wide range of people who will be able to assist the centre. Funding must be made available for the training of all personnell as well.

5.2.12 Networking for resource maximisation

Networking with other facilities may also prove very useful. Other colleges and centres may have resources and skills in abundance, where the IiBC at GMIT may be deficient - and visa versa. Formal and informal links should be fostered and supported in all activities of the centre.

Social Networking

5.3 Introduction to social networking

Social Networking can be defined as the use of web technologies by applications or web sites to support the maintenance of personal relationships, the discovery of potential relationships and to aid in the conversion of potential ties into weak and strong ties.

(Zyl, 2009)

Social networking is increasingly becoming a very important business tool (Banerjea, 2009) and involves all areas of society. According to Tapscoll, a Canadian internet expert, the networks now involve governments, companies, civil society organizations and most importantly individuals (Tapscott, 2010). While social networking can have particular benefits to the incubation community, in general terms, these benefits are the same to the whole business and social community as well.

5.3.1 Social Networking in the Workplace

Social networking has really hit main stream in the last number of years. There are a large number of social networking sites. From MySpace to YouTube, from Face book to Twitter, from Beebo to LinkedIn, the options are vast and varied. For businesses the options are not so clear. With the dot com bubble just after popping in our rear view mirror, companies are more cautious before they throw more time and resources into IT investment, and social networking features.

There are clear signs that social networks offer increased levels of customer relationships. Lotus Connections social software platform (IBM), LinkedIn and Ryze have brought social networking closer to the business world. The targeting of scarce resources, too much targeted audiences, in a measurable fashion makes the investment quite attractive.

Together with emailing, social networking tools are also being used as a source of internal communications. While at entry level basic employee data is all that is required to start. An extension of the data bases allows employees to add more

personal details, and work experience, in a fashion that allows others to share the information. This knowledge sharing facility can allow the organization to harness the entire knowledge base of an organization, within a controlled environment.

The customers can benefit from quicker turnaround periods as well. If problems can be directed to individuals who are more knowledgeable in certain areas, or who have solved certain problems in the past, customer satisfaction is heightened. It allows companies to react rapidly to problems as well, thus protecting the reputation of the company.

Social networking sites can also allow potential and current customers a forum to discuss the products and services offered by companies. When people can interact with each other, the interest generated in the site can be increased, and this can translate into better market research, leading ultimately to an increase in revenues. (Edmunds.com Car-space 2009).

Social networking also facilitates the more efficient implementation of six sigma, lean and other quality systems. By allowing the customers, and potential customers, to interact directly with the company, other non essential services can be eliminated from the process. The customer takes control of a lot of the feedback and query process and not the seller.

Networking sites also allows professionals to link into sites, and join networks, with professionals that have similar interest. Once you are invited to a network, based on your profile, you can tout for business, get expertise from other experts in certain fields, and even search for employees.

Social networking sites for business also allow others to communicate with others, via online introductions, which they may not be able to get in contact with by other means. Invitations can come through membership groups and online acquaintances- though some introductions do require premium subscriptions (Tapscott, 2010).

In the 2009 study carried out by Zyl she concluded that social networking increased productivity and efficiency by allowing staff to communicate with each other, potential customers, and industry colleagues outside the company. The study also concluded that the use of social networking sites also increased awareness of environmental opportunities and threats to an organisation.

Social networking provides a way to connect people, in any location, with any set of interests on-line. There are a wide range of social networking sites that provide the networking platforms for businesses.

5.3.2 Social Networking Trends

According to De Nielson online, cited in the Harvard Business Review (Armano, 2009) there are a number of Social Networking trends emerging in 2010

- Social Networking begins to look less social- as people get engrossed in the whole social networking culture, and as more and more people are requesting to join groups, networking groups may start limiting the members and the groups become more exclusive
- Companies will not be in a position to be part of numerous networks and will begin to focus on a smaller number of networking sites. As a result employees will be restricted to a number of sites and their transactions will be monitored by the company more seriously
- All companies will introduce social networking policies to protect their operations
- Competition in the social networking market heats up with incentives being offered to users to 'push' users through their sites.
- As companies strive to control the actions of employees on their networks, employees will turn to their i-phones, smart phones and blackberries for their social networking 'hit'. The importance of targeting the mobile market will should not be understated.
- Privacy will become harder to manage as social networking sites implement policies to encourage users to 'share' their user lists.

5.3.3 Drawbacks of social networking-

It makes identity theft much easier. When you register on a social networking site you need to disclose some information about yourself. However, some sites have limited control over what information is disclosed. Private information such as information about birthdays etc. makes it very easy to steal someone's identity. But the problem is that if you don't disclose information you won't be able to create a social network. (Strickland, 2009)

Another issue is that some unsuspecting users may download, knowingly or otherwise, malicious software. All it takes is clicking a link that you think is going to take you to one site but it inadvertently takes you to another. (Strickland, 2009) (see appendix 9). Malicious software could quite easily result in organisation sensitive information may being illegally accessed on social networking sites (Zyl, 2009). Security of information was one of the key drivers in the US government banning the use of most of the social networking sites for the US Military. However, acknowledging that Web 2 technology is here to stay, and implementing certain site restrictions, this decision has been reversed (Virk, 2010).

Social networking can also be very addictive. A direct result can be someone joining numerous groups making it difficult to decipher the information, and keeping track of all the group contacts. Job productivity can suffer as a result. (Strickland, 2009) Zyl in her study also found that there were concerns that productivity could be affected (Zyl, 2009)

There is also the distinct risk that the useful information obtained on social networking sites may not be available to the decision makers, and is therefore not channeled in the correct direction (Zyl, 2009). Unless spam and unwanted solicitations are controlled the future will be uncertain (Kharif, 2005)

The risks companies face, according to Windows Security fall into a number of broad categories (Windows Security , 2009):

1. There is always the risk that someone can hack into the network. Unless organisations and administrators are vigilant, at all levels, the damage that can be caused by carelessness can be great.
2. Users may unknowingly allow malware to be downloaded onto their systems, unless user settings protect themselves from the threat of malware.
3. The risk that a hacker will gain information through the social networking site that will allow him/her to attack your company network (social engineering).

The only way to protect organizations from the risks of social networking is to have a clear and well thought out social networking policy.

5.3.4 Social Networking and Incubation Centres

Incubator units are an effective form of business tutoring and add to the chances of success of a new company. As well as the supports that the educational establishments offer they also offer the opportunity to develop entrepreneurial networks, due to the close location of their companies.

Incubation companies, are in general, very different in nature to each other, and their business objectives may be quite different (Hannon & Chaplin, 2003). The role of a business incubator is to offer any necessary assistance in order to create a sustainable company. A study carried out by McAdam and Marlow concluded that the increased use of social networking, within the incubators, could have a very positive effect on new companies (McAdam and Marlow, 2008).

5.3.5 Twitter and LinkedIn- 2 social network giants

5.3.5.1 Twitter- general information

Twitter - started in 2006, and is now one of the most popular social networking sites (find source of users). Twitter is now used by celebrities, retail shops, and the business world alike. The business world now use twitter to communicate with potential and existing customers, (Hanlon and Akins, 2010) business

experts and advisors, and every conceivable business related contact that could need to be accessed.

As with most of the social networking sites, though twitter is a web based application, more and more of the mobile phone devices are twitter enabled. Twitter is free to use (excluding the initial connection costs for mobile devices) and with some caution when getting set up, is very easy to use.

Twitter can add value to a business in many ways.

- Comments are ranked by Google within a few hours, thus increasing your search profile
- Tweets (a message on twitter) can drive people to your site
- Tweets can be used to distribute information and news the company
- Social networking allows you to make contact with people that you would not normally have access to.
- Messages, if they are 'retweeted' (where someone repeats your tweet) can be distributed to a wide audience. The greater the exposure the more the more value you get out of Twitter. 'Retweets' have another benefit. If you retweet a message, the original sender, will also receive a copy of the tweet. They will see that you have forwarded their message to others. If they are not already a follower (someone whom you network with already), they may become one of your followers and interested in you. If people become interested in you they may in turn use some of the services that they offer.
- Tweets can contain promotional messages or special offers that other followers can avail of. If these offers are retweeted this can be of great benefit to a company.
- Tweets allow for better customer service, where people can leave feedback about a product or service. While there are concerns that this can be potentially damaging, careful monitoring of followers, and the removal of harmful malicious tweeters (person who sends tweets) can manage this. Positive tweets can be very valuable.
- Tweets allow you to create a data base of potential customers.

- Tweets (on Twtjobs) also allow you to post jobs and get job applications on-line. For some employers, the demographics and dynamics of certain groups, can fit a job profile perfectly, especially where targeted expertise is needed.
- Social networking works because of the Web 2 technologies and capabilities that are now available to users. Companies that promote events, on platforms that users already associate with (eg webinars on the internet) can get their message across very effectively.
- Twitter has also a very strong advertising capability that companies can pay for. Twitter can be used to place ads for specific market groups. When you register on twitter you submit certain details about yourself. Depending on the access rights that you determine for your information, others can view your profile. These ads are charged on the number of hits to the site. Companies can limit their financial exposure to a maximum advertising spend (number of hits), determined by their budgets. Where there are more than one advertisement for the same market an auction is initiated. Bid prices are determined by the budgets that are set.

5.3.5.2 LinkedIn

LinkedIn was initially set up with the objective of connecting business people. It now has a membership of over 10 million people with over 100,000 new members globally every week. Connections take place at all levels- from CEOs to business professionals. People that could only be contacted by direct face to face communications that were often impossible to make, could now be contacted via social networking sites.

Luo (founder of LinkedIn) said that the most common use of the networks is that of recommendations. This prompted the development of their online questions and answer facility, allowing people to communicate quickly through their networks. The financial model of LinkedIn revolves around corporate subscriptions. They can be at an individual or corporate level. Additional services such as HR and Recruitment are part of the premium membership packages, often saving the costs of recruitment through recruitment agencies.

5.3.6 The future of Social Networking

The future of social networking is could well be in the area of, VOIP technologies, as well as the whole area of instant communication via Skype and other instant messaging technologies.

Because C2C *social* networks have traditionally been the bailiwick of younger consumers, industry insiders believe that *social* networks will gain a foothold more easily as that generation moves into the work force. As Driver from Forrester puts it, "The 'Millenials' will influence the use of collaborative tools in the enterprise."

One way that LinkedIn may broaden its appeal to more experienced workers is the introduction of an Experts feature, according to Luo. "This is for people who have more money than time; you explain your need to us and we deliver back the names of five experts in the LinkedIn network who could address it."

Targeting, and personal placement in social networks is the primary reason why social networks are part of corporate marketing and advertising plans. Once organizations can target online communities, the economic benefits of networking are obvious.

Networks facilitate International communications between members. The economic benefits of using social networking sites to communicate with international communities can be great.

If people spend a lot of time working on connections, they will not be willing to spend a lot of time on creating countless business colleagues, in countless business networks. The case for the consolidation of social networking sites will become stronger as the number of social networks, and market groups increases. Users will begin to become more loyal to the networks that they are already members of and not want to join countless numbers of sites.

Program evaluation

5.4 Introduction

To evaluate the performance or success of an incubation centre can be quite difficult. Ultimately a centre must focus on its corporate goals and objectives and try and evaluate its success or failure in relation to these. Regardless of what the centre is trying to achieve it is of paramount importance that the centre keeps a wide range of management and statistical data. This data can be used, not only to assess the current performance of the centre but also to outline any improvements that might be necessary to secure its future.

5.4.1 Evaluation criteria

Evaluation criteria, according to the NBIA, must be manageable, and must be relative to the resources that the centre has to collect the data (NBIA 2010). While it would be preferable to have all the relevant information relative to the needs of all the stakeholders in the centre, gathering too much information runs the risk of taking too much time, and drawing too much from the available time resources available in the centre.

Dr Chris Coughlan, in his chairman's address for the Commemorative report on behalf of Innovation centres in Ireland, commented on how successful Irish incubation centres had become at meeting their corporate objectives (Coughlan, 2010). He said that Irish companies had become very adept with creating the business know-how to impact on their regions successfully. Without proper evaluation techniques such business know-how could not be created.

5.4.2 Outsourcing Program evaluation

Programme evaluation can be outsourced in certain areas of the world. One such centre is located at the University of Melbourne in the centre for programme evaluation (Melbourne University - Centre for Program Evaluation, 2006). The centre undertakes commissioned research on a consultancy basis and focuses on the practice and theory of program evaluation.

5.4.3 Post incubation monitoring

The problem with the post incubation monitoring is linked to the identification of what goals incubation centres should be rated against (Economic and Social Research Council (ESRC), 2008). The ESRC found that there were difficulties in establishing links between the centres and their beneficiaries. They also found that it was very difficult to assess the long term impact of innovation centre research and the wider community. The time delay in reaping the rewards of research highlighted additional problems. Many research problems were undertaken over a period of time. The rewards of the research may not have been reaped for numerous years. Putting a value on these rewards was next to impossible. If you factor in Schumpeter's theory of creative destruction (Schumpeter, 1942) one must also allow for the fact that some research may be worthless as someone comes up with new and innovative products and services.

There appears to be a lack of an agreed set of monitoring procedures that will monitor effectively the impact that a centre has (Economic and Social Research Council (ESRC), 2008). The information that centres use to assess their performance is likely only to present an estimated picture of a 'point in time'. Estimating the future value of projects, and their future benefits to society, is a guessing game, and can rarely be assessed. ESRC have concluded that although research is aimed in the right direction there is little evidence on the actual foundation of the research itself (Economic and Social Research Council (ESRC), 2008). 'Point in time' research, according to ESRC, only gives information at a specific 'point in time' and not the life of the project. Research should be able to provide data over the life of the centre and the projects

5.4.4 Monitoring and fundraising

One other important reason for monitoring the data is the whole area of business fundraising. While no empirical studies have apparently been carried out in the area of incubation fundraising, one can assume that the most successful applications for funding would be those with the most accurate data on their centre.

5.4.5 Evidence on levels of tracking

While no direct information could be found with respect to the number of centres that track their incubation centres, a US survey carried out by the International City/County Management Association found that 66% of local governments did not track the success of their local development efforts. 38% of those surveyed were incubation managers (Stenberg et al, 2006). It does appear that the tracking of the centres is far more relevant and important at the moment (Mc Court, 2010).

Research in some countries has been far more successful in tracking the success of their centres. In Norway a study found that it could clearly identify the main areas of success, particularly in cluster areas (Isaken, 2009). One of the most important findings of this report is that the study was able to show information at a local level that was contrary to National opinion and findings. Localised information also highlighted the fact that local higher education facilities are more capable of adapting to their local environments.

A study carried out in Germany and in the UK (Cantner et al, 2010) found that centres were still afraid of the network models, in the area of post-incubation monitoring. The report concluded that exchange and collaboration between centres can have enormous benefits for incubation centres. While both studies were cited in their own right, there has been no research to assess the data that was used by the centres in evaluating the centres, covered by their surveys. Some centres use very sophisticated forms of research and others use very basic research methods to assess their impact. The very fact that variances do exist highlights the need for an accepted method of data collection.

5.4.6 UKBI 'inspire' programme

The UKBI have an inspire programme aimed at assisting innovation centres in data collection. The aim of the 'inspire' programme is to assist in the monitoring, development and accreditation of business incubation programmes. It is based on the Business Incubation Development Framework (BIDF) (Drapier, 2010) and covers both virtual and physical incubation activity. The aim is for centres to

develop a core basis for data collection to assist centres them in providing more accurate information for their stakeholders.

One of the most comprehensive frameworks that has been adapted by the NBIA with the assistance of all its members in the states. Fully acknowledging the lack of comparable accurate data being received from their members they initiated a framework for data collection from their members.

- Number of current clients
- Total number of graduates since program inception
- Number of graduate firms still in business or that have been merged or acquired
- Number of people currently employed full-time (at least 32 hours) by client and graduate firms
- Number of people currently employed part-time (>32 hours) by client and graduate firms
- Current monthly salaries and wages paid by client and graduate firms
- Gross revenues for the most recent full year for client and graduate firms
- Dollar amount of debt capital raised in most recent full year by client and graduate firms (bank loans, loans from family and friends, revolving loan funds, or other loan sources)
- Dollar amount of equity capital raised in most recent full year by client and graduate firms (include investments from angel investors, venture capitalists, seed funds, or other equity capital sources)
- Dollar amount of grant funds raised in most recent full year by client and graduate firms (SBIR, state grants, etc.)

(NBIA 2010)

The above information looks at the hard and fast economic impact of innovation centres. For a lot of the centres, while self-sustainability and financial impact may be very important, the non-economic factors should also be considered. The needs of all the stakeholders should also be considered. More simplistic information such as the number of graduates that stay in the sector or the length of time they stay in business after incubation should also be considered as very important variables,

5.4.7 Benchmarking data for program evaluation

Not surprisingly the problem for incubators is to try and compare their performance against other centres, especially when evidence suggests that networking of centres is not very prevalent (Isaken, 2009), (Cartener et al, 2010).

The incubation centre in Southwest Michigan (Southwest Michigan Innovation Center, 2010) found that the best way to get co-operation was to come together with some of its colleagues and peers in the industry and agree key data that would be used in their benchmarking process. They also agreed to share the information at regular intervals with their rival centres in the interest of their centre. In addition, they take their benchmarking one step further with the publishing on the website both short and long term success rates. The centre outsources its data collection to an independent data collection company (Cochrane, 2010)

There are alternative methods of program evaluation that can give a very clear message to stakeholders, both current and future, of the true excellence of a centre. One such method is to seek an ISO90001 certification. There is evidence all over the world that centres are now looking for, and relying on this certification as a public statement of their commitment to quality (Food Business Incubation, 2009), (Department of Biotechnology, Ministry of Science and Technology, Government of India. , 2010). Microsoft in the USA go a step further and recommend only software + services incubation centre partners that have an ISO certification (Microsoft, 2010).

5.4.8 Importance of qualatative data

Some of the most important benchmarking information is not possible to be correlated in factual data and may be qualatative in nature. Information on the services, mentoring, facilities and a vast array of different information may be of great use to the centres and should be gathered. One of the best methods to carry out this research is by direct feedback from companies (pre, current and post incubation companies). Research has shown that outside agencies are being used by centres in the persuit of their client feedback. Innovacorp in the US use outside professional fact finding agencies to correlate qualatitive data. Research is carried out by telephone surveys of client perceptions and surveys (MacDonald, 2010)

Chapter 6

Conclusions and Recommendations for the IiBC at GMIT

6.1 Conclusions

The research into innovation is vast and varied and regardless of what theory you use, the evidence is that innovation is essential for business exploitation and generation. Business incubators are one of the most targeted forms of business assistance for entrepreneurs. Without these incubators, in whatever format they represent, many businesses would not be able to start exploiting their business ideas.

The problem for incubation centres is the assessment of their own performance. Assessment can mean the difference between funding or not, new client companies or not and ultimately continuing in business or not. While assessment can be carried out at local level, particularly in relation to the impact the centre has on the local economy, or the number of companies that continue after graduation, or even its fulfilment of corporate goals, 'big picture' assessment is not very prevalent.

'Big Picture' assessment for innovation centres means being compared against your peers, in a locality, country or internationally. The UN, as have many others, concluded that all centres are different. If their findings are true how can incubation centres put forward a valid case for them excelling (or otherwise) in the business or business incubation.

Stakeholders, especially when cash is now a scarce resource, have the right to know how centres are performing. Should we, the general public, finance underperforming centres what use their own interpretation, of their own performance, to carry on in business? On the other hand should we limit resources to centres who manage to churn out successful companies that add 'real' value to society?

Incubation centres, both literally and in their operations, can mean many things to many people. The success of centres can be determined by many factors,

depending on whose eyes you are looking through. But success can be coloured differently by those same eyes, by the incorrect interpretation of information, generally qualitative by nature. But unless centres start signing up to public scrutiny, accountability and meaningful benchmarking, the risk of incorrectly judging a centre will always exist.

Yes, benchmarking does exist in theory (and in practice in limited circumstances). But unless benchmarking becomes the rule and not the exception, accurate comparisons, cannot be drawn between centres and their performance. Ironically, benchmarking, something centres are avoiding, could also open a lot of opportunities for centres.

Benchmarking should motivate centres to constantly strive for improvement and become models of best practice that others can follow. Areas where centres fall down should be improved. Formal and informal networking, and relationships built up in the benchmarking process can only be of benefit to centres. Marketing alliances, extra resource expertise and of course ways to improve the performance of individual centres are just some of the potential advantages.

This study investigated best practices in operation in different centres in the world and recommended how these best practices could be applied to the liBC at GMIT. But a judgement call had to be made on what constituted best practice. Best practice for innovation centres, at the moment, is only a recommendation, by some of the business incubation networks. Reports into business incubation have all come up with bespoke best practice models. But nothing definitive has been agreed by anyone. With the importance of innovation in the modern world, and the level of investment going into innovative projects (both privately and publically), the time has come for both private and public institutions to agree criteria for benchmarking best practice in incubation centres.

In the meantime, the liBC should get outside agencies to benchmark its activities to insure that it is getting the best return on its investment and churning out the highest percentage of new companies as is possible. Dr. Chris Coughlan (HP) clearly stated that Irish companies were, in general, excellent at setting

quantifiable targets and monitoring performance against the targets. The IiBC at GMT needs to be no different. With or without the cooperation of other centres to compare its performance against, it should strive to become a model of best practice and best practice benchmarking, in its own right.

6.2 Recommendations for best practice strategies that could be implemented in the Incubation Centre at GMIT

Constantly striving towards internationally best practice can only be of assistance to the liBC at GMIT. There are no magic solutions to guarantee streams of excellent applications, and graduated, to the centre. All that can be insured is that if the operations of the centre are to a high (and recognised) level, new companies will know that applying to the liBC, they are applying to a centre of excellence, of best practice. If these entrepreneurs are looking for the best possible chance of success, then applying to a centre exhibiting best practice is a win-win for all sides.

Recommendations for the liBC at GMIT

6.2.1 Written Strategies

The importance of proper entrance and exit strategies cannot be understated. The liBC at GMIT is lucky, like a lot of its counterparts, in that it has the right to decide who to accept and reject into the incubation program. Having a clear, well designed application form is the most basic of requirements for selection. Though the application form is not available for public view on the liBC web page, web-site research into the entrance and exit strategies of its colleagues and competitors should allow the liBC at GMIT decide on the most appropriate criteria, for the liBC, to be used as part of entrance and exit strategies.

6.2.2 Centre and client evaluation

There is evidence (Wright et al, 2005) that different centres have carried out research into their own weaknesses and capabilities so they can better target their resources at new entrants. A full review of the capabilities and weaknesses of all personnel who come in contact with incubees should be carried out (both paid and volunteer). Similarly, a full assessment should be carried out by the centre (or self-assessment) on the needs and requirements of potential companies. New companies should be shown how to assess their company and idea. The result should be better matching of the needs of the new companies to the capabilities of the centre.

6.2.3 Communication of strategies

The criteria used to grade both entrance and exit assessments should be communicated, as often as possible, to the companies. If marking schemes are being used they should be transparent and verified by more than one member of staff. Ongoing assessments should clearly indicate the position of the company with respect to potential graduation. Targets should be given to the management of the companies to ensure that they are constantly advancing their projects and ventures. Failure to achieve targets should result in the company being removed from the centre.

6.2.4 Innovative policies

The innovative selection criteria used by Perdue and Innovacorp have been very successful. Not alone does this innovation target more entrepreneurial candidates but it can also serve to provide excellent public relations and promotional opportunities for the centre. The Entrepreneurial Enterprise awards for students are an excellent example, and are quite similar to those on offer in Perdue (see appendix 7). The IiBC should continue to look for innovative ideas that will result in better client pipelines, as well as P.R. opportunities.

6.2.5 Striving toward self-sustainability

Ultimately, the IiBC should strive towards a model of self-sustainability. The OECD report on incubation centres in Australia and similar reports carried out by the NBIA clearly identify the importance of incubation centres striving to become self-sufficient. At present the IiBC has only one main revenue source which is the GMIT. Clearly this is not enough. As the economy in Ireland is still in turmoil budgets will be continually squeezed in the public sector. Incubation centres cannot expect to be immune from these cuts.

6.2.6 Other revenue sources

The GMIT must look for alternative revenue sources. The study has highlighted some of the potential sources of income for incubation centres. The IiBC, must, in partnership with the administration in the GMIT, agree a plan of action to find alternative revenue sources for the centre. The risks of not doing this could be detrimental to the long term survival of the college.

6.2.7 Importance of following the Strategic Development Plan 2010 - 2015

The GMIT has quite a clear and well-defined vision for the future and has just released its Strategic Development Plan 2010 – 2015. The IiBC was set up in accordance with the previous strategic development plan of the GMIT. The mission, vision, values, and performance indicators (overarching goals) are clearly identified in the plan. The IiBC is set up in accordance with this plan.

6.2.8 Communication with management to ensure compliance

The fact that the college has a very well-defined strategic plan makes the job of corporate governance of the IiBC a lot easier. The directors and management of the centre must ensure that the strategic plan, as it applies to the IiBC, is adhered to and reported on. The directors of the college must continue to ensure that there are regular and meaningful reporting procedures in place to ensure the correct direction of the centre.

6.2.9 Recruitment and selection code of practice

Regardless of the economic model within which incubation centres work, getting the right personnel for the job is essential, and the success or failure of the centre could depend on the correct recruitment and selection policies. The GMIT recruitment and selection policy, as agreed by its board of directors, is a comprehensive document that deals in detail with all areas of the recruitment and selection. The selection process is agreed by all the college stakeholders. This code of practice is also in use in the IiBC. Consequentially, it is fair to assume that staffing procedures meet best practice standards in Ireland.

6.2.10 Hiring and training additional staff

One of the biggest issues facing the college, given the difficult economic times which we find ourselves in, is the ability to bring in additional staff as is required, especially if they have to be paid, and the clients cannot afford to pay. Angel advisors and volunteers may be able to assist and management must ensure that the networking abilities of the management and staff include a wide range of people who will be able to assist the centre. Funding must be made available for the training of all personnel as well.

6.2.11 Networking for additional resource capabilities.

Networking with other facilities may also prove very useful. Other colleges and centres may have resources and skills in abundance, where the IiBC at GMIT may be deficient - and visa versa. Formal and informal links should be fostered and supported in all activities of the centre.

6.2.12 Networking for Benchmarking

Evaluating the performance of any incubation centre is one of the hardest tasks that managers have. There are no accepted benchmark criteria. Until there is some form of agreement between centres benchmarking one entity against another will be practically impossible. The IiBC at GMIT should look to create a group of similar incubators and agree benchmark criteria so that centres can accurately assess their performance. Networking groups may be an excellent starting point for such an agreement.

6.2.13 Networking for Marketing supports and assistance

Alliances with other centres to promote the services and facilities of an individual centre or a group of incubation centres should be looked at. Costs can be shared and with the increased marketing spread and population coverage, the centres can leverage enormous benefits from joining with other centers. Groups can be large groups such as the NBIA and the UKBI. The IiBC should look at leveraging marketing assistance from alliances with other Institute of Technology incubation centres (eg Tralee and Waterford). This form of alliance will open the IiBC to exposure from people who use the facilities or web sites of these centres. Similarly a Galway alliance with the incubator at NUIG and the Ballybane enterprise centre could help promote the incubation assistance facilities in a region.

6.2.14 Networking for better information sharing between centres

Networks will also allow managers to share information on operational practices, client companies, research and many other forms of information between centres.

6.2.15 Networking for additional resource capabilities.

Networks between centres, particularly in Galway, could result in more human resource and advice sharing to the benefit of its client companies. Ultimately the more successful the client companies are the more profile they will get and the more successful the centre will be.

6.2.16 Social networking

On line social networking sites are now offering countless ways of people getting in contact with each other. Social networking is now seen as a communication phenomenon. However the benefits for business generation are unclear. The beauty of social networking lies in its low cost structure. As a marketing and promotional tool its benefits are unquestionable and should be used to its full advantage to communicate information to current and potential users. However, social networking sites must be used and updated constantly to avoid it being closed down and to avoid your users growing tired of the information on your site. If the LiBC decides to use social networking sites the information must be relevant and interesting but most importantly be updated frequently. The alternative could have very negative consequences for the LiBC. For the LiBC, manpower is an issue and agreement must be made with the college for the allocation of the required hours to pursue social networking as a communication tool.

6.2.17 leveraging through 'SMART' facilities

There is evidence to suggest that being part of a centre is, in itself, a way to leverage competitive advantage. However, if we take this one step further, in a SMART economy, one of the most important leveraging tools that can be offered to new clients is a 'Smart Building'. Building a smart economy is a new way or re-organising the economy over a number of years (Cowen (Taoiseach), 2008). Developing a smart economy is a framework to address the current economic challenges faced by Ireland. The reorganisation, according to Cowen, will result in 'a thriving enterprise sector, high-quality employment, secure energy supplies, an attractive environment, and first-class infrastructure'.

The William factory innovation centre in Tacoma in the US opened its first Smart office in 2004, and followed it with another in 2009. These offices with ‘technologically the most sophisticated small office buildings’ were designed to match the changing technological world, within which innovators worked in. If a ‘SMART’ economy is seen as the way to get countries moving again, then the need for ‘Smart facilities’ is even greater. The IiBC at GMIT should look to equip its centre with all the most modern and up to date research and technology infrastructure, as is feasibly possible, to meet the needs of its new incubees, and leverage competitive advantage to some of the other incubation centres.

6.2.18 leveraging through High Performance Start-Up supports (HPSU)

The IiBC at GMIT and Castlebar has already a number of HPSU companies using their facilities. The IiBC should continue to ensure that it promotes all the leveraging and assistance tools that it has. For some potential companies, particularly potential HPSUs, knowing that centres have the capability to advance companies to HPSU status, and open the doors that this status offers, this facility is very important. This could be a key factor in attracting new companies to join the IiBC, and an excellent pipeline source.

6.2.19 leveraging through the management of IP

Intellectual Property is ultimately what will protect the company should their product be successful. The GMIT has a wealth of information and experts at its disposal. Using these available resources, the IiBC at GMIT should ensure that, at all stages of product development, the IP rights are kept up to date and managed correctly. It may also be necessary, given the importance of IP protection, to use the outside legal supports that the GMIT have already in place.

6.2.20 Leveraging through Marketing and PR

The study has highlighted the multitude of ways that the IiBC at GMIT could maximise its own and that of its client companies, marketing return. Every marketing angle should be exploited. Just as there is no point having a book in the library if nobody knows it is there, the same applies for the IiBC. Successfully marketing the centre will raise its awareness. The more people that are targeted in marketing (web site, social media, and printed materials) the more

chance there is of raising the profile. The UN has already concluded that one of the most important factors for an innovation centre is its profile. Market exposure should be a primary target for the LiBC - the very success of the centre could be a direct result of this.

Appendix 1

Quality Benchmarks for Business Incubators

A partnership project to measure and raise standards in business incubation



Contents

Introduction		2
Composition of the benchmarks		3
Organisations involved in the project		5
Foundation Phase		7
<hr/>		
Key Area 1: Effective management of strategy & policy		
Principle 1	Entry policy	7
Principle 2	Incubation strategy	8
Principle 3	Exit policy	9
Principle 4	Strategic framework	10
<hr/>		
Key Area 2: Skills and experience		
Principle 5	Generic management skills & experience	11
Principle 6	Business experience	12
Development Phase		13
<hr/>		
Key Area 3: Client support		
Principle 7	Trust and empathy	13
Principle 8	Entrepreneurial approach	14
Principle 9	Networking skills	15
Principle 10	Mentoring skills	16
Principle 10A (optional)	Relevant experience for targeting specific groups	17
<hr/>		
Key Area 4: Effective management of operations and processes		
Principle 11	Monitors performance	18
Principle 12	Tailored client learning	19
Appendices		
Appendix 1:	SFEDI 7 Key areas of Knowledge & Understanding	20
Appendix 2:	SFEDI Key Principles for Effective Small Firms Learning and Development	23

Composition of the benchmarks

The benchmarks are presented as two linked sections.

Foundation Phase: this relates to activity that defines the incubation environment and makes it different from, but complementary to, other forms of business support.

Development Phase: this relates to core elements that all incubators will need to develop in order to become mature incubation environments (i.e. the stage at which they are providing a wide range of services to clients, achieving objectives and are becoming independent and sustainable).

The standard is concerned with the management of the process of business incubation and its delivery as well as the management of strategy and policy. It is comprised of 4 **Key Areas**, each of which relates to the primary areas of work an incubator should be undertaking in order to provide a high standard of service to its clients.

1. Effective management of strategy and policy
2. Skills and experience
3. Client support
4. Effective management of processes and systems

The key areas are made up of a number of **principles** with **indicators** to show how they should be followed. The incubators must meet these indicators, which are made up of elements of **good practice**. These, in turn, set out the practical steps incubators can take to meet the requirements of the benchmarks. The **good practice** section provides examples only and it is not intended to be exhaustive or prescriptive.



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Introduction

The benchmarks have been developed by the Small Firms Enterprise Development Initiative Ltd (SFEDI) in partnership with UK Business Incubation (UKBI) on behalf of the Department of Trade and Industry's Small Business Service (SBS), Scottish Enterprise, Welsh Development Agency (WDA) and Invest Northern Ireland, to help promote quality and consistency of service within the business incubation community. Incubation is a relatively new concept and practice in the UK. There are varied approaches to it and the term has historically been open to different interpretations. The Quality Benchmarks for Business Incubators is part of an initiative to promote national standards to which incubators can work and ensure consistent levels of quality service.

The new benchmarks were piloted with 10 incubators at various stages in their development. An assessment process was put in place, assessors recruited and participating incubators engaged in a development process. Assessment was by interview and observation and was not onerous in terms of evidence requirements, as no portfolios of evidence were needed.

The benchmarking document was based on the report, 'Benchmarking Framework For Business Incubation', published on 21st January 2003 by UKBI. The Quality Benchmarks for Business Incubators standard is an example of the practical application of the report's conclusion. The focus of the standard is on the management skills and knowledge (including the management of systems) necessary to set and achieve planned objectives and is based on the definition of business incubation the report provides.

An assessment strategy, which details how individual incubators were assessed against the various key areas and principles of the standard, provides accompanying and complementary documentation.

Aims and Objectives

The ultimate aim of the standard was to produce a quality assurance framework within which the level and consistency of services to incubator clients can be assessed. This will subsequently help incubators provide a high quality level of service to start-up and early stage businesses, with particular emphasis on the provision of learning and skills development opportunities that are capable of addressing business objectives and contributing towards accelerated business development and growth.

The above should also contribute to raising the small business skills base within those localities where the incubators are operational.

In addition, the more specific objectives of the standard are to:

- ◆ provide a benchmark of 'good practice' indicators against which business incubators can be measured;
- ◆ ensure that incubators provide a high quality consistent and flexible service to clients;
- ◆ provide incubators with a clearer understanding and appreciation of the preferred learning styles of start-up and early stage businesses across all sectors and of the particular constraints faced by start-up and early stage ventures; and
- ◆ enable incubators to re-evaluate their activities and performance on a regular basis, and work towards continuous improvement.

Organisations involved in the project



**small
business
service**



**Business
Incubation**

The Small Business Service (SBS) – an Agency of the Department for Trade & Industry (DTI)

The Small Business Service (SBS) was launched in April 2000. Its task, in co-operation with the whole of Government, is to deliver the Government's vision of wanting more people to have the ambition of starting their own business and, for all those who take that step, to have every chance of succeeding.

Having listened to the small business community and talked to colleagues across Whitehall, the SBS has developed a policy framework based on the key drivers to economic development and growth – improved productivity and a wider involvement in enterprise for all, to ensure a more coherent engagement between the whole of Government and the small business sector. The framework encompasses seven core themes from which seven national strategies have been built:

1. Building an enterprise culture
2. Encouraging a more dynamic start-up market
3. Building the capability for small business development and growth
4. Improving access to finance for small businesses
5. Encouraging more enterprise in disadvantaged communities and under-represented groups
6. Improving small business' experience of Government services
7. Developing better regulation and policy

The SBS is looking at the development of business incubation within the overall framework of business support, as part of its start-up policy. It aims to ensure that all members of society, who need and will benefit from the process of business incubation, have access to it.

The SBS is the major funder of this project and has contracted with UK Business Incubation (UKBI) and the Small Firms Enterprise Development Initiative Ltd (SFEDI) to undertake the work. Other partners involved in the project are Scottish Enterprise, the Welsh Development Agency (WDA) and Invest Northern Ireland.

UK Business Incubation (UKBI)

Providing Leadership in Business Incubation

UK Business Incubation (UKBI) is recognised by the Government as the lead body for business incubation in the UK and by practitioners and stakeholders as the cornerstone of the future development of quality incubation in the UK. UKBI has made significant contributions to shaping Government policy, promoting quality business incubation, providing specialist development events and information and has successfully delivered major contracts e.g. DTI's Internet Incubator fund (IIF).

UKBI supports the development of its members and wider business incubation community to increase the quality and quantity of incubation in the UK by increasing the survival and growth rates of early stage businesses, in commercialising new ideas and research, developing clusters and the regeneration of local and regional economies. UKBI will achieve this by championing the interests of the business incubation industry, spreading good practice, standards of incubation and being a catalyst for innovation development and change.

UKBI has the following key aims:

1. The development of quality incubators and incubation through benchmarking, development, networking, research and the promotion and support for innovation, development and change.
2. Lead in presenting and promoting quality UK incubation – maintain UKBI as the authoritative voice of business incubation.
3. Promote member's interests and put them at the centre of UKBI's activities, best practice and skills development.
4. Act as a catalyst for and supporter of innovation and change, the development of best practice and incubation skills and lead in the provision of information/research.

In light of the lack of clarity on the meaning of "Incubation", UKBI has published a national definition of the term:

"Incubation is a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development and change."

F) Marketing and Sales

- ◆ How marketing activities contribute to sales and to developing customer relationships.
- ◆ What contribution marketing and sales planning can make in achieving the best return from limited resources.
- ◆ How to describe products or services in terms of features, benefits and unique selling points.
- ◆ Where to go to get market information on designing and developing products and services, logos, devices, branding and e-commerce.
- ◆ Where SME's can go to get specialist advice.

G) Operations and processes

- ◆ How business performance is measured, including costs, speed, flexibility, reliability and quality.
- ◆ The options available to improve the efficiency of SME's.
- ◆ How health and safety laws affect SME's and what will happen if SME's do not follow those laws.
- ◆ Managing health and safety issues (including risk assessments, risk control and monitoring) as an active part of business operations.
- ◆ The effect the SME's products and services may have on the environment they work in.
- ◆ Where SME's can go to get specialist advice.

Appendix 2

SFEDI Key Principles for Effective Small Firms Learning and Development

Incubator management will find these generic key principles helpful in identifying appropriate learning, training and development solutions for clients.

Identifiable benefits

Different types of small firms have different attitudes to learning, training and development, and most small firms are likely to prefer more informal learning techniques.

Most research shows that learning, training and development is a relatively low priority for small firms. It also shows that the business benefits of owner and manager development are considerable and that they often lead to further investment in people development.

Small firms will get more involved in learning, training and development if they are encouraged to identify the real business benefits of these activities. Small firms enjoy recognition, such as Investors in People and qualifications, but do not usually get involved in programmes and other development activities to get recognition.

- 1 An owner or manager should be able to clearly identify the benefit of a particular piece of learning, training or development.
- 2 Learning, training and development should help the owner or manager to tackle a problem their business is facing.

Immediate

The smaller a business, the shorter the timescale for strategic planning. Six months is a long time ahead for a very small business.

- 3 Learning, training and development should relate to the planning timescale within the firm.

Time flexible

The smaller the business, the less formal the management of the business and the less time is available for planning or arranging learning and development, even if it is informal. The more time an owner or manager spends on the day-to-day running of the business, the more impractical it is for them to take part in training activities during working hours.

- 4 Learning activities should be delivered at a time and a place that suits the owner or manager.
- 5 Learning activities should, where possible, be approached in small bite-size units of minutes rather than hours.

Small firms specific

Getting small firms involved with learning, training and development activities should 'join entrepreneurs in their world' (reference: Council for Excellence in Management and Leadership). Different learning, training and development opportunities must be made available to meet the varying needs of the very wide range of small businesses.

- 6 The type of learning, training and development should match the needs, preferences and restrictions of the potential clients.

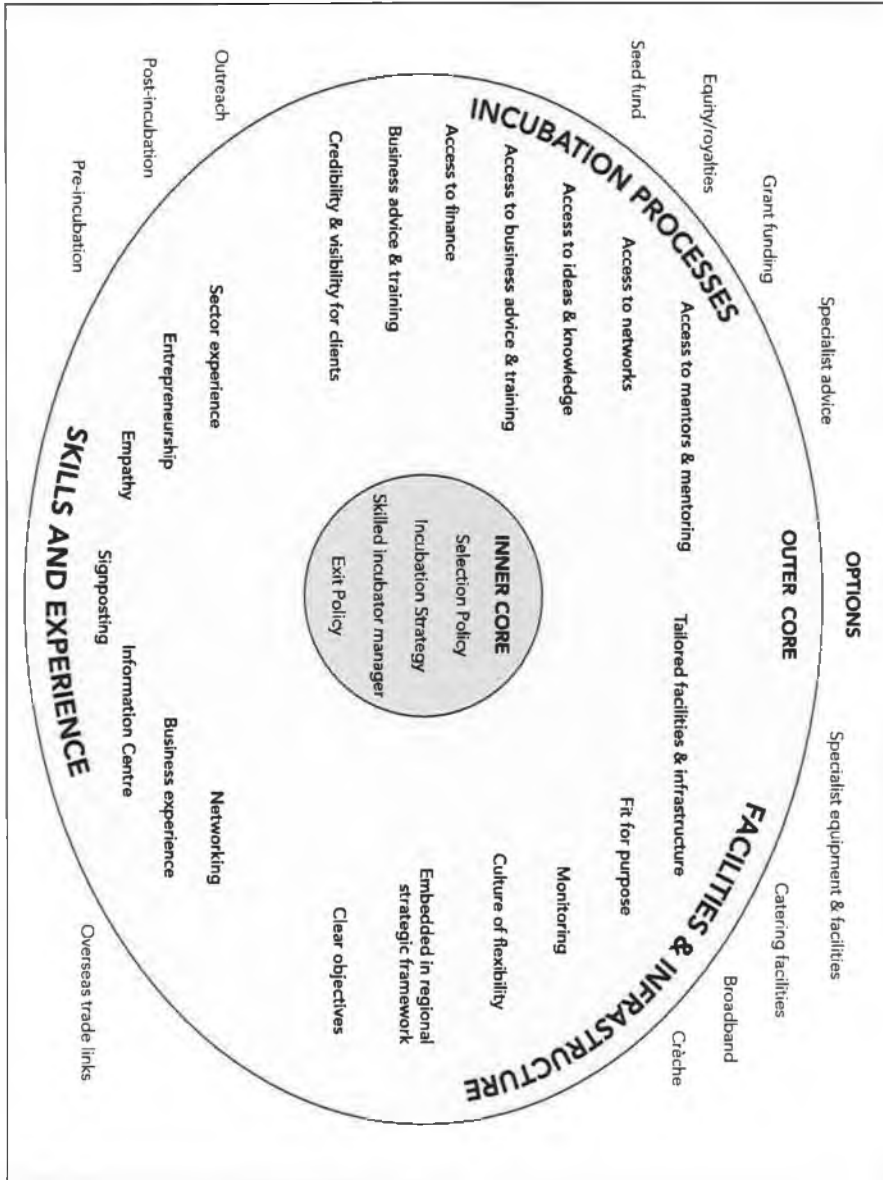
Appropriate methods of learning

Small-business owners or managers prefer to learn from the experiences of other small businesses. Learning, training and development will be more effective if it is in the informal and experiential learning style that small business personnel prefer.

- 7 Learning, training and development should allow the owner or manager to learn from their own experience or the experiences of other businesses.
- 8 Learning, training and development should be as active and informal as possible. This means that the centre creates opportunities to learn rather than giving formal input.
- 9 Learning, training and development should relate to the client's own business as much as possible.
- 10 Learning, training and development should be in plain English and free of jargon.

Graphical illustration of the incubator environment

As defined by the report "National Incubation Benchmarking Framework" (LKB), January 2003), this diagram illustrates the core processes and services that all incubators should be striving to provide for their clients. It also presents a range of optional services that some incubators may need to provide.



Foundation phase

The units in the foundation phase are those that define the characteristics of the incubator environment and its offering to, and impact on, clients. These units represent the skills and activity that make business incubation different from, but complementary to, other types of business support. They also provide the foundation upon which a mature and sustainable incubation environment can be built.

> Key Area 1 – Effective management of strategy and policy

This key area is about making sure that the incubator has the management skills resources necessary to produce, implement and manage policies and strategies that form the critical core principles of the operation of the incubator. It is also concerned with ensuring that these policies and strategies are implemented in a way that best serves the interests of both the incubator and the clients.

Principle 1

It is vital that proposals from prospective clients are subject to a rigorous selection process so that only those that will benefit from (and contribute to) the objectives of the incubation environment are recruited. The entry policy should be compatible with the overall **internally and externally focussed** incubator strategy so as to ensure consistency of delivery and to contribute to the incubator's aims and objectives.

Principle

Incubators demonstrate effective management of the **entry policy**.

Indicator

In order to assess proposals from prospective clients, management needs to do the following:

- ◆ select those that will benefit most from an incubation environment
- ◆ meet the objectives of the incubator and its stakeholders

Good Practice

- ◆ undertake a due diligence exercise (on the people) and a critical analysis (on the business idea) using experienced individuals with knowledge of the sector and relevant business experience
- ◆ produce a written entry policy and publicise it (e.g. through promotional materials, website, sources of referrals)
- ◆ put in place appropriate screening procedures, which ensure that clients:
 - exhibit the potential for development and growth
 - meet specified targets
 - are able to produce a business plan
 - have the potential to benefit from the learning opportunities and mentoring offered
 - have the capacity to pay for the services and facilities offered

Appendices

- 1) **SFEDI 7 key areas of Knowledge & Understanding**
- 2) **SFEDI Key principles for effective learning and development in small firms**

The appendices that follow are intended as best practice that Incubator Management teams may wish to embrace to the benefit of both their own and clients development.

Appendix 1

The 7 areas for knowledge & understanding forms part of the SFEDI Business Support standards and is used to measure the depth and application of knowledge in the areas that are essential to giving holist business advice.

Appendix 2

The key principles for effective learning and development were produced following research with small businesses and the results of the research undertaken by the Council for Excellence in Management & Leaderships Entrepreneurs group (CEML).

Appendix 1

SFEDI 7 Key Areas of Knowledge and Understanding as required by Business Support Staff

The following is a brief overview of the 7 key areas of business (as defined by the SFEDI Standard for Business Support) for which advice may be appropriate and helpful to incubator clients. Business support intermediaries, such as Business Link operators & Enterprise Agencies, have been assessed against these as part of professional competencies within quality assurance programmes.

This section is for information only and does not form part of the assessment process.

A) Strategic Overview of the business

- ◆ Why some SME's succeed when others fail.
- ◆ Strengths and weaknesses of different types of SME's with regard to their market sectors and stage of growth.
- ◆ The main features and benefits of:
 - Investors in People;
 - The Business Excellence Model; and
 - ISO 9000.
- ◆ The benefits of using various diagnostic and analytical tools.

B) Finance and accounting

- ◆ Accounting systems (manual or IT based).
- ◆ Financial statements.
- ◆ The main financial indicators, including:
 - gross profit;
 - net profit;
 - break-even point;
 - stock turnover;
 - debtors days; and
 - return on capital
- ◆ Current tax, VAT and National Insurance levels.
- ◆ Where SME's can go to get specialist advice.

C) ICT and e-commerce

- ◆ Commonly used business software.
- ◆ The main features of intranet and extranet.
- ◆ The main requirements of the Data Protection Act.
- ◆ Where SME's can go to get specialist advice.

D) People

- ◆ The ways in which SME's can:
 - train and develop staff;
 - review their learning and development policies;
 - recruit and keep staff;
 - manage staff performance;
 - deal with losing key workers; and
 - develop teams and improve their performance.
- ◆ How legislation can affect SME's and how they can take steps to keep up with it, including:
 - employment and contract law;
 - equality of opportunity law; and
 - health and safety law.
- ◆ Where SME's can go to get specialist advice.

E) Innovation and technology

- ◆ The changes in the way SME's are using technology including:
 - supply chain management systems;
 - workstation design; and
 - marketing and distribution systems.
- ◆ Typical strategies SME's can use to encourage innovation including:
 - financial and other incentives;
 - culture change;
 - organisational development;
 - business process changes; and
 - leadership.
- ◆ Where SME's can go to get specialist advice.



Small Firms Enterprise Development Initiative Ltd (SFEDI)

SFEDI is recognised by the Government as an organisation that sets standards for people who are starting up and running small businesses, and for those providing advice and support to them. As a result, it has developed four sets of occupational standards for Exploring Enterprise, Business Start Up, Business Development and Business Support. These standards have been widely used to guarantee quality and approve a range of products and services aimed at developing small businesses, such as websites, manual guides, qualifications for owners and managers of small businesses, business-support personnel and university students, and the services provided by business-support organisations working in different business-support environments.

A board made up of owners and managers of small businesses is responsible for driving SFEDI towards its vision of:

'increasing the ability of the self-employed and owners and managers of small businesses and their staff to start up, survive and thrive, through their access to improved learning assistance and the highest standards of small business support.'

SFEDI's main roles within the project were to produce the standard and its accompanying assessment strategy, pilot the standard, and to manage the overall assessment process.

Principle 3

The principal aim of the incubator is to move clients to the point where they are no longer wholly dependent on its services. Like the entry policy, the exit policy needs to fit with the overall incubator strategy so as to ensure consistency of service delivery and to contribute to the incubator's aims and objectives.

Principle

Incubators demonstrate effective management of the **exit policy**.

Indicator

Incubator management should work towards reducing clients' dependency on support, through:

- ◆ supporting them to an agreed stage in their development
- ◆ encouraging them to leave once this has been achieved
- ◆ assisting relocation

Good Practice

- ◆ produce a written exit policy and publicise it (e.g. through promotional materials, website, referral sources). The policy may include:
 - maximum time limit
 - stepped rents
 - incentives to exit
 - removal of subsidies
 - agreement for mandatory development and growth targets at the outset
- ◆ set and agree targets with clients
- ◆ agree exit policies with clients from the outset
- ◆ put in place processes that encourage exit
- ◆ work with clients to establish foundations for development after they leave the incubator
- ◆ assist clients in finding grow-on space
- ◆ establish mechanisms to monitor progress after clients leave the incubator
- ◆ maintain contact with clients after they leave the incubator (e.g. post-incubation support)

Development phase

> Key Area 4 – Effective management of operations and processes

This key area is about ensuring that management has the skills and experience necessary to effectively manage the incubator environment as a whole and the systems and processes individually. In order to assist clients to grow their businesses it is important that the incubator management has in place appropriate and efficient operations and processes to support both the team and the clients.

Principle 11

Monitoring performance against pre-determined measures will assist the incubator to measure success. There should be clear links between the performance measures and the incubator strategy, entry and exit policies. Performance monitoring is the basis for evaluation and review and as such it is a key driver of service development and improvement.

Principle

Incubator management effectively **monitors performance** of the incubator and its clients.

Indicator

To continually improve services to clients, and to meet objectives management needs to do the following:

- ◆ define appropriate and realistic objectives and targets
- ◆ plan how to achieve them
- ◆ put in place processes to measure performance

Good Practices

- ◆ consult with staff on planning processes
- ◆ communicate the objectives as appropriate
- ◆ put in place transparent performance measures
- ◆ implement reviews/surveys of client progress
- ◆ set targets
- ◆ encourage informal feedback
- ◆ conduct customer satisfaction surveys
- ◆ link targets to selection and exit strategies

Principle 12

Ways of supporting clients' learning and development are an essential part of the incubator environment. They should be flexible and responsive in order to take into account the various preferred learning styles of clients. Management should have the skills necessary to manage and review the development and practice of learning, information, advice and training provision.

Principle

Incubator management develops and puts into practice systems and support for **“bespoke” client learning, information, advice and training**

Indicator

To develop and put into practice flexible, bespoke support for client learning to help them overcome the barriers to development and growth, management needs to do the following:

- ◆ assess the effectiveness of support and the way it is delivered
- ◆ put together a “library” of information and learning provision
- ◆ ensure that the necessary resources are available

Basic business advice and information as well as more specialist advice may also be required depending on client needs. Where this is the case management needs to decide how best to deliver an appropriate package of support utilising:

- in-house resources
- identifying and bringing in external business support providers

Good Practices

- ◆ identify the most relevant types of informal and formal learning and training for the needs of different clients (e.g. on-line learning, mentoring, formal/informal courses, tutor support)
- ◆ assess the scope for creating new ways of supporting clients in their preferred learning styles
- ◆ develop a strategy to ensure equality of access to learning, advice, information and training
- ◆ assess client needs on a regular basis (e.g. progress reviews)
- ◆ regularly evaluate advice, learning and training provision
- ◆ organise seminars, workshops and training using external providers
- ◆ signpost clients to appropriate advice and support
- ◆ form relationships and negotiate fees with providers of specialist advice and services
- ◆ identify continuous professional development opportunities
- ◆ recruit staff with experience and knowledge in key areas such as business planning, marketing and sales, team-building
- ◆ monitor use of services over time

Foundation phase > Key Area 1 – Effective management of strategy and policy

Principle 2

To create the best possible set of conditions, in terms of services and environment, in which to support the accelerated development of start-up and early stage ventures it is necessary for incubators to operate an incubation strategy that takes into account the needs of clients and the aims and objectives of the incubator.

Principle

Incubators demonstrate effective management of the **incubation strategy** for the development of clients.

Indicator

In order to maximise the impact of activity incubator management should:

- ◆ create ideal conditions in which to bring about the successful development of new and growing ventures

Good Practice

- ◆ produce an incubation strategy identifying the incubation processes, facilities and infrastructure that will be needed by the target client group and to meet the incubator's objectives. The strategy should:
 - acknowledge the changing needs of clients, over time
 - assess the quality of external service provision
 - indicate the sources of new client flow
 - ensure objectives inform delivery of incubation processes
 - put forward an evaluation framework to assess the impact of the incubator on the wider economy
 - be completely compatible with the screening process to select clients that will best benefit from the environment, processes and facilities offered
 - identify methods to assure the quality of business development resources
 - identify the portfolio of business development resources and, where appropriate, facilities and infrastructure necessary to ensure clients fulfil their development and growth potential
 - identify measures to ensure that the incubator acts as a catalyst for local/regional economic development
 - provide a critical path analysis for the further development of the incubation environment towards full maturity
 - set milestones and targets
 - set the aims and objectives of the incubator and publicise them through:
 - marketing material
 - website
 - annual report
 - set the methodology by which client dependency will be reduced over time

Foundation Phase

> Key Area 2 – Skills and experience

This key area is about ensuring that the incubator's management has the skills and experience necessary to operate the incubator effectively. It is concerned with making sure that resources (people, knowledge, finance) are used to best effect and that contacts and links are maintained.

Principle 5

It is essential that the incubation environment provide 'hands-on' support for clients. To do this effectively means that management must have the right skill-set to provide the range of information, advice and guidance, learning opportunities and an appropriate organisational culture to maximise the benefit, in terms of development and growth, for clients. The aims and objectives of the incubator, as expressed in the **internally and externally focussed incubator strategy**, entry and exit policies, will be achieved through the application of a range of skills that complement both the needs of clients and the requirements of the incubator as a business in its own right.

Principle

Incubator management has appropriate **generic management skills and experience** to run the incubator effectively.

Indicator

Management should enable the incubator to operate effectively as a business and meet the needs of its clients through enabling it to:

- ◆ meet its objectives as stated in
 - the incubator strategy
 - the entry policy
 - the exit policy
- ◆ operate efficiently with regard to
 - finance
 - resources
 - planning
 - time management
 - people

Good Practice

- ◆ employ a skilled, experienced on-site incubation management team with appropriate management experience, including
 - finance
 - resources
 - planning
 - time management
 - people
- ◆ create a 'hothouse' environment
- ◆ produce an incubation strategy
- ◆ produce an entry policy
- ◆ produce an exit policy
- ◆ provide adequate remuneration for the management team
- ◆ commit to active support for the management team from the board and stakeholders
- ◆ commit to incubation as a process

Development phase > Key Area 3 – Client support

Principle 10

Skilled mentoring can be an essential component in the nurturing of accelerated development and growth in young companies because it provides access to established good practice and to the prior experiences of mentors and people they have access to. Management should seek to develop such skills so as to maximise clients' potential to accelerate development and growth, by helping them to make appropriate business and technical decisions.

Principle

Incubator management demonstrates **mentoring skills or can provide access to skilled mentors.**

Indicator

To assist clients make effective technical and business decisions, to find solutions and to advise on methodologies, management needs to do the following:

- ◆ respond to clients' needs in a positive and constructive manner
- ◆ assist clients in planning business and product/service improvements
- ◆ assist clients in reviewing changes
- ◆ decide whether, and in what circumstances, to offer the services of external mentors and put in place process for recruiting, induction and developing external mentors
- ◆ implement appropriate systems to monitor mentoring activities
- ◆ put in place a mentoring agreement that clearly states both parties areas of responsibility

Good Practices

- ◆ provide information on relevant options
- ◆ direct clients to sources of specialist advice
- ◆ help clients to evaluate their current position
- ◆ maintain a detailed working knowledge of the client's business position
- ◆ maintain a detailed working knowledge of the client's product or service
- ◆ establish links with mentoring networks
- ◆ recruit experienced mentors
- ◆ interventions are at a non-executive director level
- ◆ establish client 'buy in' to the mentoring agreement
- ◆ include the role of mentors in the induction process
- ◆ build in time for mentoring within planning processes
- ◆ record information where appropriate

Development phase > Key Area 3 – Client support

Principle 10A (optional)

For incubators targeting specific groups it is important that access to relevant knowledge, advice and guidance is provided. This includes facilitating links with appropriate organisations within and outside the incubator environment. The focus should be on enabling business development by access to, and sharing the benefits of, relevant and specific support. Development and growth will also be enhanced by the specialist expertise of management.

Principle

Incubator management demonstrates **relevant sector experience, or access to**, where incubators are targeting specific groups

Indicator

To be effective in accelerating clients' development and growth through specialist expertise, management needs to:

- ◆ demonstrate past experience of work within the sector
- ◆ provide access to relevant external experience
- ◆ maintain a detailed working knowledge of the sector
- ◆ build sector knowledge through professional updating
- ◆ build sector knowledge through continuous professional development

Good Practice

- ◆ recruitment takes place from within the sector or recruitment policy requires empathy with and/or knowledge of the sector
- ◆ maintain strong links with the sector
- ◆ maintain networks within the sector
- ◆ utilise relevant publications
- ◆ utilise other sources of information (e.g. websites)
- ◆ attend conferences and seminars as appropriate
- ◆ attend courses/learning opportunities as appropriate

Foundation phase > Key Area 1 – Effective management of strategy and policy

Principle 4

It is important that the incubator operates effectively within the broader context of economic development activity and policy formulation so as to raise the profile of both its own activities (i.e. the incubation community) and those of its sector or specialism and to influence policy to derive maximum benefit for the local and regional economies.

Principle

Incubator demonstrates effective management of incubator's position within the local/regional overall strategic framework.

Indicator

Management should enable the incubator to become a catalyst for local/regional economic activity through:

- ◆ engaging with relevant agencies
- ◆ working towards a role as focal point for wider economic activity

Good Practice

- ◆ incubator and incubation has a local champion
- ◆ active participation in policy creation through links with:
 - Government Offices
 - development agencies
 - enterprise agencies
 - local authorities
- ◆ develop special relationships with bodies who:
 - make client referrals
 - provide a source for spinouts
 - may be a source of funding
- ◆ value is added to regional development strategy by incubator strategy

Development Phase

The key areas in the development phase are those that relate to skills and activity that will grow as the incubation environment develops. These key areas are central to the incubation environment and it is envisaged that all incubators will need to develop their capability to meet them in order to become a mature incubator (i.e. to reach a stage at which they are providing a wide range of services to clients, achieving objectives and becoming a viable and sustainable business in their own right).

> Key Area 3 – Client support

This key area is about ensuring that the incubator management has the skills necessary to communicate effectively, in a wide variety of circumstances, in order to assess client needs and address them. It is also concerned with ensuring that the skills needed to help clients benefit from opportunities to improve their businesses are in place.

Principle 7

In order to help clients learn, particularly from challenging circumstances, it is of key importance that incubation management is seen to be impartial and independent in terms of the provision of information, advice and guidance. It is also key that clients see management as being 'on their side' – it is through trusting and even-handed relationships that management can best help clients.

Principle

Incubator management demonstrates ability to build **trust and empathy** with clients.

Indicator

In order to gain clients' trust and build an open, sustainable relationship it is important that:

- ◆ there is regular communication
- ◆ clients understand that they have access to incubator management
- ◆ there is a supportive organisational culture
- ◆ a genuine rapport is established
- ◆ clients know that their issues will be listened to and acted upon
- ◆ confidentiality is maintained

Good Practice

- ◆ put in place protocols to:
 - establish what the client can expect from the incubator
 - establish what the incubator expects from the client
- ◆ conduct regular reviews
- ◆ encourage informal communication between clients and clients and management
- ◆ evidence examples of empathetic responses
- ◆ communicate in a way that demonstrates a clear understanding of clients' needs and concerns
- ◆ empathise with entrepreneurial drivers and behaviours

Development phase > Key Area 3 – Client support

Principle 8

To encourage and facilitate an entrepreneurial approach from clients it is important that management is able to demonstrate such an approach clearly. Positive role models are a crucial element in fostering accelerated development and growth of start-up and early stage ventures, which by virtue of their early stage of development may still be forming their organisational culture.

Principle

Incubator management demonstrates **entrepreneurial approach**.

Indicator

To assist clients to achieve their business objectives and growth targets, management needs to help them do the following:

- ◆ assess and act upon opportunities to access different markets where appropriate
- ◆ assess and act upon opportunities to improve efficiency
- ◆ assess and act upon opportunities to provide new products/services

Good Practice

- ◆ identify target markets
- ◆ utilise research data
- ◆ utilise other sources
- ◆ encourage innovation
- ◆ be aware of market trends
- ◆ be aware of changes in regulation
- ◆ provide access to sources of knowledge technology and new ideas

Development phase > Key Area 3 – Client support

Principle 9

In order to achieve success in business, excellent networking skills are vital. Incubator management help their clients to build up a range of contacts, both within their particular business sector, geographical area and within the wider business community generally (national/international where appropriate) Networking skills can assist clients in finding customers and widening the client's market as well as assisting supply chain development and it is therefore important that management assists clients to develop them.

Principle

Incubator management assists clients to develop **networking skills** and puts into practice systems and support for **networking**.

Indicator

To assist clients to form beneficial relationships with others, management needs to do the following:

- ◆ develop networks through contacts
- ◆ build an overview of clients'/sector's significant 'players'
- ◆ identify opportunities for marketing follow-up
- ◆ build trust and confidence internally (within the incubator)
- ◆ build trust and confidence within the local business support and sector networks
- ◆ provide access to knowledge and ideas

Good Practice

- ◆ provide space and time for regular networking sessions
- ◆ hold regular 'information exchanges'
- ◆ develop mapping of organisational interfaces
- ◆ attend meetings/seminars/workshops as appropriate
- ◆ regularly review marketing activity
- ◆ organise appropriate events
- ◆ develop brokerage roles
- ◆ identify and broker links with other agencies in the local business support and sector networks, such as:
 - Business Angel networks
 - trade associations
 - sector-based networks
 - existing networks of entrepreneurs
 - customer-based networks
 - public and private research organisations
 - corporate organisations
 - local authorities
 - local HEIs/Universities/FE Colleges
 - banks/venture capitalists
 - Community Development Financial Institutions
 - Business Link operators and counterparts in Scotland Wales and Northern Ireland
 - accountants
- ◆ provide impartial and independent help, support and brokerage to these agencies
- ◆ ensure that these agencies are fully informed of the incubator's work and areas of expertise
- ◆ identify opportunities for partnership or joint working
- ◆ guarantee client confidentiality at all times
- ◆ arrange seminars
- ◆ 'matchmaking'

Foundation Phase > Key Area 2 – Skills and experience

Principle 6

A good general level of business experience is essential to both the incubator itself and to clients. Such experience will help guide the incubator and its clients through the difficulties inherent in start-up and early stage ventures and will maximise the potential for accelerating development and growth. It is important for clients to have access to information, advice and guidance from managers that is based on understanding, gained through personal experience, of the sorts of issues they are facing. This will assist clients to move forward successfully having taken advantage of the learning experience.

Principle

Incubator management demonstrates generic **business experience**.

Indicator

To be effective in accelerating clients' development and growth through generic business expertise management should:

- ◆ demonstrate past experience of business
- ◆ maintain a detailed working knowledge of business
- ◆ build business knowledge through continuous professional development

Good Practice

- ◆ recruitment policy requires people with business experience
- ◆ maintain membership of relevant membership organisations
- ◆ utilise appropriate publications
- ◆ utilise other sources of information (e.g. websites)
- ◆ maintain links with business support agencies
- ◆ attend conferences and seminars as appropriate
- ◆ identify and utilise particular areas of experience among management (i.e. 'play to people's strengths')

Appendix 2

Building Ireland's Smart Economy

A Framework for Sustainable Economic Renewal

Executive Summary

© Government of Ireland 2008

December 2008

Department of the Taoiseach,
Government Buildings, Upper Merrion Street, Dublin 2.

FOREWORD

Ireland faces challenging economic circumstances but there are also great opportunities on the horizon. While it is imperative we successfully plan our way through the current economic storm, we must also restructure our economy so that we can be in pole position when the global recovery begins.

Building Ireland's Smart Economy sets out an ambitious set of actions to reorganise the economy over the next five years and to secure the prosperity of current and future generations. It sets out a framework to address the current economic challenges and to build a 'Smart Economy' with a thriving enterprise sector, high-quality employment, secure energy supplies, an attractive environment, and first-class infrastructure.

This Framework does not seek to outline all the reforms or measures which will be required across the economy. Instead, it sets out a clear direction which the Government intends to pursue and some of the specific actions we will take in the short-term to help us get there.

Neither does the Framework address all of the policy challenges which arise from the interdependence of economic and social policy issues as set out in *Towards 2016*, reflecting the important work of the NESC in this area. The primary objective of this document is to outline a pathway forward which acknowledges the severe short-term economic challenge, while focusing on how we can return to sustainable growth in the medium-term.

The Action Areas and Points within this Framework are a combination of existing policies on which the Government will build and new actions that will drive the restructuring of the economy. This combination is important because a principal objective of this Framework is to reprioritise the business of Government and to re-focus resources in a manner that will hasten economic renewal. On occasion, that will mean other policy issues having to wait until the economic situation has improved. We will make those choices where necessary.

The lesson from the past is that providing a clear sense of direction by setting out a long-term vision and a set of goals, and by prioritising the resources needed to achieve them, secures immediate gains from increased confidence and a determination to deliver. There won't be overnight results – but there can be, and will be, successes over the period ahead. Success will come from taking the right decisions, implementing them quickly and effectively, and acting consistently to support the enterprise sector in generating growth and jobs.

The successful implementation of this Framework will not just be delivered by the policy measures and investments put in place by the Government. It requires a national effort, in particular to meet short-term, but crucial, challenges. The Government intends to work with the Social Partners on the development and implementation of this Framework, which is consistent with the principles and vision underpinning *Towards 2016*, using the well-established mechanisms of the social partnership process.

I met with the Social Partners on Tuesday 16th December and outlined the Government's thinking about the elements of this Framework for Economic Renewal. While it is the duty of the Government to provide leadership, I believe that the best prospect of achieving what we all want for our country, as reflected in the goals of *Towards 2016*, lies with a collective effort grounded in the values of partnership.

I invited the Social Partners to participate in detailed and intensive discussions on measures to develop further and then implement this Framework for Economic Renewal. I invited them to work with us in a constructive spirit to contribute their views before the Government concludes the detailed actions to implement the Framework. I am glad that their response was extremely positive.

The path to economic renewal begins here.

A handwritten signature in black ink, appearing to read 'Brian Cowen', written in a cursive style.

Brian Cowen T.D.,
Taoiseach

EXECUTIVE SUMMARY

Introduction

This Framework for Sustainable Economic Renewal sets out the Government's vision for the next phase of Ireland's economic development, which is predicated on successfully addressing the severe economic situation we face, restoring stability to the public finances, and beginning the process of restoring competitiveness. Building on the significant strengths of the economy, which provide strong foundations for future export-led economic growth, this document sets out an ambitious set of actions to develop Ireland's Smart Economy.

Our strategy is to:

- address the current economic challenges facing the Irish economy by stabilising the public finances, improving competitiveness, assisting those who lose their jobs, and supporting Irish business and multinational companies;
- invest heavily in research and development, incentivise multinational companies to locate more R&D capacity in Ireland, and ensure the commercialisation and retaining of ideas that flow from that investment;
- implement a 'new green deal' to move us away from fossil fuel-based energy production through investment in renewable energy and to promote the green enterprise sector and the creation of 'green-collar' jobs;
- develop first-class infrastructure that will improve quality of life and increase the competitiveness of Irish business.

The Smart Economy

The Smart Economy combines the successful elements of the enterprise economy and the innovation or 'ideas' economy while promoting a high-quality environment, improving energy security and promoting social cohesion. A key feature of this approach is building the innovation or 'ideas' component of the economy through the utilisation of human capital - the knowledge, skills and creativity of people - and its ability and effectiveness in translating ideas into valuable processes, products and services. A second important aspect is the greening of the economy and the development of green enterprise.

We can learn lessons from the current international financial crisis and pursue these twin initiatives to ensure the creation of high quality, well-paid employment which lasts through any future upturns and downturns in the global economy.

The Smart Economy has, at its core, an exemplary research, innovation and commercialisation ecosystem. The objective is to make Ireland an innovation and commercialisation hub in Europe – a country that combines the features of an attractive home for innovative R&D-intensive multinationals while also being a highly-attractive incubation environment for the best entrepreneurs in Europe and beyond. This will be the successful formula for the next phase of the development of the Irish economy and for delivering quality and well-paid jobs.

The Smart Economy is a 'Green Economy' in that it recognises the inter-related challenges of climate change and energy security. It involves the transition to a low-carbon economy and recognises the opportunities for investment and jobs in clean industry. The core of this Green New Deal is a move away from fossil-fuel based energy production through investment in renewable energy and increased energy efficiency to reduce demand, wastage and costs.

This sustainable approach to economic development complements the core strength of our economy in the use of natural resources in the agriculture, forestry, fisheries, tourism and energy sectors. It recognises that our manufacturing industries are already relatively clean and green in the low level of resource inputs they use and environmental outputs they create. It will allow us develop a digital services export economy which will only require a high speed broadband network, a renewable electricity supply and our own ingenuity to succeed.

The resolution of Lisbon Treaty issues is important to the success of this plan as any uncertainty about Ireland's future position in the European Union is a serious threat to our future economic performance, in particular, the attraction of foreign investment. At the same time, there is now an important all-island dimension to all aspects of Government policy and, to the extent that it is appropriate, and by agreement with the Northern Ireland Executive, all of the policies, programmes and initiatives in this Action Plan will take full account of the mutual benefits available through North-South co-operation.

Meeting the Challenge Facing the Irish Economy

The ambitious vision and implementation plan in this document can only be achieved if we effectively manage the serious economic challenges we face at present.

A fall in GNP and rising unemployment over the period 2008 – 2010 is forecast and a return to positive and stable economic growth, in the later years of this five-year framework, can only be achieved if we restore stability and order to the public finances. Tax revenues are now nominally at 2005 levels which, combined with the very significant increase in current spending in the intervening years, means that we have a substantial funding gap. It is likely that borrowing to pay for day-to-day services will be in the region of €3.5 billion this year and will be higher next year. This is not sustainable and the interest costs mean that more and more of our day-to-day resources are simply going to pay interest as opposed to paying for services.

A crossroads has been reached in the nation's economic development. If we are to implement this plan, and be well-placed to prosper from the anticipated upturn in the global economy in 2010, we must address competitiveness issues and the serious shortfall in the Exchequer finances. Urgent priority must be given to returning the public finances to a stable and sustainable position. A national effort is required and, with this in mind, the Government will be engaging with the Social Partners and other stakeholders to ensure we take the right decisions in the interests of securing the economic future of the Irish people.

Government Actions to Build the Smart Economy

The Framework consists of a set of interlocking elements each of which is reflected in a series of Action Points, which demonstrate the specific measures which are being taken as a matter of urgency. The five Action Areas of the Framework are:

1. Meeting the Short-term Challenge – Securing the Enterprise Economy and Restoring Competitiveness;
2. Building the Ideas Economy – Creating 'The Innovation Island';
3. Enhancing the Environment and Securing Energy Supplies;
4. Investing in Critical Infrastructure;
5. Providing Efficient and Effective Public Services and Smart Regulation.

Action Area 1: Meeting the Challenge – Securing the Enterprise Economy and Restoring Competitiveness

Meeting the challenge of securing the economy in what are among the most difficult global economic circumstances since the foundation of the Irish state is an absolute priority for Government. We are implementing a strategy to manage the current short-term difficulties, maximise the rate of pick-up in economic activity, restore competitiveness, stabilise the banking sector, and assist those who lose their jobs during the downturn, while respecting the unavoidable constraints on policy arising from the fiscal and international environment. This strategy to secure Ireland's Enterprise Economy will provide a strong base from which to pursue the next phase of economic development.

Key actions:

- A fiscal support is being applied to pump billions of euro into the economy through unparalleled investments in infrastructure which will make the economy more competitive. This constitutes proportionately the largest capital programme in the EU;
- Capital investment allocations will be reviewed to identify scope for re-prioritisation towards more labour-intensive activities;
- Significant funding will be made available for a range of housing programmes and insulation schemes (see Action Area 3);
- The public finances must be restored to a sustainable position and the Government will engage with the Social Partners to chart a way forward;
- The Special Group on Public Service Numbers and Expenditure Programmes will have a significant role to play by identifying options for expenditure adjustment;
- Steps to broaden the tax base will be taken, having due regard to the recommendations of the Commission on Taxation;
- The Government's focus will continue to be on securing a stable and active banking sector which serves the needs of the Irish economy; we will support, alongside existing shareholders and private investors, a recapitalisation programme for credit institutions in Ireland of up to €10 billion;
- Our low corporate tax regime has been a central pillar of Ireland's industrial policy and we will maintain competitive, low corporation tax rates (including the 12.5% rate) and introduce a range of pro-enterprise tax measures to stimulate activity and employment growth;

- Activity and employment in the construction sector will benefit from substantial and sustained capital investment under the NDP; in particular the Exchequer will provide €1.66 billion for housing in 2009, we are reforming Stamp Duty applicable to commercial property, and Enterprise Ireland will provide a construction sector export service to assist companies and professionals to market their products and services abroad;
- Within the Social Partnership framework, we will seek to ensure wage moderation and flexibility consistent with our competitive position, while also securing industrial peace and stability;
- We will publish a whole-of-Government response to recommendations contained in reports of the Competition Authority within nine months of their publication;
- We will pursue reforms to reduce legal costs and tackle factors which continue to drive costs and delays arising from the legal system;
- We will work to a target of reducing administrative burdens on business by 25% by 2012, beginning with concrete measures in Taxation, Environment, Health and Safety, Statistics, Employment and Company Law and introduce a consolidated inspections programme to reduce the number of inspection visits to business;
- The Government will improve co-ordination between Departments and Agencies in order to improve access to job search, training and education, community and employment programmes and will provide a range of opportunities for up-skilling and re-skilling;
- Specific actions include increased Job Search Supports capacity; an initiative to target young people who become unemployed; additional places, predominantly in training, for the unemployed; and we will bring forward further measures in this area in early 2009;
- Retraining of construction and other workers will be re-focused and enhanced in order to support retrofitting of our housing stock and provide the skills for the green economy;
- Initiatives to protect mortgage holders include the Government's insistence that banks participating in the Guarantee Scheme confirm their compliance with the Irish Banking Federation (IBF) Code of Practice on Mortgage Arrears, support through the Money Advice and Budgeting Service, and careful monitoring of practices in relation to mortgage arrears and a pro-active approach to any further regulatory or other steps required;
- A range of measures is included to build on the strengths in the Agriculture, Fisheries and Food Sectors and exploit the potential of an export-led, natural resources based

Agri-food sector. They include income support and capital investment on farms, environment and animal welfare enhancing schemes, further investment in the food processing sector, supporting innovation, marketing and research and development throughout the sectors and continued support for sustainable forestry. Measures to overcome the recent difficulties in the pigmeat sector are also being implemented;

- A range of measures will be introduced to re-invigorate the international financial services industry including: reform of the legislative framework for financial services in Ireland, support for a targeted upskilling programme for the industry to enhance the skill base necessary to attract and retain investment; increased support for Research, Development and Innovation activity; extending the number of double taxation treaties; and vigorous promotion targeting new opportunities in areas such as specialist leasing, pensions, technology development and sovereign wealth funds.

Action Area 2: Building the Ideas Economy – Creating The ‘Innovation Island’

The key objective of this Action Area is to make Ireland an innovation and commercialisation hub of Europe – a country that combines the features of an attractive home for innovative multinationals while also being a highly-attractive incubation environment for the best entrepreneurs from Ireland and overseas. It builds on Ireland’s significant multinational presence and Ireland’s stock of highly-skilled workers and higher education institutions by incentivising greater investment, in high-value research and development areas in science and technology. In addition, the objective is to create an exemplary research, innovation and commercialisation ecosystem which capitalises on the Government’s unprecedented €8.2 billion investment in science and technology. This will be achieved by mobilising Ireland’s cohesive ‘Team Ireland’ agencies to translate knowledge creation into economic return. It will involve creating a similarly R&D-intensive indigenous enterprise sector through the provision of strong supports for start-up companies and entrepreneurs whose companies will provide the employment of the future.

Key actions:

- Up to €500 million will be generated to create a venture fund, known as ‘Innovation Fund – Ireland’, to support early stage R&D-intensive SMEs. The capital will be divided into five venture funds of between €75-150 million;
- The new fund will be operated in coordination with existing financial supports from Enterprise Ireland for early stage R&D intensive SMEs, in order to ensure efficient allocation of resources and avoid overlapping supports;
- More favourable tax treatment of the carried interest of venture capital is being introduced at a rate of 15% for partnerships and 12.5% for companies to encourage the availability of so-called ‘smart capital’ for investing in start-up innovative companies who will be the employers of the future;
- The multinational community will be incentivised to intensify innovative, high-value activity and technological convergence which will provide quality jobs;
- Entrepreneurship, business start-ups and employment creation will be driven by a number of highly-favourable taxation measures including exemption from corporation tax arising in the first three years of operation for business start-ups, a tax abatement scheme for restricted shares, and a refund in the case of forfeited shares, to assist companies, including start-up companies, in retaining key employees;

- A Remittance Basis of Taxation scheme will apply, in appropriate circumstances, to income earned from the exercise of an employment in this State where the payment is made outside of the State;
- We are introducing significantly enhanced R&D tax arrangements; an industry-led Competence Centre Programme is being rolled-out in Applied Nanotechnology, Advanced Manufacturing Productivity, Energy, BioEnergy, Composites and Advance CMOS Circuits; and an action plan will be developed for expanding research and development in converging technologies combining our science-based strengths with enterprise capacity;
- Revised arrangements for the taxation of intellectual property will be developed during the course of 2009;
- In the light of the above, we will review the potential for the active management of Intellectual Property, whether generated or domiciled in Ireland;
- Fast-track visa arrangements will be provided for key researchers and highly skilled staff and their spouses. They will also be eligible for fast-track progression to long-term residence;
- Manufacturing will continue to play a fundamental part in our economic future, with an increasing focus on securing competitive advantage through innovation, R&D and design, and we are establishing a Manufacturing Forum to support the sector;
- There will be continued substantial investment in R&D through implementation of the Strategy for Science, Technology and Innovation, as demonstrated by significant allocations in Budget 2009, launch of a 5th cycle of the Programme for Research in Third-Level institutions and the preparation, by June 2009 of an Action Plan for Health Research;
- We will focus on the promotion of commercialisation of opportunities arising from research undertaken including through the Commercialisation Fund, the Incubator Space Scheme, and the Technology Transfer Strengthening Initiative;
- A particular focus will be on opportunities arising from research in the renewable energy and environmental technologies areas, including the development and commercialisation of ocean energy and Science Foundation Ireland's recently added third pillar of energy;
- Science Foundation Ireland will continue to build Ireland's world class research capacity in strategic areas allied to the needs of industry;
- To accelerate Ireland's global science reputation, by 2013, SFI will attract to Ireland a premium cohort of world class researchers who have been nominated for, or secured

prizes, awards and honours that will drive up the international visibility of Ireland to the global research community and the global high-tech business community;

- Ireland has just won the European City of Science 2012 for Dublin and will use this opportunity to bolster Ireland's reputation internationally;
- A review is being conducted to ensure maximum coherence and collaboration between the enterprise development agencies and to identify any gaps in support;
- We will explore and pursue opportunities in international services including in Tourism, Construction, the Maritime Sector, Arbitration and Digital Trade Facilitation;
- We will seek to position Ireland as a location of choice in the International Education market;
- A number of initiatives to support life-long learning will be implemented;
- Restructuring the higher education system will be a priority with a new Higher Education Strategy to enhance system wide performance;
- Higher Education institutions will be supported in pursuing new organisational mergers and alliances that can advance performance through more effective concentration of expertise and investment;
- Under the Strategic Innovation Fund, priority will be given to flexible learning initiatives that can be targeted at up-skilling people in the workforce;
- We will use research funding through SFI, Enterprise Ireland and IDA to instil a commercialisation culture in third-level institutions alongside the now embedded teaching and research culture;
- We will foster entrepreneurship, mathematical, science and language skills and prioritise the roll-out of Project Maths;
- We will promote study in priority areas through the Discover Science and Engineering programme, which will now assume a role in relation to maths;
- We will explore, in partnership with industry, development of a targeted programme of bursaries to increase participation in key engineering programmes at third level;
- Young Scientist winners will be linked with a third-level institution and/or a firm to enable them to bring their idea to development and the top 3 finalists will have laboratory/research space, as appropriate, in universities for the summer;
- We will raise the profile of the County Enterprise Board student enterprise awards and encourage second level students to participate in an enterprise related programme;
- We will enhance ICT use in schools, working in partnership with industry to invest in ICT equipment and connectivity;

- The Schools Broadband Programme will be continued, the range of services available to schools will be expanded and the range of digital content available to schools will also be expanded;
- We will pursue the objective of equipping second-level schools with 100Mb per second broadband connectivity;
- Summer schools in science and engineering will be expanded with an emphasis on innovation and commercialisation;
- The HEA will progress the provision of entrepreneurship and management training skills on scientific and engineering doctoral programmes in universities;
- We will continue to strengthen bilateral education relations between Irish and Chinese authorities at third level, including further development of economic and cultural links and the learning of the Chinese language;
- An Action Plan will be developed for improving trade, investment and tourism links with new and fast-developing markets by end-2009;
- We will review the network of diplomatic and consular missions in order to ensure a proper alignment of resources with strategic objectives;
- A consultative mechanism will be established with public and private sector representatives to advise on the economic work of Embassies;
- Enterprise Ireland will build on its existing network of offices in Asian and other high-growth markets;
- The IDA will shift resources from non-business generation to business generation, expand the number of staff based in the United States and seek to diversify the source of foreign direct investment (having recently set up offices in Mumbai, India, and Beijing, China);
- The programme of Ministerial-led trade Missions will be expanded to build on both existing markets and also new opportunities, including Asia, the Gulf States, Brazil, Russia and the developing EU markets;
- Detailed proposals will be brought forward to stimulate and enhance economic links with the overseas Irish, including the vital issue of Ireland/US Economic Relations;
- IDA, Enterprise Ireland and SFI will develop a marketing campaign for 'The Innovation Island'.
- We will publish a new Knowledge Society Strategy by mid-2009 with an action plan for the use of new high speed broadband networks to further our enterprise, educational and environmental objectives.

Action Area 3: Enhancing the Environment and Securing Energy Supplies

The EU has committed to reducing overall carbon emissions by 20% by 2020. Agreement on a climate change package in Copenhagen next year will further increase our responsibilities and we must plan for this transformation now. The International Energy Agency has also warned that the 'era of cheap oil is over'. Ireland, which is over 90% reliant on imported fossil fuel, must alter this dangerous dependence. We need to protect our economy from future oil and gas supply shocks. Radically enhanced energy efficiency across all sectors of the economy, together with actions to diversify supply through investment in renewable energy will deliver reduced costs, reduced emissions and greater energy security.

The success of our economy is intimately related to how well we manage our environment. For example, tourism depends on high quality landscapes and built environments and certain high value-added parts of the food industry depend on Ireland's 'green image' for competitive advantage. More fundamentally, for the purposes of this Framework, if we wish to keep talented Irish people working in Ireland, as well as attracting the most talented people from around the world to our shores, we cannot afford to offer a poor quality living environment. In addition, the environment and energy areas are beginning to provide very significant opportunities for industrial and enterprise development through Green Enterprise.

Key actions:

- The Government will increase the production of renewable electricity in a cost-effective manner to meet the new increased target of 40% of electricity from renewable resources by 2020;
- Over the next two years an estimated €400 million will be spent by the private sector building an additional 400mw of wind power to meet our 2010 target for 15% of our power to come from renewable electricity supplies;
- EirGrid will spend €4 billion between now and 2025 building a new electricity transmission system to tap into renewable energy resources;
- The ESB has set out its own zero emissions corporate plan for 2030 and a related €22 billion long term investment budget;
- Bord Gáis have set out a €5 billion investment strategy to develop the gas network and clean energy technologies;
- The East West interconnector will be completed in 2012 while planning further interconnection to the UK and the Continent;

- A framework will be in place in early 2009 to support the development of auto-generation projects by large industry as well as micro-generation in the small business, agriculture and domestic level;
- 21,000 smart meters will be placed in Irish homes as a test project prior to the roll out of the new smart grid to every home in the country;
- We will fast-track development and commercialisation of ocean energy technologies under the Ocean Energy Development Programme 2008-2012;
- We will ensure that the Commission for Energy Regulation carries out a fundamental review of energy prices and tariff methodologies which will take account of the needs of all energy consumers including the need to support economic competitiveness;
- We will progress restructuring of the electricity sector through finalisation of the CER / ESB Asset Divestment Strategy by end year and the transfer of the national transmission assets to EirGrid;
- The consent process for energy developments on the foreshore will be modernised in 2009;
- €30 million will be spent in 2009 helping the installation of better insulation in over 25,000 houses;
- We are increasing the range of energy efficient equipment purchased by companies that can qualify for accelerated capital allowances, including energy efficient data-server systems and, vital in these times of high energy costs, electricity provision equipment and control systems;
- We are pursuing national cycling and walking strategies and a cycling package for Dublin;
- We will publish a National Sustainable Transport and Travel Action Plan early in 2009;
- We will work towards our target of 10% of Ireland's road transport fleet being electrically powered by 2020;
- In the first quarter 2009 the Government will publish its National Energy Efficiency Action Plan including the targeted 33% improvement in energy efficiency in its own services by 2020;
- Environmental considerations will be further integrated into the public procurement process in 2009, with the goal of bringing us in line with the best performers in Europe;
- Current capital appraisal and cost-benefit analysis guidelines will be amended in early 2009 to incorporate best practice in reflecting the cost of CO2 emissions in cost benefit analyses;

- An announcement on the issue of a Carbon Levy, assisted by recommendations of the Commission of Taxation, will be made in Budget 2010. Particular attention will be paid to ensuring that any Levy does not impact adversely on the most vulnerable or on the economy;
- Further appropriate modifications to the motor tax system will be considered to encourage continuous improvements in the efficiency of the car fleet and to encourage a move from advanced plug-in hybrid vehicles to full electric vehicles;
- The Irish Government will support measures at EU level to have a lower rate of VAT apply to eco-friendly products;
- A high-level Action Group on Green Enterprise will report to Government within four months, setting out an Action Plan for developing green enterprise in Ireland;
- We will continue to support the development of eco- and green tourism.

Action Area 4:**Investing in Critical Infrastructure**

Continued commitment to high levels of investment in infrastructure will provide an important basis for economic recovery and growth while also supporting employment and stimulating economic activity. Given the current economic and financial circumstances, there is a need to prioritise projects and expenditure with the most immediate positive impact on the economy and employment. Investment must also be delivered in a coherent and efficient manner and be consistent with the vision of a 'Smart Economy'. The key role of dynamic city-regions in driving economic growth and in enhancing regional and national competitiveness, by acting as economic engines for their regions and providing a critical mass of public and private institutions, will be reflected in this process.

Key actions:

- We will continue investment under *Transport 21* concentrating on completion by 2010 of the five major inter-urban motorways, continuing development of the Atlantic Road Corridor, increased public transport capacity and maintaining the momentum on project planning and statutory approvals;
- Some €2 billion will be invested over the coming years in Dublin Airport;
- €300-600 million in capital investment will be made in our commercial seaports over the period to 2013;
- Investment will be made in 2009 of €1.3 billion capital funding in social housing, €102.5 million in Affordable Housing Initiatives and other Private Housing Supports, and €560 million in Water Services;
- A capital allocation is being made in 2009 to the school building programme of €581 million with a third-level capital investment of €265 million;
- The Arts, Sports and Tourism capital allocation of €148 million in 2009 will develop sporting and cultural infrastructure and enhance the infrastructure aimed at tourists and foreign visitors. The Convention Centre Dublin and Lansdowne Road Stadium are scheduled for opening in 2010;
- ESB, EirGrid and Bord Gáis are investing over €1 billion in 2008 and in 2009 in extending and upgrading the national electricity and gas distribution and transmission networks while ESB is investing €22 billion up to 2020 in the electricity network, the National Smart Meter programme and renewable energy R&D and commercialisation projects;

- EirGrid will also invest €4 billion from now up to 2025 in the national transmission grid under the Grid 25 Strategy and is delivering the electricity interconnector between Ireland and Wales to schedule by 2012 while undertaking the feasibility work on next phase interconnection with UK/mainland Europe;
- We will support the continued investment of some €700 million each year by the private sector in the upgrading of our broadband network via a telecoms regulatory framework which has the promotion of competition as a core objective;
- There will be a requirement for open access fibre to be installed, where practicable, in new premises;
- We will roll out the National Broadband Scheme, which will ensure that every part of the country has full access to broadband coverage;
- We will support investment of €70 million in international connectivity through Project Kelvin;
- We will establish a new 'one stop shop' to allow better access for telecom operators to fibre optic ducting contained within public infrastructure and mandate the provision of such 'open access' ducting in new state projects;
- We will promote Ireland as a world leader in the flexible use of the wireless spectrum including the creation of new 'ubiquitous' broadband connectivity zones;
- We will introduce a new terrestrial digital television service in 2009 and secure a digital dividend in 2012 with the switch off of the analogue transmission service;
- We will continue to develop the Digital Hub and the National Digital Research Centre;
- An analysis of the implementation of the National Spatial Strategy (NSS) by end March 2009 will be used to assess the extent to which sectoral programmes are aligned with the NSS and to recommend any necessary re-prioritisation;
- The Dublin Transport Authority will be established in early 2009;
- A Public Transport Regulation Bill will be enacted in 2009 to reform the licensing of access to the bus market;
- The Strategic Corridor Frameworks for the Atlantic Gateway cities (Waterford, Cork, Limerick, Galway) will be completed early in 2009;
- Work on implementation of the cross-border North West Gateway Initiative (Letterkenny/Derry) will also be well underway in early 2009;
- Under the Rural Development Programme funding of €425.4 million will be provided for the diversification of the rural economy, creating up to 12,000 jobs in rural areas;
- The CLÁR and Gaeltacht schemes will also continue to provide key rural infrastructure and supports for small enterprises.

Action Area 5: Efficient and Effective Public Services and Smart Regulation

Reform and renewal of the public service is essential if Ireland is to achieve the ambitious economic and social challenges set out in this document. Efficiency and effectiveness in the delivery of public services is critically important in progressing economic recovery and reform and will be directed strategically through the fast-track programme of reform set out in the recent *Government Statement on Transforming Public Services*.

At the same time, while Ireland's regulatory environment is well regarded internationally, reform must be accelerated in order to maximise competitiveness and accessibility of the system for business and citizens, in particular by minimising red tape. Where regulation is necessary to achieve policy goals it should be clearly communicated, and regularly evaluated. Enforcement should be based on risk so as to minimise the burden on citizens and businesses.

Key actions:

- The Special Group on Public Service Numbers and Expenditure Programmes will recommend by end-June 2009 reductions in public service numbers, further rationalisation of State Agencies and reallocation of staff and expenditure resources;
- We will use centralised and specialised procurement to acquire goods and services more effectively, efficiently and at lower cost to the taxpayer, including through the introduction of e-auctions;
- Public Bodies will share services for functions such as payroll, human resources, financial management, procurement and ICT systems management;
- We will improve performance measurement through the development of specific outcomes and indicators for all sectors, organisations and individuals;
- Performance and underperformance of staff within the Public Service will be measured and addressed through strengthening, standardising, and monitoring the performance management system;
- Performance assessments will be developed in areas of the Public Service where none currently exist;
- We will identify and remove barriers to a unified public service labour market to include new arrangements on redeployment and exit options where people cannot be redeployed;
- Priority e-government projects will be developed to facilitate information sharing across public service bodies and to improve value for money and service standards;

- **An Administrative Burden Reduction Programme will be introduced to reduce volume and frequency of data required from the public;**
 - **The system of Regulatory Impact Analysis will be strengthened and enhanced;**
 - **Accessibility to legislation will be improved by early 2009 through updating the Electronic Statute Book to include all 2008 Acts and Statutory Instruments from 2005 to 2008.**
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Appendix 3



What is Innovation Governance?

Our thinking about innovation has changed in three big ways, so our system of managing it has to change also.

▪ **Idea 1:** "Innovation" does not just mean product development. Most managers already understand that developing new products is not enough – to keep ahead of the competition, companies have to also continually innovate in services, business models, business processes, supply chain, channels to market, branding, pricing, and customer experience.

▪ **Idea 2:** Multiple, reinforcing innovations are much more powerful than a single innovation. Not only is it necessary to broaden the definition of "innovation" to include all the different types of innovation, but the development of these different innovations should be coordinated so that they reinforce each other. Apple's iPod provides a vivid example of this. In addition to being an attractive product in itself, the iPod benefits from the success of a constellation of complementary innovations – including:

- The new business model of the 99-cent song
- Apple's Fairplay system, which was the first copy protection system strong enough to give most music providers the confidence to sell their music online
- A new sales channel, the Apple stores, which function as gathering and training places for enthusiasts
- An array of complementary accessories such as docking stations, skins, headphones, and carrying pouches, whose manufacturers pay license fees to Apple.

Together, these and other innovations create a much more compelling offering for the customer than any single product could by itself – and have allowed the iPod to successfully fight off sustained efforts to displace it as the dominant portable music player. (For more on the iPod example, [click here](#))

▪ **Idea 3:** Opening up innovation can result in faster, better, and cheaper innovation. Opening up innovation means moving from internal problem solving to external solution finding. It may be that the new idea that you're looking for already exists in some other industry, and the innovation process means simply bringing it in house. Or it may be that outsourcing the invention of a new idea, method, or device can be faster and cheaper than trying to create it in-house. Proctor and Gamble, with their Connect and Develop system, has identified 1.5 million outside scientists/innovators that they use to complement and extend the capabilities of their 7500 internal researchers. As Bill Joy of Sun Microsystems said, "Not all of the smart people work for us."

If you accept the three ideas above – that "Innovation" should be defined broadly, that different types of innovation have to be coordinated, and that we need to work with internal and external parties to innovate – then your innovation governance system must be designed to support that.

While most managers readily accept the three ideas listed above, few companies have updated their innovation governance systems to address these changes. If innovation is to occur in products, services, business models, business processes, channels to market, branding, pricing, and/or customer experience – and involve external parties as well – then a system is needed to strategically identify complementary innovations, assign responsibility to the relevant company departments and external parties for the innovation effort, and coordinate their activities in an efficient and effective manner.

What's needed is a system to align goals, allocate resources, and assign decision-making authority for innovation, both inside the company and with external parties.

How do you design an innovation governance system?

[Click here to find out.](#)

Do you have good innovation governance?

[Take our simple quiz.](#)

If you accept the three ideas to the left, then your system of managing innovation has to change.

▪ **Innovation Governance in Action: The LEGO Group**
[click here](#)

▪ **Use Innovation Matrix to Assess Your Current Governance System**
[click here](#)

▪ **Using the innovation matrix to challenge the Apple iPod team**
[click here](#)

Appendix 4

EXECUTIVE SUMMARY

Patries Boekholt, Pim den Hertog and Svend Otto Remøe

The MONIT project

The OECD's project on national innovation systems (NIS) began in 1995. It was managed by the Working Party on Technology and Innovation Policy (TIP) and set out to explore the requirements for redirecting innovation policy in OECD countries. It took into account new insights into the innovation process arising from innovation research. While many accepted that the linear model of innovation did not capture the realities of the innovation process, they also acknowledged that public policy was still founded upon the linear model and its implications for policy. Hence, the OECD NIS project became an important collaborative mechanism for generating new data based on the interactive model of innovation and for developing a set of recommendations for public policy.

Formally, the OECD NIS project ended in 2001. Over the years, many of its findings fed into other OECD work. It also generated several publications on industrial clusters, networks and human mobility as well as synthesis reports aimed at renewing innovation policy. However, the concluding publication (OECD, 2002) raised a crucial question which became the starting point for the current MONIT project. If the developed economies are shifting towards a more innovation-oriented and dynamic mode, is it feasible for the policy-making modes of national governments to remain largely unaffected? More precisely, given needed changes in the content of policy, how can or should governments modify their structures and processes to better accommodate the dynamism of their environment?

To explore these issues, the OECD and the TIP working party endorsed a new collaborative study called MONIT (monitoring and implementing national innovation policies). The project was organised in two work packages, one to study the main innovation governance issues in each country and the second to select and study policy areas relevant to innovation policy. This volume contains the studies undertaken in the first part. Volume 3 (OECD, 2005b) contains those resulting from the second part of the project.

MONIT's basic assumption was that innovation policy and its governance require significant changes. While the earlier linear and systemic models of innovation can be seen as the first and second generations of innovation policy, MONIT set out to explore the foundations of a third generation, in which innovation policy constitutes a process, and to examine its institutional, structural and political characteristics. From the point of view of firms, such a policy forms a nexus in which policies interact to produce innovation outcomes. Thus, coherence of innovation policy across ministerial boundaries is key to successful governance.

The case for flexibility and adaptation

In recent decades there has been an increasing trend towards globalisation of the world economy, as flows of goods, services, capital and labour transcend national borders more easily and to a far greater extent. Further, the world economy has become more dynamic, with knowledge production and use, innovation and technology development becoming more important for economic growth and restructuring. Hence, the need for more flexible economies.

As knowledge and its diffusion and use have become more important for innovation and innovation systems, the earlier linear model of innovation has revealed its weaknesses. The systemic or interactive model of innovation, currently broadly accepted as a representative picture of how the innovation-driven economy works, postulates the need for dynamic and flexible structures and processes that facilitate the diffusion of knowledge throughout the economy (OECD, 2002). However, non-economic institutions that are not exposed to market forces often continue to develop along an earlier path (path dependency). Public institutions such as governments typically operate according to a rationale different from that of commercial firms and change slowly, if at all. They may thus remain out of step with a wider need for flexibility and adaptation.

Recently, greater attention has been given to the need for governments to change and develop institutional capabilities and governance practices more in line with a dynamic, innovation-driven economy. A third-generation innovation policy (going beyond the linear and interactive models) is emerging. It calls attention to institutional adaptation in the area of science, technology and innovation (STI) policy as well as to the need to develop innovation policy components across ministerial boundaries and thus redefine innovation policy horizontally. By implication, this will require new government capabilities. The more an economy needs to release lock-ins and develop new development paths, the more will be demanded of governmental institutions and policy making to accommodate these changes.

A variety of projects

This volume of contributions represents analytical work on governance structures and processes in participating countries. Many of these chapters draw on earlier reports and papers, as major efforts have been made in many countries to study in depth the challenges to current governance practices. In most cases, independent research teams have done research on contract for governmental agencies. In some countries, the MONIT activity has also been linked to major policy learning processes aimed at assisting ongoing policy formulation. Other chapters are written by civil servants who have taken part in the MONIT project and reflect insiders' views of governance challenges and processes in their countries.

These proceedings have as their focus important developments taking place in each country. They do not aim at an overall treatment of all issues analysed in the various national projects. Hence, the individual chapters focus on a variety of issues, reflecting what is at stake in a given country and what seems to offer lessons of value for other countries. Conclusions for the study as a whole are to be found in the synthesis report contained in Volume 1 (OECD, 2005a).

A guide to this volume

This volume is divided into two parts which reflect two broad trends in how governance challenges are being met across countries: On the one hand, countries may redefine or reform their STI-related institutions. On the other, they may develop broader framework policies with the aim to induce an improved strategic orientation across ministerial boundaries.

Part 1: Adapting institutions in innovation policy

In Chapter 1, Lena Tsipouri and Mona Papadakou present a study of a dilemma in the Greek innovation policy system and focus on the lack of development of governance capabilities, because the innovation system is strongly influenced by external funding from EU sources. They see the challenges to be the creation of effective governance structures and the need for policy makers to find efficient ways to spend external funding for high-impact activities, given that the market is not mature and most actors have limited experience.

In Chapter 2, Rachel Hilliard and Roy Green present an analysis of the Irish innovation policy system. They argue that the system has been struggling with two significant, and interrelated, challenges. The first is stimulation of a national innovation system (NIS). The second is securing the role of policy in achieving effective links and integration between the elements of the NIS.

In Chapter 3, Yoo Soo Hong discusses key changes occurring in Korea which needs to overhaul and renew its formerly successful catch-up policy. Hong argues that the Korean system is changing to meet the challenges of increasing complexity and responds in various ways to leverage the authority of science and technology policy.

In Chapter 4, Leonard Jorg studies Austria's governance practice as a competitive environment in which policy learning is underdeveloped. He argues that Austria's STI policy system lacks strategic focus and needs a centre of gravity and a referee function for supervising the allocation process and imposing a common point of reference for innovators and policy makers.

Chapter 5 contains an analysis of the Finnish governance system by Marja Häyrinen-Alestalo, Antti Pelkonen, Tuula Teräväinen and Sampo Villanen. Their analysis shows that, compared to other nations, Finnish policy has succeeded in raising the STI profile. At the same time it has prevented further horizontalisation of innovation policy. The case study of Finland indicates that it is difficult for actors outside core STI policy to participate in the wider policy-making process.

In Chapter 6, two contributions discuss developments in Japan. Bunro Shiozawa gives an overview of key changes in Japanese industrial policy, pointing notably to basic changes in the institutional organisation, new priorities in innovation policy, such as science-industry relationships, and the development of cluster policies. Tagui Ichikawa presents a particular development in the Japanese governance system, the "agencification" of governmental institutions, with a clearer demarcation between the ministerial policy-making level and the agency policy-implementing level.

Part 2: Integrating policies for innovation

In Chapter 7, Patries Boekholt and Pim den Hertog study the increasing tendency towards integration in the Dutch policy system in a context of strong inertia. Against the background of deteriorating STI performance, existing innovation governance mechanisms are under discussion and new innovation governance mechanisms are being introduced. These are evolutionary rather than revolutionary changes, as both the perceived policy challenges and the arsenal of policy responses develop only slowly.

In Chapter 8, Svend Otto Remøe discusses recent Norwegian efforts to leverage innovation policy to achieve a broader strategy. He discusses current challenges in the innovation policy system and emphasises the inherent tendency towards fragmentation, the low level of co-ordination among autonomous institutions and ministries, and short-termism in priorities. Recent developments to promote a more coherent or horizontal innovation policy are assessed against this background.

In Chapter 9, Jenny Granath Thorslund, Lennart Elg and Patrick Sandgren discuss Sweden. Over the years, large firms have played a central role, and this has led to the Swedish paradox: the Swedish economy is not particularly innovative despite great investments in R&D by Swedish industry. Recent institutional innovations represent a trend towards leveraging innovation policy to develop a broader strategy than traditional R&D policy.

Chapter 10 examines the recent New Zealand strategy to redefine earlier market-oriented priorities and launch a broader policy framework for innovation policy. This framework, it is shown, builds upon the idea of integrating policy areas to support coherent and sustainable economic development. Information on the institutional set-up to ensure this is provided.

In Chapter 11, Mel Timpson and Nathan Rudder describe similar developments in Australia. They discuss how Australia's economic and political structures have shaped, and continue to shape, innovation policy, as well as the influence of past science and industry policies on current innovation policy.

In Chapter 12, Jan Larosse discusses ongoing changes in the Flemish innovation policy system in the context of the devolution of competences in Belgium from the national to the regional level. He argues that in order to fully implement an innovation policy that emphasises the integration of policy domains, new governance structures are needed that support strategic convergence and interactive policy development. The study points to the formalisation of the policy cycle as a key governance issue for strategic innovation policy in Flanders.

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Executive Summary

Innovation drives growth and helps address social challenges

The past two years have seen reduced potential output growth, increased unemployment and soaring public debt. To recover and move towards a more sustainable growth path, new sources of growth are urgently needed.

At the same time, some traditional sources of growth are declining in importance. Many countries have stagnating or declining populations, and this reduces the role of labour input in long-term economic growth. Moreover, investments in physical capital face diminishing returns and may be insufficient to strengthen long-term growth, especially in advanced economies. Innovation, which involves the introduction of a new or significantly improved product, process or method, will increasingly be needed to drive growth and employment and improve living standards. This is true as well for emerging economies that look to innovation as a way to enhance competitiveness, diversify their economy and move towards more high value added activities.

Innovation is already an important driver of growth in some countries. Firms in several OECD countries now invest as much in intangible assets, such as research and development (R&D), software, databases and skills, as in physical capital, such as equipment or structures. Much multifactor productivity (MFP) growth is linked to innovation and improvements in efficiency. Preliminary estimates indicate that in Austria, Finland, Sweden, the United Kingdom and the United States, investment in intangible assets and MFP growth together accounted for between two-thirds and three-quarters of labour productivity growth between 1995 and 2006, thereby making innovation the main driver of growth. Differences in MFP also account for much of the gap between advanced and emerging countries. This suggests that innovation is also a key source of future growth for emerging economies.

This economic challenge coincides with increasing political pressure to meet various social challenges, such as climate change, health, food security, or access to clean water, many of which are global in nature or require global action. These challenges cannot be dealt with by any single country and require better co-ordination of effort by countries and through both supply- and demand-side interventions. Innovation is crucial for solving such problems in an affordable and timely manner. In the absence of innovation, addressing climate change, for example, will be considerably more costly. Moreover, innovation-driven growth makes it easier for governments to make the necessary investments and undertake the policy interventions to address these challenges.

*Action on innovation must be a priority
for emerging from the crisis*

The crisis has only served to underscore the need for innovation as a way to provide new solutions. While expenditure cuts are needed, governments must continue to invest in future sources of growth, such as education, infrastructure and research. Cutting back public investment in support of innovation may provide short-term fiscal relief, but will damage the foundations of long-term growth. Public investment in basic research, in particular, provides the seeds for future innovation, as it did in the past for the Internet and the Human Genome Project. It will also be needed to foster the breakthrough technologies for dealing with climate change and other global challenges.

At the same time, there is considerable scope to improve the efficiency of government spending and innovate in the delivery of public services. Reforms of education and training systems and public research institutions, for example, can help increase returns from public investment in innovation. Moreover, many policy actions that can help strengthen innovation do not require additional or significant public investment. Structural policy reforms of the framework conditions that support innovation, such as the removal of regulatory barriers to innovation and entrepreneurship, including administrative regulations, as well pro-growth tax reforms, can do much to strengthen innovation and growth.

In most countries, markets can also be strengthened to unleash demand for innovative products and services that meet social and global needs. Getting prices right, opening markets for competition and devising innovation-inducing standards and smart regulations are among the approaches that governments can use to unleash innovation in areas such as health and the environment. Better use of public procurement can also be effective, in particular when government is a large consumer. Well-designed demand-side policies are less expensive than direct support measures; they are also not directed at specific firms, but reward innovation and efficiency. Demand is closely linked to supply, however, and supply-side policies are necessary to create the conditions for business to innovate.

*Policies need to reflect innovation as
it occurs today*

If policies to promote innovation are to be effective, they need to reflect the ways in which innovation takes place today. To transform invention successfully into innovation requires a range of complementary activities, including organisational changes, firm-level training, testing, marketing and design. Science continues to be an essential ingredient of innovation, even though innovation now encompasses much more than R&D. Innovation also rarely occurs in isolation; it is a highly interactive and multidisciplinary process and increasingly involves collaboration by a growing and diverse network of stakeholders, institutions and users. Moreover, the emergence of new and important players has added to the complexity of the multifaceted international landscape of innovation.

These and other changes in the innovation process present a challenge to existing national policy frameworks. Policy will need to move beyond supply-side policies focused on R&D and specific technologies to a more systemic approach that takes account of the many factors and actors that influence innovation performance. The objective of policy should not be innovation as such, but the application of innovation to make life better for individuals and society at large. This is no easy task, especially as the scope for policies for innovation broadens. The objective of the OECD's Innovation Strategy is to support this process of policy development, recognising that "one size does not fit all". It is built around five priorities for government action, which together form a coherent and comprehensive approach to policies for innovation that can help underpin an innovation-led recovery and strengthen the role of innovation in the long run.

People should be empowered to innovate

Human capital is the essence of innovation. Empowering people to innovate relies on broad and relevant education as well as on the development of wide-ranging skills that complement formal education. Curricula and pedagogies need to be adapted to equip students with the capacity to learn and apply new skills throughout their lives. At the same time, education and skills development systems require reform to ensure they are efficient and meet the requirements of society today. Improving teacher quality is particularly important for enhancing outcomes; this might include better initial selection of teachers, ongoing evaluation to identify areas for improvement, and recognising and rewarding effective teaching.

Universities, colleges and vocational training centres are essential nodes in the innovation system, both producing and attracting the human capital needed for innovation. These institutions act as essential bridges between players – businesses, governments and countries – in broader and more open systems of innovation. The major policy challenge is to recognise the essential role of universities in the innovation enterprise rather view them, as is all too commonly the case, simply as providers of essential public goods. This requires a greater focus of policy makers on ensuring independence, competition, excellence, entrepreneurial spirit and flexibility in universities.

Entrepreneurs are particularly important actors in innovation, as they help to turn ideas into commercial applications. In the United States in 2007, firms less than five years old accounted for nearly two-thirds of net new jobs. Successful entrepreneurship often comes with practice, hence the importance of experimentation, entry and exit. Yet, only a small part of the population receives entrepreneurial education. Education and training policies should help foster an entrepreneurial culture by instilling the skills and attitudes needed for creative enterprise.

Internationally mobile talent contributes to the creation and diffusion of knowledge, particularly tacit knowledge. To encourage this circulation of knowledge, governments should build absorptive capacity, open labour markets to foreign students, and ensure that the tax regime does not penalise mobile skilled workers. For their part, sending countries can put into place policies that provide opportunities for expatriate researchers to re-enter the domestic labour market. Migration regimes for the highly skilled should be efficient, transparent and simple and enable movement on a short-term or circular basis. Related policies need to be coherent with the wider migration agenda, and with development and aid policies, so as to contribute to the effective management of migration.

People participate in innovation not only by creating, diffusing or adapting technologies in the workplace, but also as consumers. Consumer policy regimes and consumer education should improve the functioning of markets by helping to equip consumers to become active participants in the innovation process and enable them to make informed choices. This has the added benefit of strengthening competition between businesses. It is essential to ensure that the information provided to consumers is easily understandable and takes account of how people process information.

Innovation in firms must be unleashed

Firms are essential for translating good ideas into jobs and wealth. New and young firms are particularly important, as they often exploit technological or commercial opportunities that have been neglected by more established companies. Both market entry and exit are indispensable for the experimentation that leads to the development of new technologies and markets. Simplifying and reducing start-up regulations and administrative burdens can reduce barriers to entry. Bankruptcy laws should be less punitive for entrepreneurs and should offer more favourable conditions for the restructuring of ailing businesses, with due regard to risk management and the need to avoid moral hazard.

Between 20% and 40% of entering firms fail within the first two years. Reallocation of resources to more efficient and innovative firms is crucial to innovation and economic growth. Labour market policies should provide the flexibility needed to reallocate resources from declining to innovative firms, along with support for lifelong learning and re-skilling of workers.

The tax climate for entrepreneurs should be made more neutral; potential entrepreneurs may also be discouraged from leaving their current employment by the financial and health costs associated with losing employer-based health insurance and social security contributions. Where possible, barriers to the transferability of such benefits should be lowered.

The growth of firms is a particular challenge in many countries. Low regulatory barriers can help ensure that high-growth firms do not spend the capital they need to support their growth on overcoming bureaucratic obstacles. Administrative, social and tax requirements that rise with the size of the company should be reviewed as they increase the cost of growth. Policy can also help existing small and medium-sized firms enhance their capacity to innovate, e.g. in supporting the formation of relevant skills.

Access to finance is a key constraint for business-led innovation, which is inherently risky and may require a long-term horizon. Restoring the health of the financial system should therefore be a priority. Well-functioning venture capital markets and the securitisation of innovation-related assets (e.g. intellectual property) are key sources of finance for many innovative start-ups and need to be developed further. Financial markets should continue to provide sufficient room for healthy risk taking, long-term investment and entrepreneurship, all key drivers of innovation, while ensuring safeguards in case of failure. When public funds are deployed to ease access to finance, they should be channelled through existing market-based systems, and take a clear market approach.

The creation, diffusion and application of knowledge is critical

The creation, diffusion and application of knowledge are essential to the ability of firms and countries to innovate and thrive in an increasingly competitive global economy. Science continues to be at the heart of innovation and public research institutions in many OECD countries require reform in order to maintain excellence and improve collaboration with the business sector.

Today, high-speed communication networks support innovation throughout the economy much as electricity and transport networks spurred innovation in the past. Governments should also foster ICTs, in particular broadband networks, as platforms for innovation by upholding the open, free, decentralised and dynamic nature of the Internet.

In addition to hardware and software, ICT infrastructure includes information that is publicly generated or funded. Provision of this information at no or low cost can stimulate innovation and improve the transparency and efficiency of government. Obstacles that impede the commercial and non-commercial re-use of public-sector information should be addressed including restrictive or unclear rules governing access and conditions of re-use; unclear and inconsistent pricing of information when re-use is chargeable; and complex and lengthy licensing procedures. In general, public information should remain open so as to eliminate exclusive arrangements and allow innovative commercial and non-commercial re-use.

Intellectual property rights (IPRs) provide an important incentive to invest in innovation by enabling firms to recover their investment costs. IPRs should be well protected and appropriately enforced. They contribute to the creation of innovation and are important for diffusing knowledge and creating value. A variety of collaborative mechanisms, such as licensing markets or pools and clearing houses, can facilitate access to and use of knowledge. Patent systems need to be properly tailored to ensure a proper balance between incentives for innovation and the public benefit that flows from dissemination of the knowledge in the marketplace.

In an economy increasingly based on knowledge and innovation, the development of fully functioning knowledge networks and markets could have a significant impact on the efficiency and effectiveness of the innovation effort. Some good practices exist but significant scale-up is required. Governments can first, underpin the development of a knowledge networking infrastructure; second, implement measures, such as the OECD Guidelines on Access to Research Data from Public Funding, to share public-sector knowledge and data; and third, foster the development of collaborative mechanisms and brokerages to encourage the exchange of knowledge and ensure a fair return on investments made.

Innovation can be applied to address global and social challenges

Innovation is a means of dealing with global and social challenges. Global challenges need to be addressed collectively through global solutions and bilateral and multilateral international co-operation. However, current global challenges require more concerted approaches to accelerate technology development and diffusion and bring innovative products to the market. A new model for the governance of multilateral co-operation on international science, technology and innovation should be explored. It could focus on setting priorities, funding and institutional arrangements, procedures to ensure access to knowledge and transfer of technology, capacity building, and the delivery of new innovations into widespread use.

For many of these challenges, market failures – including the simple absence of a market – limit investment and the development and deployment of innovations. Pricing of environmental externalities, such as carbon emissions, will be an important trigger for innovation. Tax policies or other economic instruments can provide the necessary signal and thus foster a market for innovations, as can the removal of environmentally harmful subsidies. Policies should allow the private sector to identify the most promising means of addressing global problems through innovation. Governments will need to take the lead in areas that firms find too risky and uncertain through investment in public research and well-designed support for pre-competitive research in the private sector.

Low-income countries face specific challenges for making innovation the engine of economic development, including poor framework conditions and low human and social capital. In these countries, policies should focus on enhancing educational attainment and strengthening framework conditions. Modernising agriculture through a locally adapted approach in which entrepreneurship, agricultural productivity, and value addition drive poverty reduction and green growth is particularly important.

The governance and measurement of policies for innovation should be improved

Given the increasingly central role of innovation in delivering a wide range of economic and social objectives, a whole-of-government approach to policies for innovation is needed. This requires stable platforms for co-ordinating actions, a focus on policies with a medium- and long-term perspective, and leadership by policy makers at the highest level. Involving stakeholders in policy development can help develop a shared vision and make policies more effective in meeting social goals. This also involves coherence and complementarities between the local, regional, national and international levels.

Evaluation is essential to enhance the effectiveness and efficiency of policies to foster innovation and deliver social welfare. Improved means of evaluation are needed to capture the broadening of innovation, along with better feedback of evaluation into the policy-making process. This also calls for improved measurement of innovation, including its outcomes and impacts.

The way forward – changing the emphasis in policies for innovation

The broad concept of innovation embraced by the OECD Innovation Strategy emphasises the need for a better match between supply-side inputs and the demand side, including the role of markets. Moreover, policy actions need to reflect the changing nature of innovation. This implies an emphasis on the following areas:

- A more strategic focus on the role of policies for innovation in delivering stronger, cleaner and fairer growth.
- Broadening policies to foster innovation beyond science and technology in recognition of the fact that innovation involves a wide range of investments in intangible assets and of actors.
- Education and training policies adapted to the needs of society today to empower people throughout society to be creative, engage in innovation and benefit from its outcomes.
- Greater policy attention to the creation and growth of new firms and their role in creating breakthrough innovations and new jobs.
- Sufficient attention for the fundamental role of scientific research in enabling radical innovation and providing the foundation for future innovation.
- Improved mechanisms to foster the diffusion and application of knowledge through well-functioning networks and markets.
- Attention for the role of government in creating new platforms for innovation, *e.g.* through the development of high-speed broadband networks.
- New approaches and governance mechanisms for international co-operation in science and technology to help address global challenges and share costs and risks.
- Frameworks for measuring the broader, more networked concept of innovation and its impacts to guide policy making.

The OECD stands ready to help governments and international instances to use the Innovation Strategy in designing their approaches to finding national and global solutions. Implementing the Innovation Strategy will be an ongoing and evolving process, which will benefit from monitoring, peer review and the exchange of experience and good policy practices.

Appendix 5

**II. BEST PRACTICES IN PROVIDING INTELLECTUAL PROPERTY
SERVICES TO BENEFICIARIES OF BUSINESS AND
TECHNOLOGY INCUBATORS**

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A. Introduction

One must have clarity as to what is the key objective for setting up an incubator. It is not uncommon for policy makers to wrongly assume that the focus of incubation is employment generation, when it should be enterprise development. Employment generation will follow successful and sustainable commercial outcomes, based on dynamic competitive advantage resulting from innovation and creativity. In an increasingly demanding and globalizing business environment, harnessing innovation and creativity in the form of new or original knowledge-based products and services is becoming the key to business success. Intellectual assets are increasingly being recognized as a source of corporate value today, and are increasingly playing a critical role in influencing innovation and key value drivers across every industry. Protecting and managing knowledge is becoming therefore a core aspect of business strategy whether of a new or an established enterprise. It is from this perspective that policy makers in ministries, departments and other agencies of government, who are responsible for policies and programmes for private sector enterprise development, should look at the issue of setting up incubators. Before investing in incubation, policy makers need to ask how well markets are working in the provision of those services that incubators would supply – in business support services as well as in industrial real estate. Only if there are critical gaps should incubators be set up. The assessment of the performance of incubators should be measured with reference to these gaps. Also, measures of incubator performance should record different dimensions of enterprise development (such as reducing the time which enterprises take to establish market niches; reducing the time to develop new products if the incubator has a technological orientation; and improving management practices and/or the technology of enterprises).

The ability of an incubator to achieve its objectives is critically dependent on the type, range and quality of business support services it provides to its beneficiaries. The National Business Incubation Association (NBIA) in the United States of America defines business incubation as “*hands-on management assistance, access to financing, and orchestrated exposure to critical business or technical support services.*” There are different ways of classifying these services, such as the following:

The commonly provided business support services in an incubator may be classified as follows: (i) business plan development; (ii) accounting, legal, and financial planning; (iii) aid in attracting investors; (iv) marketing; and (v) common shared services, such as secretarial support and facility maintenance.

Another way is to look at the four key areas of business support services, namely: (i) Entrepreneur training (often part of ‘pre-incubation’); (ii) business advice; (iii) financial support (in some cases from incubator seed/venture capital funds but usually through links with external providers); and (iv) technology support.

Yet another approach is to focus on the six different dimensions of an incubator that have a direct impact on its success. These dimensions are: (i) facilities and location; (ii) shared services; (iii) tenant entry and exit criteria; (iv) mentoring and networking; (v) funding and support; and (vi) incubator governance.

The cost of these services may be at or below market rate and the quality varies from incubator to incubator. The client firm may pay for the services directly on a billed fee-for-service basis or as part of rent to the incubator facility. Firms may need to take out a loan for services or exchange equity in the firm for services.

Business support services, including intellectual property services, may be supplied to client firms through a variety of mechanisms and through various cost structures. These services may be provided by:

- Incubator manager and staff
- Advisory board or host institution (such as a university’s faculty member or a member of the university’s Technology Licensing Office)
- A local Small Business Development Centre
- arrangements with area professional service firms or network of external consultants

Business Support Services	Percentage	Provided by
Marketing assistance	90	~A
Networking activities	89	~A
Links to higher education institutions	81	~A
Investor/strategic partner linkages	79	~A
Technology commercialization	76	~A
Accounting/financial management assistance	73	~A
Help with access to commercial loans and other funds	64	~A
Intellectual property management	64	~A
Affiliate programmes	63	~A
Management team development	55	~A
Shadow boards/mentoring programmes	55	A
International trade assistance	54	£
General legal services	53	°
New product assessment	50	~A
Federal contract procurement assistance	50	£
Manufacturing practices assistance	46	£
Comprehensive business training programme	43	£
Help with regulatory compliance	36	°
Product design assistance	31	°
Management information systems	26	°

Notes: ~A = Provided directly or by referral to one of HRTI's stakeholders.
£ = Provided by referral.
° = Not currently provided by HRTI.

In a survey of business assistance services of incubators in the United States, it was found that there is an increasing trend in the provision of intellectual property management services. This is shown in the following table.

Percentage of incubators offering various services

Business Assistance Services	No. of incubators offering	Percentage of responding incubators that offer
Help with business basics	249	90
Marketing assistance	232	89
Accounting/Financial management	200	77
General legal services	122	47
Intellectual property management	97	37
Help with access to commercial loans/loan funds/loan guarantee programmes	201	77
Management team development	114	44
Shadow boards/mentoring programmes	109	42
Investor/strategic partner linkages	151	58
Affiliate programmes	163	63
New product assessment	106	41
Management information systems	66	25
Manufacturing practices assistance	97	37
Product design assistance	59	23
Networking activities	224	86
Technology commercialization	105	40
Links to higher education institute	197	76
Help with regulatory compliance	80	31
International trade assistance	110	42
Federal contract procurement assistance	113	43
Comprehensive business training programme	127	49

Business Assistance Services	No. of incubators offering	Percentage of responding incubators that offer
General office services:		
Conference room	238	92
Custom equipment/custom leasing	116	45
Shared administrative services	229	88
Video conferencing	50	19
Telephone system/phone answering	170	65
Internet access	162	
Computer labs	103	40

Finance is always an important question for starting a new business. For high-tech entrepreneurs, an increasingly important source of finance (equity) is from venture capitalists and business angels. In the United States, every organized angel group appears to conduct independent due diligence on their investment opportunities. The depth and extent of that due diligence varies both by group and by specific opportunity. Several common threads appear in the due diligence processes of many angel groups: (a) conducting civil, criminal, credit, and state motor vehicle checks of key managers; (b) verifying intellectual property ownership; (c) intensely evaluating the management team; and (d) understanding the potential market.

C. Basics of intellectual property management

An understanding of the major types or categories of intellectual property rights is a prerequisite for their successful management. A broad overview of basics of intellectual property is presented below from a business perspective.

1. Patents

Innovative and creative ideas are at the heart of most successful businesses. Ideas by themselves, however, have little value. They need to be developed, turned into innovative products or services and commercialized successfully to reap the benefits of innovation and creativity. Intellectual property, and patents in particular, can be crucial for turning innovative ideas and inventions into competitive products that significantly increase profit margins. A patent is an exclusive right granted for a product or a process that provides a new way of doing something or offers a new technical solution to a problem. (For a more detailed explanation, see <<http://www.wipo.int/about-ip/en/patents.html>>.)

A patent, once granted, gives the patent owner the right to stop all others from exploiting the patented (claimed) invention. A patent is granted to the patent owner by the government, generally for a period of 20 years, in return for a complete description of the invention in the patent application. This is considered to be a fair reward to the inventor or patent owner for an adequate disclosure of a claimed invention which is new, non-obvious and capable of industrial or business application. In this way, the patent system seeks to balance the need for exclusivity of the patent owner with the need to encourage the wider dissemination of new knowledge or information so that others may learn from it and improve upon the so-called 'prior art' (which may otherwise be kept as a trade secret indefinitely). The patent owner can then benefit from a limited monopoly as defined in the claims of the granted patent – in that she/he can commercially exploit her/his invention, or can license the intellectual property rights to others to exploit the invention, perhaps in return for a sum of money (royalty).

While the acquisition of patent protection is not a guarantee for commercial success, such acquisition is always important in ensuring that the patent owner has the opportunity to look for ways in which he/she can commercialize his/her invention.

An incubated enterprise is often at the centre of innovative activities, therefore, owners/managers of such enterprises must be made aware of the basic principles and practices in designing and using the patent system.

The key reasons why a one should consider patenting an invention, provided it meets the criteria of patentability, are the following:

- **Exclusive rights** – Patents provide the exclusive rights, which usually allow the patent owner to use and exploit the invention for twenty years from the date of filing of the patent application in the national or regional patent office.
- **Strong market position** – Through these exclusive rights, the patent owner is able to prevent others from commercially benefiting from the patented invention, thereby reducing competition in the marketplace and enhancing the chances of business success of the patent owner.
- **Higher returns on investments** – Having invested a considerable amount of money and time in developing innovative products, the patent owner, under the legal cover of the exclusive rights provided by a patent, may commercialize the invention to obtain higher return on investment.
- **Opportunity to license or sell the invention** – If the patent owner chooses not to exploit the patent itself, then he/she may sell it or license the rights to commercialize it to another entrepreneur or enterprise and get a one-time or recurring income.
- **Increase in negotiating power** – The patents owned by an enterprise may be of considerable interest to another enterprise or institution. Through a cross-licensing arrangement it becomes possible to exchange the patent rights between the two parties to mutual advantage. The negotiating strength of either party is linked to the strength of their respective patent portfolios.
- **Positive image of the SME** – Business partners, investors and shareholders may perceive patent portfolios as a demonstration of the high level of expertise, specialization and technological capacity of an enterprise. This may prove useful for raising funds, finding business partners and raising the market value of the enterprise.
- **Take action against free riders** – As patent owner an entrepreneur is in a stronger position to combat unlawful imitation or copying by competitors.

2. Patent information

Effective use of patent information can be very useful in ascertaining a firm's competitive position in the marketplace. "Patent information" refers to the technical, commercial and legal information contained in patent documents that are published periodically by national and regional offices and by WIPO under the Patent Cooperation Treaty (PCT). A patent document includes the full description of how a patented invention works and one or more "claims" which determine the scope of protection as well as details such as who patented the invention, when it was patented and reference to relevant literature.

About two-thirds of the technical information revealed in patents is never published elsewhere. The entire set of patent documents worldwide is well over 40 million documents. More than 90 per cent of the information contained in patent documents is in the public domain, which means its use is in no way constrained by having to seek the prior approval of any one. This makes patent documents as the single most comprehensive collection of classified technological information of immense commercial and technological value. Most SMEs are not aware of this basic fact and, therefore, do not use patent information.

Access to patent information may also pose a challenge. The Internet and digitization of patent information is helping in reducing the problems faced by SMEs to access patent information. Affordability is still a concern for SMEs in many countries, apart from the inherent difficulty in interpreting the techno-legal language in which "claims" are written. Even so, learning to use patent information in many ways is the first step towards sustainable technological progress of an SME. The availability of such wealth of technical knowledge provides enterprises with the following competitive opportunities:

- **Information on new or alternative source of inputs, components or machines:** By using patent information an SME may be able to identify new or alternate sources of inputs, components or machines for its products or services. This may provide it with valuable options regarding price, quality and terms of delivery which may ultimately have an impact on the final price of its products or service, and hence on its competitiveness.

- **Information about potential new markets:** Patent information may also be a useful source of information on potential new markets. An SME can identify other enterprises that can use its products or services as inputs, components or machines.
- **Avoiding unnecessary costs:** Investing in a new product is an expensive and risky exercise. The information contained in patent documents may save on time and scarce financial resources from being wasted on a nonviable product, as someone else has already patented a key invention. The information can also enable an SME to avoid unintentional infringement of others patents, thus saving the SME from unnecessary litigation procedures and expenses. It goes without saying that avoidance of unnecessary costs contributes to a firm's efficiency and competitiveness.
- **Information on the market (market intelligence):** For competitive enterprises information on the trends in the market and what the competitors are doing is very important. A proper analysis of patent information often provides the needed information. For example, by analyzing the patents owned or acquired by competitors it is possible to ascertain the trend of the market, and to plan the direction of the SMEs future strategy which may sometimes involve taking timely steps to not invest further in plant and machinery for making products that would be unprofitable in the near future and/or to take timely action to exit business lines and products that would soon be obsolete with the emergence of alternate products in the marketplace. It may also provide valuable information on who are the emerging key players in the field i.e., on potential competitors. Such information would be very useful in reviewing the competition strategy of an enterprise. Apart from the manufacturer, even as a distributor or retailer of products, patent information may be of great assistance in choosing new products early and wisely.

3. Trade secrets

Today's business environment has increased the importance of trade secret protection for business by developing and implementing information protection practices that address the risks associated with a global marketplace, rapid advancements in technology and telecommunications, a mobile, highly skilled workforce, and networked strategic business relationships, including extensive outsourcing. Technology is changing so rapidly that trade secret protection is, in some cases, the most attractive, effective and easily available intellectual property right. As with all intellectual property, trade secrets can be valuable to a company's growth, competitive advantage and, sometimes, survival.

A trade secret is information of any type that is actually or potentially valuable to its owner, not generally known or readily ascertainable by the public, and for which the owner has made reasonable efforts to keep it secret. A trade secret generally has some cost associated with its development, and is not common knowledge in the industry. Even negative information, such as research options that have been explored and found worthless, can be trade secrets. Practically any type of technical and business information may be protected as a trade secret provided it meets these requirements; the following categories are illustrative:

- Data compilations, for example, lists of suppliers or customer (the more information a list contains, the more likely it would qualify for trade secret protection)
- Designs, drawings, architectural plans, blueprints, and maps
- Algorithms and processes that are implemented in computer programmes and the programmes themselves
- Instructional methods
- Manufacturing or repair processes, techniques and know-how
- Document tracking processes
- Formulas for producing products
- Business strategies, business plans, methods of doing business, marketing plans
- Financial information
- Personnel records
- Production or maintenance schedules
- Operating, maintenance or training manuals
- Ingredients of products
- Information about research and development activities of an enterprise

A trade secret may comprise of a combination of characteristics and components, each of which, by itself, is in the public domain, but where the unified process, design and operation of such characteristics or components, in combination, provides a competitive advantage. Inventions and processes that cannot be patented may be protected as trade secrets. SMEs should rely on trade secret route to safeguard the details of research and development, including draft patent applications, and patent applications before their official publication or grant. Even after grant of a patent, the associated knowledge is protected as a trade secret. A newly developed but not yet published or used industrial design or even trademark may be a valuable confidential information.

Trade secrets can create an advantage over competitors in many ways. The right to use trade secret information can also be licensed or sold. Although trade secrets provide no protection against those who independently develop the trade secret information, trade secrets never expire as do patents, industrial designs and copyright.

4. Copyright and related rights

In most countries worldwide 80 to 90 per cent of the creative industries are SMEs. Many high-tech incubators are solely focused on such enterprises. The creative industries sector includes publishing, software, music, television and radio, architecture, advertising, designer fashion, visual arts, crafts, etc. They account for 3 to 6 per cent of the GDP of most countries. In fact, the creative industries are the backbone of a knowledge economy and their rapid growth in many countries demonstrates the potential for making a significant contribution to national economy.

Protecting copyright and related rights is important because it enables creators and users of such works to support themselves from their artistic work and for creative entrepreneurs to generate profits to reinvest in tomorrow's creators. In addition, protection of such works promotes cultural integrity, diversity and variety as most of such works are created or used by SMEs.

Copyright literally means the right to make a copy of an original literary or artistic work. As a legal term, copyright refers to the rights given to creators for their literary and artistic works. The kinds of works covered by copyright include literary works such as novels, poems, plays, reference works, newspapers and computer programmes; databases; films, musical compositions, and choreography; and artistic works such as paintings, drawings, photographs and sculpture; architecture; and advertisements, maps and technical drawings.

Related rights are the rights that belong to the performers, the producers of phonograms and broadcasting organizations in relation to their performances, phonograms and broadcasts respectively. Related rights differ from copyright in that they belong to owners regarded as intermediaries in the production, recording or diffusion of works. The link with copyright is due to the fact that the three categories of related rights owners are auxiliaries in the intellectual creation process since they lend their assistance to authors in the communication of the latter's works to the public. A musician performs a musical work written by a composer; an actor performs a role in a play written by a playwright; producers of phonograms – or more commonly “the record industry” – record and produce songs and music written by authors and composers, played by musicians or sung by performers; broadcasting organizations, broadcast works and phonograms on their stations.

The related rights grew up around copyrighted works, and provide similar, although often more limited and of shorter duration, rights to:

- performing artists (such as actors and musicians) in their performances;
- producers of sound recordings (for example, cassette recordings and compact discs) in their recordings;
- broadcasting organizations in their radio and television programmes.

The owner of a copyright is the only person/entity who/which has the right to make a copy of it in any form, or to permit someone else to do so. The owner of a copyright has the sole right to control any copying/reproduction, public performance, recording or broadcasting of a work, and its translation or adaptation. This control may be exercised for a fee termed ‘royalty’. Royalty payments may be arranged through performing rights societies, collective management organizations or societies, publishing houses or by the owners of copyright directly.

Collective management organizations or societies act on behalf of copyright or related rights owners and administer some or all of their rights on behalf of the membership and members of foreign affiliated rights societies. There are often separate national societies for different types of rights such as: performing and broadcasting rights for music, reprography rights, mechanical reproduction rights and retransmission rights. The primary function of these societies is to act as "licensing bodies" on behalf of the members. Membership of collective management organizations is open to all owners of copyright and related rights, whether authors, composers, publishers, writers, photographers, musicians, or performers. Broadcasting organizations are not included in the list, as they are considered users, even though they have certain rights in their broadcasts. Collective management organizations grant permission and give terms for use of works in their respective repertoires. After deducting the administration charges, the royalty collected is distributed periodically to the owners of copyright and/or related rights.

Examples of public performance are the playing of recordings in shopping malls, bars, nightclubs, discotheques, hotels, airlines, and restaurants. An example of the broadcasting of performances and sound recordings is radio airplay. In fact, radio stations are the largest single broadcast users of recorded music. Each time a radio station plays an eligible sound recording a royalty is paid to the composer, the maker of the sound recording and any performer whose performance is fixed in that recording. This makes it clear that various types of SMEs are users of works protected by copyright and related rights, not to mention the widespread use of software by an even wider range of SMEs.

The digital revolution and an era of converging technologies have created exciting business opportunities for SMEs in the entertainment, mass media, computer, and telecommunications industries, as well as for multimedia, consumer products and financial services companies that can take advantage of the new interactive technologies. There is a greater need than ever to safeguard copyrightable material on the Internet in the entertainment industry, including film, theatre, music and print publishing transactions. While the first line of action concerns dealing with IP issues in relation to e-mails, the next one is about IP issues in relation to the web site of the enterprise. All enterprises, including SMEs, have to take special measures to deal with the problem of protecting widely distributed factual confidential or copyrighted information on or in relation to web sites – even claiming trademark rights against unwelcome hypertext links to their web sites.

Multimedia is a new form of expression made possible by digital technology. With multimedia technology, graphics, video, animation, text, still images, sound and data can simultaneously appear on a computer screen and the user can interact with the content. Copyright or related rights of course protect most of these works (music, photos, paintings, texts, film extracts, etc.). To exploit them in an interactive multimedia product, it is first necessary to clear the rights. Clearing the rights simply means obtaining authorization from the owner of the rights to exploit the work or parts thereof in a multimedia product, and negotiating how much that will cost. This authorization is generally in the form of a user license in writing granted by the owner of the rights. Examples of multimedia content include distance learning, virtual visits to historic sites, and interactive games for children. Frequently offered on CD-ROM or on the Internet, multimedia presentations have become an innovative and efficient means for communicating information and for storytelling or entertainment. Most multimedia companies are SMEs and many are being nurtured in high-tech incubators in different countries. As users of copyright these companies need to understand the importance of proper use of the IP system in all facets of their business. This is not limited to use of copyright and related rights but often includes protection of trade secrets, creation, protection and use of trademarks, and protection of novel software by patents in some countries.

5. Trademarks

A well-crafted trademark often becomes a decisive factor in the success of an enterprise in the market place. A trademark enables users or consumers to distinguish products or services of an SME from those of its competitors and to associate the products or services of an enterprise with desired qualities. In other words, a trade or service mark is a distinctive sign which identifies certain products or services as those produced or provided by a specific person, enterprise or a group of persons/enterprises allowing the consumer to distinguish them from goods or services of others. (For a more detailed explanation, see <<http://www.wipo.int/about-ip/en/>>). A trademark may be a word, letter, symbol (logo), number, colour, shape or, where the legislation of the country so allows, sound or smell, or a combination of two or more of these elements.

No wonder, to develop trust, confidence and loyalty in its products or services, every Forward-looking SME has to develop and maintain a distinct identity, image or reputation. Only then it would be able to distinguish itself and its products or services from those of its competitors. It must also, at the same time, provide a mechanism for linking the provider of a product or service to the valuable business assets of trust and goodwill. This is mostly achieved through a distinctive trade name and one or more trademarks. These play a pivotal role in the marketing strategy of differentiating products or services from those of rivals and in developing longer-term positive relationships with customers by communicating an assiduously nurtured image or reputation.

Every business must woo customers to move them quickly from brand awareness, via brand recognition, to brand preference and finally to brand insistence, a point at which the consumer refuses to accept alternatives and is willing to pay an even higher premium for the desired branded product or service. A major step in eliminating wasteful expense and reducing risk is to register the trademark early so that it is legally secure and others cannot free-ride on it. This is often done well before test marketing the new product or service to avoid incurring expense on advertising and other promotional activities, only to discover the brand name is not available.

Some countries do provide a degree of protection to unregistered trademarks, but in most countries, protection is contingent upon successful registration. Many countries allow registration without prior use, but the trademark registration may be cancelled if it is not used in the marketplace in relation to the relevant product or service for a certain period of time. It is easier to deal with wilful free riding, known as counterfeiting of a trademark and with grey market products (so-called parallel imports) if the trademark is validly registered. Informed businesses take active steps to educate employees, dealers, distributors, newspaper editors, publishers of encyclopedias and the public that their trademark identifies their specific products alone and therefore should be used in a proper manner.

6. Industrial designs

Industrial designs are compositions of lines or colours or any three-dimensional forms, which give a special appearance to a product or handicraft. They protect the ornamental or aesthetic aspect of a useful article, which usually appeals to the sense of sight or touch and can be reproduced in significant quantities (for a more detailed explanation see <<http://www.wipo.int/about-ip/en/>> and <<http://www.wipo.int/hague/en/index.html>>).

The terms design, industrial design or design patent, when used in intellectual property law and practice, have a specific connotation. In most cases they refer to the *eye appeal* of – that is, the features of *shape, configuration, pattern* or *ornament*, or any combination of these features – of a finished article made by hand, tool or machine, as opposed to functional features which may be protected by other types of intellectual property rights, such as patents, utility models or trade secrets. In many countries, the requirement of *eye appeal* of an article of manufacture or handicraft has been modified to that of *perceptible features* of appearance, and the rule of novelty has been replaced or supplemented by an individual character requirement.

A good design strategy must compare the various alternatives for protecting industrial designs, as there are different legal ways to prevent unscrupulous competitors from unauthorized copying. Legal options may include one or more of the following: protection under industrial design law, copyright law, trademark law – as a two or three-dimensional mark – and unfair competition law. In some countries the protection of these different laws may be mutually exclusive, in others it is cumulative to varying degree.

Industrial design issues affect various types of business decisions of an enterprise. For example, the type of protection and its cost or effectiveness may affect which details should be disclosed to the designer, especially when the designer is employed by a contractor, whether to undertake design development entirely in-house, or to contract or commission an outside agency or do it jointly; timing of the initial use of a new design in advertising, marketing or public display in an exhibition; if and when to seek or continue to maintain design registration; if and when to initiate action against unauthorized/infringing acts of competitors, counterfeiters or importers; if and when to license or partially assign a design; and if and when to register the design in other markets for export or for exploring the potential of entering into strategic business alliances, joint ventures, setting up wholly owned subsidiaries, etc.

It is therefore hardly surprising that smart enterprises take great pains to timely protect the new or original aesthetic aspect of its products so as to prevent such designs from being copied by competitors; otherwise the competitive edge may be easily lost even though functionally the product of an enterprise may be superior to those of its competitors.

D. Practical intellectual property issues in developing a business plan

(a) *What can a business plan do for businesses?*

A business plan is a mechanism to ensure that the resources or assets of a business are applied profitably across all its activities for developing and retaining a competitive edge in the market place. For a new business it provides a blueprint for success, while for an ongoing business it provides an overview of where a business is at present, how the business is positioning itself, and how it seeks to achieve its objectives to become and/or remain successful.

Putting together a good business plan takes a lot of work. Then what justifies the time and energy you will spend creating a plan? A business plan can be used for a variety of purposes:

- **To examine the feasibility of your business idea:** A written business plan forces a company to think through all the key issues – such as the potential demand for its products or services, the nature of the competition, entry barriers, the unique selling proposition of the new or improved products or services, resources required, critical employees, relevant technologies and strategic partners, raising funds, projected start-up costs, marketing strategies, and the like.
- **To access start-up services and financing:** Business incubators and potential investors and lenders require well-formulated and realistic business plans. This is often not the case; no wonder some 80 per cent of business plans received by investors and business incubators are rejected.
- **To provide strategic guidance:** A business plan is a reference point providing you and your management team with an objective basis for determining if the business is on track to meet the goals and objectives in the time frame set and with the available resources.
- **To furnish a standard/bench mark** against which to judge future business decisions and results. This standard/bench mark may evolve along with the business, and as such the business plan is a dynamic document that should be revised based on new and evolving circumstances.

(b) *Why should intellectual property (IP) be integrated in the business plan?*

New or original knowledge and the creative expression of ideas is the driving force of successful businesses in the 21st century. Therefore, safeguarding such knowledge and creative expression from inadvertent disclosure or its unauthorized use by competitors is becoming increasingly critical for developing and retaining competitive advantage. Building a business also requires various types of other resources, including a network of relationships and sources of funds. The IP protection system provides a key tool for (i) keeping at bay unscrupulous competitors, (ii) developing relationships with employees, consultants, suppliers, subcontractors, business partners and customers, and (iii) obtaining funds.

To be accepted by a business incubator or to attract investors, it is necessary to have a quality business plan that takes an objective look at the prospects of the proposed business. In order to convince investors a business will have to show that (i) there is a demand for its product in the market place, (ii) its product is superior to competing products, if any, and (iii) it has taken adequate steps to prevent free riding on its success by dishonest competitors.

Most entrepreneurs would argue that the product they are offering is innovative, unique, or superior to the offerings of competitors. But is this really so? If they believe it is, they will have to prove it, and a patent (or the results of a reliable patent search) may be the best proof of novelty they can get.

Trade name, trademarks and domain names may be the prime elements that differentiate a business' product from those of competitors. Therefore, a business should carefully choose its trade name, trademark, and domain name and the steps taken to register these should be referred to in its business plan.

In addition, start-up service providers and investors will want to make sure that the product an enterprise proposes to sell is not relying, without authorization, on other companies' trade secrets, copyrighted materials, patents or other IP rights as this may bring the downfall of the business through expensive litigation. In some high-tech sectors the risk of infringing on third party IP rights is high and start-up service providers and investors may be reluctant to take the risk unless the enterprise can prove (e.g., through a patent or trademark search) that no such risks exist.

For many businesses, confidential business information (such as details of production, secret inventions, and technical, financial and marketing know-how) alone may be the source of their competitive advantage. In such circumstances, it is important to communicate to start-up service providers and investors that the enterprise has proprietary and significant business information – known as trade secrets – and that it has taken adequate steps to protect it from employees and competitors. In fact, even your business plan is a secret document that should not be disclosed except on a “need-to-know basis” and that too, generally, only after the employee, investor, or whoever else concerned, has first signed a non-disclosure or confidentiality agreement.

In short, if IP is an important asset for a business (i.e., if it owns patents or patentable technologies, industrial designs, trade secrets, reputable trademarks or hold the economic rights to copyright works), then it should be a key part of the business plan. An adequate reference to the assets of a company and of its market opportunities should not only list the tangible assets (e.g., factories, equipment, capital, etc.) but also the intangible assets as the latter are increasingly the key to a company's success in a hyper competitive environment. **As such, any indication that confirms due diligence on in the management of IP assets is likely to play an important role in convincing start-up service providers and investors of your company's potential.**

(c) *How can IP be integrated into the business planning process?*

Writing a plan requires good preparation. Before drafting a business plan, one needs to think over a number of issues. One should understand what is the nature of the business; what resources would be required to meet the business' objectives; what are the target markets; what is the viability and growth potential of the business, etc. Also, one should identify the commercial relevance of IP assets and the resources needed for obtaining and maintaining these assets. The outline presented below lists some key points relating to IP that an enterprise needs to consider while preparing its business plan. The importance of different points will depend on the particular situation and business. Further, the list is not exhaustive, and many additional issues may have to be considered depending on the circumstances. However, the answers to these questions may help to integrate IP assets into a business planning process.

1. What IP assets do you own?

- Identify and classify your IP portfolio. This invariably includes confidential information/trade secrets, trade name(s), and trademark(s), often also domain names, industrial designs and copyright and related rights, and sometimes utility models and patents for inventions.
- What other intangible assets do you have? In this context, also consider franchise, license and distribution agreements, publishing rights, covenants not to compete, information databases, computer systems software, marketing profile, management expertise, distribution network, technical skills, etc.

2. What is the status of your IP portfolio?

- Do you have a system for identification of your IP assets? Do you have an IP portfolio? When was it created? Who created it?
- Which of your IP assets are registrable? If so, are they or should they be registered? Are they also registered in foreign countries/export markets? Is the registration to be renewed? If yes, when?
- Do you conduct or plan to conduct IP audits? If so, at what periodicity and by whom?

3. How do you plan to protect your IP assets?

- If you commercialize your IP assets (regardless whether in-house or with a partner), do you have arrangements securing the ownership or co-ownership of your IP assets?
- If you outsource a part of your business activities, do you have contracts in place that ensure your IP rights over the outsourced work and prohibit others from taking advantage or commercializing your product without your prior agreement?
- How easy or difficult is it for others to properly acquire or duplicate your secret business information? What measures are taken to guard the secrecy of your confidential business information? Do you have an integrated security policy and plan for your physical and electronic assets? If you commercialize your IP assets (regardless whether in-house or with a partner), do you have arrangements maintaining the confidentiality of your secret business information? Have you included confidentiality or non-disclosure clauses and non-compete clauses in the employment agreements with your key employees and business partners?
- Have you ensured that confidential business information/trade secrets are not available or lost by display on or through your web site? Are all your URL headers free of confidential information? Do your web pages provide links to pages that have confidential information?

4. How important are IP assets to the success of your business?

- To what extent are your IP assets currently being used, potentially useful, or no longer of use to your business?
- Does your enterprise depend for its commercial success on IP assets, whether owned or licensed? On what types of IP assets does it depend?
- Do you have new products or processes which will provide a unique competitive advantage? If so, will they revolutionize an industry? Can the associated IP rights be secured, providing additional differentiation and bar competitors from entering the market?
- What competitive advantage do your IP assets (whether owned or licensed) provide to your enterprise? Assess and explain how IP provides or adds value to your customers and contributes to developing a sustainable competitive edge.
- Do your trade secrets, patents, trademarks, copyrighted works and industrial designs go far enough to protect those aspects of your business that determine your business' success?

5. Do you own all IP assets that you need, or do you have to rely on IP assets owned by others?

- Do you own the IP assets that you are using? Can you prove it? Do you have the records, registrations, contracts and other proof that an investor, business partner or a court of law may require? Have you identified any potential third-party claims on your IP (for example, industrial sponsors or contract research clients)?
- Are you sure you are not infringing IP rights of someone else? Can you prove it (e.g., have you conducted a patent, trademark and/or industrial design search)? Have you verified if any of your key employees, who has worked for a competitor in the past, is bound by post-employment non-compete or non-disclosure confidentiality agreements by the previous employer(s)? Do you need access to third party IP in order to exploit your business idea? Have you been granted the license(s) you need for the use of IP, which is not owned by you?
- Have you signed non-disclosure and/or non-compete agreements with key personnel, contractors, consultants or other external suppliers which assign to your business any IP they develop when working for you?
- When you use external contractors to write and design your marketing and promotional material or your web site/web pages, do their contracts specify who owns the IP that would be created? If employees do so, then is the work within the scope of their individual employment? If not, then have you taken a written assignment of copyright and other appropriate IP rights? Have you proper permissions to use written material, graphics, photographs, music or anything else created by a third party for use on your web site or in any other manner?

- Does your web site have any meta tags, hypertext links, frames or deep links to other web sites? Are these duly authorized by the third parties concerned?
- 6. Do you know enough about your competitor's IP strategies and IP portfolios?**
- Do you have a plan for gathering competitive intelligence? Do you gather or plan to use IP information/databases for obtaining competitive intelligence on your competitors? By searching patent, trademark and industrial design registers, you can gain detailed legal, technical and business information about a competitor's operations and products. You can use this information to assess whether there is likely to be a market for your products. In addition, an IP search allows you to verify whether you can protect your IP, whether you are infringing another party's IP and whether others are already infringing or likely to infringe your IP rights.
 - Are there any IP related barriers to enter your competitor's market, e.g., patents, trademarks or industrial designs which underscore customer loyalty to competitor's corporate image, brands, etc.?
- 7. Do you have an IP policy and IP strategy for your enterprise?**
- How do you currently identify, protect, leverage and manage your IP assets?
 - What plans do you have in place to derive the maximum value from commercializing your IP assets?
 - Do you have a special marketing strategy? Do you plan to export? If so, have you used or plan to use a regional or international filing or registration system (such as the Patent Cooperation Treaty, the Madrid system or the Hague Agreement) for patent applications and trademark or design registrations?
 - Have you assessed the potential to commercialize some or all of your IP assets partly or wholly through licensing, franchising and/or selling them?
 - Have you conducted an independent IP audit periodically? And has valuation been done of your IP assets? Was this done independently?
 - How far have you considered taxation and incentives issues associated with the commercialization of your IP? There may be taxation-related requisites (such as registering) to the commercialization of IP. The taxation treatment of revenues and expenses resulting from the commercialization of your IP can differ widely from the accounting treatment. There may be government financial assistance measures associated with IP assets and their commercialization.
 - Do you plan to use your IP assets as security or collateral for a loan, or to create a tradable security in the securities market? What is the possibility of securitization of future revenue streams linked to a bundle/portfolio of your IP assets?
 - Do you have a staff education programme that covers the management and protection of your IP assets?

E. Intellectual property self-audit

Assuming an enterprise has addressed intellectual property issues in its business plan and has been in the incubator for one year, then there are a number of questions that it may try to answer. An illustrative list of questions is hereunder:

- Are procedures regularly promulgated and responsibility assigned to ensure
 - timely filing and maintenance of patent, trademark and copyright applications, both domestic and foreign?
 - marking of products with proper notices of patents, trademarks, and mask work registrations?
 - printing of copyright notices on published materials?

- control of access to your company's confidential information?
- printing of proprietary legends on confidential software, drawings, and other documents?
- continuous education of employees regarding intellectual property responsibilities?
- that personnel involved in R&D maintain logs/diaries respecting inventions and discoveries?
- Are written agreements with employees in existence
 - requiring the disclosure to the company of invention and discoveries and cooperation in obtaining intellectual property rights?
 - requiring employees to assign all rights to inventions, trademarks and copyrights related to the company's business to the company?
 - defining the obligations of the employee with his or her duties of confidentiality respecting the business of the company?
- Are procedures in existence that require
 - timely investigation of possible infringement of others' rights by the company's new products and trademarks?
 - indemnification by vendors against infringement of others' rights?
 - handling of unsolicited disclosures of ideas by non-employees?
- Are periodic reviews made by competent personnel or counsel of agreements involving intellectual property such as employment agreements, licenses, development contracts, disclosure forms, and indemnification provisions of procurement contracts?

F. Range of intellectual property services

There is a wide array of intellectual property services that are needed by entrepreneurs and enterprises. These are classified in different ways depending on the service provider. A few examples are given below.

Example 1

- **Trademarks:**
 - Applications and registrations
 - Disclaimers
 - Recordation of changes
 - Renewals
 - Foreign registrations
 - Oppositions
 - Counterstatements
 - Appeals
 - Translations
- **Patents:**
 - Registrations
 - Renewals
 - Oppositions
 - Counterstatements
 - Appeals
 - Foreign registrations
- **Copyright:**
 - Filing
 - Recordation

- Licensing
- Foreign registration
- **Contracts:**
 - Franchising
 - Licensing
 - Distributorship agreements
 - Technology transfer
- **Enforcement:**
 - Civil and criminal actions against infringement
 - Counterfeiting and piracy

Example 2

- **Searches:**
 - Patents
 - Industrial designs
 - Trademarks
 - Copyrights
- **Application for intellectual property rights:**
 - Preparation and prosecution of applications for:
 - Patents
 - Industrial designs
 - Trademarks
 - Appellations of origin
 - Copyrights
 - Maintenance
 - Appeal
 - Advisory
- **Transfer of intellectual property rights:**
 - Consulting services in:
 - Licensing
 - Pricing
 - Negotiation and presentation
 - Drafting and applying for approval and registration of licensing agreement
- **Intellectual property litigation:**
 - Cease and desist letter
 - Temporary injunctions to settle cases of infringement
 - Initiating civil court proceedings

Example 3

- **Patents:**
 - Patent searches
 - Patentability and infringement opinions
 - Preparation and prosecution of national and foreign patent applications
 - Patent litigation

- **Trademarks:**
 - Trademark searches (including screening corporate names prior to their adoption)
 - Trademark registrability and infringement opinions
 - Preparation and prosecution of national and foreign trademark applications
 - Trade dress (product appearance) matters
 - Trademark litigation
- **Copyright:**
 - Copyright searches
 - Copyright infringement opinions
 - Preparation and prosecution of copyright applications
 - Copyright litigation
- **Intellectual property licensing and agreements:**
 - Negotiation and preparation of licenses, assignments, and similar agreements involving sales and other transfers of intellectual property
 - Advice and preparation of agreements concerning confidentiality and trade secret matters, including employment agreements and invention disclosure agreements.
 - Negotiation and preparation of publishing agreements
 - Preparation and, where required, filing of franchise agreements and of related federal and state disclosure documents
- **Assistance in investment and securities matters:**
 - Searches and opinions as to the existence, scope, validity, infringement, and/or ownership of patents, trademarks and copyrights, to assist clients and their general counsel or accountants in making investment decisions as well as in assessing tax consequences, and for secured transactions, buy-outs, mergers, and other investment transactions
 - Preparation of documents required to transfer intellectual property assets from one domestic or foreign entity to another
- **Assistance in product liability and personal injury matters:**
 - State-of-the-art searches to demonstrate what could have been or was being done in particular technologies, designs, or methods of manufacture as of a given date searches of patent records to locate manufacturer admissions as to product flaws

Example 4

- **General services:**
 - Show you inexpensive ways to find and use trademarks
 - Advise you on when and where to file patents, and when to use trade secrets
 - Develop stronger, more valuable patent claims and inventions
 - Leverage cash and manpower resources
 - Find out whether your concept will stand up to competition
 - Use experimental design to develop better formulas or methods at a lower cost
 - Eliminate minor disadvantages in new product ideas
 - Provide laboratory, pilot plant and design facilities
 - Build and/or optimize prototypes
- **Buying intellectual property:**
 - Use no-cash down options
 - Recover cost through sublicenses

- Leverage “in-kind” contributions
 - Create residual value for yourself if you give up the intellectual property
 - Maximize the value of cash deposits and royalty payments
 - Protect your business trade secrets when dealing with inventors
 - Save you money on lawyers, patent and trademark agents
 - Calculate appropriate royalty payments
 - Determine when and where patents are appropriate
 - Create and protect trademarks at very low cost
 - Save cash via joint ventures, outside funding sources or experimental design
- **Selling intellectual property:**
 - Make it easier for potential investors to buy your concept
 - Protect ideas without a patent profit, reduce cost and manage risk with joint ventures
 - assess the value of your idea
 - find customers at low cost via trade shows, trade associations and the Internet
 - create, evaluate and improve prototypes
 - create a skilled-team to improve your selling proposition
 - budget for success

Another way of classifying the services would be under the following headings:

- **Establishing intellectual property awareness**
- **Identification and tracking of intellectual property (IP Inventory)**
- **Ownership of intellectual property assets**
- **Evaluation and valuation of intellectual property**
- **Protection of intellectual property**
- **Using intellectual property assets**
- **Sharing intellectual property assets**
- **Marketing intellectual property assets**
- **Commercial arrangements and disputes (Licensing of intellectual property)**
- **Taxation of intellectual property**
- **Insurance of intellectual property**
- **Intellectual property audit**
- **Accounting and intellectual property**

Yet another way of classifying intellectual property services is as follows:

- **Intellectual property inventory and management**
Helping clients strategically evaluate and actively manage their intellectual property against specific objectives.
- **Intellectual property assessment**
Determining the market attractiveness of client intellectual property and identifying its most compelling applications.
- **Intellectual property valuation**
Establishing an objective, market-driven measure of intellectual property value.
- **Intellectual property licensing**
Providing complete licensing solutions – from identifying potential licensees to negotiating final terms.

G. Intellectual property management guidelines

Patents, trademarks, copyrights and trade secrets are more than intellectual property. They are important assets that can impact a company's viability, market share and competitive edge for years to come. Simply obtaining patents, trademarks and copyrights without an IP strategy represents increased risk and missed opportunity.

IP management is full of potential pitfalls. These guidelines flag just the most critical issues.

Save time, money and anguish by not trying to reinvent the wheel

- Do a patent and literature search before you start. Someone else may own the rights to your idea already, or to key aspects of it. Are other teams working on the same concept, and if so, how likely are they to beat your team to the finishing line?
- It is crucial to know your potential market. What is the proven need that your idea or product will satisfy? Are there perfectly adequate solutions to this need already available? How will your idea add value, or is it just a solution in search of a problem?

Do not preannounce or use new knowledge that may be worth formally protecting

- Timing is critical. Premature announcement or use may invalidate a patent application. Find out the rules on this and make sure that nobody on your team breaches them.
- Keep reliable research records. These can be used to show prior creation or to sue.

What kind of IP protection do you need for your idea?

- Learn the pros and cons of the various forms of IP protection. Is the product easily reverse-engineered and is copying common in your industry? Are you likely to want to sell or license your IP, e.g., for use in some overseas markets? Might your idea have a range of potential applications in different fields? If any of these apply, you may need more formal protection, e.g., a patent, than is available through trade secrecy.
- Using a trademark, copyright protection (which is automatic) and/or trade secrets may often be enough. A patent requires time, effort, money and full public disclosure. Is technical change so fast in your area that a patent may become rapidly outdated?
- Can you afford to lodge, maintain and protect a patent in your key potential markets? These costs mount up fast. Most patents never make enough money to cover them.
- Was the discovery (even if accidental) made at work? If so, your employer may own it.

Getting a patent or other IP protection is not the ultimate objective

- A patent is just the means to an end. The goal is to create a commercially successful product or service. The financial and marketing risks of a new venture often exceed the technical ones. Don't let your emotions take control over this or other aspects of IP.
- Inventors rarely become rich from IP licensing or royalty payments alone. Most value is added during the product development and commercialization phases. Very few inventors have all the skills needed to become a successful entrepreneur. Get help.

Take professional advice on all partnerships and joint ventures

- The key success factor to a partnership or joint venture is maintaining trust. IP is the commonest source of disputes. Complete an IP agreement before committing. Cover issues such as the declaration, valuation and use of all relevant pre-existing IP; the ownership of new IP; selling or licensing rights to it and for what purposes; who lodges, maintains and protects it; the apportionment of costs and revenues; restrictions on publishing results; and exit arrangements. Take independent advice from a patent attorney.
- Be realistic. As many joint ventures fail to fly due to excess greed as crash later due to disputes.

An effective intellectual property service requires a dedicated team of professionals who can merge their knowledge, legal and technical expertise, and business acumen with the right combination of negotiation and advocacy skills to produce legal solutions that match clients' business goals and competitive philosophies. It is not possible to have such a team in an incubator. Most of the services listed below have to be obtained from outside sources.

- Patent prosecution and counseling
- Trademark and copyright prosecution and counseling
- Intellectual property litigation
- Intellectual property issues on Internet and in e-commerce
- Intellectual property issues in licensing, technology transfer, and joint venture agreements
- Intellectual property issues in computer software, system acquisition, and data processing agreements
- Intellectual property issues in advertising, promotions and sweepstakes law
- Intellectual property audits
- Intellectual property issues in merges & acquisitions due diligence
- Intellectual property issues in rights of publicity and privacy
- Trade secrets

In big intellectual property law firms the in-house attorneys and engineers have extensive backgrounds and advanced degrees in electronics, computer science, electrical engineering, avionics, physics, e-commerce and information technology, chemistry, mechanical and chemical engineering, food science, biotechnology, biology, medical and dental devices, and structural and civil engineering. These individuals are skilled in the art of preparing and prosecuting domestic and foreign patent applications in all disciplines; analysing patentability, invalidity and infringement issues; counseling clients in the design and development of new technology and products; and negotiating patent licensing and technology transfer agreements. These attorneys also use sound business and marketing judgment to counsel clients in the selection, protection, enforcement and licensing of trademarks to address the global brand management issues which necessarily confront any company in today's international economy.

H. Best practices of IP services to incubators

- (1) Orientation/training of incubating manager and other key staffs on IP issues
- (2) Organization of workshop and seminars for tenants of incubators on IP issues
- (3) Panel of IP specialists and other IP service providers
- (4) University faculty provides on IP issues

The following is a list of "best practices" employed by incubators worldwide with a view to identifying successful mechanisms for making intellectual property rights more accessible and relevant to their client firms.

- Include intellectual property questions in pre-screening
- Assist start-up firms to cover the cost of protecting their intellectual property. The cost of protecting intellectual property is critical to both the long term and immediate viability of many start-up technology companies, absorbing much of their working capital. Assistance could take the form of helping to seek out suitable partners or offering a 'soft' loan and would be given after assessment of the start-up firm's intellectual property and business strategy.
- Assistance on intellectual property in business plans
- Assistance on intellectual property issues in technology development such as provision of patent information services, drafting of patent applications, guidance in licensing, etc.
- Assistance in addressing intellectual property issues in marketing and franchising
- Assistance in dispute settlement and enforcement
- Assistance in developing and implementing trade secret policy

- Assistance in due diligence on IP in negotiations with potential partners and in developing strategic alliances
- Assistance in securitization of IP assets
- Assistance in integrating IP strategy into the business strategy of the incubated enterprise
- Continued assistance on IP matters after the firm has left the incubator, including assistance on IP matters in developing or penetrating export markets.

I. Activities of the SMEs Division of WIPO

1. The SMEs web site

One of WIPO's major initial activities was the creation of an SME web site, as a distinct part of WIPO's main web site. The section on IP for Business on the SME's web site explains basic IP issues in relation to some practical business concerns in a simple, business-friendly language. The web site already has over a hundred pages of substantive information and advice, in addition to full text of some very useful documents and links together parts of WIPO's web site or outside links to various issues of interest to SME entrepreneurs, managers, investors and business consultants. Through the content on the web site, the SMEs Division of WIPO seeks to reach out to the largest number of SMEs and SME support institutions in a low-cost and reader-friendly manner. It allows readers to rapidly select the information they are interested in and have the option to follow links for more detailed discussions of certain issues. Finally, publication on the Internet gives the possibility to update information regularly and maintain readers informed of the latest events. The disadvantage related to such an endeavor is the limited access and spread of the Internet in many countries and therefore the inability to reach out to a large number of potential users in SMEs. WIPO is therefore committed to providing paper copies of the material available therein, including documents, presentations and IP guides to enterprises and institutions requesting the information in paper format. A CD-ROM, with a search function, containing the full content of the SMEs web site, in three languages (English, French and Spanish), has also been produced. This CD-ROM, entitled "Intellectual Property for Small and Medium-sized Enterprises", contains the entire SME web site of WIPO in English, French and Spanish, along with other relevant information from other parts of the web site of WIPO. A reasonable number of additional copies of the CD-ROM will be made available to IP offices and SME support institutions, on request.

The Division's monthly e-mail newsletter provides updates and other relevant information on IP for SMEs to some 2,000 subscribers of the e-mail newsletter service. The newsletter contains useful news on IP and SMEs, best practices, useful IP tools, useful links, etc. New subscribers may join the service by inputting their e-mail address through the home page of the SMEs Division's at <http://www.wipo.sme.int/sme/>.

The overall aims of the SME web site are as follows:

1. To provide an overview of the main reasons why SMEs should consider IP issues when preparing their business plans and strategies;
2. To offer practical information on how to protect, manage, license, and enforce a company's IP assets and how to deal with IP issues in e-commerce;
3. To disseminate information on "best practices" aimed at assisting SMEs to use the IP system and "case studies" on companies that have benefited from a sound IP strategy; and
4. To provide information on the SME-related activities of WIPO in general, and of the SMEs Division in particular.

Given the international nature of the information provided, there is significant scope for national customization or adaptation of the relevant content on the SMEs web site based on the national legal and institutional system. WIPO encourages national IP offices and other SME support and financing institutions to use the material and adapt it according to the needs of national entrepreneurs, and is willing to provide advice, guidance and/or other support in this respect.

The SMEs web site is currently available in English, Spanish and French at www.wipo.int/sme/ and parts of it in Chinese, Arabic and Russian.

2. Collection of “best practices”

The SMEs Division of WIPO also seeks to collect information on policies, programmes, and activities of a range of national institutions to assist SMEs to use the IP system effectively. In May to June 2001, the International Bureau of WIPO sent a questionnaire to IP offices, focal points on SMEs within governments, chambers of commerce and a number of other institutions (primarily SME associations and incubators) requesting information on the activities conducted by each institution related to the initiatives to be undertaken under the Milan Plan of Action. The information was gathered with a view to compiling “best practices” and allow for wider information sharing and exchange of experiences among and within countries. Additional information on other such best practices from around the world would be put on the web site of the SMEs Division of WIPO as and when it is made available; all concerned are, therefore, requested to help the SMEs Division of WIPO in this process.

Replies to questionnaires reflect a wide range of initiatives in this area aimed either directly at the SMEs community or having an impact on bringing the IP system closer to SMEs. Initiatives have been grouped into six broad categories. The following is a non-exhaustive list of the types of activities that were mentioned:

(i) Awareness-raising and training on IP

- Awareness-raising seminars, conferences and campaigns for entrepreneurs, researchers, inventors and students in areas of technical expertise;
- IP guides and other information material on various aspects of IP for SMEs;
- Web sites with practical information on IP issues for entrepreneurs;
- Collection and dissemination of case studies illustrating the success stories of SMEs using intellectual property;
- Building IP content into customized training manuals for enterprises operating in specific sectors (e.g., biotechnology, software, agriculture, multimedia, etc.);
- General advice to applicants on administrative issues relating to the application process (e.g., helpdesks within IP offices);
- Multimedia products (e.g., CD-ROMs) with information and advice on management of IP assets;
- Participation in business fairs of SMEs, contribution of articles on IP issues to business magazines targeting SMEs, and in other promotional activities for the benefit of SMEs;
- Monthly radio and/or television programmes on issues relating to intellectual property and innovation;
- Integrating IP issues in the national/institutional teaching and training curricula and course material for entrepreneurs; and
- Proactive visits to SMEs.

(ii) Technological information services

- Regular workshops for entrepreneurs on how to use patent information services;
- Free access to IP databases;
- Provision of a range of technological information services for SMEs at a reduced price;
- Establishment of patent libraries with specialized staff within universities, technology parks, business incubators, research centres and chambers of commerce;
- Regular provision of information on recent patents in a given technical field;
- Development of multilingual IP databases; and
- Establishment of centres for technological information or decentralized branches of the IP office for the provision of technological information.

(iii) Financial assistance

- Financial assistance to SMEs, either in the form of grants or favourable loans, patenting their inventions;
- Fee reductions for SMEs applying for IP rights;
- Partnerships between IP offices and associations of patent attorneys for providing legal advice to SMEs, either free or at an affordable (lower) price; and
- Tax incentives for expenditure in R&D, patenting, technology transfer, etc.

(iv) Customized advisory services on IP

- Legal and managerial assistance to enterprises on how to manage their IP assets and how to develop an IP strategy as a part of their business strategy;
- Promotion of and legal assistance on the use of collective marks, certification marks and geographical indications by small-scale businesses;
- Pilot projects on IP management with a selected group of enterprises; and
- Assistance in the creation of trademarks or distinctive signs.

(v) Assistance for technology transfer

- Creation of databases on licensable technologies (e.g., virtual marketplaces for IP);
- Tools for the valuation of IP assets;
- Business fairs of licensable technologies where potential licensees and licensors may meet;
- Advice for licensing negotiations;
- Programmes to facilitate and create incentives for technology transfer; and
- Establishment of technology licensing offices (TLOs) within universities and public sector research centres assisting researchers to patent their inventions, conduct prior art searches, license their inventions or set up their own start-up companies.

(vi) Partnerships between institutions

- partnerships between IP offices and other institutions providing services to SMEs such as chambers of commerce, incubators, research centres and science parks for the inclusion of IP services within a wider range of services to SMEs.

Case study: Sweden

There are several aspects of the incubator's operations that demonstrate good practice:

- **The Centre for Innovation and Entrepreneurship (CIE)** within Linköping University offers courses in entrepreneurship and new business development at both undergraduate and postgraduate level in English and Swedish.
- **Entrepreneurship Development Programme (ENP):** This course is conducted by CIE in collaboration with SMIL (Business Development in Linköping) and other local actors. These courses, which began in 1994, consist of eight modules and leads to the creation of new companies and the award of a formal 'certificate' level qualification. To enter the course, the individual has to have a good business idea. Many entrants come from the University's Business School, the others coming from small businesses in the Linköping area. Each course usually has 10-20 participants. There is a close link between the ENP and the University's research activities, on the one hand, and the CIE's wider role in providing business support services to local firms, on the other. The ENP is regarded as a model in Sweden and has been replicated elsewhere.

Business Development Programme: This programme was created in 1986 to develop the businessperson's skills in the companies, which have been on the market for about two years. Every programme consists of up to 9 companies represented by 2-3 persons bringing their own questions to every meeting. About

100 firms have participated thus far. This programme serves the incubator programme indirectly in two important ways. First it is available as a later stage development opportunity for companies that have been incubated here and second it provides an opportunity for CIE to introduce mentors from these emerging companies to the new starts.

- **'Growlink' Scheme:** This scheme is managed by University Holding, the technology transfer arm of Linköping University. It consists of a structured framework of business support designed to speed up the development of tenant companies. The scheme begins at the pre-incubation stage, i.e., Entrepreneurship Development Programme, and at this stage includes an 'Ideas Advisory Board'. At subsequent stages in the scheme, key elements include access to a wide network of contacts (University, business support organizations, companies, etc.) in the Linköping area and access to financial assistance from the Technology Bridge Foundation which is the off-shoot of a national scheme providing grants for high tech start-ups. The Growlink scheme is noteworthy because it ensures linkages into a wider network of business support organizations and provides a structured framework for developing start-up firms. An interesting aspect of the scheme is that there are three 'Process Leaders' who ensure that the various 'Growlink' inputs are coordinated in a proactive manner.
- **Idea Lab:** Within the incubator is a space dedicated to idea formulation and innovation. Here, students, faculty, business advisers, and companies may come together to brainstorm. Within the lab is a new specially designed space-in-the-round that offers 8 comfortable chairs, plenty of wall surface on which to write, as well as light and sound controls to provide users with customizable atmospheres in which to innovate.
- **Incubator/Expert Breakfast:** This initiative brings together area experts in law, patent and licensing procedures, bookkeeping, accounting, marketing, public relations, among others to meet every last Friday morning of each month with incubator tenants for an hour and a half casual breakfast. All of the experts attend as do the tenants thereby all learning from one another. They hear a brief presentation for ten minutes and then discuss issues surrounding the presentation or other pressing issues on their minds. The experts also deliver pro bono service to tenants on a pre-arranged basis through the incubator management at Mjärdevi Science Park.
- **Incubator Fund:** Teknikbrostiftelsen (The Technology Bridge Foundation) manages a dedicated incubator fund to assist qualified new incubator companies with necessary capital for development.
- **Internationalization:** Recognizing that many new start companies in the world must often find large markets for their innovations, products, and services, the Mjärdevi Science Park Incubator offers companies information on other markets, access to overseas capital, patent search, access to tax and regulatory experts, and partnering opportunities. Mjärdevi takes advantage of the global science park and incubator network as well as its contacts in various countries' investment agencies, universities, and corporations to help serve the tenants in the best way possible. The incubator also serves as a starting point for appropriate technology-related companies from abroad seeking to establish themselves in Sweden.
- **Trade Shows:** Wherever possible, Mjärdevi Science Park leverages the resources of its tenant companies in order to allow cost-effective participation in conferences and trade shows such as CeBit, Comdex, BIO-Scandinavia, and others.
- **Media Relations:** Through affiliations with local media relations experts and through special arrangements with PR Newswire Europe, Mjärdevi Science Park is able to promote its companies often and to help companies learn to work with the media as well.
- **HomeCom Initiative:** This is a joint marketing initiative managed by the incubator/science park to describe the region's competencies in the converging IT, telecom, wireless, and electronics technologies affecting the home: security, entertainment, electrical and water systems, heating, telemedicine, and more. This is home communications. The initiative has so far led to the publication of a book on home communications designed to explain and publicize the concept, a university-backed department dedicated to home communication research, and an idea think tank. Ericsson, Nokia, and a network of other technology companies, researchers, designers, and building developers are developing a homeCom showroom, smart homes and apartments. Backed by both Ericsson and Nokia this is a good example of a pre-competitive collaboration between major firms that potentially benefits smaller companies researching new technologies in this industry and spawns new start-ups as well. Home communications in Linköping is recognized at the national level as an official competence centre.



Key Issues

In the view of the incubator manager, the following points are critical in the successful setting up and management of business incubators:

- *Quality of business support* – the Mjärdevi Science Park has established a comprehensive network of business support organizations that work closely with tenant companies. This is seen as one of the keys to its success.
- *Structured programme of business incubation.* At the Mjärdevi Science Park incubator, start-ups follow a structured programme starting with entrepreneurship training, progressing through starter units to the growth units. This system, served by the Growlink network and careful on site attention, is seen as a distinctive feature of the incubation approach at the science park.
- *Linkages between university and science park/incubator* – a number of schemes ensure that there are exceptionally close links. These include Growlink, the Entrepreneurship Development Programme, and the role played by the Technology Bridge Foundation (a national scheme that provides financial support for technology transfer) and University Holdings. Taken together these and other elements provide a structured framework for technology transfer and entrepreneurship. The higher education system, under which teaching staff own the ideas they develop, is also a driver of technology transfer and commercialization.
- *Technology focus* – Mjärdevi Science Park incubator acknowledges that business incubators/science parks may often have a particular technology focus, but that the focus must be truly reflective of the region's and university's strengths and that the incubator should be flexible enough to respond to changes in markets and evolving technologies.

Appendix 6

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EU Jobs in Innovation

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- Sr. Manager - Marketing & Communications
- Director-General
- Resource Efficiency/C&E Manager
- Human Resources Manager - Heidelberg

EU Jobs

- Internship - Communications Assistant
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- Communications Assistant (CDD)
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- Senior Journalist


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MEP: Use procurement process to 'leverage innovation'

Published: 17 February 2009 | Updated: 18 February 2009

SHARE

Public authorities should back innovative SMEs from the beginning of the procurement process, regardless of whether their product or service ultimately wins a public contract, MEP Malcolm Harbour (EPP-ED, UK) told EurActiv in an interview.



Malcolm Harbour is a UK Conservative MEP and the European Parliament's rapporteur on a report on pre-commercial procurement, drawn up in the EU assembly's internal market committee.

To read a shortened version of this interview, please click here.

You have spoken of a need to help small businesses access funds available through public procurement processes. What are the barriers to SMEs in bidding for publicly-funded tenders?

It varies from country to country, but there are problems in relation to SMEs being able to bid for major contracts. There are many SMEs that find the way contracts are handled puts them at a disadvantage. Some of the pre-qualifications for getting onto the public procurement tender lists are quite onerous in terms of having to submit several years of accounts.

However, there are some local authorities that are actively encouraging SMEs by facilitating groups of smaller enterprises wishing to bid for part of a larger contract. But I think it's an area that needs much more attention, and certainly there have been moves like the Small Business Act, which specifically mentioned the need to make public procurement more SME-friendly.

You were rapporteur for an own-initiative report on pre-commercial procurement drawn up by the European Parliament's internal market committee. How can public authorities use the procurement process to help R&D?

We invest hundreds of billions of euro in publicly procured projects. Not many public authorities really think about how they can use just a small part of that funding to leverage innovative products, but it can be done. Authorities should encourage and fund research and development before they award a contract – this is at the pre-commercial stage.

In other words, public bodies can actually procure R&D as part of a package to give them an outcome for which the technology does not yet exist. It's almost like setting a challenge. They can say 'We want an entirely new type of electric refuse collector that will operate in city centres,' even if the design doesn't yet exist and there may be new technologies involved in the product that eventually wins the contract.

So they actually fund a number of competing businesses to come up with concept proposals on how they will meet the requirement, and then choose the one that's the most promising and fund it for a second stage.

So authorities would fund the development of the proposal by several operators?

Exactly. This is why it's a win-win situation. What we are saying is public authorities have an increasing remit to face up to societal challenges, whether that's looking after older people at home, running health services in hospitals, or tackling the problems of climate change.

We had mayors in Brussels last week signing up to a convention on climate change, so you see public authorities are absolutely engaged in that. Improving the energy performance of public buildings, running public transport systems, collecting waste – just think of the number of areas in which they can be looking for new innovative solutions to global problems.

So, basically we are challenging the public authorities not just to go out and put out a contract for the traditional way of doing things, but actually saying here is a requirement. Are there any examples of how this has worked in practice? In the Netherlands, they wanted to improve the way they inspect the dykes that protect citizens from flooding. These have to be monitored all the time and currently the authorities send people to physically check them.

The question they asked was 'Can we employ technology to do that?' They put it out as a concept and had four or five competing suggestions using totally different types of technologies, including aerial mapping and sensors. Then they chose a couple of proposals to go to the next stage and finally selected one. But they put funding into that pre-commercial process.

What's also interesting is that there were a number of SMEs involved and some of them, having had that work funded – even if they didn't win the contract – were able to take the

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Appendix 7



THE GRADUATE ENTERPRISE PROGRAMME ENTRY FORM 2010

1. Personal Details

For group entries please put in the contact details of the team leader	
Title	
First Name	
Surname	
Address	
Telephone Number	
e-mail address	

Additional group members

Group Member (2)	
Title	
First Name	
Surname	
Address	
Telephone Number	
e-mail address	

Group Member (3)	
Title	
First Name	
Surname	
Address	
Telephone Number	
e-mail address	

Group Member (4)	
Title	
First Name	
Surname	
Address	
Telephone Number	
e-mail address	

2. What skills do you have as a promoter / team leader to bring your idea to fruition?

3. About your product

i. Name of your product

ii. Describe your idea in under 500 words (attach separate sheet)

iii. Drawing (s) of idea attached (optional) Yes No

iv. Photograph(s) attached (optional) Yes No

v. What inspired you to come up with your idea?

vi. What makes your idea innovative / original?

--

vii. Explain the competition you will face

--

viii. Why do people need your product/service?

--

ix. Who is your target market?

--

x. Have you applied for a patent/design registration? If yes, please specify

--

Signature: _____

Signature: _____

Signature: _____

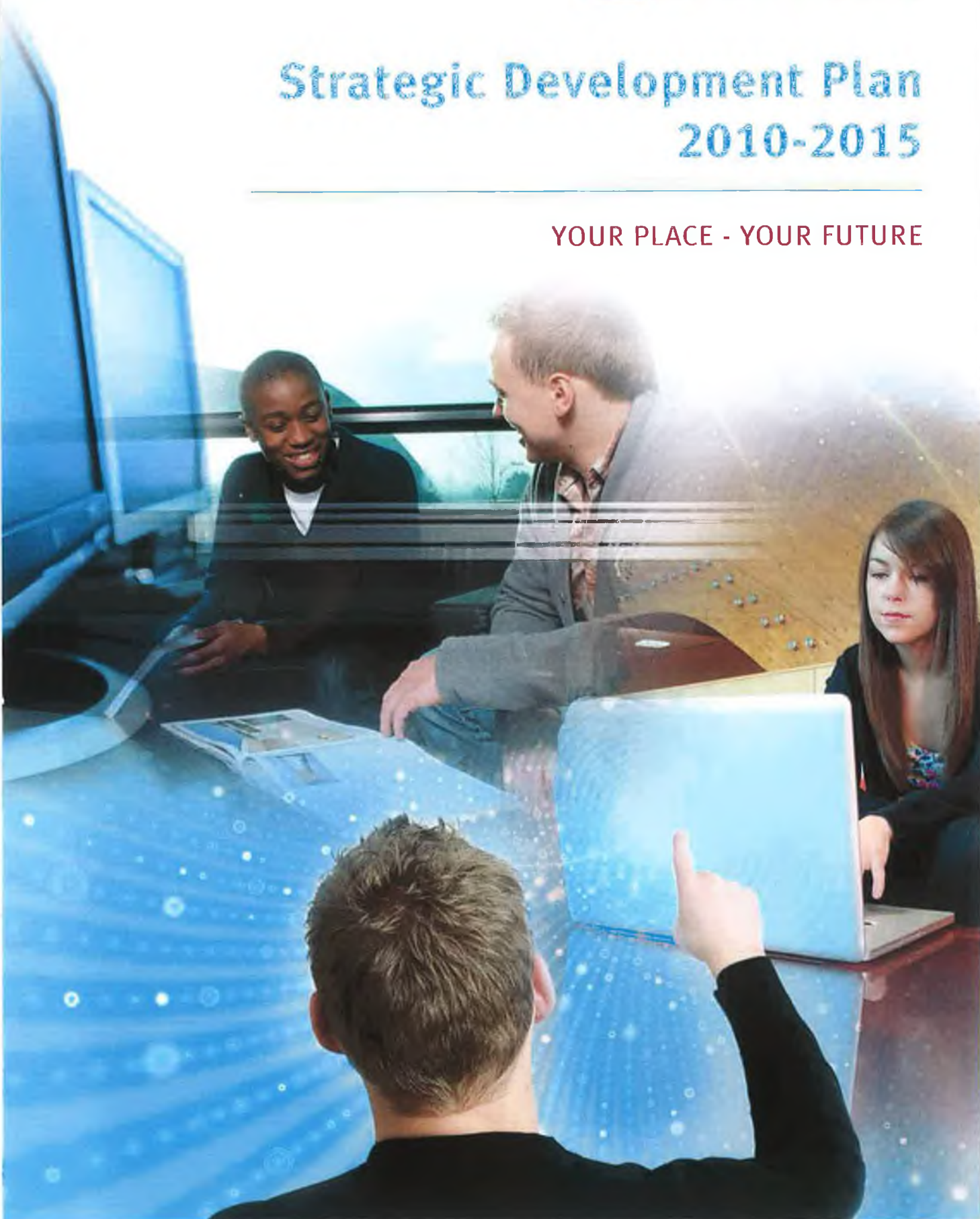
Signature: _____

Date: _____

Appendix 8

Strategic Development Plan 2010-2015

YOUR PLACE - YOUR FUTURE





GMIT IDENTITY >

As GMIT plans its future in a volatile environment, the Institute reasserts its commitments to work to promote economic development, social cohesion and regional growth. These three aspirations were the rationale for the establishment of the new higher education system in Ireland in the late 1960s. They remain core to the mission and values of GMIT.

GMIT sees its **future** strongly focussed on providing its students with an opportunity to develop their potential, through a strong emphasis on the quality of the teaching at undergraduate and post-graduate level and on the development of a strong supporting framework for teaching and learning. GMIT wants to ensure that its students, as active learners, together with all the staff of the Institute, ensure and assure the quality of learning and teaching. Above all we want our students to believe GMIT is their **place**, a place to shape their future.

GMIT has always had a strong belief and track record in promoting social equity through higher education. The Institute will continue to focus on improving access and accessibility for all who are in position to benefit. GMIT will continue to develop access opportunities for those whose socio-economic circumstances impaired their readiness to participate in higher education. The Institute reaffirms its commitment to creating a flexible system to meeting the needs of students at all stages of their lives.

GMIT sees its **future** as a regional resource in the promotion of regional economic and social growth. The Institute looks outwards and seeks to respond to the needs of its region through programmes of applied research and development, the establishment of a regional innovation hub, support for entrepreneurship and the provision of relevant and current professional development for the workforce.

Is ar dhaoine atá an Plean Straitéiseach láraithe agus ní ar fhoirgnimh. Tá sé deartha d'aonturas chun an nuálaíocht agus an tsofhreagracht a spreagadh. Mar eagraíocht seirbhíse poiblí, teastaíonn uainn an t-athrú a chothú agus freagra a thabhairt air; teastaíonn uainn go ndéanfaí muid a mheas de réir ár sofhreagracht do pholasaí náisiúnta agus teastaíonn buntáistí oideachasúla a fheabhsaíonn an saol a chur chun cinn.

GMIT believes in and values the distinctive and differentiated mission of the institute of technology sector. It strongly supports the original concept that the sector should evolve and develop to respond to the evolving needs of society, and that there should be no artificial limitation of either the scope or the level of educational achievement in the sector. GMIT will collaborate with other higher education institutions to ensure effective provision of higher education. To this end, GMIT would welcome clarity in national policy on the spectrum of higher education provision in Ireland.

The qualities required to thrive in an uncertain **future** can and should be developed through higher education. Our vision is that our students will be challenged by a range of global opportunities and directed by their capacity for personal and professional growth, while retaining a strong sense of **place**, regional and national. What we hope for our students we also believe should imbue the spirit of GMIT.

STRATEGIC PLAN FRAMEWORK >

IDENTITY
What is GMIT?



MISSION
Why Does GMIT Exist?



VISION
What is GMIT's Vision?



VALUES
What does GMIT Value?



OVERARCHING GOALS
High Level Key Performance Indicators





MISSION >

As a publicly funded higher education institution, GMIT is proud of its identity and role as an Institute of Technology. It is proud of its people and achievements and has confidence in its ability to meet the challenge of the future. GMIT's Strategic Plan is driven and shaped by the Institute's mission:

At GMIT we develop life-long learning opportunities through our teaching and research, by supporting regional development consistent with national higher education policy.

In crafting the future direction of the Institute, the imperative of a changing policy context, both national and international has been considered. The Institute will pursue its distinctiveness in Ireland's higher education through a long-term strategic approach formulated upon the following vision:

VISION >

- Learning is and will be the core activity of the Institute, bringing students, staff and the region together to share, apply, test and create knowledge;
- GMIT will continue to develop as a regional organisation with an international focus committed to the personal and professional enrichment of its students, the needs of its region, national priorities and global opportunities;
- GMIT will both shape and respond to the perspectives and expectations of its stakeholders and will work in collaboration with them to meet their needs;
- GMIT will be an organisation characterised by its flexibility, creativity, responsiveness and a capacity to adapt.

VALUES >

The Institute, in pursuit of its mission, values:

Higher Education for the benefits it brings to society and the individual;

Equity in support of social cohesion;

The role of education as a catalyst for change;

Participating in regional development.



GRADUATE QUALITIES AND CHARACTERISTICS >

GMIT is and will be defined by the quality and employability of its graduates. All of our programmes are aligned with the National Framework of Qualifications (NFQ). The Institute, through its academic programmes and approach to learning and teaching, will ensure that all our graduates have a comprehensive understanding of relevant disciplines, professional knowledge and skills appropriate to their awards. Our graduates should embody the following skills profile and information base in the context of a value system and a holistic philosophy based on self awareness and actualisation in the business, social, environmental and flexible learning arenas:

ACADEMIC LIFE

- Applied orientation to their study informed by current research.
- Appropriate balance between theory and practice.
- Possess national and internationally recognised qualifications.
- Be technologically literate to meet the requirements of the 21st century.

PROFESSIONAL LIFE

- Possess a skillset which is adaptable, transferrable and amenable to lifelong learning.
- Take responsibility for continued personal and professional development.
- Be exposed to entrepreneurialism and contribute to social entrepreneurship as appropriate.
- Exercise reflective and critical judgement in their ability to solve problems.

SOCIAL LIFE

- Value and understand different cultures and diversity.
- Contribute to their community and wider society.
- Be self-directed and innovative and work independently and collaboratively.
- Be promoters of the sustainability of the environment.
- Be capable of entrepreneurship and leadership.

PERSONAL LIFE

- Value freedom of expression and enquiry.
- Recognise the importance of human rights within a tolerant and inclusive society.
- Make links and gain a holistic overview of their learning within their programme of study, their extra-curricular activities and their careers.
- Be independent and able to reflect critically.
- Be conscious of the importance of their physical, mental and emotional well-being.
- See learning as part of life.



GMIT STRATEGIC GOALS >

In order to develop a culture characterised by flexibility, creativity, responsiveness and a capacity to adapt continuously, GMIT will:

1. Be a major regional centre for the provision of higher education with a strong applied focus.
2. Be known for the quality of its learning environment characterised by empowered students, high quality teaching and support infrastructure including technology.
3. Deepen engagement with enterprise and the broader community through innovation, learning, teaching, programme provision and research for the benefit of students, staff and the regional stakeholders.
4. Develop the international dimension of the Institute with increased enrolment from outside the State.
5. Balance revenue sources to diminish the over-reliance on central public funding.
6. Continue to act nationally to develop the higher education system.

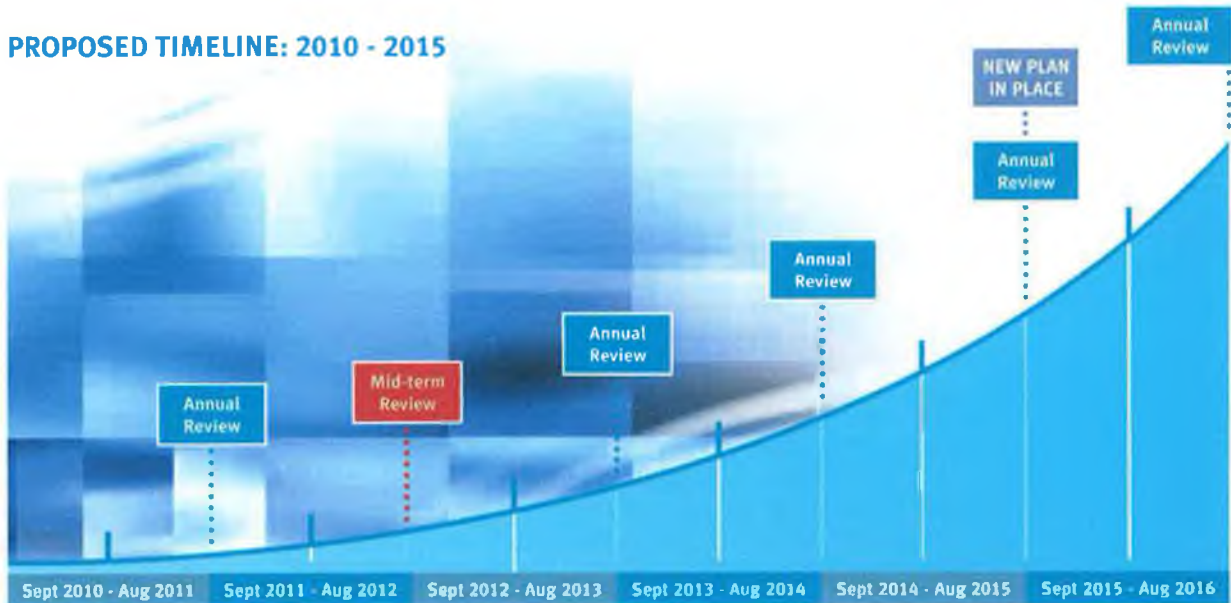
ACADEMIC PROFILE AND MARKET POSITION

The successful achievement of targets associated with the KPI's will give GMIT the following academic profile and market position.

- Increased student population in terms of Full-time equivalents.
- Leading Level 7 provider nationally.
- Pioneer in curriculum reform and new learning methodologies.
- Recognised centre for professional education at undergraduate and post-graduate levels.
- Highly networked, outward looking, and collaborative organisation.
- National leaders in research in identified niches.



PROPOSED TIMELINE: 2010 - 2015



KEY PERFORMANCE INDICATORS

For each of the five pillars, the following indicators have been identified:

LEARNING AND TEACHING

- Student Enrolment.
- Student Retention.
- Student Achievement.
- Learning and Teaching Strategy Implemented.
- Programme portfolio managed annually.

STUDENT ENVIRONMENT

- Flexible Modes of Delivery.
- Campus Development Plan Implemented.
- Graduate Destination Statistics.
- Students' Evaluation of their experience.
- Unit Cost.

RESEARCH AND INNOVATION

- Top quartile status for research within IOT sector.
- Through-flow of companies through IIBC's.
- Formal research-led collaborations with other institutions.
- Increased number of graduating research post-graduates.
- Number and value of research projects.

COMMUNITY ENGAGEMENT

- Participation rates of under-represented groups.
- Proportion of mature students.
- Number of on-line programmes developed.
- Number of programmes with 30 credits directly attributable to learning which is industry, business or community based or takes place overseas.

INTERNATIONALISATION

- Proportion of international students.
- Number of strategic agreements with HEIs overseas.
- Number of GMIT students studying abroad.





GMIT PLANNING STRUCTURE >

The five pillars of the Institutes Strategic Development Plan are:

PILLAR	RATIONALE
1. Learning and Teaching	Strategic focus on quality of teaching
2. The Student Environment	Strategic focus on totality of student experience
3. Research and Innovation	Strategic focus on regional development
4. Community Engagement	Strategic focus on social cohesion
5. Internationalisation and Collaboration	Strategic focus on the global experience for all students

Figure 1 shows the relationship of these pillars to the overall strategic plan and a number of aligned plans, each supporting one or more of the Strategic Plan Pillars.

Obviously, there are overlaps and linkages between the various pillars: for example, internationalisation will have an impact on the student experience. Therefore it is important not to consider each pillar in isolation.

The following section deals with each of the pillars and outlines the objectives and strategies to achieve the objectives.

The Operational Plan for each pillar will include Key Performance Indicators (KPI's) for each objective. These will be generated centrally and will be linked to school and department plans, staff development, infrastructure and quality assurance plans. The Operational Plan will be the subject of an annual review to monitor and report on progress in achieving the objectives outlined.



Fig. 1 The Five Pillars and the Aligned Plans of the Strategic Plan

LEARNING AND TEACHING

Make the student learning experience more active and participatory.

OBJECTIVE 1

Implement Learning, Teaching, Assessment and Quality Assurance strategies that promote a student centred model of learning.

Key Strategies:

1. Provide greater recognition for the 'student voice' in the enhancement of teaching and assessment.
2. State clearly student expectations in relation to their individual learning responsibilities.
3. Promote modes of learning which enhance professional practice inside and outside the classroom.
4. Develop an innovative policy on assessment.

OBJECTIVE 2

Provide leadership and support for innovative approaches to Learning and Teaching

Key Strategies:

1. Develop more flexible programme structures and delivery options.
2. Continue the roll-out of modularisation and the flexible curriculum framework.
3. Develop 'professional' Masters and PhD provision.
4. Undertake annual reviews of programme offerings for currency, relevance and sustainability.
5. Develop a new programme, in association with the Students' Union, on transitioning from education to the workplace.
6. Develop and expand work-based learning and accreditation at undergraduate and postgraduate level.
7. Assess the sustainability of SIF projects with a view to mainstreaming collaboration with NUIG and AIT in learning and teaching

OBJECTIVE 3

Align staff development with the Learning, Teaching and Assessment strategy of the Institute.

Key Strategies:

1. Attract and retain staff with a commitment to high standards of learning, teaching, scholarship and research.
2. Provide pathways for staff to pursue post-graduate professional development.
3. Develop a framework for institutional research in Learning, Teaching and Assessment.

OBJECTIVE 4

Create a system to engage students in the quality of their learning.

Key Strategies:

1. Position students as 'engaged collaborators' in assessment, teaching, programme planning, quality improvement and Institute governance.
2. Devise and implement a student retention and achievement policy for all programmes, with a particular emphasis on the first year experience.
3. Embed the student perspective in all aspects of teaching, quality enhancement and quality assurance.





STUDENT ENVIRONMENT

Continue to enhance a supportive environment for students by developing services, improving infrastructure and providing more flexible learning opportunities .

OBJECTIVE 1

Explore alternative methods for programme delivery.

Key Strategies:

1. Improve access to learning, support and information resources using new technologies.
2. Promote open access to learning, through formal access initiatives, web-based initiatives and blended learning.
3. Maximise involvement of Institute in National Flexible Learning Initiative.
4. Develop a new range of work-and-study programmes.

OBJECTIVE 2

Develop and implement systems and structures which address the totality of the student experience.

Key Strategies:

1. Appropriately resource and maintain the wider learning infrastructure, which includes *inter alia*: library facilities, the IT learning centre, teaching venues, labs and computing access.
2. Explore feasibility of sharing facilities, services and technology with other higher educational institutions.

OBJECTIVE 3

Develop social structures which support the student experience

Key Strategies:

1. Facilitate the growth of clubs and societies.
2. Provide opportunities for greater civic engagement and student leadership.
3. Continue to develop the range and scope of Student Services.

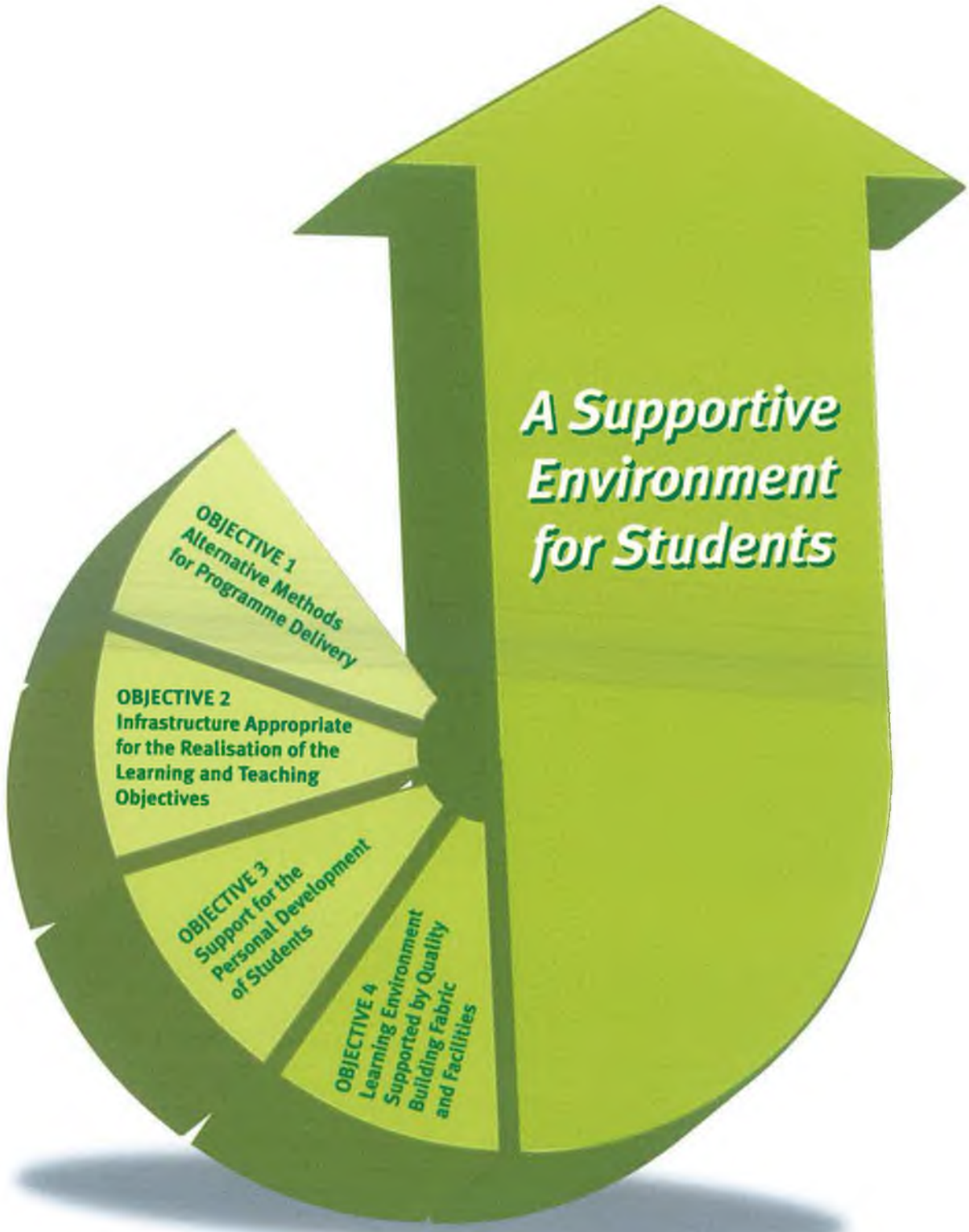
OBJECTIVE 4

Enhance infrastructure to support a quality learning and sustainable environment.

Key Strategies:

1. Complete Student Building.
2. Progress the Public Private Partnership (PPP) engineering building project.
3. Provide / Develop Sports and Leisure Facilities.
4. Expand the Business Incubation and Applied Research facilities.
5. Adapt current learning environments for range of learning modes.
6. Continue to develop the multi-campus infrastructure.
7. Improve the environmental sustainability of the physical infrastructure.





RESEARCH AND INNOVATION

Focus primarily on applied research and development in prioritised areas with clear outcomes related to teaching and regional development.

OBJECTIVE 1

Consolidate research activities for economic sustainability.

Key Strategies:

1. Consolidate the following development research groups:
 - a. Marine and Fresh Water
 - b. Biomedical Engineering
 - c. The Built Environment (to include Energy and Furniture)
2. Identify and foster the development of two new research groups.
3. Identify and target industry based research supervisors and collaborators.

OBJECTIVE 2

Prioritise interdisciplinary based research vs disciplinary based research.

Key Strategies:

1. Exploit the diversity of the Institute research and teaching portfolio to identify and develop interdisciplinary research areas.
2. Foster and facilitate the creation of interdisciplinary networks.
3. Encourage and facilitate staff mobility between schools or departments.
4. Communicate our interdisciplinary research strengths outside the organisation.

OBJECTIVE 3

Develop the nexus between research and teaching.

Key Strategies:

1. Develop the relationship between research and teaching.
2. Translate excellence in research into learning opportunities for students.

OBJECTIVE 4

Engage in formal inter institutional collaborations, including the provision of Structured PhD Programmes for Industry.

Key Strategies:

1. Formalise collaborative arrangements which enhance the Institute's capacity for research.
2. Participate in the development of sectoral structured PhD programmes for Industry.

OBJECTIVE 5

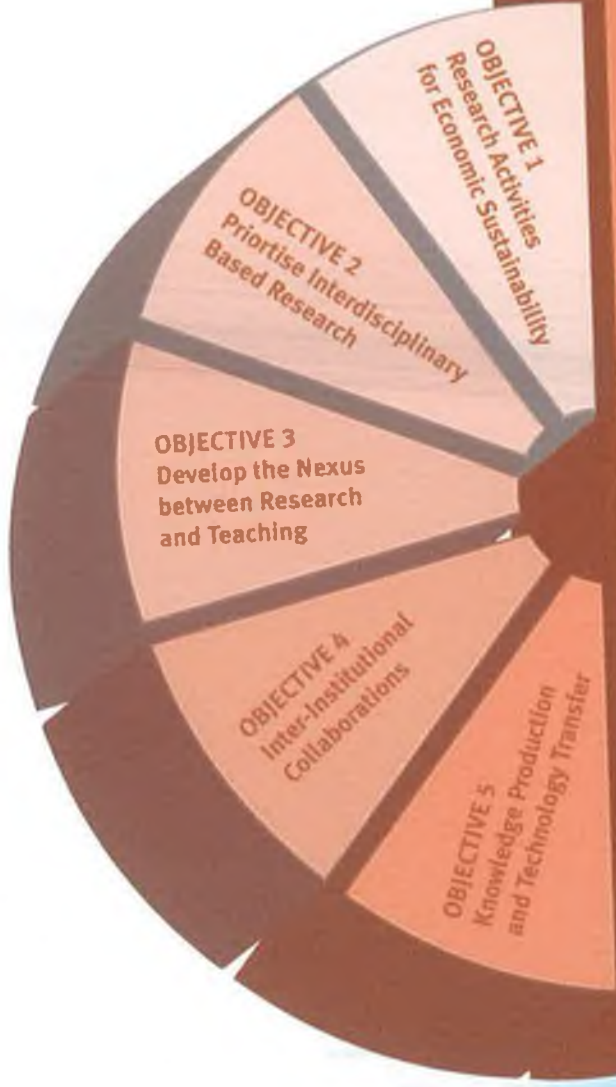
Prioritise knowledge production and technology transfer in support of regional development and enterprise formation.

Key Strategies:

1. Develop a Research and Innovation Hub to bridge academic excellence and enterprise development.
2. Ensure the effective capture, protection and exploitation of potential intellectual property.
3. Stimulate and support spin-outs to the Institute's incubation centres (iIBC).
4. Become a recognised provider of knowledge-based business solutions.



Applied Research Related to Teaching and Regional Development



COMMUNITY ENGAGEMENT

Create an outward facing organisation working with the community.

OBJECTIVE 1

Enable students to develop their capabilities through wider engagement.

Key Strategies:

1. Increase the number and scope of student internships/placements.
2. Develop final year projects around problems/challenges solicited from the wider community.
3. Develop a policy to recognise and accredit civic engagement.

OBJECTIVE 2

Contribute to the social, cultural and economic well being of the communities served by the Institute.

Key Strategies:

1. Support staff in undertaking projects valued by the community.
2. Implement ethical policies and practices.
3. Engage in environmentally responsible practices.
4. Promote positive relations with our neighbours at all campuses.

OBJECTIVE 3

Meet the national target for participation in higher education with particular reference to life-long learning and under-represented cohorts.

Key Strategies:

1. Build alliances with selected further education providers in order to make transfer and progression seamless.
2. Develop reciprocally beneficial relationships with the institute's alumni.
3. Ensure recognition for the institutes alumni and their achievements.
4. Improve access by communities and organisations to GMIT facilities.

OBJECTIVE 4

Collaborate with industry, professions and other communities ensuring programme relevance and currency.

Key Strategies:

1. Develop effective models for industry and community collaboration.
2. Promote student and staff engagement with a broad based community and business organisations.





A Community Focused, Outward Facing Organisation



INTERNATIONALISATION AND COLLABORATION

Provide an Irish experience for our International students and an International experience for our Irish students.

OBJECTIVE 1

Integrate an international perspective into programmes.

Key Strategies:

1. Introduce an enhanced induction programme for international students.
2. Increase opportunities for students to study/work abroad and accredit this work and study.
3. Integrate the international dimension into programme design in consultation with partner institutions.

OBJECTIVE 2

Promote cultural diversity and understanding among our staff and students.

Key Strategies:

1. Continue to develop annual staff training programme on interacting with students from diverse ethnic backgrounds.
2. Arrange and promote increased opportunities for staff teaching exchanges with overseas partner institutions.

OBJECTIVE 3

Enhance the capacity of the Institute to compete in the international market.

Key Strategies:

1. Establish the non-EU section of the International Office.
2. Define and implement a plan to grow international student numbers.
3. Develop and market an international summer school programme.
4. Extend existing scholarship schemes to embrace international entrants.
5. Develop key international alliances to further GMIT's international standing and profile.



Appendix 9

ON*

*Participation required
FREE LOT!

Video Podcasts Blogs Quizzes Games RSS

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Home > Tech > Computer > Internet > Social Networking > Social Networking Information

What are the pros and cons of social networking sites?

by Jonathan Strickland

Browse the article [What are the pros and cons of social networking sites?](#)

What are the pros and cons of social networking sites?

Are you an online network socialite? Do you Twitter about your Facebook status while listening to music on Last.fm? Have your friends noticed that you'll only talk to them 140 characters at a time? Then you've got your finger on the pulse of online social networking — a big part of Web 2.0.

Just a few years ago, the idea of an online social network was revolutionary. While the Web has always provided a way for people to make connections with one another, social networking sites made it easier than ever to find old friends and make new ones. Today, it's rare to find someone who hasn't at least heard of Facebook, MySpace, Twitter or one of a hundred other social networks.

Related Articles

- [Top 5 Niche Social Networks](#)
- [Is happiness contagious in online social networks?](#)
- [Are social networking sites addictive?](#)

For novices in the world of social networking, the vast online landscape can be a little intimidating. There are so many options available and each one has its own terms of service or end user license agreement (EULA). Even Web veterans may find some of these agreements difficult to understand. There are times when it can feel like you're signing your life away just to get a profile on a Web site. You may not even know why you would want to use such a site in the first place, apart from the fact that everyone else seems to be on it.



Popular Web Sites Image Gallery

AP Photo/Paul Sakuma

Social networking sites like Facebook can be both useful and dangerous. See more [pictures of popular web sites](#).

We've taken on the task to break down the positive and negative aspects of online social networking sites. Before we go much farther, understand that there are a lot of things you should take into consideration before signing up. You should also know that the good tends to outweigh the bad, particularly if you're careful about the way you use these sites. So, let's start off with the pros of social networking sites.

The Pros of Social Networking

Without a doubt, the best reason to join any social networking site is that it lets you make connections with other people. You can use social networking sites to stay up to speed with what your friends are doing. If the social network is popular, you may be able to track down old friends and acquaintances and renew long-forgotten friendships.

You can also use these sites to network professionally. Even if you're happy where you are in your career, you might be able to help someone else out. For instance, one friend might mention on his profile that he needs a carpenter to come to his house. You might know someone who's perfect for the job. All you have to do is send a couple of messages and you've helped two friends out at the same time!

Many social networking sites like MySpace and Facebook make it easy to organize an event and invite your friends. Some sites allow you to group friends using different criteria, including geographic location. So the next time you plan a group trip to the movies, you can send out a notice to your local friends using a social networking service.

Are you an actor, musician or writer? If so, you can use social networking sites to promote your work. Many sites allow users to create special pages for bands or theater companies. You can keep fans informed about everything from your latest single to the next time you'll perform. And social networking sites gives people the opportunity to interact with the artists they admire.

Several social networking sites also act as application platforms. You can find dozens of applications ranging from quizzes to games to restaurant review programs. On a site like Facebook or MySpace, you can challenge your friend to a game of trivia — even if she's on the other side of the world!

Social networking may even get you out of jail! American graduate student James Karl Buck was in Egypt covering an anti-government protest rally when Egyptian police detained him. Buck sent out a single word over his Twitter feed: Arrested. People following him on Twitter knew that he was in trouble and began to contact U.S. authorities. Before long, Egyptian officials had released Buck [source: [Simon](#)].

But it's not all sunshine and roses. There are some drawbacks to social networking too.

Drawbacks to Social Networking

Perhaps the biggest online social networking drawback is that it makes identity theft easier. In order to create a profile on a social networking site, you have to share some information about yourself. Many sites allow you to decide how much information to share. Some give you options to hide information like your e-mail address or birthday — information that could give unscrupulous people the chance to send you spam or steal your identity.

A Tangled Web

One of the cool things about social networking sites is that you start to see connections between friends you didn't realize knew each other. You may discover that the friends you have in different circles are also friends with one another. Your own social network can grow and you might get invited to many more parties. That's definitely a social networking "pro!"

The problem is that if you don't share any information, none of your friends will be able to find you on the site. That defeats the purpose of a social networking site in the first place. On the other hand, if you share too much you may discover that someone else is masquerading under your identity. They might even be destroying your credit rating or attempting to access your e-mail or financial information.

Another danger is that scammers use social networking sites to trick people into downloading malicious software (malware). A common tactic is to use social engineering. Social engineering plays on human nature to get results. For example, you might receive a link from a friend claiming that it leads you to a funny video that you appear in. Following the link brings up a message saying you need to install a video player before you can view the clip. But the video player is actually a virus or Trojan horse program that can harm your computer. Once your computer is infected, the scammer will use your friends list to try and spread the malware even further.

Social networking can be both overwhelming and addictive at the same time. If you join every social network and add hundreds of people as friends, you'll receive updates constantly. It'll become difficult to see any one individual's updates. You'll have a lot of noise to filter out if you want to find something specific. And you may find yourself checking for updates several times throughout the day when you really should be doing something else.

The good news is that the pros for social networking outweigh the cons. And with a few healthy habits, you can avoid or minimize the drawbacks. Just remember to be careful and responsible before you sign up!

Learn more about social networking through the links on the next page.

Lots More Information

Related HowStuffWorks Articles

- [Top 5 Niche Social Networks](#)
- [Top 5 MySpace Applications](#)
- [Is happiness contagious in online social networks?](#)
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- [Are social networks good for job productivity?](#)

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AP Photo/Chris Weeks
Groups like Anonymous use social networking sites to organize real world protests like this one against the Church of Scientology.

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