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# Incubation policy and practice: building practitioner and professional capability

Incubation policy  
and practice

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Paul D. Hannon

*The University of Central England Business School,  
The University of Central England, Birmingham, UK*

## Abstract

**Purpose** The primary purpose of this article is to propose a conceptual base from which an appropriate management and leadership development framework for supporting capability building of professionals and practitioners across the UK incubation community can be built. Furthermore, it provides insights into how such a framework could be applied through an initiative developed in the East Midlands region of the UK.

**Design/methodology/approach** A review of the research in this field is summarised as an empirical background to proposing a conceptual framework. The author explores the evolution of incubation and identifies specific models and processes of incubation, as reported elsewhere in the specialist literature. This framework is further explored within the context of its applicability as a tool for building management and leadership development capability.

**Findings** The author recognises the lack of published research in this field, despite its importance for enhancing incubation performance outcomes. Three main framework components are drawn from this comprehensive review. Four different learner types are identified, and these form the basis of outline incubation management and leadership development programme options, with differentiated indicative syllabi.

**Originality/value** This article reinforces the need for, and has demonstrated the importance of, enhancing human capital capability within professionals and practitioners in the incubation community. The conceptual framework presented in this paper provides a foundation from which learning and development programmes can be provided.

**Keywords** Leadership development, Business policy, Human capital

**Paper type** Research paper

## Introduction

It is now well established that small firms in the UK significantly contribute to the economic and social fabric of the nation in terms of the size of the small firm population, their share of total UK employment and their overall contribution to national GDP. Additionally, and possibly more importantly, small firms provide the lifestyle sought by their founder(s); service provision within small communities and localities; and new opportunities for those members of society identified as being disadvantaged and/or deprived, an aspect currently of particular interest to the UK Government in supporting the social inclusion agenda. Additionally, policy-makers see new ventures as key vehicles for increasing the level of national innovation through the pursuance and exploitation of opportunities for the commercialisation of science, technology and knowledge.

It is also evident that a small percentage of small firms are accountable for a large disproportionate contribution to overall wealth and employment creation (Storey, 1995). However, this fact obscures the highly dynamic nature of the business start-up



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environment. The stock of businesses in the UK has been growing each year since 1998 and currently stands at over 3.8 million (Bank of England, 2003). Many new firms are created each year, approximately 400,000-500,000 per annum, of which 60-65 per cent survive their first three years (Small Business Service, 2003).

In striving for increasingly effective policy, UK government policy in recent years has sought to improve the impact of new business birth rates by addressing both the quality and quantity of new start-ups (for example, the Scotland business birth rate strategy and its recent adaptation by some English regional development agencies).

Additionally, the UK Government's Office of Science and Technology has been engaged in supporting the increase in the quality and quantity of knowledge transfer in attempting to address the UK's apparent lower levels of innovation and entrepreneurship as compared against global indicators (Harding, 2002), particularly in the case of the commercialisation of research from UK universities. For example, since 1999, university challenge, science and enterprise challenge and higher education innovation funding rounds have aimed to increase the degree and nature of enterprise activity and technology transfer within science and technology related areas (Department of Trade and Industry, 2001; Office of Science and Technology, 2002).

In driving forth such policy imperatives, incubators and incubation programmes have performed a growing role in supporting business start-up, knowledge and technology transfer, and the commercialisation of university research. Central UK government support for UK Business Incubation (UKBI), the lead body for incubation in the UK, the establishment of the Small Business Service (SBS) incubation team and the increasing interest in incubation by English regional development agencies (RDAs), and their counterparts in Scotland, Ireland and Wales, have all contributed towards the growth in the number of incubation projects in the UK. Other public sector interest at sub-regional levels has fuelled further expansion.

Although the growth of incubation projects and the increasing emphasis on them as tools of socio-economic change have continued to be supported, the wider industry is now reflecting on the quality of incubation outcomes from such projects. The identification of unmet demand for future incubation development needs to be examined within this context. Increasing performance outcomes and the development of long-term sustainable projects are therefore essential for continued support of the sector.

New opportunities for exploring methods for enhancing incubation processes and outcomes are leading to a greater focus on many critical aspects of incubation, in particular: governance and control; management and leadership; professionalism and personal development; client monitoring and tracking; and impact assessment and evaluation (Hannon and Chaplin, 2001, 2003).

The author has already established that "recent incubator and incubation studies have suggested an association between the role of incubation management and perceived client value" and that "there has long been recognition that the role of the manager, particularly within an incubator context, is complex and often paradoxical" (Hannon, 2003). Clearly, the incubator manager can have many guises (see Hannon (2003) for a taxonomy).

Recent research studies have emphasised the need for improving the quality of incubation management to enhance the performance standards of both incubation projects and user firms (Albert *et al.*, 2002; CSFS, 2002).

But what does make an effective incubation manager and what would be appropriate and relevant management education and support in building a sense of professional development within the UK incubation industry? (Hannon, 2003).

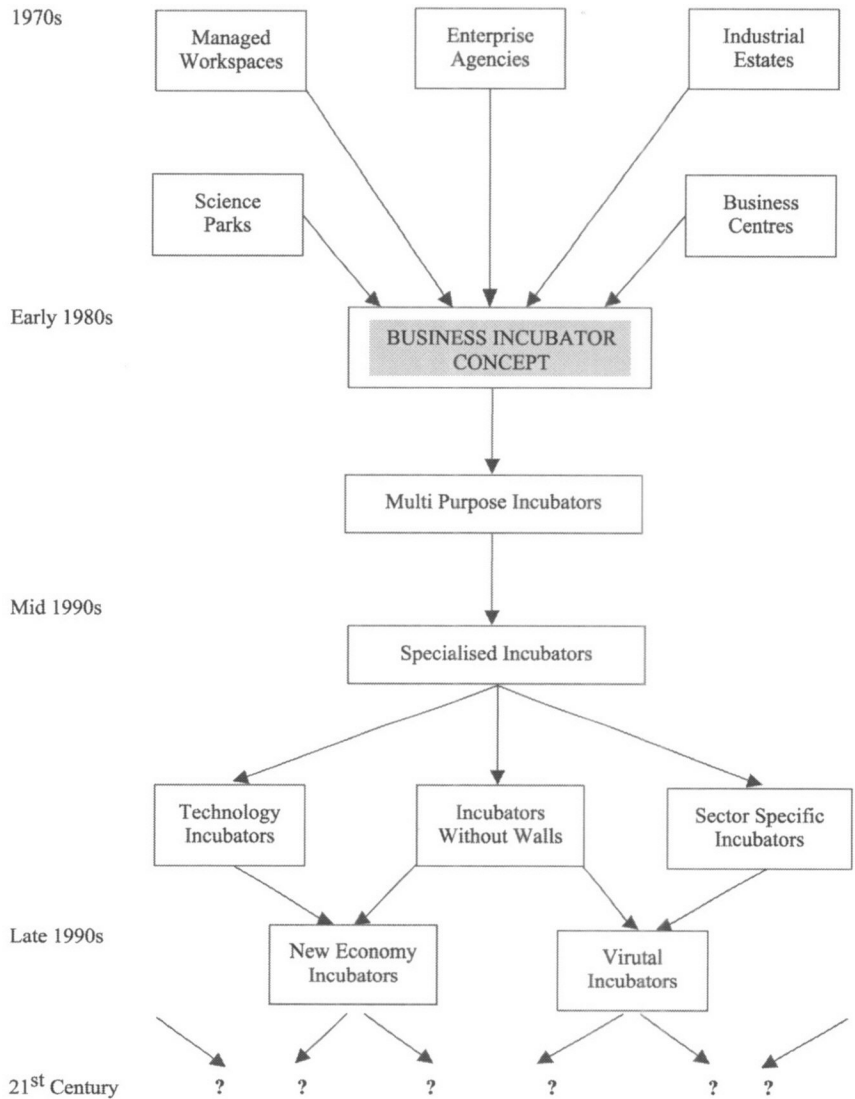
This paper asserts that the development of incubation management capabilities, understanding and decision making are paramount in the effective application of specific incubation policies and processes, recognising that incubator structures alone will not achieve desired incubation outcomes. However, the promoters and providers of support for incubators and incubation projects have as yet paid little attention to this critical factor and not developed any meaningful way of conceptualising the incubation management process.

The paper will first, summarise the review of the limited work in this field, as reported elsewhere[1], as a backdrop to proposing a conceptual framework emerging from the earlier work of the author. This framework will then be explored within the context of its application as a tool for building management and leadership development capability of professionals and practitioners within the UK incubation community. Finally, the paper will present the latest developments on building management and leadership capability within the UK, with particular reference to the case of the East Midlands region, where support from the East Midlands Regional Development Agency (EMDA), is enabling a lead to be taken with new educational initiatives in the field of incubation management and leadership learning and development.

### **The evolution of incubation**

A review of published research relating to incubators and incubation clearly identifies that there has been an emphasis upon the nature of incubators and incubation, what they do and how they do it rather than any attempt to critically inform the debate concerning the development of the management of such initiatives (Hannon and Chaplin, 2000). Many studies also tend to be of a descriptive nature rather than of an analytical or evaluative nature (Hannon and Chaplin, 2000). The recognition of the importance of the role of the manager in property-based types of support structures is not a new revelation. In the UK, the predecessors of incubators are managed workspaces and enterprise centres, which emerged through the 1970s and 1980s. These early structures also faced management challenges. Indeed a UK national forum of managed workspace and business centre managers was created with the purpose of sharing practice and informing performance. In the early 1990s a newly formed UK Association of Workspace Managers and those associated with the growth of business centres in the UK were beginning to recognise the impact of the centre manager on the performance of the centre and its client firms and the need for associated management standards, frameworks and tools (Hannon, 1991, 1992). Figure 1 charts an indicative evolutionary model.

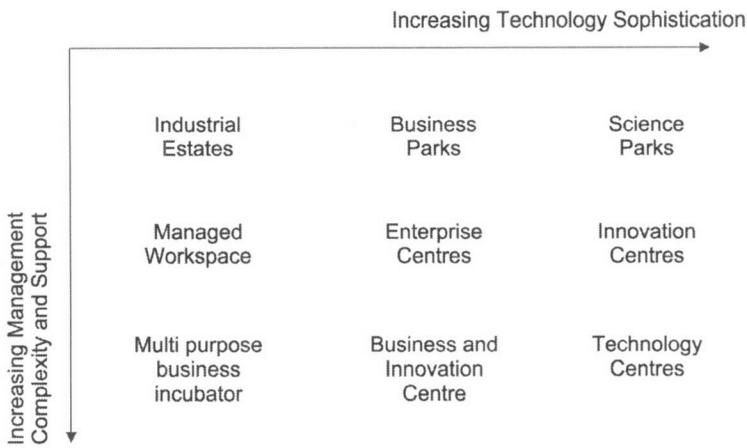
During the early to late 1990s, as can also be identified by Figures 2 and 3, the nature of management support and the degree of client technology sophistication has changed over time across the evolutionary path of incubators. Additionally, there has been a specific recognition of the potential affect on incubation policy and management practice of the project orientation towards either maximising real estate investments or accelerating business development opportunities, emphasising the actual, rather than espoused, purpose and goals of the managing organisation.



**Figure 1.**  
Evolution of the business  
incubator model

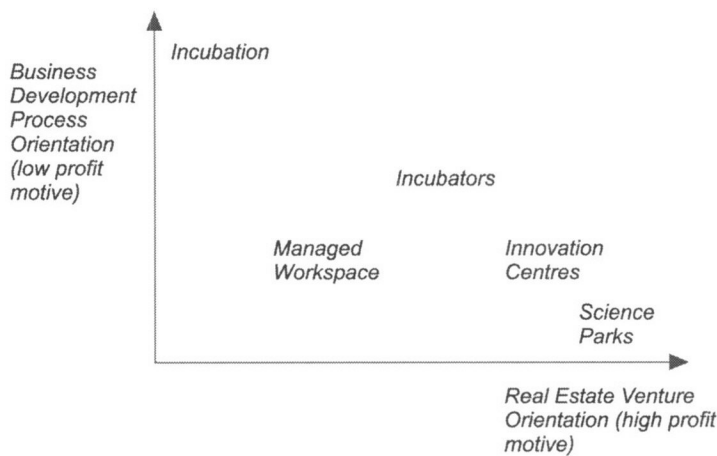
**Source:** CSES (2002)

Figures 2 and 3 are of course generalisations and not representative of all projects with such names. Indeed a lack of clarity of the terms and their mixed use has in part contributed to confusion in the industry of what distinguishes incubators from other projects, and other policy themes. Interpretations of Figure 3 further highlight variations and tensions between espoused policy and pragmatic reality.



Source: Adapted from CSES (2002)

Figure 2. Mapping management/technology sophistication against structure type



Source: Hannon and Chaplin (2001; 2003a)

Figure 3. Mapping incubation initiative orientation against process emphasis

*Identifying practitioner management development need*

In 1992, as reported previously by the author (Hannon, 2003):

The DTI funded a UK-wide study to explore the nature of the role of the manager and to develop a management development framework for use in informing managers and their employer organisations of opportunities for improving manager performance (Hannon, 1993, 1995).

Hannon (2003) also reports that:

By the mid-1990s business centre/incubator managers across Europe were recognising the need for establishing performance standards and management development support linked to impact measurement in local economic regeneration (European Symposium, 1995).



As can be identified from the quotes below of early studies and reports the point is well illustrated (Hausner *et al.*, 1990; Steffens 1992):

The qualities of a manager are vital to any successful scheme. Regardless of the quality of the building and its facilities without a good manager the work-space will not be successful.

It is the managers ability to communicate, understand problems and resolve any tensions and at the same time be a good listener and be able to give worthwhile advice that will make the difference between a successful operation and one that is mediocre.

Rice and Abetti (1993) concluded from their study of the interventions by US incubator managers that:

It seems likely that the majority of the interveners (the incubator managers) are not well prepared by education, experience and orientation to be effective, regardless of the availability of resources and support of top management.

Although other European countries such as Finland may already have extensive experience in supporting incubation management development, more countries, such as Sweden and Australia, are now realising that investment in the development of management capability across the industry is essential in maintaining and improving incubator performance both as a business operation within its own right but also in improving the performance capability of client service users.

The need for "well-educated incubator management" (Wilcock, 1999) has been supported regarding the key determinants of incubator impact relating to the level and quality of management assistance (Woods and Rushing, 1995) and the need for competent management (Autio and Klofsten, 1998).

The Hammon and Chaplin (2000) study for UKBI concluded that:

Developing the capacity and capability of managers/management will be crucial to enhancing quality and raising industry standards in governance, management, policy and practice.

The UK national study of incubation best practice (Hannon and Chaplin, 2001) recommended that:

A self-development framework for incubator managers ... should be established, particularly for newer managers entering the industry. Use of the framework as part of managers' continuing professional development should become part of the responsibility of any incubator board ... the framework could be developed to match the different competence and development needs managers across all stages of incubator and firm development and within different incubator environments.

Furthermore, the EC Enterprise Directorate commissioned study (CSES, 2002) re-iterated that:

There is a need to "professionalise" the occupation of business incubator management ... the quality of the management team is a key to successful incubator activities. At present there is no recognised professional qualification or standard in this field ...

Although the evidence presented supports an emerging need for management and leadership development across the industry, the above reports offer no conceptual insight for informing a development framework for incubation managers and leaders. The following section begins to provide a conceptual context to the development of a framework prior to exploring incubation process models that can underpin the framework's creation.

### Developing a conceptual frame for practitioner development

“Incubation” is used here to mean the business development processes applied to enhance and accelerate the pre-start, launch and early start and growth phases of a new venture opportunity and may involve the development and/or growth of an existing technology, product or process. In its implementation incubation policy and practice is primarily focused on developing an effective supportive environment in which “market-led ideas, and new ventures can be developed and are given the chance to fulfil their potential by providing access to opportunities, a wide range of development resources and tailored support services” (Hannon, 2003).

There is a wide group of individuals working in the public and private sectors that are likely to be engaged in incubation this type of activity and could include, for example:

- incubator and incubation practitioners, board members, funders and sponsors;
- new venture project managers;
- technology transfer officers and agents;
- knowledge transfer managers;
- business support organisations;
- venture funders and fund managers;
- public sector managers or organisers of incubation projects at local and regional levels;
- others engaged in related fields such as economic regeneration and social enterprise; and
- those working with specific sections of the local community such as, inter alia, youth, women, ethnic minorities and deprived or disadvantaged localities.

The individual needs of each user will vary depending upon the “configuration of many factors such as incubator context, personal and organisational aspirations, individuals’ experience base and the local and regional market environment conditions” (Hannon, 2003). To provide flexibility to cater for this diversity, and to develop appropriate and relevant management capability, it is important in designing a learning framework for practitioner development to consider a “generic set of core components for supporting incubation, as well as context-specific sets of components relevant to particular users and/or purposes” (Hannon, 2003).

This article continues by reporting in summary the findings of the first two phases of a study commissioned by EMDA that were completed during 2002/2003 and directed by the author in association with research colleagues[2]. For a complementary report of the findings of the first phase of the study see Hannon (2003). This first phase was a review of known published work on incubation process models and frameworks. An overall conceptual framework for the study is then derived. This framework informed phase two of the study that proposed an indicative management development framework for incubation professionals and practitioners.

#### *A summary of incubation process models*

Reviews of published work on incubators have recently been completed, particularly in the UK (see Hannon and Chaplin, 2000), but also in other countries – USA, France, and

Australia. Although much has been written about incubators, much less has been written specifically on incubation, particularly in the context being adopted by this study. This is probably due to the term only recently having been applied in this particular context in the UK. Other materials on business start-ups and technology transfer abound. However, few of these articles provide a coherent conceptual framework or process model to underpin the processes involved in incubating an idea or opportunity and nurturing it to become a viable, sustainable market-led venture that is likely to achieve its growth potential. There are however, some identifiable common components that can be drawn from this review to begin to construct a generic incubation process model.

The presentation of the main literature review outcome is clustered around a number of key building blocks for creating a generic frame for incubation management development, and summarises the detailed review provided elsewhere (Hannon, 2003).

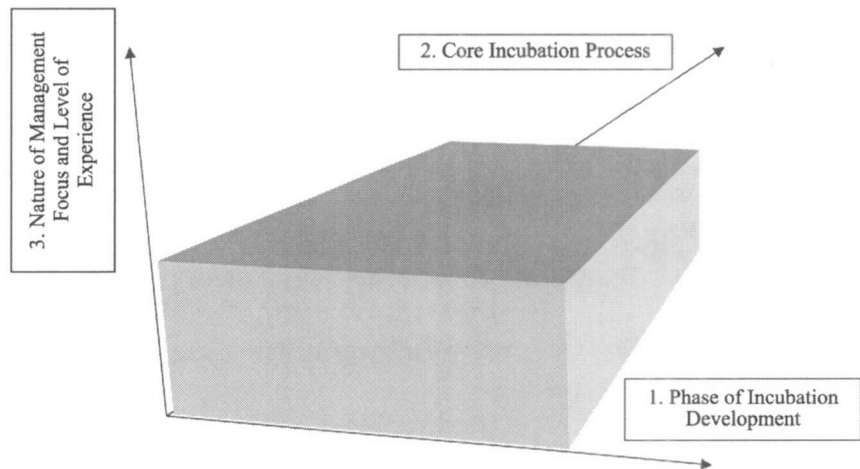
The three clusters are:

- (1) The phases of development of the incubation initiative.
- (2) The core processes involved in incubating ideas.
- (3) The nature of management focus and the level of management experience.

Figure 4 presents a three-dimensional representation of the incubation management development context. This generic frame recognises the nature of the management focus and level of management experience, in relation to both the phase of development of the incubation initiative and the core processes being implemented in the course of achieving desired incubation outcomes.

(1) *The phases of incubation development.* A common theme in the literature is the use of stage models of venture development that describe new venture development as a series of linked phases or stages through which the venture passes from its inception through to venture maturity. Models can range from three to 11 phases but all appear to involve some common patterns. Selected models are highlighted below (see Hannon, 2003).

Research of technological development in the context of new enterprises suggests ventures move through five stages from “embryo” to “nurture” and “fledgling” into a “maturing” phase and then consolidating as a “business” (Bolton, 1996). A more



**Figure 4.**  
A generic frame for  
incubation management  
development



comprehensive approach, in borrowing from the biological sciences, suggests a detailed process-oriented model of growth (Cardozo *et al.*, 1995), as presented in Table I.

UKBI has undertaken a project to develop a national best practice framework for the benchmarking of incubators in the UK (UK Business Incubation, 2003). In an initial focus group for the project, incubation experts suggested that there were three different stages of incubation:

- (1) Pre-incubator stage: ideas and teams were nurtured.
- (2) Incubator stage: once there is a business plan prepared.
- (3) Post-incubator stage: when enterprises move out to “grow-on” space.

Table II identifies many more stages/phases models of firm or product/market development, such as the well-known Greiner (1972) and Churchill and Lewis (1983) models.

Conception and gestation	The process begins with a business concept or vision
Assembling	Resources are needed to turn the vision into reality
Reaching, exploring and attaching	Finding appropriate niches in order to attach itself – these may be defined in terms of products/services and markets and may involve iterative trial-and-error or experimentation
Expansion	Once attached, it expands (from the first sale)
Replications	Sales made to similar customers that require no change in product or marketing
Replicating with modification	Departing from original customers and products or services
Variotyping and proliferating	Adding new customer segments, product lines, models
Differentiating	Specialisation with the firm rather than the marketplace
Identification	Reaching out to new prospective acquisition targets
Annexing	Some targets may be annexed to the growing firm
Absorbing	Some of these annexed targets may be absorbed by the growing firm

**Source:** Cardozo *et al.* (1995)

**Table I.**  
A “biological” model of  
venture growth

Model type	Main authors
Life cycle (birth to death; metamorphosis; s-curve)	Starbuck (1971); Buchele (1967)
Stages (phases; developmental; abrupt)	Steinmetz (1969); Lievegoed (1973); Flamholtz (1986); Hosmer <i>et al.</i> (1977); Churchill and Lewis (1983); Kazanjian (1988); Scott and Bruce (1987); Quinn and Cameron (1983); Dodge and Robbins (1992)
Evolutionary (crises)	Greiner (1972)
Transition (organisational change)	Chandler (1977)

**Table II.**  
A typology of models

(2) *Core incubation processes.* Hannon (2003) states that:

The incubation process can support the specific processes of business development, from the formulation of an idea, to the recognition of its potential in a commercial sense, planning and preparation of a business plan, entry into the market place, and development of the business to the point where it is self-sustaining.

Some models from the literature are noted here. See, for example the key steps relevant to an incubation process in the business development model presented by Carter and Jones-Evans (2000). The process begins with idea formulation and opportunity recognition prior to pre-start planning, preparation for launch and finally post entry development.

Similarly, Balan (2002), in presenting a network system to support innovation commercialisation, provides a process model that emphasises “opportunity positioning”; “strategy building and business modelling”; and “action planning” to realise new venture potential. The project, named Harmony, provides practitioners with a framework and tools to support decision taking as well as informing professional development needs.

The report by the Gatsby Foundation of technology transfer between universities and industry presents a comprehensive flowchart that identifies the key tasks in the process (Gatsby Charitable Foundation, 1998). This model implies that practitioners dealing with the commercialisation of ideas will need to have capability across a range of core process areas, such as: IPR protection (e.g. patenting), prototyping activities; market research; product development; company formation; business plan writing; licensing and royalty agreements.

UK Business Incubation (2003), in the early development of their draft benchmarking framework for incubation, suggests that the core processes of incubation include:

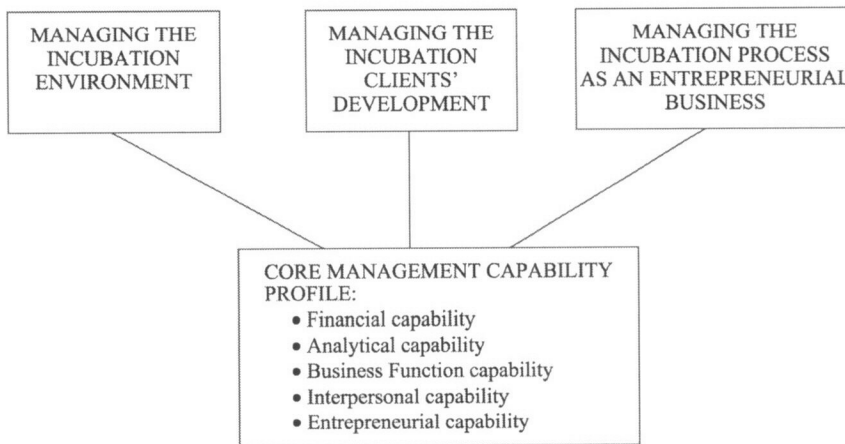
- selection: the right ideas/proposals and people;
- clarity of purpose: the right strategy implemented by a skilled incubation team
- building the community: creating the right environment, culture, networks; and
- exit: preparing the clients for an independent, self-sustainable future.

It is evident then that although there is no single process model applied to incubation there are common patterns of components that can be drawn together to build a base generic framework of incubation processes.

(3) *The nature of management focus and the level of management experience.* In considering the management of the incubation process, few examples were available in the existing literature. Hannon’s early study of the management of enterprise centres and workspaces suggested three key management functions and is presented as Figure 5 (adapted from the author’s original work (Hannon, 1993) and previously published elsewhere (see Hannon, 2003).

Similarly, Rice and Matthews (1995) in their US study suggested three principles of successful business incubation:

- (1) Focus the energy and resources of the incubator on developing companies.
- (2) Manage the incubator as a business, i.e. minimise the resources spent on “overhead” and develop a self-sustainable, efficient business operation.
- (3) Develop a sophisticated array of services and programmes that can be targeted to companies, depending on their needs and stage of development.



**Figure 5.**  
The nature of  
management focus

The UKBI focus group mentioned above suggested four core functions:

- (1) Managing the incubator as a business.
- (2) Managing the incubation process (i.e. assisting clients).
- (3) Managing the incubator “environment”.
- (4) Managing the people and skills necessary to deliver business incubation.

Any references of management experience in the literature emphasise the need for effective and high quality management but there is little research of the impact on incubation clients’ performance of varying levels of management experience in incubation processes and practices. Until recently “only Hannon in the UK had explored and published research on the development of a management framework adaptable across all levels of management experience” (Hannon, 2003). The application of Hannon’s framework, presented as Figure 5, provides opportunities for considering aspects of incubation management development, in identifying capability building, a benchmark for management performance assessment, and a framework for continuing professional development.

### **Summarising the initial conclusions to framing incubation practitioners’ management development needs**

A number of points can be summarised here:

- (1) It is recognised that there are a small number of key “core principles” underpinning generic incubation. They can be articulated as, inter alia: managing the entry and exit processes; business nurturing; validating and exploiting the venture opportunity; creating the environment; networking; and building the management team.
- (2) The key components of a generic business incubation model can be derived from existing frameworks.
- (3) There are a number of context-specific factors that need to be accounted for that will significantly impact on likely support need. These particularly relate to the scale, scope and type of venture being incubated.

- (4) There are likely to be a number of generic management capabilities that should be developed for effectively managing and leading an incubation process within an entrepreneurial environment.
- (5) Around such a generic core incubation process model will need to be built further development layers relating to the:
  - micro-management of the process model at a client case level;
  - management of an incubation support service through an organisation; and
  - management of the embedding of an incubation service within a wider environmental context at a local and/or regional level

Additionally, and with reference to the introductory discussion, consideration of the purpose of the incubation model is crucial. For instance, what is the profit orientation of the incubation programme? Is it high or low? What is the programme's development orientation? Is it business or social development, accelerated commercialisation of knowledge research or technology, or in the case of some incubators, real-estate development? Is the purpose of the incubation programme to provide an "artificial" environment for the venture "embryos" which are supported through expert advice and close monitoring? Or is the purpose to provide a space where germination and/or incubation takes place under "natural" conditions and the fittest ventures survive and grow (see Hannon (2004) for a more detailed discussion)? Is the purpose to affect entrepreneurial cultures in organisations or communities or provide socio-economic opportunities for specific target groups?

Such factors will affect management and leadership development needs. Approaches, styles, interventions, client expectations and management capabilities will vary according to the overall purpose and context specifications. For example, the potential for conflict between incubation policy and practice exists as the realities of managing and producing profitable incubation projects can draw the focus away from venture incubation goals toward decisions and actions more likely to lead to maximising and/or securing cash and profit outputs.

The following section discusses the principles and approach adopted for the design of four indicative management and leadership development programmes in the East Midlands region of the UK for incubation professionals, as part of the study commissioned by EMDA and discussed above.

### **Designing incubation management learning and development programmes**

In designing a programme that meets the management and leadership development needs of a diverse range of incubation professionals and practitioners across a number of incubation contexts and levels of management experience, there is significant potential for a comprehensive portfolio of learning opportunities. Some opportunities could be regarded as core or generic and others as contextually specific.

An underlying principle of this paper:

Has been an orientation towards those ventures more likely to be at an early "pre-start" and "start" stage of development, and with a focus on processes of incubation and not incubator development, although it is recognised that such incubation support may be located within an incubator (Hannon, 2003).

From this perspective a range of incubation management learning programme options focusing on different learner types and educational purposes are conceptualised. Four initial groups of learners are identified, but others can clearly be added. The four are:

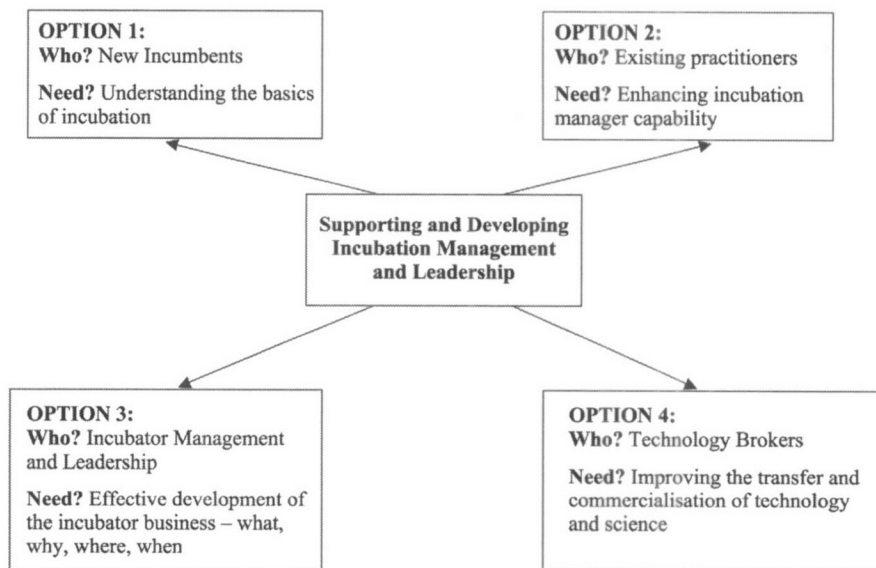
- (1) *New incumbents*: these learners are new to incubation and/or the context within which it operates. They need to understand the processes of incubation and its key components and be exposed to good/best practice to gain insights into how incubation works in practice. This programme is positioned at an introductory level.
- (2) *Incubation practitioners*: this group comprises those organisations and individuals already engaged in incubation in some form and across a range of contexts. Their experience levels still vary from individual to individual. The aim of this programme is to develop highly effective incubation project managers and/or directors from a best practice perspective. The emphasis is therefore on personal development. This programme could operate at both “intermediate” and “expert” levels.
- (3) *Incubator management and leadership*: this group of learners is a sub-set of the above group but specifically focuses on those who are responsible for incubator management from a policy perspective at board/director/sponsor/funder levels. This programme is strategic in nature and essentially focuses on the development of an incubation “business”. The programme operates at different levels of expertise (e.g. introductory, intermediate, expert).
- (4) *Technology brokers”/specialist practitioners*: this group consists of those individuals who are engaged in the processes of brokering and/or supporting the transfer of emerging and existing technologies/science/research from application concepts and ideas to viable market deliverables through technology venturing approaches. This role forms part of the function of any of the other three groups listed above but is context-specific and merits particular attention. A programme needs to take a pragmatic approach and aim towards preparation for commercialisation. Individuals are from public or private sector organisations, employed within incubator/incubation projects or independent operators.

The four groups proposed provide a framework that can form the foundation for the development of four outline incubation management and leadership development programme options. These are outlined below. Figure 6 summarises the overall framework and Table III provides outline syllabus descriptions.

Such a design approach creates substantial flexibility to work across a range of learner interests and enables the programme delivery to focus on a number of context-specific options, e.g. social/community oriented new ventures; general new venture creation opportunities; creative industries etc.

The decision of appropriateness of delivery mode is driven by a number of variables:

- the need for and styles of assessment;
- the personal learning preferences of the individual;
- the skills, preferences and resource base of the deliverer; and
- the organisational/institutional need for the programme of development.



**Figure 6.** Indicative incubation management and leadership development programme options

A number of assumptions have underpinned the approach

- The emphasis for the development of the incubation learning materials would primarily focus on the management of the incubation process, i.e. the target learners will be those individuals who provide, or work for organisations that provide a support service to incubation clients, however defined.
- The study recognises that incubation can take place in a variety of physical and virtual contexts. Any proposed syllabus therefore needs to include components relating not only to specific incubator development and/or management factors, i.e. real estate management, but also other modes and forms of incubation.
- A generic set of components will form a core base on top of which a range of context-specific components can be added. The approach to the design and development of the syllabus and subsequent materials emphasises the importance of individual learning, and hence is developmental in nature rather than acting as surrogate sources of knowledge and expertise.

Beyond the design of a core generic framework there is an immense scope for further enhancement by providing additional learning and development components that tailor the overall syllabus for a more specific audience.

In progressing the development of an educational programme beyond a conceptual model and towards a practical, deliverable set of learning experiences a learner-centred approach would be appropriate and the design needs to emphasise the existing experiences of the learner as a starting point for offering an effective value-adding learning opportunity. In this sense the programme becomes developmental in nature and not solely about the dissemination of knowledge or information.

	Option 1	Option 2	Option 3	Option 4
Indicative title	Understanding incubation	Effective incubation management and leadership	Effective incubator policy development	Supporting technology venturing
Target learner	New incumbents to the incubation industry	Existing incubation practitioners and providers	Incubator management, leaders and supporters	“Technology brokers” working with technologists, scientists, researchers
Overall purpose	Introductory: to raise awareness and understanding of incubation processes and practices	Personal development: to provide opportunities for enhancing personal capabilities, knowledge and understanding	Business development: to increase the effectiveness and growth of incubators through strategic level policy	Business and management development: to enhance the capabilities, knowledge and understanding of the founding team and to increase the capacity for finding and exploiting viable market-driven opportunities through venturing
Indicative content	The world of incubation – who, where, what, how Understanding the processes of incubation – key components and best practice Embedding incubation projects within the locality Creating an environment for effective incubation Key stages of venture incubation – changing client needs and support Understanding and supporting the venture team Resourcing incubation – finance, people, networks, expertise	The world of incubation management and leadership Managing and leading incubation processes for accelerating new venture creation and growth Profiling the effective incubation manager and leader Learning from best practice Assessing management performance and impact Self-assessment diagnostic tool to identify personal strengths and weaknesses Development of personal action learning plans Management and leadership coaching and mentoring support	The world of incubators and incubation Incubator and incubation process models – best practice Policies and strategies for growing the incubator business Entrepreneurial incubator management and leadership – best practice Understanding the incubator market – segmentation and differentiation Embedding within regional and local infrastructures and policies Creating a successful and sustainable incubator business	The world of business and technology venturing Understanding research and technology supply pipelines, e.g. biotechnology applications From ideas and concepts to market – understanding the processes of product/process commercialisation and technology/knowledge transfer Finding and validating opportunities Testing the science/technology Understanding and accessing the VC market Deal making Building venture team capability and capacity Ownership, protection and compliance Planning and organising for success Preparing for market launch Preparing for technology venture growth

**Table III.**  
Four indicative syllabi options

Awareness of the variations in the overall purpose of the different programmes is crucial. Option 1 aims to give learners a grounding in the processes and practices of incubation as a starting point and assumes no or very little prior experience. The emphasis here is not to build skills but to increase knowledge, understanding and awareness. Modes of delivery could include seminars and presentations, workshops and exposure to best practice through guest inputs and visits. Supporting materials as cases and exemplars as well as workshop handouts and related reports would act as important reference materials for future use.

Options 2 and 3, however, aim to be developmental in nature and hence would need to provide opportunities for enhancing capabilities and for applying new knowledge. This need for practice and concept would require the embedding of a learning process within the programme, i.e. that the individual would be provided with the opportunity to reflect upon and diagnose existing experience (own and others), identify opportunities for change and the implementation of actions within their own context. The outcomes of these actions become the basis for further learning and development. Such an action-oriented approach is likely to meet the learning preferences of practitioners. The importance of mentoring and coaching may be highly relevant to support learning. The use of workshops and project-based challenges are likely to be appropriate.

Option 4 is also developmental in nature and focuses upon increasing the capability of individuals to effectively manage a key process (venturing) within a specific context (technology). Offering a "live" technology-transfer project opportunity to the learner will provide a meaningful learning experience from which enhanced knowledge, skills and understanding can be developed.

Other learners (particularly with option 3) may be interested in developing their knowledge base and conceptual understanding rather than enhancing their practical skills. In this sense the challenge for the learner becomes more cognitive in nature and may be best addressed through case study work and through exposure to strong peer group networks. New thinking can be stimulated through exposure to known and respected "experts" from the field.

A further underlying principle is to provide a design that would lend itself to some form of accreditation opportunity for the learners. It is therefore important to recognise how individual learning is likely to be assessed for accreditation purposes. All completing participants can be "awarded" a certificate of attendance but to provide any form of career enhancement through nationally recognised vocational and academic qualifications will require each individual to demonstrate their learning achievements. The modes of assessing such achievements will need to relate appropriately to the learning preferences and constraints of individuals, and be grounded in agreed, recognised and acceptable benchmarks.

### **Implications**

This paper has summarised an approach to exploring the management and leadership development needs of the incubation community in the UK through a project commissioned by EMDA, which has resulted in the development of an underpinning conceptual framework for incubation management and leadership capability building. The approach has been applied across a number of identified and specific incubation learner types. The study has further presented four outline indicative management and



leadership development programme options. These are important for the further development of the incubation community and the overall strength and credibility of the industry as a whole.

The adoption of an incubation stages framework will also assist in clarifying the stage at which an incubation programme is operating. Is it a germinator or a hatchery, aiming to create new life? Is it an incubator or a hothouse, aiming to nurture and grow new life? Or is it a grow-on facility or cold frame, aiming to strengthen young ventures in preparation for sustaining an unsupported growth rate? A further exploration of incubation environment descriptors is published elsewhere (Hannon, 2004).

The importance of building the management and leadership capability of key individuals across the community of practice within the incubation industry is recognised as paramount at international, national, regional and local levels. The current training offering in the UK provides relevant information and some exchange of experiences and practice but not in any developmental way that leads to changed behaviour, i.e. embedded learning. As is already recognised by professional and academic educators such deeper learning takes time and requires continued support as would be expected from other typical management development programmes that have this outcome as an aim for learners.

The UK incubation community now recognises the management and leadership need of the sector and the market opportunity that is emerging, although at this early stage of development the sophistication of educational need is low, mainly focusing upon individual skills training. However, it is likely that continuing professional development needs across the sector will remain strong and grow for many managers and leaders, whatever their specific context.

The EMDA has already taken a lead in the UK by commissioning the development and piloting of learning programmes for incumbents new to incubation, as detailed in this paper. Further development programmes aimed at existing incubator managers and boards are being developed. The creation of the UK's first university certificate in continuing professional development for incubation managers and leaders is being explored. The development of an international executive management and leadership programme with European partners is also being piloted through the EU's Gate2Growth initiative with programmes in the UK, Holland and Sweden. Other training and development activities are being carried forward.

This paper has explored this need and has demonstrated the importance of enhancing the significant human capital invested in incubation projects. Incubation is a people business and its future success will heavily depend on building their capability, both as users and as providers and as industry leaders. The frameworks and proposals presented in this paper aim to provide a platform upon which such management and leadership development can take place in the UK, and beyond.

#### Notes

1. An earlier version of this paper (*Education + Training*, Vol. 45 No. 8/9, pp. 449-460) provides a complementary review of the relevant literature, some of which is summarised here for coherence and clarity.
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