

The Performance of Business Incubators and their Potential Development in the North East Region of England

POORAN WYNARCZYK* & ARNOLD RAINE**

**Small Enterprise Research Unit (SERU), Newcastle University, UK*

***SERU Consulting Ltd, North East of England Business & Innovation Centre, Wearfield, Sunderland, UK*

ABSTRACT The creation of incubators is viewed by many local and regional strategic bodies in the UK and abroad as an effective way of nurturing and facilitating the success of new technology-based companies. Drawing on a survey of 17 incubators operating in the North East of England, based on original findings, this paper empirically examines the crucial role of existing incubators in the local economy in enterprise creation and attempts to identify areas of good practice that can be used as benchmarks for the creation of future Incubators.

KEY WORDS: Local economic development, business incubators, innovation, enterprise culture

Background

There is increasing evidence that new or small firms play an important role in the production of innovation, which is not only considered crucial to the growth of output, productivity, competitive advantage, high quality employment and overall success of the economy, but also a fundamental driving force behind rising living standards (Sheikh & Oberhoizner, 2001;

Correspondence Address: Pooran Wynarczyk, Small Enterprise Research Unit (SERU), First Floor, Porter Building, St Thomas Street, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK. Email: Pooran.wynarczyk@ncl.ac.uk

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DTI, 2003a). However, as the EC's Enterprise Directorate-General (DG) has recognised, from the total population of European SMEs, only a fraction (2%) are responsible for the majority of competitive innovations and thus jobs created (Euro Info, 2000).

Additional research has revealed the vitality of these highly atypical enterprises on regional economic performance insofar as they stimulate growth and diversity in the knowledge base, particularly in less favoured regions (LFRs) of the UK, such as the North East of England, where, in spite of decades of assistance, the nature and low levels of manufacturing, innovation (product and process), productivity and employment density remain of major concern to those involved or interested in the region's revitalisation and development (Thwaites & Wynarczyk, 1996; Wynarczyk & Thwaites, 2000). The economic diversification and growth in the North East is further 'hampered by the lack of an entrepreneurial culture, with low levels of new business formation' (One NorthEast, 2003, p. 44).

Continuing statistics reveal that the rate of new firm formation varies between UK regions and is to the disadvantage of some LFRs, such as the North East, in which high business failure rates have also been observed (DTI, 2003b). This disparity is also apparent in terms of developing new sources of technological knowledge. As the DTI's Innovation Report states, there is, for example, a relatively higher concentration of Research and Development (R&D) activity in the more prosperous regions such as Southern and Eastern areas of England, compared with the less favoured regions such as the North East, even when adjustments are made for the populations of different regions (DTI, 2003a). The North East's poor performance in terms of key economic indicators is summarised in Table 1.

The emerging challenge for business support intermediaries and policy makers is to identify, support and promote firms with growth potential, particularly in the less favoured regions. The creation of incubators is viewed by many local and regional strategic bodies in the UK and abroad as an effective way of nurturing and encouraging subsequent growth and improved survival rates of new businesses, assisting the identification of investment opportunities, and helping businesses to graduate onto larger more independent business units.

Table 1. Enterprise and innovation deficit in the north east of England

Indicators	% Below UK Mean
Density of business by population	40
New businesses as indicated by VAT registrations	50
Employment in high tech businesses	10
Businesses spend on R&D by regional GDP	33
Proportion of graduates in the workforce	32

Source: One NorthEast Innovation Strategy & Action Plan 2001.

What are Business Incubators and Why are They Important to Economic Development in the Region?

It can be argued that business incubation is simply a process that can deliver stronger new businesses, create jobs and encourage innovation. It creates an environment of support and encouragement that allows the entrepreneur to develop the product and market potential without worrying about how, for example, the next VAT bill will be completed on time. Incubators can help fast track companies that are real creators of future wealth and employment (Wynarczyk & Raine, 2002).

An incubator is usually a home to a number of small units, providing a supportive environment to individuals at start up and during the early stages of establishment of the business. Incubators provide several main ingredients for growing successful businesses, such as accommodation, entrepreneurial and learning environment, ready access to business experts, mentors and investors, increased visibility in the market place, and networking/clustering opportunities (Hannon & Chapman, 2001).

In return, such firms not only generate wealth and jobs, they also bring substantial value to their incubator's stakeholders and local economy by virtue of their capacity for innovation, new product development and penetration of new markets. Incubators have been observed as helping to build entrepreneurial cultures and clusters and acting as a catalyst for the development of integrated business support networks which include finance providers, universities, business schools, large companies, business professionals and government bodies (EUBICS, 2000).

During the early 1980s business incubators emerged and began to be used as instruments to support innovation and technology transfer. The evolution of the incubator concept has been summed up by Lalkaka and quoted in *Benchmarking of Business Incubator Report* (2001, p. 3) as follows:

The first generation incubators, established in the 1980s, were essentially offering affordable space and share facilities to carefully selected entrepreneurial groups. In the 1990s the need was recognised 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 mobilise ICT and provide a convergence of support, towards creating growth-potential, technology-based ventures.

Business incubators have taken on a wide range of different forms from virtual incubators, to workspaces with limited on-site support to centres providing a wider and more sophisticated range of facilities and support. They are known by different names, including, for example, Technology or Science Parks, Business and Innovation Centres (BICs), 'Incubators Without Walls', and other Business Centres. New versions of incubators are continuing to emerge, including 'Internet Incubators' launched by the

UKBI in October 2001, aiming to provide support for over 500 new Internet start-ups over the next few years and more recently the 'Junior Incubator', currently being developed in Bolton with over £100,000 financial support from NESTA (the National Endowment for Science, Technology and the Arts), aiming to identify talented and creative young people from 3500 school children in Bolton, who will benefit from the top-class facilities and expertise the centre can offer (NESTA, 2004).

Public Funding for Incubators

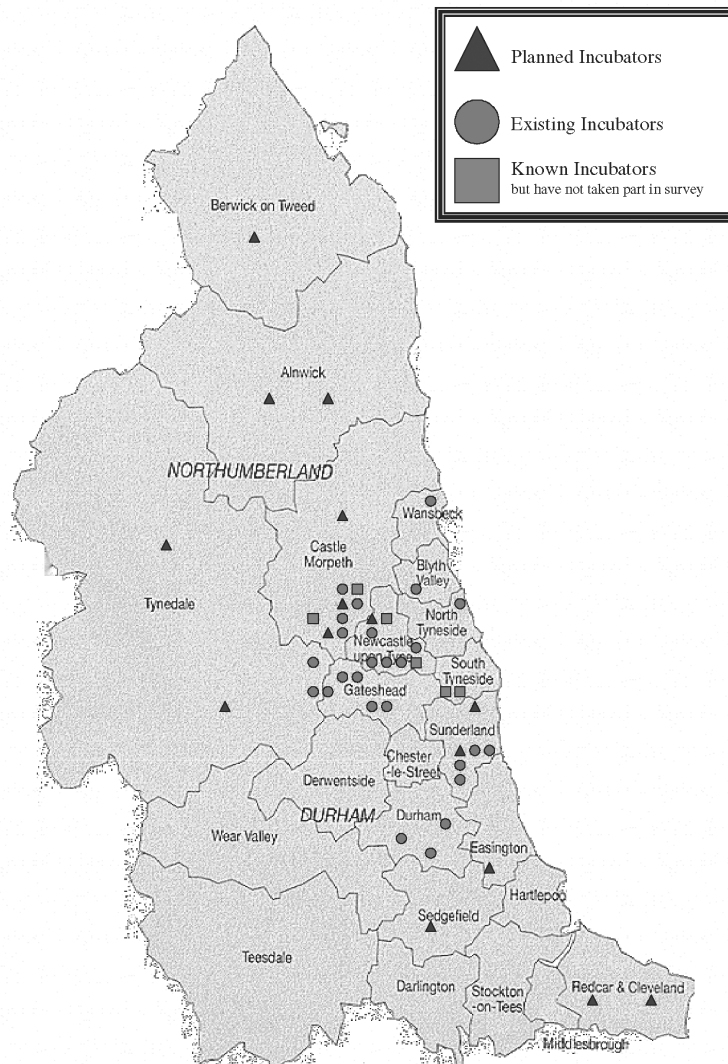
In recent years, the UK Government has shown firm commitment for further development of incubators. In the White Paper on Enterprise, Skills and Innovation (DTI, 2001), the Government announced a £75 million 'Incubator Fund' to be operated under the Small Business Service (SBS). Working in partnership with Regional Development Agencies (RDAs) and local partners, SBS will help to establish 75 incubators nationally, providing managed workspaces and business support vital to helping new business survival. The Government's Regional Innovation Fund (RIF) has also provided the RDAs with their first opportunity to use the £50 million per year fund in a flexible way to match their regional priorities. To date, with RIF funding, RDAs have initiated over 90 incubator and science/business park development projects (DTI, 2003a). Furthermore, the DTI has recently announced the Incubator Feasibility Study Grants, which provide £0.5 million to organisations that require financial assistance to undertake a feasibility study in order to develop a business incubation project in the UK. The grants will provide a boost to promoting business incubation, especially in disadvantaged areas where it is needed most (UKBI, 2004).

Moreover, for the period 2000–2006, England has been allocated over £5 billion from the European Union European Structural Fund (European Social Fund (ESF) and European Regional Development Fund (ERDF)). This funding stream is being implemented to underpin regional economic development initiatives such as incubators (ERDF Objective 2 Programme Complement 2000–2006). As a direct result of these funding streams and a strong demand from the industry, according to the UKBI, there are already over 220 incubator environments in the UK compared with 100 at the turn of the millennium (UKBI, 2004).

Data Selection and Empirical Findings

This paper builds upon a study, initially commissioned by the North East's Regional Development Agency, ONE NorthEast, and subsequently with support from the European Social Fund (ESF), which focused on the performance and potential development of incubators in the North East of England. For the purpose of the study, a questionnaire was designed, covering several key aspects surrounding the operation of incubators. The questionnaires were sent out to all identified incubators in the region,

a total of 27 organisations responded. In the process of identifying these incubators all local authorities in the North East were contacted and the *UK Business Incubation Directory* (2001) was also consulted. However, only 17 incubators complied with the UKBI definition of incubator, i.e. providing accommodation, infrastructure and access to on-site business development support, as described above and included in the analysis, of which 15 are located in Tyne & Wear, one in County Durham and one in Tees Valley (see Annex 1, a map of the location of existing and planned



Annex 1. Location of existing and planned incubators

Table 2. Years the incubators established and began accepting client companies

Year of Start	1980–89					1990–99				2000–2001			
Number of incubators	6					9				2			
Percentage	35					53				12			
	1981	1984	1986	1988	1989	1990	1992	1994	1998	2000	2001	Total	
Number of incubators	1	1	2	1	1	6	1	1	1	1	1	17	

incubators in the North East). The remaining 10 incubators were found to be acting as managed workspaces or workshops and, therefore, excluded from the analysis. In order to obtain a more in-depth qualitative insight into their operation, the incubators were visited and 'face-to-face' semi-structured interviews were conducted with the managers of all 17 incubators. The surveyed incubators were established and began accepting clients over the period 1981 to 2001 inclusive. The sample, therefore, includes both well-established and new incubators. Some 35% of the incubators (a total of six) were established during 1980s, 53% (a total of nine) were established during 1990s, and the remaining 12% (a total of two) were established in 2000 and 2001 inclusive (Table 2).

The empirical results of the survey, based on quantitative and qualitative information and observations, which aim to provide an insight into incubator design, operation and performance, reveal some original findings as presented in the following section.

Summary of Empirical Findings

The empirical results illustrate three interrelated elements of importance to the economy, and the way in which business incubators in the North East generally facilitate the regional economic development process through supporting local enterprises, as highlighted below.

(i) *Adding value to local economy and meeting economic development objectives: the goals of incubators*

The measures of effective participation in economic development processes rely on the ability to generate additional jobs through facilitating the creation, growth and survival of businesses. The study has identified a set of goals listed out in Table 3 according to the order of importance as indicated by the respondents. The results demonstrate that the most important goal shared by all incubators is that of creating enterprises and jobs in the local economy. Other goals of incubators include, retaining businesses in the local economy, commercialising technologies, and revitalising distressed neighbourhoods. However, a number of other goals

Table 3. Goals of incubators

Goals	%
Creating jobs in the local economy	100
Enhancing a community's entrepreneurial climate and the value it attributes to entrepreneurship	100
Retaining businesses in the local economy	94
Commercialising technologies	88
Diversifying local economy	82
Generating complementary benefits for the sponsoring agency	76
Opportunity to support other entrepreneurs and local community	66
Generating net income for the incubator or sponsoring organisation/founders/investors	60
Revitalising distressed neighbourhood	60
Building or accelerating growth of a local industry	55
Identifying potential spin-in or spin-out business opportunities	30
Encouraging minority or women entrepreneurs	6
Moving people from welfare to work	6

Table 4. Distribution of businesses supported and jobs created by 2001

Number of Business Supported	4	21	33	39	80	150	225	250	500	600
Number of incubators	1	1	1	1	1	1	1	2	1	1
Average: 195	Median: 80					Sum: 2,152				
Number of jobs created	10	39	140	200	435	2000	2500	2800	–	–
Number of incubators	1	1	1	2	1	1	1	1	–	–
Average: 924	Median: 200					Sum: 8,324				

such as 'moving people from welfare to work' or 'encouraging minority or women entrepreneurs' appear to be less important.

Further examination of results, summarised in Table 4, reveals the number of businesses supported by the incubators on and off their sites. The number of businesses supported is wide-ranging, between 4 to 600. At the time of the survey, a total of 2152 businesses were supported by 11 incubators alone. The average and medium incubator supported 195 and 80 businesses respectively. The distribution of the data reveals that only one incubator supported less than ten businesses, a total of three incubators supported between 21 and 50 businesses, a total of two incubators supported between 51 to 150, and a total of three incubators had helped 151 to 250 businesses. Of the remaining two, one had supported 500 and the other 600 businesses by year 2001 (please note only 11 incubators responded to this question). The table also shows that some 8300 jobs have been created by firms which, at some stage, were

located in or supported by, nine of the surveyed incubators alone. In fact, as it can be seen from Table 4, 7300 jobs have been created by enterprises located or supported, at some stage, in the three largest incubators, adding to the local employment stock at a time when the region as a whole faced major employment decline in both large and small firms (please note, only nine incubators responded to this question).

(ii) *Adding value to the enterprise through pro-active business development services*

The incubators that add value most effectively to the economy are those adopting a pro-active role in business development and address the needs of the 'clients' on an ongoing basis. The characteristics of these incubators are embodied in their design and operation but, generally speaking, they offer the widest possible range of business services.

Incubator type

The focus of the incubators depends immensely upon the success of both incubators and clients. The role of the incubator is seen as 'facilitator' rather than 'real estate', hence focus plays a crucial part. The majority of the surveyed incubators are mixed use, which shows that their objective is more economic development in broader terms than industry specific. The industry specific incubators provide specific knowledge and expertise to businesses. However, the region's industry specific incubators are wide ranging. Their focus and sector specialities are ICT and web-related, technology-based, manufacturing, and R&D Science Parks.

Target Clientele and Entry Criteria

The clients targeted by the incubators are mostly business start-ups and expanding businesses, while sector specific incubators cater for technology, science-based innovative enterprises. Some others, on the contrary, accept any legitimate companies. Table 5 presents data on the client entry requirements of the incubators. As the distribution of data demonstrates, some 34% of the sample accept start-ups or small businesses less than 5 years old while 18% of the sample only accept start-up businesses less than 12 months old. The entry criteria of 12% of the sample are concerned with innovation (product, process and/or design), as well as job creation potential.

Graduate enterprises generally receive unprecedented attention from most incubators as they are supported by the universities and facilitate the transformation of academic knowledge into an economically viable enterprise. A number of incubators in the region are affiliated to the universities and undertake special programmes to encourage graduate enterprise. Although this is seen as a vitally important aspect of the creation of future growth-orientated businesses, the number of graduate start-ups in the region is at present very small. If we are keen to encourage

Table 5. Entry criteria

Criteria	Number	%
Start-up or small businesses set-up within last 3–5 years	6	34
Application, business plan, cash flow forecast	2	12
Start-up businesses less than 12 months old	3	18
Innovative (product/process/design), with job creation potential, growth oriented technology enterprises	2	12
Bio-science support	1	6
Graduate level, new technology-based enterprises	1	6
Technology-based companies (must conform to the entry criteria for the e-business foundation)	1	6
R&D, innovative companies linked to Universities	1	6
Total	17	100

an enterprise culture in all sectors of the community, awareness must start much sooner and be embedded in primary and secondary school education. A number of incubators in the region are already developing such initiatives. For example, the 'BIG IDEA' facility at the Business & Innovation Centre (BIC) support school children to initiate and develop their ideas with the help of experts and 'state-of-the art' equipment, including a 'Virtual Reality Centre'. Furthermore, the BIC also rewards innovation amongst school children as part of their annual regional initiative, 'Spirit of Innovation Awards' (North East Business & Innovation Centre, 2004).

In-house General and Specialist Business Support

The value-added of incubator operations lies increasingly in the type and quality of business support services provided to clients (Table 6). The Incubators in the North East provide a range of business support largely dependent on their focus and availability of on-site expertise. The business support services generally offered on-site include, basic start up training; marketing assistance; shared admin/office services; and specialised equipment/prototype facilities.

Table 6 also presents data on the specialised services provided to the clients. As the table shows, out of 17 participating incubators, 77% provide specialised services to the clients and/or serve specific sectors of the economy. As the table reveals, the nature of the specialised services varies amongst the surveyed incubators. For example, around half of the incubators provide specialised support in terms of property management and feasibility studies, and around half provide variegated specialised technology-based support to their clients, including for example, specialised support to the bio-technology sector; funding signposting; networking; support and access to internet-based companies; specialised support

Table 6. Business support and specialised services/sectors provided

Business Support Services	Number	%
Help with basic start up needs	17	100
General legal service	4	24
Marketing assistance	16	94
Help with accounting /financial management	15	88
Networking activities	16	94
Linkages to higher education resources	6	35
Shared admin/office services	15	88
Internet access	13	77
Specialised equipment/prototype facilities	15	88
Specialised Services / Sectors		
Property management and feasibility studies	15	88
Innovation projects	13	77
Support for design and artistic projects, paint/spray shop facilities, bureau and conference facilities	1	6
Bio-science, funding, sign-posting, business support, networking	1	6
Internet, IT support, access to web/internet based companies on-site	13	77
R&D and science-based support	6	35
Technology-based (telecommunications, software, micro-electronics, engineering designs, IT support, internet development)	1	6

to scientific, R&D orientated new technology-based companies in, for example, telecommunications, software, and microelectronics sectors; IT support; engineering design; and internet development. Other support provided to clients in these sectors includes meeting and conference facilities. Although not all incubators are fully equipped to provide in-house business support services, they overcome this barrier through business mentoring schemes and networking with external business support providers in the region.

Linkages to Economic Development Organisations and Local Authorities

The majority of the incubators are established with the support of external agencies, which are instrumental in establishing incubators as part of an economic development strategy. The incubators are actively involved with prominent agencies responsible for economic development in the region, for example, the Regional Development Agency (One NorthEast), Coal Field Developers and local authorities. Through these alliances, the incubators seem to benefit not only by way of financial support but also by way of policy and strategic guidance, which ensures mutual benefits to all parties involved.

(iii) *Capacity to enhance initiation, survival and growth of enterprises and incubator sustainability*

Attracting Adequate External Funding and Ability to Generate Income

The majority of the incubators are financed through external sources (e.g. European Structural Fund) while generating their revenues by letting premises to supplement the additional costs of providing services to their clients. Most services are either free or at subsidised rates. The study reveals that incubators have been fully financed by the sponsoring agency during their start and growth stages. The funding has, mainly, come from the Regional Development Agency for the North East of England (ONE NorthEast), Single Regeneration Budget (SRB), Enterprise Agencies, Local Authorities, Coal Field Developers, European Regional Development Fund (ERDF), and the region's universities (e.g. Newcastle and Teesside). It appears that those incubators which continue to be dependent on external funding agencies for revenue support have, in fact, been initiated by those agencies as part of the local economic strategy. The largest surveyed incubator, The North East Business and Innovation Centre, is an exception to this as it has become independent from its previous sponsor, Sunderland City TEC, which ceased to exist in 2000, and now operates as an independent not-for-profit entity. It has managed to secure funding from the European Structure Fund and the DTI sources and generates its own income through the letting of premises and providing business support to firms, on and off-site.

Management Structure

The study reveals that management structures vary, depending on the size and type of incubators. The majority of the incubators have their own formal management structure headed by a manager in charge of incubator operation. In most cases, the manager plays the role of a facilitator who provides advisory services to clients in addition to day-to-day business practices. The incubators surveyed had additional cadres to provide basic support as well as administration and office support. In some places, for example, technology, ICT and R&D oriented incubators have on-site technical staff.

Facilities and Ancillary Services

This is the most important aspect, which contributes to the development and growth of both client businesses and incubators. All incubators in the survey provide accommodation to their client companies, offering both office and workshop space. In addition, the clients have access to communal facilities including training facilities, ICT laboratories, design and product prototyping, and technology demonstration. The clients are also provided with shared office facilities, administration and secretarial

Table 7. Current occupancy/breakeven level

Occupancy/breakeven Level (%)	Current occupancy		Current breakeven level number of incubators	
	Number	%	Number	%
100	4	24	1	13
99–91	10	59	1	13
90–81	1	6	2	24
80–66	1	6	4	50
Total	16	95	8	100

support, postal and message handling, conference and meeting facilities, restaurants, car parking and crèche facilities.

Future Plans for Expansion and Diversification

The incubators surveyed indicated plans for further expansion. Sites have already been earmarked for expansion by a majority of incubators with some experiencing difficulties in obtaining sites adjacent to their existing location. Over 80% of the sample have reached above 90% occupancy levels and stress the need for further expansion (Table 7). However, even where sites have been earmarked for expansion and a funding stream has been secured, incubators are, generally, experiencing difficulty finding space near existing premises (*The Journal*, 2001). The table also presents data on the occupancy levels required by the surveyed incubators to at least break even. As the table shows, all respondents require at least 66% occupancy to break even, two of them require at least 80% and, in one case, 100% occupancy to break even.

Benchmarking Indicators for Future Incubator Development

On a closer inspection, certain factors emerge from the survey that point to success criteria and offer some benchmarking indicators for future incubator development. These are summarised below.

Location

Incubators located in city centres and offering office space at reasonable rents are 100% occupied even though, in many cases, support services are minimal. The range of services offered by incubators located in rural areas needs to be extended to attract business from a wider catchment area. Local authority, economic development agencies and Business Links could locate staff in incubators from both a cost-effective point of view and in the interest of creating a 'one stop shop' for business support.

This will create a greater demand from businesses wishing to be located at what is regarded as a 'prestigious' address.

Type

From an economic development point of view, mixed incubators are more successful in terms of wealth and job creation as they attract businesses across a variety of sectors. This may also provide networking/cluster opportunities amongst businesses located on site. Not relying on the buoyancy of one sector, incubators also generally enjoy high occupancy levels.

Business Support

A varied and comprehensive range of services tends to draw businesses from a wider catchment area, and in general tends to create a greater survival rate amongst start-up companies. The quality and range of business support should be the key focus of best practice development. Business support and incubator management, i.e. property and tenancies, should be promoted separately.

Flexibility

Successful incubators offer units of various sizes to allow companies flexibility to grow at a planned rate. They should offer easy in/easy out terms to start-ups. Moreover, from a commercial point of view, incubator premises should ideally be easily adaptable to meet any emerging sector needs.

Job Creation

The ratio of jobs per business assisted from those incubators who provided information averaged 3 to 1. The exception to this was one incubator where the ratio was 12 to 1. This organisation operated fairly rigid entry criteria, accepted companies from all sectors and had the most comprehensive business support infrastructure.

Ownership and Purpose

At best, incubators cover operating costs and make a modest surplus, most of which is 'ploughed back' into the incubator. The main purpose of incubators surveyed, therefore, is job creation, and ownership is vested in local authorities, companies limited by guarantee and, generally, economic development organisations that are non-profit making. None of the incubators surveyed were owned by profit-making private companies, or had such entities, even the North East Business and Innovation Centre, which became independent in its own right, following the demise

of Sunderland TEC and now operates as a limited not-for-profit company, which may be a message to DTI for the future of the Incubator Loan Fund.

Suggested Model

From the original findings presented in this paper, consultation of other benchmarking studies of incubators (e.g. UKBI, Identifying Best Practice, 2001) and discussions with a number of tenants, the following would appear to be the essential features of a successful incubator if infrastructure and other support are accessible.

- (1) Minimum size of 50,000sq ft of space to rent in order that the incubator has the potential to be financially self-sufficient.
- (2) From a commercial point of view it should be located within easy travel of a major conurbation. (It is accepted, for economic development purposes, that many incubators must be located in rural areas. It should, therefore, be borne in mind that they generally will be less commercial and will continue to require financial assistance from other sources).
- (3) Location of 'major players' – e.g. Business Link, Chamber of Commerce, local authority staff involved in economic development – at the incubator to provide additional support to business as well as prestige and guaranteed rental income to the incubator.
- (4) The widest possible variety of business support, not necessarily employed by the incubator, but accessible when required.
- (5) Flexibility of accommodation in terms of size, use and specification.
- (6) 'Easy-in, easy-out' rental agreements.
- (7) 24 hour per day, 7 days per week access.
- (8) Good security and mail handling service.
- (9) Adequate car parking in close proximity.
- (10) Available conference and meeting facilities.

Concluding Remarks

One of the major weaknesses of lagging regions such as the North East is the relatively low number of 'star-performers' and the generally poor economic performance and innovation activities of its businesses. The creation of incubators is viewed by many local and regional strategic bodies in the UK and abroad as an effective way of nurturing, as well as assisting further growth of new technology-based firms. This paper has examined the performance and potential development of incubators in the North East and their crucial role in business creation in order to identify areas of good practice that can be used as a benchmark for the creation of future incubators in the region. Based on a survey of 17 incubators, the results have illustrated three broad interrelated elements of importance to the economy, and the way in which business incubators located in the North

East of England facilitate the economic development process through supporting enterprises, namely:

- (1) Adding value to economy and meeting economic development objectives.
- (2) Adding value to the enterprise through pro-active business development services.
- (3) Capacity to enhance initiation, survival and growth of enterprises and incubator sustainability.

The results clearly demonstrate the significant role of incubators in nurturing businesses with the potential for growth and innovation. The main goal of the incubators surveyed is the creation of jobs in the local economy. The hands-on support provided by incubators' business experts and advisors have been found to be vital to the survival and growth of budding enterprises, particularly through the early stages where managerial capacity and other resources are scarce. Business incubation helps young firms to overcome the problems that can lead to their early failure. The main reason for this is the lack of relevant business skills needed to survive. The process of support not only offers a breath of business skills but also helps combat the loneliness and stress of setting up a business.

However, the results of the study show that the majority of the existing incubators in the North East are reaching their full capacity and need additional space to attract new young businesses. Around 80% of incubators in the North East have already achieved more than 90% occupancy levels and the need for further expansion, if funding can be accessed, has been stressed. However, incubators are, generally, experiencing difficulty finding space near existing premises. The creation of 'satellite offices' may, therefore, be a potential alternative for expansion.

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