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**PRACTICAL EXPERIENCE AND DIFFERENT APPROACHES IN MENTORING
AND COACHING INNOVATION**

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ABSTRACT

This paper begins with a short introduction of Iceland and its economic environment. The main contents involve a discussion on the results of two studies, one concerning science parks in the Øresund area, and the other concerning internal surveys and research conducted at the IceTec Incubation Centre. In addition, I examine the experience of IceTec in operating support programs for entrepreneurs and SMEs in the field of innovation. Within this context, I draw attention to several areas where improvements should be made in order to increase added value of the programs.

INTRODUCTION

Although Iceland is usually thought of as being a distant destination, in fact it is only about a three-hour's flight from England and Continental Europe. The flight from New York City to Iceland takes about the same amount of time as flying from the east coast to the west in the United States.

Iceland is unique in many ways: it is a large island (103,000 sq. km), about the same size as Ireland, but is sparsely populated with only about 3 people per km². The language is Icelandic, the original Norse language, but with some Celtic influence. The climate is relatively mild as it is warmed by the Gulf Stream; the average temperature in July is 10-11°C, while the average temperature in January is 0°C, about the same as in New York City. The capital, Reykjavík, is the country's largest city, and the world's most northerly capital. Its population is about 108,000, while the population of Greater Reykjavík is about 170,000.

Iceland's economy is largely based on renewable natural resources, the most of important being the fishing stocks, hydro-electric and thermal power, and the grasslands which support livestock. In recent years significant growth has been occurring in areas of high-tech equipment and machinery, in the software industry, biotechnology, information technology and power-intensive industries. Because of the country's small population, large companies have considerable impact on their sectors. For example in the area of biotechnology, the establishment of one company, DeCode, produced significant spin-offs. Most Icelandic companies, however, would be categorised as small- or medium-sized.

A major factor that has influenced Iceland's prosperity in recent years is the free flow of capital and the maturing stock market. Other factors that have had an impact are expanding educational opportunities both at home and abroad, and increasing emphasis by the government on research and development through the National Research Council.

CONTENT

IceTec (The Technical Institute of Iceland) is a cooperative partner in the World Economic Forum that is ministered by Michael Porter at Howard University in the United States. According to findings by the World Economic Forum, Iceland is in 11th place of 80 countries in the Growth Competitiveness Index. This is a rise of 4 places. Iceland is in 2nd place in information and communication technology, and in 3rd place regarding public administration. However, we are in 21st place in regards to innovation, and in 24th place in overall economic environment. Part of the Growth Competitiveness Index is the index for technology. Here we are in 16th place. Iceland's strong position in this index is largely due to the country's expanding use of technology and the Internet.

Today, Iceland spends a relatively high proportion of its GNP on research and development, when compared to other Western nations. IceTec has participated in this development, and is an important force in this growing trend. For example, when restructuring the law pertaining to the Research Council of Iceland, IceTec was given an important role in servicing technical development of Icelandic SMEs, and fostering entrepreneurship in general. Today, IceTec runs a research and development operation in the fields of biotechnology, food, chemistry, fish farming, material technology and environmental technology. It also runs one of the largest labs in Iceland, the Centre of Innovation (IMPRA), which supports SMEs and entrepreneurs both financially and professionally.

In the context of this paper, I will emphasise the IMPRA, its support programs for entrepreneurs and small- and medium-sized industries, as well as its Incubation Centre¹, which has been operating since 1999. The support programs vary in emphasis, but the common thread of them all is their support both companies and entrepreneurs in respect to knowledge and finance. The longest-running program is the Product Development Scheme, which has been operating since 1989. Quite a lot of IceTec's experience in support programs and serving entrepreneurs is derived from that program. Other programs include Smart Programs, which promote the competition of innovative ideas, Entrepreneur Support, which supports entrepreneurs in developing business plans, patent searches, developing prototypes and developing products for market entry.

IceTec also runs programs specifically for women, and is a cooperative partner in promoting entrepreneurship for young people. One of IceTec's Centre of Innovation services is counselling for the start-up, management and growth of companies. The centre does not sell consultancy as such, but instead works with private consulting organisations.

As has been mentioned, IceTec operates an Incubation Centre, which is becoming an increasingly larger part of IceTec's overall operation. Today, IceTec is able to service 12 companies in the incubator simultaneously, and over 20 companies have been serviced since 1999. While the University of Iceland has been running an incubator for a number of years, IceTec's incubator program places greater emphasis on fostering the individual company and supporting it all the way from idea to market. Iceland does not have a Science Park, but the University of Iceland, in cooperation with other parties, have proposed building one on the University's campus.

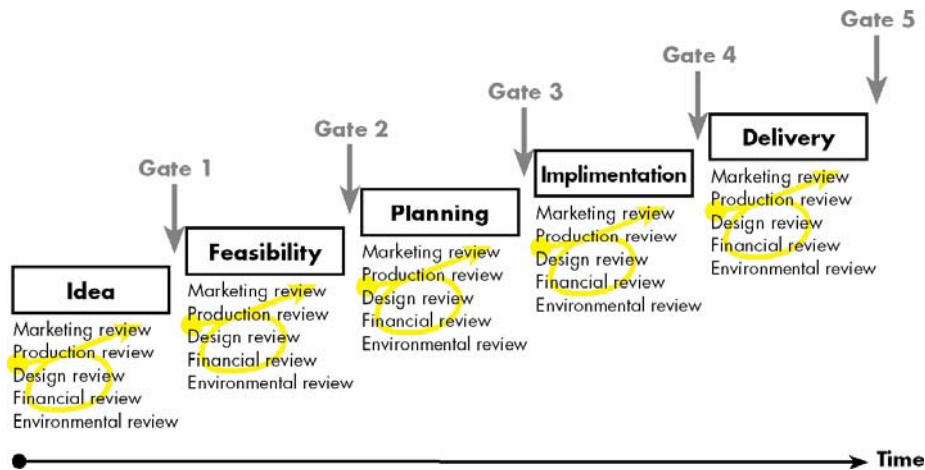
In our experience at IceTec, there are three considerations to keep in mind when formulating a support program in the field of innovation. These three factors are the following: 1) employees, knowledge and capabilities; 2) company culture; 3) the company's organisation. A program needs to be tailor-made, incorporating these three considerations, while focusing on goals to be attained and the type of company involved. Our research has shown that these factors are critical when developing the proper course of action for each individual company.

Over the years, our emphasis in support-group programs has developed from specific or technical consultancy to what we call "process consultants." This means that we have developed our services so that we interact closely with our clients and their operations, utilising an "umbrella approach" in regard to knowledge and professionalism.

We have also developed procedures to assist companies in bringing products to market, from a linear model of innovation to one of the interactive innovation models. In an interactive model, we build on knowledge from marketing, production, financing, designing and environments.

IceTec Interactive Innovation Process

¹ Business Incubation in accordance with the definition of NBIA.



Part of our activities at our incubators involves conducting frequent surveys on managerial and developmental needs of the tenants. This year, we conducted a comparative study, benchmarking our results with results from a study from last year that was done among selected Science Parks in the Øresund area² (The following parks participated in the study: The CAY Science Park, Risø, Roskilde and Lyngby (Denmark); The Danish Science Park, Hørsholm (Denmark); The Ideon Science Park, Lund (Sweden). This study also reviewed the idea of setting up a science park in Iceland.

In the Øresund science park study, hypotheses were put forward in several areas. Some of the hypotheses involved questions on how tenants interact with the university or research institutions, as well as with other parties. According to both studies, tenants do not seem to interact intensively with universities or other research institutes. This is supported by our own study. This also applies to tenants, who do not seem to interact intensively with the incubators and the science park.

In the Øresund study, it appeared that only about 17% of respondents interacted in a moderate level with the supporting function of the science park. About 60% of respondents do not interact at all with the science park. In the IceTec incubator there was relatively more involvement between the tenants and incubator management. However, when questioning whether tenants would like to have more support from the incubator, they responded positively, stating that much more professional support would be desirable

The IceTec study showed that tenants would like the manager of the incubator to promote professional interaction between the tenants and other companies in their fields of operations. The study also demonstrated the importance of social interaction. It seems that the incubator is handling this aspect reasonably well, however there is a high demand for more interaction in this area, so it appears to be a very important factor.

The tenants tend to be relatively self-sufficient in product development and technology. The areas where they feel they are lacking are in marketing, financial management and personnel matters. In their opinion, there are two specific areas that are the prerequisites for success: experienced project management and access to experiences of professionals (mentoring). IceTec has been working on developing a mentorship program, and will be placing great emphasis on this in its future incubator activities.

² Emilsson, Emil and Gunnarsson, Sigurður Örn. A Science Park in Iceland!: A Knight in Shining Armour or Just Another Hype. Copenhagen Business School, 2002.

In both of the above-mentioned studies, tenants were asked what benefits their participation in the science park would have for their companies. In the Øresund study, two benefits were most often mentioned, which is in accordance with some other studies: enhancing the company image, and access to R&D expertise. The IceTec study differed from these results, which could be explained by the different roles of the science parks and the incubator. The most frequently mentioned benefit was savings on those services provided by the incubator, followed by inexpensive access to professional services.

The benefits considered least important were access to research and development knowledge, and more professional services. When the tenants were asked whether they would recommend the incubator to other entrepreneurs, they all replied yes.

The general experience of IceTec, supported by several surveys, is that entrepreneurs and small and medium sized companies require more support than program managers expected. When asked whether paperwork or formality of the programs weighed too heavily, they responded negatively, stating that they would be prepared for more intensive procedures. IceTec has good experience of hands-on management in innovation programs, as long as the participants are well qualified and have the capacity to follow through on the program in a professional manner. This coincides with what has been mentioned before: that project management and experienced mentoring are the two most important factors in the innovation program.

Bearing in mind the results from the two aforementioned studies, as well as other literature, one begins to consider the role of the science park and incubators in relation to innovative activity in society. Of course, according to the ISAP Official Definition of science parks, and the definition of business incubators, we are discussing two different things, although they have similar goals and objectives, i.e. fostering innovation. The question remains: what kind of added value do these programs provide? If the tenants of the science park are primarily involved in the park for reasons of image, then we are probably creating hype, which could crash as did the “dot coms” in the late 1990s. At the same time, if the incubator tenants participate in these programs primarily to save internal costs, it is reasonable to question whether such programs should continue in their present form. These thoughts regarding the results inevitable put pressure on program managers to rethink their methodologies in order to improve results.

I feel that further research is required in these fields in order to increase our knowledge of these programs. This should also involve a comparative study of similar companies not involved in such programs.

The criteria for a successful innovation program involves tailoring it to the requirements of the specific company, simplicity of operation and the generation of required results. The strategy of a company is a fundamental aspect when analysing and reviewing their needs and the solutions required. In this respect, IceTec uses foresight activities and benchmarking to determine the right methodology. It uses the product development procedure (shown in picture 2) when helping companies with their innovation.

One of the most important aspects of innovation is the interaction between people exchanging views. In this, IceTec has formulated a tool to assist companies that involves significant interaction among company employees, yet also has the focus of developing a strategy of social responsibility for the company. We call this a company’s Communal Policy. The tool relies on best-practice methodologies used in business management today, utilising the knowledge base of employees while harmonising diverse views and attitudes prevalent in the workplace.

The Communal Policy tool is extremely important in promoting discussion among and between employees and managerial staff of the company as a source of ideas and innovation. It encourages intensive interaction, which is the basis for creative thought. Many other tools are used in a similar manner, but by discussing Communal Policy I am drawing attention to a new tool in the business consultant arsenal.

CONCLUSION

The concept of science parks and incubators is relatively young in the research and development arena in Iceland. I would like to see more research in this field, especially comparative research, i.e. companies within such programs in relation to companies outside. This is necessary in order to get a well-rounded picture of the effectiveness of such programs. Such knowledge is crucial to formulating improvements. I feel the need to emphasise the importance of forming tailor-made activities within the science parks and incubators that are of added value to the research and development programs of individual tenants. It has been shown that well-developed mentoring programs and experienced project management is of great benefit. Professional and social interaction is necessary. However, one needs to exchange “best practices”: how tenants interact with the academic knowledge centres, as well as how they bridge the gap between their companies and the consumer.

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