

# Entrepreneurship in the Netherlands

*Innovative entrepreneurship.  
New policy challenges!*



Ministry of Economic Affairs



**EIM**

Business & Policy Research

# **Entrepreneurship in the Netherlands**

*Innovative entrepreneurship.  
New policy challenges!*

# Colophon

This publication forms a part of a series relating to entrepreneurship and small businesses.

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Mailing address: P.O. Box 7001  
2701 AA Zoetermeer  
Telephone: +31 (0)79 341 36 34  
Fascimile: +31 (0)79 341 50 24  
Internet: [www.eim.nl/mkb-en-ondernemerschap](http://www.eim.nl/mkb-en-ondernemerschap)  
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## Preface

Encouraging entrepreneurship will be high on the list of priorities of the Ministry of Economic Affairs over the coming years. This is a logical aspiration, given that entrepreneurship is one of the engines that drives a dynamic and innovative economy. Entrepreneurs are always devising new products or opening up new markets, and this adds to the innovative capacity of the economy. Moreover, these entrepreneurs also stimulate existing businesses to operate more efficiently. All sectors of the economy therefore reinforce each other, and this in turn has a positive knock-on effect on productivity, growth and employment.

The Ministry of Economic Affairs is therefore fully committed to pursuing an effective policy on entrepreneurship. In 1999, I issued a policy document on the government's entrepreneurship policy entitled 'De Ondernemende Samenleving' [The Entrepreneurial Society]. This sets out a broad package of policy measures. The interim progress report on this policy, which was presented to parliament at the end of 2001, concluded that the quality of entrepreneurship in the Netherlands has improved in recent years. And that the removal of obstacles and the creation of more opportunities for entrepreneurship has led to an increase in the number of start-up firms to nearly 55,000!

However, this is no time to rest on our laurels, since there are still many challenges before us. In particular, we are lagging behind enterprise economies like the United States and the United Kingdom in areas such as innovative entrepreneurship. And despite the fact that the percentage of high growth companies has risen from 6 to 10 per cent, this is still far below the figures attained by the US and UK. And finally, our level of company dynamics, that is, the rate of company start-ups and failures in the so-called growth sectors, is also lagging behind these countries.

We are therefore by no means home and dry, and need to continue to give extra attention to this area. As a result, we have decided to devote this fifth edition of Entrepreneurship in the Netherlands entirely to the role of entrepreneurship in the innovation process. We also invited two highly respected foreign guest writers, professor Stevenson and professor Storey, to situate Dutch policy on entrepreneurship in an international context. You can read about this in Chapters 3 and 4.

Naturally enough, you will also find contributions outlining the challenges that still face us, such as the comparatively low innovative capacity of our economy, which must be lifted to a higher level through innovative entrepreneurship.

As you will see, the size of this volume is by no means directly proportional to the weight that needs to be given to the subject. But that is no problem, since if you find you have finished it too quickly, you can simply start again. I hope you will enjoy reading it.

Gerrit Ybema  
State Secretary for Economic Affairs





## *Introduction by the editors*

In the last decade, academics, policy makers and politicians all over Europe have been devoting a great deal of attention to entrepreneurship. New enterprises are not only an important contributor to job creation but they also help to create a more innovative economy that can adapt better to changing circumstances.

Also in the Netherlands, entrepreneurship is considered to be of vital importance to the development of economic growth and employment. For this reason, the Netherlands Ministry of Economic Affairs and EIM Business & Policy Research have started in 1997 with the series "Entrepreneurship in the Netherlands". Each year, a special aspect of entrepreneurship is studied more in-depth, and from the start of this series, the following subjects have been studied:

1997: New firms: the key to competitiveness and growth;

1998: Ambitious entrepreneurs: the driving force for the next millennium;

1999: Opportunities and threats to nascent entrepreneurship;

2000: New Economy: new entrepreneurs!

Apart from the two initiators mentioned above, an expert is always asked to present his/her vision on the subject in the report. In the first four editions, the following experts contributed: Professor David Audretsch, Professor Bruce Kirchoff, Professor Paul Reynolds and Professor Elizabeth Garnsey.

This year's report deals with Entrepreneurship and Innovation. Innovation is considered to be the driving force behind a healthy and dynamic economy. The central issue in this report is whether entrepreneurship in general and innovative entrepreneurship specifically are stimulating innovation and how governments try to and can influence this process.

Since this is the fifth edition of the report, we have decided to ask two foreign experts to participate in the project: Professor Lois Stevenson of the International Council for Small Business and Wilford White Fellow and Professor David Storey of the University of Warwick. In the first chapter, prepared by Dr. Yvonne Prince of EIM Business & Policy Research, the subject of the report is introduced. Apart from qualitative and quantitative information on entrepreneurship in the Netherlands, attention is paid to the role of entrepreneurship in the economic development, and more in specific the role of entrepreneurship in the creation of an innovative economy. For this reason, the concepts of entrepreneurship and innovativeness are further elaborated in which innovativeness is considered much more than technological innovations only. This elaboration is followed by an analysis of on the one hand the contribution of entry and exit and growth of enterprises to a dynamic economy and on the other hand the contribution of technological start-ups, fast growing enterprises and technological spin-offs to an innovative economy.

In Chapter 2, prepared by drs. Pieter Waasdorp of the Ministry of Economic Affairs, Dutch entrepreneurship policy is discussed. The chapter starts with an explanation why according to the government entrepreneurship in general and more specific innovative entrepreneurship are important for the Dutch innovation system and consequently for the Dutch economy. This explanation is followed by an enumeration of the specific barriers to innovative entrepreneurship and the way in which the government deals with these barriers. Finally, an overview is given of the specific policy measures the Netherlands government has and is developing to stimulate innovative entrepreneurship. These measures are based on the policy paper "The Entrepreneurial Society", from which an update was sent to parliament at the end of 2001.



In the third chapter, Professor Lois Stevenson puts the Dutch policy in an international perspective. This comparison is based on a recent international study of entrepreneurship policy in ten countries. On the basis of this comparison, four typologies of entrepreneurship policies are distinguished: SME policy extension, new firm creation policy, niche entrepreneurship policy and holistic entrepreneurship policy. The Dutch policy is indicated as 'holistic entrepreneurship policy' and incorporates elements of the other types. This typology is followed by a description of measures taken by governments to stimulate innovative entrepreneurship. The chapter ends with an assessment of the specific measures the Netherlands government has undertaken to stimulate (innovative) entrepreneurship. Professor David Storey prepared the final chapter. On the basis of the knowledge detailed in the first three chapters, he gives his opinion on whether public policy can lead to more birth of enterprises in general and amongst underrepresented groups in specific, on whether birth of enterprises leads to job creation and to thirdly on the connexion between bankruptcy regulations and birth of enterprises. Finally, he pays attention to the motivation to have tailored policy measures for innovative entrepreneurship and the link between innovative entrepreneurship and the growth of enterprises.

Jacqueline Snijders and Astrid van der Laag  
February 2002

# 1 *An introduction to entrepreneurship and its role in dynamism and innovation*

Yvonne Prince

## 1.1 Introduction

During the last twenty years appreciation of entrepreneurship has increased considerably in Europe. In the Netherlands attention for entrepreneurship emerged strongly during the last decennium. This relates not only to the quantity of entrepreneurship but also to the quality of entrepreneurship. The birth rate of new start-ups has grown to about 7% per year, and the percentage of the working population that is entrepreneur rose to 10% in the year 2000.<sup>1</sup> The quality of entrepreneurship is more difficult to measure, nevertheless there was considerable policy attention for innovative entrepreneurship.

Not only policy makers but also economic researchers foster entrepreneurship. Entrepreneurship is considered to be a driving force for the dynamism and innovation in economies, leading to economic growth. As early as 1934 Schumpeter recognised the added value of entrepreneurship for society, in his concept of creative destruction.<sup>2</sup> The entrepreneur was seen as the creator of instability and creative destruction, by being the founder of a new enterprise or by being an innovator.

“Entrepreneurs are agents of change. Their ability to respond to new opportunities determines how well an economy performs.” (UNICE (1999), *Fostering entrepreneurship in Europe*; the UNICE Benchmarking Report 1999, Brussels, p.6).

The central question of this chapter is how does entrepreneurship contribute to a dynamic and innovative economy? Before starting to answer this question it is helpful to introduce a description of the concepts of entrepreneurship and innovativeness.

### *Description of entrepreneurship*

It is not easy to give a concise description of entrepreneurship. However, Wennekers, Thurik and Buis (1997, p. 5) developed the following concept: “Entrepreneurship is the ability and willingness of individuals, both on their own and within organisations, to:

1. perceive and create new economic opportunities (new products, new production methods, new organisational schemes and new product-market combinations);
2. introduce their ideas in the market, in the face of uncertainty and other obstacles, by making decisions on location, form and the use of resources and institutions;
3. compete with others for a share on that market.”<sup>3</sup>

In this definition entrepreneurship relates not only to owners of enterprises but also to individuals within organisations with creative ideas; a phenomenon that is often indicated as ‘intrapreneurship’. These ‘intrapreneurs’ often leave the parent enterprise to start their own enterprise when their ideas do not fit fully in the strategy and product line of the parent enterprise. Below we shall consider whether such spin-offs from parent enterprises appear to be innovative.

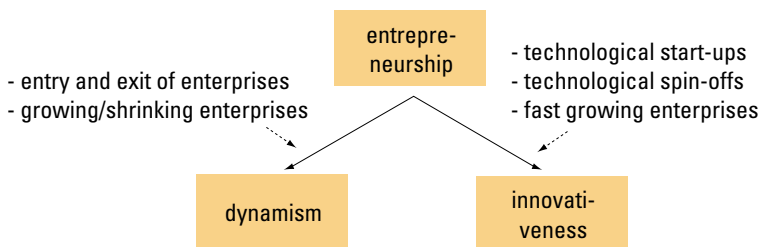
Furthermore it is remarkable that in the first part of the definition of entrepreneurship the link with innovativeness has already been made. Entrepreneurs are regarded as creators of new products, new production methods, new organisational schemes and new product-market combinations. This, however, is not so straightforward. Below we shall see whether they are really as innovative as supposed.

### *Different types of entrepreneurship*

Entrepreneurship covers several different types of entrepreneurs. The various types can be distinguished along the lines of two dimensions: that of the life cycle of an enterprise (nascent, (technological) start-up/spin-off, young enterprise, (fast) growing/shrinking enterprise, exit) and that of the characteristics of the entrepreneur him/herself (gender, part/fulltime, serial starter). For the purpose of this chapter, investigating the role of entrepreneurship in a dynamic and innovative economy, the first dimension seems to be the most relevant. However it is advisable not to forget the other dimension when paying attention to policy, since it might also reveal an interesting angle to look at stimulating dynamism and innovativeness.

In this chapter the contribution of entrepreneurship in the dynamism of an economy is investigated by considering start-ups and exits and the growing/shrinking enterprises. The contribution of entrepreneurship to innovation is investigated by considering three types of entrepreneurs that receive specific policy attention in the Netherlands because of their supposed contribution to the innovative economy: technological start-ups, technological spin-offs and fast growing enterprises. Figure 1 shows a schematic overview of the research framework.

*Figure 1 Schematic overview of the research framework*



### *Description of innovativeness*

Innovativeness of an enterprise is also difficult to describe. Innovativeness is a multidimensional concept that relates to innovations in different areas. It can best be described using two dimensions. First, it covers both technological and non-technological innovations, so that a change in the organisation structure, a new marketing tool or the education and training of personnel is also considered as innovativeness. Along the second dimension, innovativeness can be split up in innovation input, process and output. Input relates to all resources (money, machinery and people) that are involved. Innovations in the process concern the innovation strategy, co-operation, the automation of business processes, changes in the organisation

structure et cetera. Finally, all these inputs and activities lead to innovative outputs such as new or improved products, services and processes and the percentage of turnover that is accounted for by new products and services.

“If one were to pick a word that summarizes what entrepreneurs do, ‘innovation’ would fit the bill.” Peter Drucker summarizes it with the following words: “Entrepreneurs see change as the norm and as healthy. Usually they do not bring about the change themselves. But – and this defines entrepreneur and entrepreneurship – the entrepreneur always searches for change, responds to it, and exploits it as an opportunity” (White Paper, 2000, National Commission on Entrepreneurship, U.S., p.1).

### *Structure of this chapter*

In the next section a short introduction is given concerning the importance of entrepreneurship for the dynamism in the economy. Attention will be paid to the demography of enterprises in the Netherlands, by considering start-ups and exits of enterprises as well as the growth of incumbent enterprises. Dutch figures will, whenever possible, be placed in an international perspective to be able to assess the extent of dynamism in the Netherlands. After that, in section 3, the subject will be narrowed down: we shall focus on three types of entrepreneurs to whom specific policy attention is paid in the Netherlands. To judge whether this is desirable, we shall assess the contribution of technological start-ups, technological spin-offs and fast growing firms to an innovative economy. The chapter will end with a short conclusion (section 4).

## **1.2 Contribution of some types of entrepreneurship to a dynamic economy**

Before linking entrepreneurship and innovativeness together, this section will give the reader more insight into the contribution of entrepreneurship to the dynamism of the Dutch economy. In this section the demography of enterprises in the Netherlands, such as start-ups and exits of enterprises as well as the growth of incumbent enterprises, will be described. Dutch figures will, wherever possible, be placed in an international perspective.

### **1.2.1 Start-ups and exits**

#### *New firm formation*

In the period 1987-1999 the number of new firms in the Netherlands more than doubled to 66,000: 72% as a ‘real new’ start-up and 28% as a new subsidiary company.<sup>4</sup> In the period 1987-1999 the number of new subsidiaries grew more than the number of ‘real new’ start-ups: 4,900 to 18,600 new subsidiaries (280% growth) versus 27,700 to 47,700 ‘real new’ start-ups (72% growth). Most ‘real new’ start-ups in 1987-1999 were apparent in the commercial services sector. The construction sector, wholesale and retail trade also proved popular amongst starting entrepreneurs. As always, and hence also in this period, a relatively small number of persons started their own enterprise in the manufacturing industry. A growth of new subsidiaries was found in all sectors.

Since 1991 the birth rate of new firms (number of new firms as percentage of the total number of enterprises) in the Netherlands has fluctuated between 9 and 10%. Compared with other countries this is below the average. Only Belgium and Japan have a lower birth rate with 5-6%. Denmark, Germany and the United States score higher than the Netherlands but lower than the U.K. that has the highest birth rate (13%).<sup>5</sup>

Although the dynamism measured by new firm formation has been growing in the Netherlands, it appears that in international perspective there is still much to be gained. The Dutch policy attention for stimulating start-ups seemed to be fruitful because of the rise in the absolute number of start-ups, however the birth rate of new firms has not risen since 1991, so that intensification of the policy attention might be needed to further increase this birth rate.

#### *Firms exits*

The number of firm exits almost doubled in the period 1987-1999 to approximately 34,000. It seems that there is a strong relationship between firm entries and exits, also within sectors. One fourth of the exits of firms involved very young firms (younger than 2 years) and almost another one fourth consisted of firms that had been in the market for 2 to 4 years. The share of bankruptcies among the exiting firms was relatively low: during the nineties this share decreased to about 10% in 1999 and 5% in the first quarter of 2001.<sup>6</sup> Dutch entrepreneurs seem to be rather well prepared when starting their own business so that the chance of failure is relatively small.

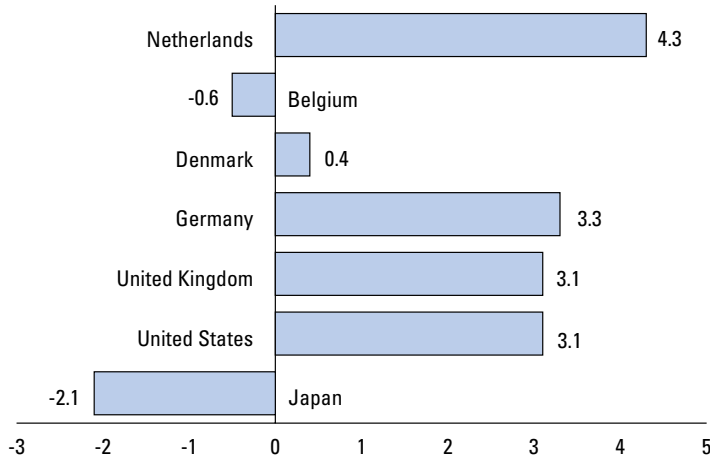
As has already been explained, in an international perspective the entry rate of firms in the Netherlands is not high. However, the exit rate also appears to be relatively low. In 1999, the exit rate in the Netherlands was only 6%, followed by Belgium with 7%. Japan and the United States show a rate of 7.5-8%. The exit rates are highest, i.e. about 10%, in countries like Denmark and the UK. The relatively low exit rate in the Netherlands is due to higher survival rates of enterprises compared to other countries, especially for new firms. Dutch starters have higher survival rates because of their relatively better preparation when starting their enterprise. Four years after the start of a firm, 60% survives, whereas this percentage is 44% in Denmark and 50% in the United States.<sup>7</sup>

All in all, it can be said that the dynamism, measured by entry and exit, in the Netherlands has increased but is still not on a high level compared with some other countries.

#### *Net number of firms*

The result of the entry and exit of firms is the net growth of the number of enterprises. Since the number of entrants is considerably higher than the number of exits, for example 66,000 entrants and 34,000 exits in 1999, the net growth of the number of enterprises in the Netherlands is high, for example 32,000 in 1999. In comparison with other countries, the net growth of the number of enterprises is largest in the Netherlands (see Figure 2). The net growth rate in the Netherlands is 4.3%.<sup>8</sup> The number of enterprises in Japan and Belgium is declining, and in Denmark this number is growing slowly. In the United States, United Kingdom and Germany, the number of enterprises is growing, but not as fast as in the Netherlands.

figure 2 Net growth rates of the number of enterprises, 1999, in percentages



Source: Ministerie van Economische Zaken (2001), *Ondernemerschapsmonitor zomer 2001 (Entrepreneurship Monitor Summer 2001)*, Den Haag.

### *Benefits and costs of start-ups*

Economists and policy makers argue that start-ups (and consequently exits) are good for the dynamism in the economy leading to economic growth. Recently some empirical foundation became available through the Global Entrepreneurship Monitor (GEM). GEM researchers found that about one third of the differences in the national growth rates is due to the impact of entrepreneurial activity.<sup>9</sup>

That stimulation of start-ups pays can be illustrated by the following. In the Netherlands a discussion started, not long ago, as to the costs and benefits of start-ups since the simplification of the Establishment Law (in Dutch: *Vestigingswet*). The simplification is thought to have led to more start-ups. As a result of increasing market competition more start-ups will indirectly result in more exits (and more bankruptcies). Kemp and Verhoeven (2001) performed some scenario analyses for the Netherlands to obtain more insight into the costs and benefits of start-ups.<sup>10</sup> The scenario, with significantly more start-ups compared with the 'normal' situation, shows that an increase in the number of start-ups has a positive impact on employment and value added. An increase in the number of start-ups by 17.5% will have created 38,000 more jobs and additional value added of approximately 957 million Euros in 2005. Of course there are also negative effects as consequence of an increase in exits and bankruptcies (note that the share of bankruptcies is quite low in the Netherlands). An increase in the number of start-ups by 17.5% will lead to a rise in left debt of about 58 million Euro in 2005. This is primarily due to the fact that young enterprises close down and go bankrupt more often than incumbent 'older' enterprises. There are also indirect negative effects on the incumbent enterprises: intensified market competition because of more start-ups leads to lower employment and value added within the enterprises that were already in the market. The 17.5% increase of start-ups results in the loss of almost 17,000 jobs and a decrease of about 340 million Euros within the incumbent enterprises.

Hence, the total effect of more start-ups in the Netherlands is clearly positive: in employment terms as well as in financial terms the benefits are greater than the costs.

### **1.2.2 Growth of incumbent enterprises**

The dynamics in an economy is not only the result of entry and exit of firms but also of the growth and decline of incumbent enterprises (i.e. existing enterprises). A quite commonly used indicator for growth of enterprises is the increase of employment. That fast growing enterprises, in particular, contribute to the dynamism in an economy is shown in a study by Bangma and Verhoeven (2001).<sup>11</sup> Based on the employment growth in the period 1994-1998 Dutch enterprises can be classified as fast growing (8%), (normal) growing (23%), stable (36%) or shrinking enterprises (33%). The 8% fast growing enterprises were responsible for 60% of all employment growth of incumbent enterprises during this period. In total the number of jobs grew by 600,000. On the other hand, about 405,000 jobs were lost within the shrinking enterprises in the same period.

In Verhoeven and Bruins (2001) an international comparison of fast growing medium-sized enterprises is made. In this study these fast growing enterprises are defined as enterprises with 50 to 1,000 employees in which employment grew by 60% or more in the period from 1995/1998. According to this definition 10% of the Dutch medium-sized enterprises are fast growing. This percentage is relatively low in comparison with other countries. Only in Japan is the percentage of fast growing medium-sized enterprises lower, i.e. 5%. In the United States, on the contrary, a quarter of all medium-sized enterprises are fast growers and this is 22% in the United Kingdom. The United States appears to be a country of extremes: they also have a high share of shrinking enterprises.

It can be concluded that fast growing enterprises are of indispensable importance for the dynamism of an economy, but in the Netherlands the share among the medium-sized enterprises seems to be low. This confirms the specific policy attention that is currently given to fast growing enterprises (see Chapter 2). Below we shall show that these enterprises are valuable not only for the dynamism but also for the innovation in the Dutch economy.

## **1.3 Contribution of some types of entrepreneurship to an innovative economy**

In this section the various types of entrepreneurship to be considered will be narrowed down. The Dutch Ministry of Economic Affairs pays special policy attention to three specific types of entrepreneurship that are assumed to create innovativeness: technological start-ups, technological spin-offs, and fast growing enterprises. See Chapter 2 for a description of the specific policy measures. This section will investigate whether empirical evidence can be found as to the contribution of these three types of entrepreneurs to innovativeness.

### **1.3.1 Technological start-ups**

The importance of technological start-ups was clearly set out by the Dutch Ministry of Economic Affairs in a policy report in 1999: this stated that technological start-ups develop and create new products with a high added value, are important for the commercialisation of public knowledge, play a role in the diffusion of new technological knowledge in and between sectors, and are as innovative, knowledge intensive suppliers important for the competitive position of larger incumbent firms.<sup>12</sup> But above all, technological start-ups create employment:

in the first two years their number of employees appears to grow four times as much as the number of employees in other start-ups.<sup>13</sup>

In the Netherlands about 3% of all start-ups in 2000 can be classified as a technological start-up: i.e. a starting enterprise performing R&D-activities and whose entrepreneur has had a higher or university technical education. In numbers, 3% in 2000 corresponds with around 1,750 technological start-ups. During recent years the 3% has been quite a stable share, but in 1994, however, the share of technological start-ups was considerably higher, i.e. 6%.

As stated above, technological start-ups are quite innovative and play an important role in the economy. Dutch empirical evidence for the first part of this thesis is, however, quite scarce. First, we shall consider the innovativeness of start-ups (in general) based on quite recent observations and then we shall focus on technological start-ups with some older empirical results.

#### *Dutch empirical insights in start-ups*

Some statistical analyses with recent observations by EIM reveal that start-ups are more innovative than incumbent enterprises in some innovation aspects. Two innovation input indicators, one innovation process indicator and one innovation output indicator are available: see table 1. This table shows that a higher percentage of enterprises that are start-ups carry out R&D activities than incumbent enterprises. And a higher percentage of technological start-ups spend 1% or more of their turnover on such R&D activities than the incumbent enterprises. Also they score better in the innovation process than incumbent enterprises: 35% of the start-ups in the Netherlands develops new products and services on their own initiative, against 23% of the incumbent enterprises. The percentage of enterprises that develops new products or services more than once a year is almost the same for start-ups and incumbent enterprises.

*Table 1 Innovative aspects of start-ups and incumbent enterprises, in 2000*

<i>innovative aspect</i>	<i>start-ups (started in 1998)</i>	<i>incumbent enterprises</i>
<i>innovation input</i>		
- enterprise carries out R&D activities	23%	19%
- enterprise spends 1% or more of turnover to R&D activities	47%	31%
<i>innovation process</i>		
- enterprise develops new products or services on own initiative	35%	23%
<i>innovation output</i>		
- enterprise develops new products or services more than once 1 year	8%	7%

*Source: EIM, 2001, based on EIM SME-panel and EIM-starterscohort 1998*



### *Dutch empirical insights in technological start-ups*

So, according to some innovation indicators, start-ups appear to be more innovative than incumbent enterprises. And what about technological start-ups? Unfortunately, no recent Dutch empirical material is available to investigate the innovativeness of technological start-ups in comparison with other enterprises. However, some indications<sup>14</sup> can be given using the EIM-Starterscohort 1994. Three innovative aspects were considered<sup>15</sup>:

- in the innovation process: the extent to which products or services are based on new techniques (techniques or technical inventions that were not used three years before);
- in the innovation process: the use of basic technologies (such as information technology, new materials, biotechnology, and environmental and energy technology);
- as innovation output indicator: the development of new products or services.

Table 2 presents the differences between these three innovative aspects. Almost half of the technological start-ups make products or provide services that are almost completely, or for the major part based on new techniques (or technical inventions) that were not used three years before. Among the other start-ups this is the case for only 14% of the enterprises.

*Table 2 Innovative aspects of technological start-ups and other start-ups, 1994\**

<i>innovative aspect</i>	<i>technological start-ups</i>	<i>other start-ups</i>
<i>innovation process</i>		
extent to which products or services are based on new techniques		
- almost completely	18%	4%
- major part	31%	10%
- small part	33%	16%
- not at all	18%	70%
use of basic technologies		
- information technology	94%	43%
- new materials	41%	26%
- biotechnology	6%	3%
- environmental/energy technology	36%	13%
<i>innovation output</i>		
development of new products or services		
- regularly	40%	10%
- sometimes	35%	20%
- never	25%	70%

\* The table shows indications only, since the number of observations of technological start-ups is relatively small.  
Source: EIM, based on EIM-Starterscohort 1994

Enterprises can make use of different basic technologies for production or service purposes. Information technology (IT) is most often used, both by technological and other start-ups. The extent of use of IT differs considerably: 94% of the technological start-ups and 43% of the other start-ups. Biotechnology is used by a small part of the start-ups: only 6% of the technological

ones and 3% of the other start-ups. Technological start-ups also make considerably more often use of new materials and environmental/energy technology than other start-ups. The innovation output of both groups of start-ups can be considered by the extent of development of new products or services. The largest part of the other start-ups (70%) never develops new products or services, whereas 40% of the technological start-ups develops them regularly and 35% sometimes.

So roughly speaking, we might conclude that start-ups are more innovative than other enterprises, and that technological start-ups are more innovative than other start-ups. This might imply that technological start-ups contribute more to an innovative economy than incumbent enterprises. Note that the word 'might' is used, because the empirical evidence is scarce and somewhat outdated. There is need for more and up-to-date empirical findings.<sup>16</sup>

### **1.3.2 Technological spin-offs**

In recent years more and more entrepreneurial employees have been given and have taken the opportunity to set up an enterprise outside the organisation. They become entrepreneurs of so-called spin-offs. There are many different definitions of spin-offs. We define a spin-off starter as an employee that leaves an organisation to start an enterprise of his/her own that is independent of the parent organisation. The transfer to the starting enterprise includes the transfer of knowledge and assets from the parent organisation to this starting enterprise. So spin-offs have an advantage compared to other start-ups since they have the availability of knowledge, working experience and/or assets built up in their former employment situation, and usually have the benefit of being supported in various ways by the former employer.<sup>17</sup>

The European Commission pays considerable attention to the importance of spin-offs and to the role of public policies in promoting spin-offs. The following quotes tell us that spin-offs have an important contribution to the innovative economy: "...recent research results from various sources revealed that spin-offs are in general highly successful phenomena in terms of competitiveness, innovation (including the transfer of R&D-results), growth, and positive effects on the socio-economic environment", and "...with regard to the knowledge based economy, spin-offs are both a result and a driver of the shift to a new era."<sup>18</sup> Spin-offs also play an important role in the innovation system since they transfer knowledge from private enterprises, universities or research organisations to the market place.

During the last few years explicit policy attention has been paid to spin-offs in the Netherlands (see Chapter 2). However, thus far this policy attention has not led to a great many empirical studies being carried out in the Netherlands. This is due mainly to the lack of a uniform definition and relevant databases, so that most of the time new empirical investigations have to be set up.

#### *Dutch empirical insights in spin-offs*

As already mentioned few insights are available for the Netherlands. In October 2001, EIM performed an explorative investigation using the SME-panel of EIM.<sup>19</sup> In that panel spin-offs were distinguished from the other SMEs. Since some innovation characteristics of these enterprises are also available, it is possible to look at the differences in some innovative aspects. It should be noted that the spin-offs do not relate to technological spin-offs only.<sup>20</sup>

Nevertheless, the spin-offs appear to be more innovative than other SMEs: see table 3 for the difference in five innovative aspects.<sup>21</sup>

According to four innovation indicators the spin-offs score higher than SMEs on average when:

- making use of an external network to exchange knowledge (innovation process indicator);
- co-operating to innovate (innovation process indicator);
- launching new products on the market in the last three years (innovation output indicator);
- introducing process improvements within the enterprise in the last three years (innovation output indicator).

The difference appears to be small on the indicator of the innovation input when one or more employees are officially engaged in innovation. In 58% of the spin-offs this appears to be the case whereas in SMEs in general this is 56%. That quite often one or more people are engaged in innovation in less innovative enterprises, is an empirical result that has been found before: in less innovative types of firms the percentage of employees involved in innovation appears to be relatively high (probably because they slightly adapt their products and services at the request of individual customers).<sup>22</sup>

*Table 3 Innovative aspects of spin-offs and average SMEs, in the Netherlands, 2001, measured in percentages*

<i>innovative aspect</i>	<i>spin-offs</i>	<i>average of SMEs</i>
<i>innovation input</i>		
- one or more employees officially engaged in innovation	58	56
<i>innovation process</i>		
- make use of external network to exchange knowledge	67	46
- co-operation to innovate	57	38
<i>innovation output</i>		
- launched new products on the market in the last three years	53	48
- introduced improvements in processes within the enterprise in the last three years	74	67

*Source: EIM, 2001, to be presented in Y. Bernardt and R. Kerste (forthcoming), Spin-off starters in the Netherlands, EIM, Zoetermeer.*

#### *Dutch empirical insights in technological spin-offs*

Recently some empirical information on technological spin-offs became available from the study of Alferink and Van Wijk (2001).<sup>23</sup> They investigated the success of technological spin-offs and the differences between university and corporate spin-offs. Despite the fact that the results are not representative for the Netherlands, due to the small number of observations, they are worth mentioning here. They studied 34 spin-offs and 11 parent organisations. In addition to success factors they also investigated the innovative activities of spin-offs, and sometimes compared them with 'normal' enterprises and start-ups.

Technological spin-offs appear to grow faster in terms of turnover and profits than enterprises in general. And they start with more employees and grow faster in terms of employment than start-ups in general. Furthermore, the entrepreneur of a technological spin-off is more highly educated than the average entrepreneur and has more relevant sector experience. In general 13% of the starting entrepreneurs have had a university education, 23% a higher education, and 64% a secondary or lower education. These percentages are 85%, 12% and 3%, respectively for the entrepreneurs of technological spin-offs. Corporate spin-offs start with more capital (and knowledge and clients from the parent organisation).

What about their innovative activities? In the qualitative study various innovative activities were considered so that indications can be given as to the innovativeness of technological spin-offs. The expenses incurred for research and development (R&D) in percentage of turnover by these spin-offs are considerable, at least in comparison to the average of Dutch enterprises. Almost half of the technological spin-offs, in particular the university spin-offs, spend more than 10 percent of the turnover on R&D.<sup>24</sup> This is, to some extent, because part of the spin-offs focus primarily on such activities (having research as core-competence). Most of the spin-offs appear to have their own R&D-facilities. Half of the spin-offs carry out their R&D-activities in co-operation with other organisations. A major part of the products offered by the spin-offs are based on new technologies (that are not older than 5 years).

To sum up the indications of the innovativeness of technological spin-offs:

#### *Innovation input*

- Technological spin-offs have entrepreneurs that have a high education level.
- Technological spin-offs have considerable R&D-expenses.
- Most technological spin-offs have their own R&D-facilities.

#### *Innovation process*

- Half of the technological spin-offs co-operate with other organisations regarding their R&D-activities.
- Many of the products from the technological spin-offs are based on new technologies.

### **1.3.3 Fast growing enterprises**

What is the contribution of fast growing enterprises to an innovative economy? Simon (1996) showed that innovation is a central issue in the fast growing so-called 'hidden champions'.<sup>25</sup> In these firms innovation covers not only the development of new technological products (i.e. technological innovation) but for example also the introduction of new organisation structures (i.e. non-technological innovation). Rommel et al. (1995) argued in their study that fast growing enterprises in total spent less money on R&D (innovation input), but that they organised the innovation process more efficiently (innovation process) resulting in more successful new products (innovation output).<sup>26</sup>

#### *Dutch insights*

Below, we shall describe the findings of an empirical study performed in 1994 in short. After that the results of a more recent empirical study will be discussed more extensively.

In 1994 Van der Hoeven and Verhoeven published a study on the creation and loss of jobs in which Dutch enterprises were divided according to their growth in employment.<sup>27</sup> They distinguished fast growers, growers, stable enterprises and shrinking enterprises. Apart from the growth of the enterprises they investigated various characteristics of such types of

enterprises. Some characteristics related to the innovativeness of enterprises: the application of new production methods, R&D-activities, requests for patents, adaptation of product to market demands, and the extent of initiative in the development of new products. See Table 4 for the relative scores of the different growth types in these innovative aspects.

*Table 4 Innovative characteristics of different growth types of Dutch enterprises\*, 1994*

	fast growing enterprises	growing enterprises	stable enterprises	shrinking enterprises
application new prod. methods	++	+	--	-
R&D-activities	++	+	--	0
request for patents	++	+	--	--
product adaptation to market demands	++	0	--	+
initiative for new products	++	++	--	--

\* The + and – indicate the relative scores of the different growth types of enterprises.

Source: EIM, 2001, based on W.H.M. van der Hoeven and W.H.J. Verhoeven (1994), *Creatie en teloorgang van arbeidsplaatsen (Creation and loss of jobs)*, EIM, Zoetermeer, page 55.

The R&D-activities appear to be most intensive in the fast growing enterprises, followed by the 'normal' growing enterprises. The same holds for requests for patents. The fast growing enterprises are better at applying new production methods and adapting products to meet the demands of customers than all other growth types. The initiatives for new products are much more apparent in the fast and 'normal' growing enterprises than in the stable and shrinking enterprises.<sup>28</sup>

All in all, the fast growing enterprises seem to be more innovative than the not-growing enterprises. In other words, the fast growing enterprises contribute more to the innovativeness of the economy than the stable and shrinking enterprises. The 'normal' growing enterprises are also rather innovative but less than the fast growing ones.

#### *Recent Dutch empirical insights*

In an empirical investigation by Baljé and Waasdorp (1998) recent information is presented on the innovativeness of fast growing firms in the Netherlands.<sup>29</sup> They compare the extent of innovativeness between fast growing and less-fast growing enterprises. In the measurement of innovativeness indicators of innovation input (R&D, the level of education, training), the innovation process (innovative strategy, innovation instruments, impediments, technological co-operation, use of knowledge sources) and the output (new products) are considered.

#### *Innovation input*

One of the most considered innovation input indicators is the amount spent on R&D (due to the availability of information on this indicator). Baljé and Waasdorp also investigated the R&D costs. It appears that fast growing enterprises spend much more on R&D related to the development of both products and processes. In comparison with slow growing enterprises

they spend 38% more on the development of products and 43% more on the development of processes (the R&D costs were measured in % of turnover).

Not only financial means play a role when carrying out innovative activities, the human capital aspect is also of great importance. The educational level of the personnel of the fast growing enterprises is higher than that in the slow growing enterprises. In 1996 7% of the slow growing enterprises had more than 20% highly educated personnel (with higher or academic level), whereas this percentage is 42% within the fast growing enterprises. Investment in human capital is essential since the absorptive capacity of innovations has to be kept up-to-date. Measured by the number of training days per employee, the fast growing enterprises pay more attention to the education of their personnel than the slow growing enterprises. This applies to various levels of the personnel: management level, specialists and production workers. In this innovative aspect however, small fast growing enterprises lag behind.

### *Innovation process*

The process by which innovation inputs are transferred to innovation outputs can be called the 'innovation process'. Innovative aspects of the organisation process are also covered by the term 'innovation process': for instance introducing a new organisation structure, new ways of marketing, frequently assessing customer satisfaction (which can be followed by improvements), absorbing innovative aspects into the business strategy, et cetera. Concerning the innovation strategy, the Dutch empirical study shows that fast growing enterprises more often belong to the innovators who have a pro-active innovation strategy. This pro-active innovation strategy appears to be stronger the faster the enterprises grow. Table 5 shows the differences between the slow and fast growing smaller enterprises with up to 100 employees. The groups differ most strongly as to the percentage of enterprises following an innovation strategy that can be described as 'following at a distance'. The fast growing enterprises are more (pro-)active in their innovation strategy.

*Table 5 Innovation strategy of small fast and slow growing enterprises (with up to 100 employees), in percentages*

<i>innovation strategy</i>	<i>fast growing</i>	<i>slow growing</i>
innovators	23	17
early adopters	23	13
close followers	42	37
followers at a distance	12	33

*Source: EIM, 2001 based on S.H. Baljé and P.M. Waasdorp (1998), Snelgroeiende ondernemingen in Nederland (Fast growing enterprises in the Netherlands), Ministerie van Economische Zaken, Den Haag, figure 6-3, p. 29.*

Fast growing enterprises more often use development procedures and feasibility studies in their innovation processes than do slow growing enterprises. The smaller fast growing enterprises in particular account for this difference: 40% perform feasibility studies (compared with 16% of the slow growers) and 35% use development procedures (compared with 16% of the slow growers). When other innovation instruments are considered (value or reverse engineering, cross-functional teams, design for manufacturing), the differences between fast and slow growing enterprises are not so noticeable.

One of the most significant differences between fast and slow growing enterprises when

viewing impediments in the innovation process, in particular when introducing new technologies, is the lack of well-educated personnel. One fifth of the slow growers face this problem, as does almost one out of ten fast growers. Possibly, this obstacle also hinders the slow growing enterprises from growing faster.

Technological co-operation can help enterprises to share their scarce knowledge and means in their R&D-activities. Fast growers are more reluctant to participate in technological co-operation than slow growers. They see their technological know-how as a unique asset of the enterprise and are reluctant to share this with others. However, the small fast growing enterprises compensate for their size by co-operating more than their larger counterparts. Small fast growing enterprises use more (internal as well as external) knowledge sources for their innovation processes than small slow growing enterprises. The differences are less clear for the larger enterprises.

#### *Innovation output*

All the innovation efforts, such as the inputs involved and the different aspects of the innovation process finally lead to innovation outputs like improved products, processes and services, or/and new products, processes and services. In practice, fast growing enterprises seem to introduce new products more often than slow growing enterprises. The larger fast growing firms (with more than 100 employees) in particular, have the strengths and ability to launch more than one new product a year. Smaller enterprises more often have to restrict themselves to the introduction of one product a year.

#### *Summary of recent Dutch empirical insights*

The Dutch empirical insights into the innovativeness of fast growing enterprises - in comparison with slow growing enterprises - can be summarized as follows:

##### *Innovation input*

- Fast growing enterprises spend more money on research and development of products and processes.
- Fast growing enterprises have more highly educated personnel.
- Fast growing enterprises invest more in their human capital.

##### *Innovation process*

- Fast growing enterprises have a more active innovation strategy.
- Fast growing enterprises more often use development procedures and feasibility studies.
- Fast growers less often face the problem of lack of well-educated personnel when introducing new technologies.
- Fast growers are more reluctant to participate in technological co-operation.

##### *Innovation output*

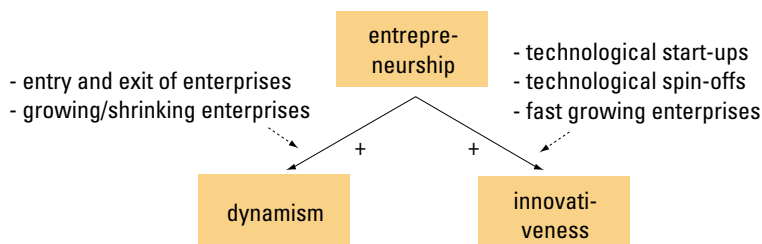
- Large fast growing enterprises more often introduce new products.

Despite this 'blue-print' for fast growing enterprises, in practice fast growing enterprises do not all behave according to this 'blue-print'. It appears that the quality and decisions of the individual entrepreneur is an important determinant for the growth pattern of the enterprise.

## 1.4 Conclusion

This chapter introduced some aspects of entrepreneurship, dynamism and innovation. It demonstrated clearly that entrepreneurship is a driving force behind a dynamic (see the + in the figure below between entrepreneurship and dynamism) and innovative economy (see the + in the figure below between entrepreneurship and innovativeness).

Figure 3 Schematic overview of the research results



It is worthwhile to stimulate entrepreneurship in two ways. First, in a quantitative way by stimulating the number of starting entrepreneurs and the growth of enterprises. In an international perspective it appears that the dynamism of the Dutch economy is lagging behind. This probably requires the intensification of the Dutch policy attention to increase the dynamism in the economy. Second, in a qualitative way by stimulating the quality of existing entrepreneurs and in particular by stimulating the development of some specific types of entrepreneurs. This chapter explains clearly that three types of entrepreneurs make an important contribution to the innovative economy. Technological spin-offs appear to be more innovative than other start-ups; the same holds for technological start-ups. Fast growing enterprises must be fostered too since, in comparison to slow growing enterprises, they perform better in different aspects of innovativeness. From this viewpoint, it seems to be beneficial to pay them special policy attention.

Figure 3 also shows that the empirical findings described in this chapter are only a small piece of the puzzle. Not all kinds of entrepreneurs are considered: it could be worthwhile to consider more types of entrepreneurs to assess their contribution to dynamism and innovativeness. Neither were all relationships studied. The relation between innovativeness and dynamism has not been studied, and the causality between dynamism and innovativeness raises an interesting question. Is it dynamism that leads to innovativeness, or is it the other way around?



# Notes Chapter 1

- 1 Respectively, Ministerie van Economische Zaken (2001), *Ondernemerschapsmonitor voorjaar 2001* (Entrepreneurship Monitor Spring 2001), Den Haag, and W.H.J. Verhoeven and A. Bruins (2001), *Internationale benchmark ondernemerschap 2001* (International benchmark entrepreneurship 2001), EIM, Zoetermeer.
- 2 J.A. Schumpeter (1934), *The theory of economic development*, Harvard University, Cambridge.
- 3 Sander Wennekers, Roy Thurik and Folkert Buis (1997), *Entrepreneurship, economic growth and what links them together*, EIM, Zoetermeer.
- 4 This paragraph is based on K.L. Bangma and W.H.J. Verhoeven (2001), *Het belang van bedrijfstypen voor de werkgelegenheidsontwikkeling; editie 2000* (The importance of enterprise types for the development of employment, edition 2000), EIM, Zoetermeer.
- 5 W.H.J. Verhoeven and A. Bruins (2001), *Internationale benchmark ondernemerschap 2001* (International benchmark entrepreneurship 2001), EIM, Zoetermeer.
- 6 K.L. Bangma and W.H.J. Verhoeven (2001), *Het belang van bedrijfstypen voor de werkgelegenheidsontwikkeling; editie 2000* (The importance of enterprise types for the development of employment, edition 2000), EIM, Zoetermeer, and Ministerie van Economische Zaken (2001), *Ondernemerschapsmonitor zomer 2001* (Entrepreneurship Monitor Summer 2001), Den Haag.
- 7 W.H.J. Verhoeven and A. Bruins (2001), *Internationale benchmark ondernemerschap 2001* (International benchmark entrepreneurship 2001), EIM, Zoetermeer.
- 8 Ministerie van Economische Zaken (2001), *Ondernemerschapsmonitor zomer 2001* (Entrepreneurship Monitor Summer 2001), Den Haag.
- 9 *Global Entrepreneurship Monitor: 1999 Executive Report*, p. 39, mentioned in *White Paper, 2000, National Commission on Entrepreneurship*, U.S.
- 10 R.G.M. Kemp and W.H.J. Verhoeven (2001), *Baten en lasten van startende ondernemingen* (Benefits and costs of starting enterprises), EIM, Zoetermeer.
- 11 K.L. Bangma and W.H.J. Verhoeven (2001), *Het belang van bedrijfstypen voor de werkgelegenheidsontwikkeling; editie 2000* (The importance of enterprise types for the development of employment, edition 2000), EIM, Zoetermeer.
- 12 Ministry of Economic Affairs (1999), *De ondernemende samenleving; meer kansen, minder belemmeringen voor ondernemerschap* (The entrepreneurial society; more chances, less impediments for entrepreneurship), Den Haag, p. 53.
- 13 Based on the EIM-Starterscohort 1994, see EIM (1997), *Technostarters en groei in werkgelegenheid* (Technostarters and growth in employment), Zoetermeer.
- 14 Indications because the number of observations of technological start-ups is relatively small.
- 15 F.W. van Uxem and H.E. Hulshoff (2000), *Technostarters* (Technostarters), EIM, Zoetermeer.
- 16 Currently, the Ministry of Economic Affairs is working on a new (international) study on technological start-ups.
- 17 Y. Bernardt and R. Kerste (forthcoming), *Spin-off starters in the Netherlands*, EIM, Zoetermeer.
- 18 European Commission (2001), *Corporate and research-based spin-offs: drivers for knowledge-based innovation and entrepreneurship*, proceedings of expert workshop held in Brussels, 18 January 2001, IPTS Technical Report Series, EUR 19903 EN, Sevilla, p. III.
- 19 The SME-panel of EIM consists of around 2,000 enterprises with up to 100 employees covering several sectors, which are approached regularly to gather empirical information.
- 20 In one third of the spin-offs technological knowledge was transferred from the parent firm to the spin-off.
- 21 Y. Bernardt and R. Kerste (forthcoming), *Spin-off starters in the Netherlands*, EIM, Zoetermeer.
- 22 Y.M. Prince et al. (2000), *De innovativiteit van de Nederlandse maritieme cluster* (The innovativeness of the Dutch maritime cluster), Delft University Press, Delft, p. 113, and A.P. Muizer and Y.M. Prince (2000), *Nulmeting Syntens* (Zero-measurement Syntens), EIM, Zoetermeer, p.34.
- 23 M.J.M. Alferink and M.R. van Wijk (2001), *Het succes van spin-offs* (The success of spin-offs), Raad voor het Zelfstandig Ondernemerschap (RZO), Den Haag.
- 24 For comparison: in 2000 69% of the Dutch incumbent enterprises spend less than 1% of turnover to R&D, and 53% of the start-ups.
- 25 H. Simon (1996), *Hidden Champions: lessons from 500 of the world's best unknown companies*, Harvard Business School Press, Boston.
- 26 G. Rommel, J. Kluge, R.D. Kempis, R. Diederichs and F. Bruck (1995), *Simplicity wins: how Germany's mid-sized companies succeed*, Harvard Business School Press, Boston, mentioned in S.H. Baljé and P.M. Waasdorp (1998), *Snelgroeiende ondernemingen in Nederland* (Fast growing enterprises in the Netherlands), Ministerie van Economische Zaken, Den Haag.

- 27 W.H.M. van der Hoeven and W.H.J. Verhoeven (1994), *Creatie en teloorgang van arbeidsplaatsen* (Creation and loss of jobs), EIM, Zoetermeer.
- 28 It may, to some extent, be surprising is that the shrinking enterprises score somewhat better than the stable enterprises on some innovative aspects.
- 29 S.H. Baljé and P.M. Waasdorp (1998), *Snelgroeiende ondernemingen in Nederland* (Fast growing enterprises in the Netherlands), Ministerie van Economische Zaken, Den Haag.



## 2 *Innovative entrepreneurship. A Dutch policy perspective*

Pieter Waasdorp

### 2.1 Introduction

Why is entrepreneurship and especially innovative entrepreneurship important? In the so called dynamic innovation system entrepreneurs play a vital role. According to the Global Entrepreneurship Monitor, entrepreneurs account for two-thirds of innovations. Entrepreneurs act as change agents and translate new discoveries and inventions into new products and services. Entrepreneurs seek new possibilities and make new combinations. Entrepreneurs are the drivers of change. Raising productivity which is a central theme in Dutch economic policy starts with improving the entrepreneurial climate.<sup>1</sup>

In the first chapter of this issue of Entrepreneurship in the Netherlands Yvonne Prince of EIM has focussed on the available empirical evidence for the role entrepreneurship plays in the Dutch economy. In this chapter we outline Dutch economic policy to encourage innovative entrepreneurs. Therefore in section two we first discuss a number of facts and figures about the role innovative entrepreneurs play in the innovation process. In section three we describe a number of characteristics of innovative entrepreneurship. In section four we briefly discuss the relative position of the Dutch economy compared a number of other countries. In section five we present Dutch entrepreneurship policy. Section six concludes with some tentative policy options for the (near) future.

### 2.2 From theory to fact

The endogeneous growth theory criticised the neo-classical assumption that technological progress was 'manna from heaven'. Endogeneous growth theory showed that technology driven growth was not exogenous but endogenous and dependent on for example investment in R&D.<sup>2</sup> Institutional economics showed the importance of institutional frameworks for economic growth. Cultural attitudes and belief systems shape institutions which in turn determine economic performance.<sup>3</sup> However, belief systems and institutions are not a given. They can change over time and moreover they interact and may mutually reinforce each other. In the 1960s and 1970s for example the cultural attitude towards risktaking and entrepreneurial behaviour was extremely negative. Economic growth was mostly driven by big companies. In the 1980s this changed as economic circumstances changed under influence of globalisation and individualisation. Simultaneously the attitude towards entrepreneurship has become much more positive reflecting a change in belief systems. Increasingly it has been recognised the past decade that entrepreneurship is the key for the transition from factor-driven economic growth to more innovation-driven growth.<sup>4</sup>

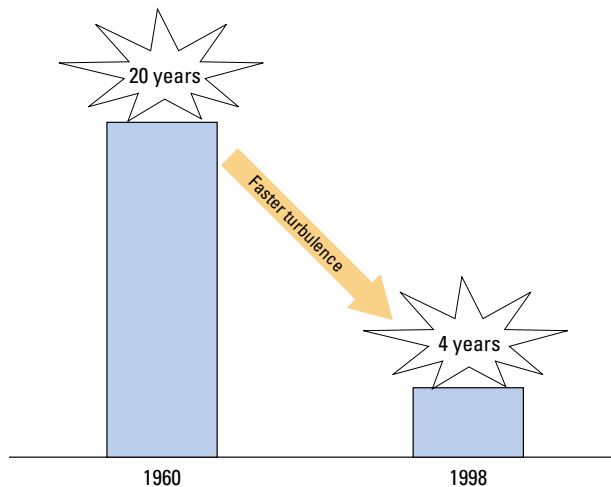
One of the main mechanisms through which entrepreneurship affects the innovative capacity of the economy is called churning.<sup>5</sup> Churning of economic activity is crucial in achieving higher productivity levels. New companies develop new products and challenge established firms to

adjust and innovate.<sup>6</sup> In its ultimate form new more efficient firms drive obsolete inefficient firms out of business.

According to research from the United States National Commission on Entrepreneurship the origins of most large companies can be traced directly or indirectly to entrepreneurial founders.<sup>7</sup> Over 50% of Fortune's 200 companies were founded by one or two entrepreneurs, 34% were the result of mergers and acquisitions and 15% were either the result of company spin-offs, company founded or sometimes government founded.

Especially new technology based firms and entrepreneurial firms such as high growth companies play an important role in the churning process. New technology based firms for example commercialise knowledge developed in the publicly-funded research sector and are a source of new know-how and opportunities. High growth companies are also mostly innovative. Dutch research shows that high growth firms invest 40% more in R&D and 70% more in human capital than other companies.<sup>8</sup> Consequently churning is in theory generally accompanied by a higher growth in productivity.<sup>9</sup> However, empirical evidence is somewhat mixed.

*Figure 1 Number of years it takes to replace one third of Fortune's 500 companies in 1960 and 1998*



There are indications that a third of productivity gains in Dutch manufacturing is a result of entry and exit of firms.<sup>10</sup> On the other hand an international survey by the OECD presents mixed evidence for the relationship between productivity and entry and exit of firms.<sup>11</sup> Much of the differences in the results can be attributed to differences in databases and definitions used. For example, it is more likely to find positive effects of churning on total factor productivity than on labour productivity implying that churning may have a relatively big effect on capital productivity. However, capital productivity is notoriously difficult to measure. This churning of economic activity is taking place at an increasingly rapid rate (Figure 1). In the 1960s, fewer than 10 new businesses were added to the Fortune's 500 list each year. Today, there are 50 per year. In other words, eighth of America's 25 biggest firms today did not exist or were very small in 1960.

### 2.3 What is innovative entrepreneurship?

Entrepreneurship is important to increase the economy's capacity to innovate, but what actually do we mean by entrepreneurship? Usually entrepreneurship is measured in terms of risk taking and being self-employed. A definition of innovative entrepreneurship becomes even more difficult as innovation itself is hard to measure. As Yvonne Prince notes in her chapter innovation is broader than just technological innovation.<sup>12</sup> Apart from new products entrepreneurs can also develop new services or entirely new business concepts such as business concepts that deliver experiences to consumers.<sup>13</sup> Innovation may also apply to the development of new business methods or new organisational models.<sup>14</sup> About 30% of Dutch companies innovates in a non-technological way for example organisational innovations.<sup>15</sup> Usually technological and non-technological innovation go hand in hand: 80% of companies that innovate in a technological way also innovates in a non-technological way. But does this also apply to new entrepreneurs? Apparently it does as Figure 2 shows that a significant portion of Fortune's 500 entrepreneurs launched non-technological innovations.

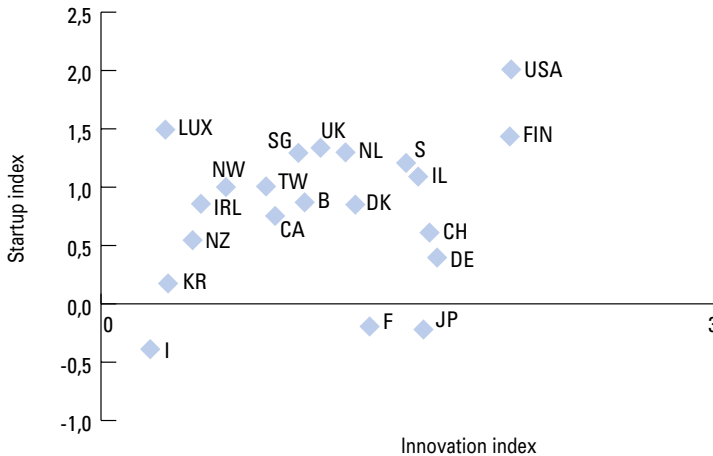
Figure 2 Non-technological innovations that launched Fortune's 500 companies

<i>Company</i>	<i>Innovation</i>
<b>Dell Computer</b>	Direct Selling
<b>Federal Express</b>	Spoke & Hub
<b>Home depot</b>	Wide assortment
<b>The Limited</b>	Limited line of women's sportswear
<b>Microsoft</b>	Operating systems for pc's
<b>Nike</b>	High quality shoes, marketing
<b>Seagate Technology</b>	Hard drive for pc's
<b>Sun Microsystems</b>	Low cost computer workstations

Source: C.A. Purrington, K.E. Bettcher, *From the garage to the boardroom*, National Commission on Entrepreneurship, 2001.

Increasingly entrepreneurial companies are also creative companies. Activities in sectors such as design, film, video, arts are becoming more important in a knowledge economy.<sup>16</sup> Moreover, in these sectors there is ample room for new entrepreneurship.<sup>17</sup> Warner constructs an index for economic creativity based on the Global Competitiveness Report.<sup>18</sup> The index is composed of a technology index and a startup index reflecting the idea that both access to technology and a healthy entrepreneurial climate are important components of economic creativity and hence innovation.<sup>19</sup> Figure 3 shows that some countries focus more on technology access while neglecting the entrepreneurial climate. The most economically creative countries such as the US however, combine both. The Netherlands performs reasonably well but there is still room for improvement.

Figure 3 Economic creativity



Source: A.M. Warner, *Economic Creativity, Global Competitiveness Report 2000*

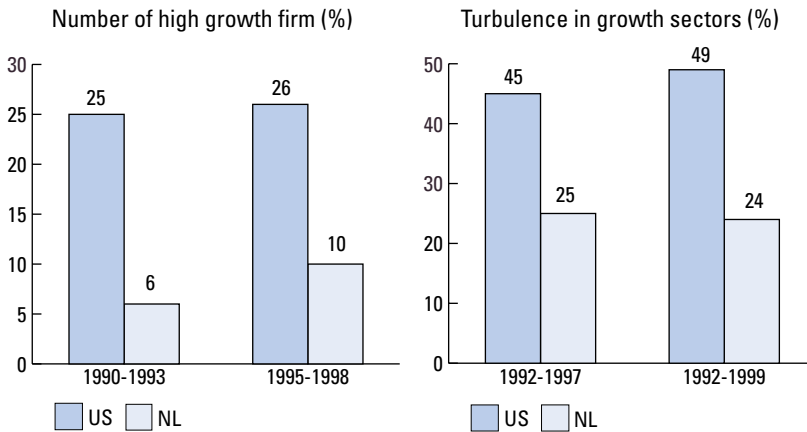
#### 2.4 The Netherlands internationally compared

On a number of terrains the capacity to innovate of the Dutch economy is mediocre compared to other economies. According to the so called innovation index developed by the EU the Dutch economy is actually 'losing momentum'.<sup>20</sup> The number of Dutch companies who consider themselves innovative is relatively high: 61% versus 52% for the EU average.<sup>21</sup> However, the turnover created with new products is relatively low: 25% of turnover in manufacturing can be contributed to new or improved products against 32% for the EU-average.<sup>22</sup> This paradoxical outcome may be a reflection of low entrepreneurial activity especially in the innovative areas.

The past ten to fifteen years have seen a positive development in entrepreneurial activity in the Netherlands. For example, the number of new businesses rose to almost 55,000 in 2001 while in 1990, there were only 30,000. The number of entrepreneurs as a percentage of the labour force now stands at 10%, roughly the same level as in the USA, but the Netherlands are still trailing the UK slightly (11%). Moreover, cultural attitudes towards entrepreneurship are much more positive than they were a decade ago.

Despite this apparently good position there still is a considerable number of challenges. Especially in the area of innovative entrepreneurship the Netherlands continues to trail 'entrepreneurial economies' such as those of the USA and UK (figure 4). At 24% in the growth sectors, the Dutch turbulence rate (the sum of entry and exit) is significantly lower than that in the USA (49%), for example. The percentage of high-growth companies has increased from 6% to 10%, but remains below that of for example the USA (26%).

Figure 4 Innovative entrepreneurship is trailing behind



Source: EIM, *Internationale benchmark ondernemerschap*, Zoetermeer, 2001

Moreover, the latest Global Entrepreneurship Monitor shows that the number of nascent entrepreneurs is relatively low compared to other economies.<sup>23</sup> Total entrepreneurial activity measured in terms of the percentage of the population who are trying to start a firm or who are the owner/manager of a firm less than 42 months old, stands at 6.4% in the Netherlands, roughly on European average but below, for example, the US (11.3%).

## 2.5 Policy mix

What are the barriers to innovative entrepreneurship and how does public policy deal with these barriers? Until the 1980s, public policy focussed mainly on relatively big companies. This is not to say that public policy did not pay attention to Small and Medium sized Enterprises. This has been a long standing characteristic of Dutch economic policy. However, the important role smaller companies play in for example the creation of new employment only gradually found its way into policy. During the 1980s, the first policy shift towards a more explicit SME policy took place. SME policy focussed mainly on improving the business climate for smaller existing businesses and less on innovation.

A second policy shift occurred in the 1990s, partly through the policy paper *The Entrepreneurial Society*. The aim of entrepreneurship policy was to create more opportunities and remove obstacles for entrepreneurship. Policy lines emphasises broadening the opportunities for new enterprises and promoting entrepreneurship in existing businesses, such as the high-growth companies. Important elements of the entrepreneurship policy are deregulation, lowering administrative burdens, lowering the costs of setting up a business and reducing entry and exit barriers, for example by abolishing the Establishment Law. Progress in entrepreneurship policy is monitored on a quarterly basis via the so called Entrepreneurship Monitor. At the end of 2001 an update of the policy paper was sent to parliament. Compared to other countries Dutch economic policy is characterised as holistic with some elements of a niche-policy mainly in the area of innovative entrepreneurship.<sup>24</sup> In Chapter 3 of this issue

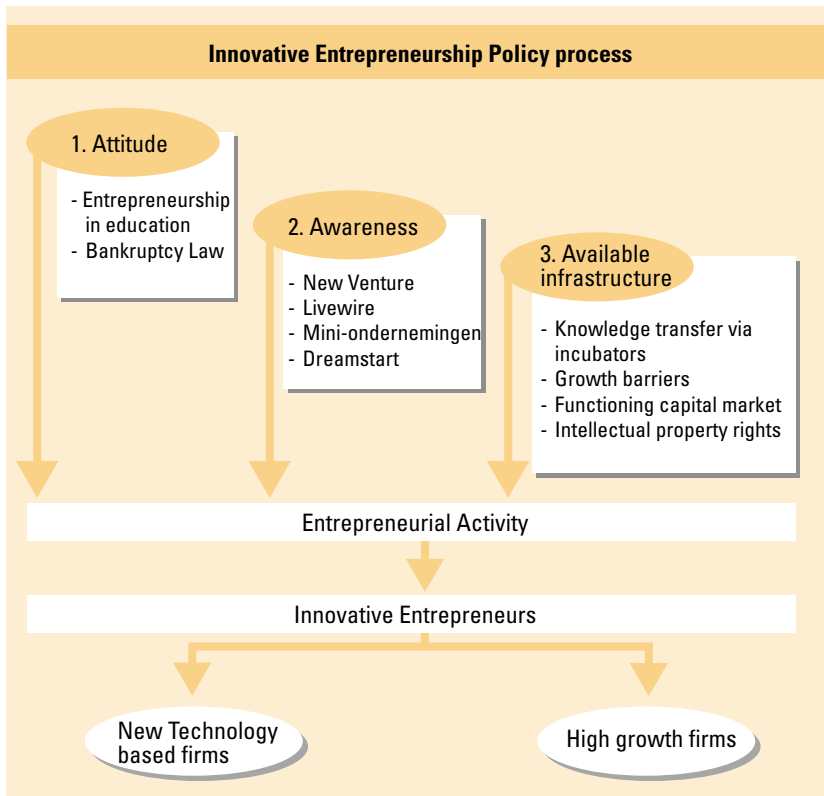


Lois Stevenson presents a more detailed international comparison of Dutch policy. In this section we will describe a number of elements of entrepreneurship policy which are of particular importance for the encouragement of innovative entrepreneurship.

Of course it may seem somewhat artificial to distinguish between ‘normal’ and ‘innovative’ entrepreneurship as most of the barriers for ‘normal’ entrepreneurship are the same as for ‘innovative’ entrepreneurship. For example, rigid regulations and high administrative burdens are impeding innovative as much as other entrepreneurs. Or, to present another example, the abolition of the Establishment Law has led to a rise in entrepreneurship but it is hard to tell if innovative entrepreneurs have benefited more from it than other entrepreneurs.

In the following overview we focus on a number policy aspects in relation to innovative entrepreneurship. This approach is somewhat eclectic as we leave out for example taxation policy or competition policy. Moreover, policies aimed at improving human capital investments and for example the availability of highly skilled employees are also important to stimulate the entrepreneurial climate. Nevertheless Figure 5 shows that by and large Dutch innovative entrepreneurship policy follows a three-step approach: enabling an entrepreneurial attitude e.g. in the education system, raising awareness through business plan contests and improving the available infrastructure for innovative entrepreneurs. The ultimate goal is improving the conditions under which innovative firms such as new technology based firms and high growth firms can flourish.

Figure 5 Policy mix

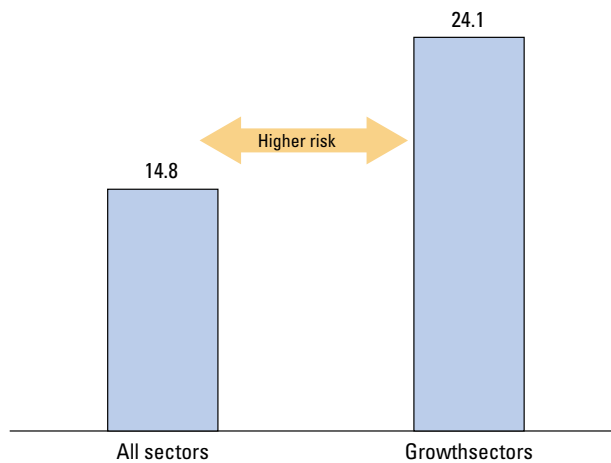


## 2.5.1 Attitude

### 2.5.1.1 Bankruptcy Law and fear of failure

Entrepreneurship in general and innovative entrepreneurship especially is risky. Figure 6 shows that turbulence rates and therefore the chances of going out of business are higher in so called growth sectors such as electronics and pharmaceuticals than in other sectors. The way society views risk and failure ultimately determines entrepreneurial activity.<sup>25</sup> If society at large is risk-averse this may result in a lower number of startups for example. Most likely this effect is even bigger for the more risky forms of entrepreneurship such as new technology based firms. Moreover, churning of economic activity which is a necessary precondition for productivity growth (see Section 2) requires absent or low stigma on failure as entrepreneurs to allow bankrupt entrepreneurs to make a restart. Research by the Boston Consulting Group shows that in the list of Europe's 500 fastest growing firms restarters show faster growth than the average for Europe's 500 companies.<sup>26</sup>

Figure 6 Turbulence rates

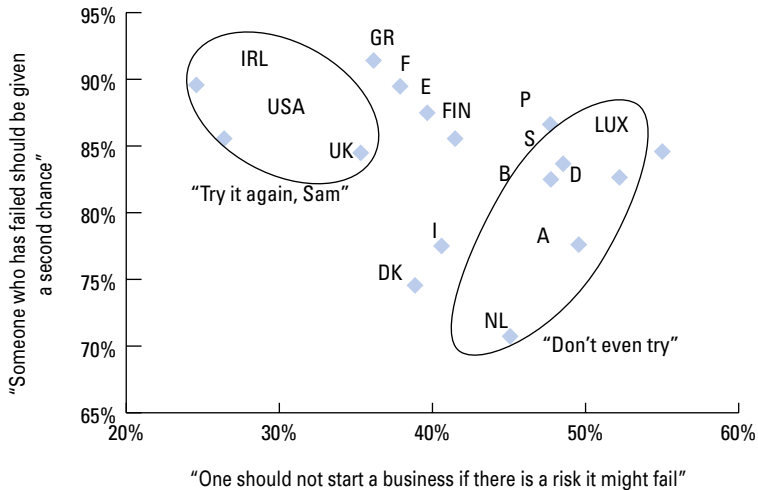


Source: EIM, *International benchmark ondernemerschap, Zoetermeer 2001*

The question then is how does society look upon taking risks. Figure 7 shows an international comparison of risk attitudes. It is based on two questions reflecting the way people view the taking of risks: 'one should not start a business if there is a risk it might fail' and 'someone who has failed should be given a second chance'. The countries in the lower right quadrant are risk-averse. The countries in the upper left quadrant have a positive view towards taking risks. The Netherlands is positioned in the risk-averse category along with a number of other European countries. The Anglo-Saxon countries have a much more positive view towards taking risks.

These results are confirmed by recent research by ING Bank which shows that 50% of interviewed Dutch entrepreneurs believe that the fear of bankruptcy leads to less entrepreneurial behaviour and more cautious business practices. This view is shared particularly by the somewhat smaller entrepreneurs. Apparently there still is a stigma on failure. Entrepreneurs who make a restart after bankruptcy generally face more difficulties getting on in the business community than "untarnished" entrepreneurs. For example, 57% of Dutch companies therefore attach more or less strict conditions to doing business with ex-bankrupts.<sup>27</sup>

Figure 7 Stigma on failure



Source: European Commission, Eurobarometer 2000 and Boston Consulting Group

Box 1: Financial systems and entrepreneurial activity

Recently a body of empirical literature has developed which focusses on the effects of financial systems on entrepreneurship. Recent research suggests that in OECD countries a relaxation of creditor rights (e.g. whether secured creditors are ranked first in case of liquidation) within the insolvency system may actually enhance entrepreneurial activity. Stringent creditor rights affect the growth of the business ownership rate *negatively* and market-based financial structures are associated with increases in the business ownership rate. Using the results, Bosma et.al. calculate that a (partial) relaxation in creditor rights would *ceteris paribus* lead to a structural increase of the business ownership rate of 0.2 % point every four-years. For the Netherlands this would mean some 14,000 additional firms each four-year period.

Sources:

Beck, Thorsten en Ross Levine (2000), *New Firm Formation and Industry Growth: Does Having a Market- or Bank-Based System Matter?*, World Bank Policy Research Working Paper 2383.  
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In november 2001 the Dutch government decided on the reform of the Dutch Bankruptcy Law. Reducing the stigma on failure is an element herein. Other elements of the reform package are more flexible labour laws for companies in financial difficulty and a relaxation of the position of secured creditors. Out of court and amicable settlements will also be promoted, and this will limit the social damage of insolvencies. Moreover, there will be more opportunities for coaching and advice to entrepreneurs who are in financial difficulties.

2.5.1.2 Entrepreneurship in education

Although for many people lifelong employment is no longer a given, the education system does not adequately reflect this. The boundaries between employeeship and entrepreneurship

are gradually dissolving as employees will in the future alternate between working for an employer and being self-employed. The throughflow from the education system to entrepreneurship is not as good as it could be. For example, only 7 % of Dutch students want to start their own company within three years of graduating. In the US this percentage seems higher.<sup>28</sup> A recent report shows that entrepreneurship education has a positive effect. Compared to other business school alumni, entrepreneurship graduates are three times more likely to start new businesses, are three times more likely to be self-employed and have annual incomes that are 27 percent higher.<sup>29</sup> In order to encourage entrepreneurship in the education system in October 2000 a broad Committee with representatives from all education sectors, business and government was installed, as the theme asks for a broad bottom up approach. The Committee has the task to enlarge support for entrepreneurship in education, to define and resolve impediments and to stimulate 'pilot projects'.

In addition to the Committee therefore a subsidy scheme Entrepreneurship and Education has been set up for public-funded schools with the aim of giving entrepreneurial skills a full place in the curriculum of education institutes. Schools can apply for the scheme if they have a project aimed at entrepreneurship. The first two tenders of the subsidy scheme were successfully completed. In these first two tranches which ran from ultimo 2000 to ultimo 2001 a total of 80 projects was rewarded. A total of € 9 million is available for the scheme until 2002. Ultimate goal is to collect good example projects via the subsidy scheme for all the education sectors (from primary school to university). The descriptions of the projects are published on a special website: [www.lerenondernemen.nl](http://www.lerenondernemen.nl).

These good examples will help ultimately embed entrepreneurship throughout the education system. In due course this will offer students more possibilities to pursue an entrepreneurial career if they choose so. In addition this policy line will contribute to a better transfer of knowledge between universities and the private sector for example because researchers will be better prepared and more inclined to start their own business to commercialise newly developed products.

### **2.5.2 Awareness**

To raise students' awareness about entrepreneurship and up to a point entrepreneurial skills the Ministry of Economic Affairs supports a number of business plan contests such as New Venture, Mini-Ondernemen, Livewire etc. These contests promote entrepreneurship while simultaneously improving entrepreneurial skills. For example, New Venture is a business plan contest aimed at the higher education system: about 40% of contestants originate from universities. In addition to financial prizes contestants can win, the programme also provides coaching and professional advice.

In addition the agency Dreamstart which is an initiative by the Ministry of Economic Affairs has the task to inform potential high-tech startups about how to start their business. Dreamstart has a special website ([www.dreamstart.nl](http://www.dreamstart.nl)) where information is made available about relevant organisations and initiatives, that can help in the different phases of (pre)starters e.g. where can information be found about making a business plan, attracting risk capital etc. Besides this informative and networking role, Dreamstart stimulates the awareness by organizing events among students and potential starters, but also among universities to develop their own policy in this field. Moreover, Dreamstart is involved in 'bringing together' relevant parties (universities, enterprises) via a.o. matchmaking events.

### **2.5.3 Available infrastructure**

#### **2.5.3.1 Transfer of knowledge**

Public R&D expenditures in the Netherlands are relatively high. Private R&D-expenditures on the other hand are relatively low. There appears to be room for improvement in the interaction between public research institutes and private businesses. For example, only 7-8% of innovative companies is cooperating with universities or research institutes.<sup>30</sup> One of the mechanisms for knowledge transfers are high-tech startups out of universities.<sup>31</sup> Bottlenecks potential high-tech startups face are a lack of available equipment and laboratories they can use, lack of housing, lack of seed capital and a need for coaching and advice. Therefore in 2002 a special subsidy scheme will be introduced to stimulate the formation of incubator networks around universities. This € 46 mln scheme will focus on facilitating incubators at universities and research institutes. These incubators provide seedcapital, housing, coaching and advice. Universities and research institutes may apply for the scheme and receive subsidy for these components of incubators. In addition an action plan is being prepared to encourage facility sharing for high tech start ups at big companies.

#### **Box 2: Stimulating entrepreneurship in life-sciences**

To stimulate the start up of firms in life sciences the Ministry of Economic Affairs has set up Biopartner. Although the Netherlands may well be in the scientific leading group in this area, until now this has not been translated into a comparable position in the area of starters. BioPartner makes money, information, advice and facilities available during the three phases of enterprise: 'seed', 'start' and 'solo'. The purpose is to create at least 75 extra starters in the field of life sciences in this manner. BioPartner offers various instruments for achieving this, whose application depends on the phase in which a starting company finds itself. For example, subsidies for researchers at public universities or research institutes who want to convert an idea into a feasible business plan or housing for new life science companies.

Source: [www.biopartner.nl](http://www.biopartner.nl)

#### **2.5.3.2 Barriers to growth**

The number of Dutch high growth firms is also lagging behind that of e.g. the US or the UK. Many high growth companies encounter barriers to growth or so called 'glass ceilings'. These growth barriers are mostly a result of organisational problems. Dutch high growth companies take on average 20 months to break through growth barriers. This is more than 50% longer than US high growth companies.<sup>32</sup> This appears to be caused by lack of networks and coaching opportunities for high growth companies.<sup>33</sup>

Dutch policy for these types of companies is therefore focussed on stimulating coaching and networking of high growth entrepreneurs.<sup>34</sup> The Ministry of Economic Affairs has supported the founding of GrowthPlus Netherlands at the beginning of 2000. This provides for a programme for network formation aimed at high growth companies. On a regular basis the members meet and every six months there is a meeting with the state secretary of economic affairs and policy advisers. GrowthPlus Netherlands is also involved in the organisation of masterclasses for ambitious entrepreneurs. Via this masterclasses entrepreneurs can learn from each other. In

2002 policy will be aimed more at the group of potential high growth entrepreneurs. To reach these ambitious entrepreneurs the feasibility of a coaching network aimed at potential high growth entrepreneurs will be investigated.

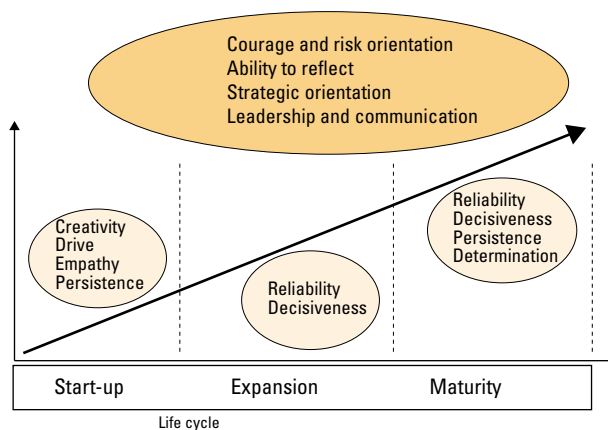
### 2.5.3.3 Functioning of the capital market

Larger, established firms with proven products generally have more access to finance than new entrepreneurs or more innovative entrepreneurs with new products in sometimes uncertain sectors. Information asymmetries between suppliers of capital and entrepreneurs are one reason for the bottlenecks at the lower end of the capital market. Another reason is a shortage of collateral for young and growing firms which makes banks hesitant to offer loans.<sup>35</sup>

#### Closing the information gap

As the development in the direction of a knowledge economy takes shape the development of knowledge of the immaterial aspects that determine entrepreneurial success must also keep pace. For example, increasingly the success of an entrepreneur is determined by intangible aspects such as the quality of the organisation, knowledge of markets and competitors, human resource management, a company's reputation.<sup>36</sup> Research by Nyenrode University shows personality characteristics of entrepreneurs are key determinants for entrepreneurial success.<sup>37</sup> It was found that irrespective of the life cycle of the venture, the following characteristics and qualities were related to success: courage and risk orientation, ability to reflect, strategic orientation, leadership and communicative capacity (figure 8). In the start-up phase creativity, performance drive, empathy and persistence were additionally found to be critical ingredients. In the expansion and mature phases decisiveness and reliability were among the specific characteristics and qualities frequently mentioned additionally. This is confirmed by a number of interviews with successful Dutch entrepreneurs.

Figure 8 Key characteristics and entrepreneurial success



Source: EZ/NVP, *De succesvolle ondernemer*, Den Haag, 2001

However, there are indications that the Dutch capital market has some shortcomings in this area. For example, Dutch bankers say that there is a growing group of companies they find difficult to assess.<sup>38</sup> This makes it difficult for bankers to make an accurate assessment of the

knowledge potential among entrepreneurs and of the costs and benefits of investment projects. This is not a specific Dutch problem. Research by the European Commission shows that most European banks are hesitant to lend to new technology based firms.<sup>39</sup>

As a first start to address this problem of asymmetrical information the Dutch Ministry of Economic Affairs together with the organisation of accountants has developed 'MKBalans (SME Accounts) - an interactive instrument that is available over the Internet ([www.mkbalans.ez.nl](http://www.mkbalans.ez.nl)). Companies can benchmark various aspects of their business activity, including the value of immaterial factors of production, against other companies and against their own past performance. A report is automatically generated, which as well as identifying strong and weak points, helps enterprises to develop their financial reporting on intangibles and enables them to provide comparative and hence more substantial data, which they can use, for instance, when approaching financial institutions. Moreover, companies are offered assistance and advice by the support agency Syntens in further developing their business performance.

#### *Credit guarantee systems*

To overcome the problem of a shortage of collateral the Ministry of Economic Affairs offers a credit guarantee system (BBMKB). This scheme aims at SMEs in general. The State guarantees credits which banks issue to SMEs with satisfactory future prospects. The amount of state-guaranteed credit cannot exceed the difference between the company's available security and the security, which a bank would normally require. As of January 2002 this scheme has been modified with a number of more favourable conditions for startups. Already for innovative firms more favourable conditions apply.

#### *2.5.3.4 Intellectual property rights*

An effective and transparent system of intellectual property rights is crucial for a good functioning innovation system. They may provide an incentive for entrepreneurs to invest in new inventions. However, the importance of IPR may differ per sector. Sometimes developments in a sector go too fast to apply for a patent. For example in chemicals and pharmaceuticals incentives for firms to innovate are very much dependent on effective patents. In sectors such as the software sector patents are generally perceived as less effective by firms.<sup>40</sup> Moreover, entrepreneurs sometimes use other ways to protect their inventions. For example, high growth companies sometimes use the strategy of lead time instead. By applying this strategy entrepreneurs can protect their inventions by simply staying ahead their competitors. About 32% of Dutch high growth companies applies this strategy compared to only 8% of the 'normal' companies.<sup>41</sup> Especially starting innovative entrepreneurs encounter difficulties on this terrain. Relatively high costs of patenting form an obstacle for smaller companies. It is difficult. For example one third of the questions of participants in the business plan contest New Venture has to do with IPR. Moreover, universities have the same difficulty in finding their way into the IPR system.<sup>42</sup> The number of patent applications by Dutch universities is relatively low compared to international standards.<sup>43</sup>

In december 2001 a strategic policy paper on the Dutch patent system was sent to parliament.<sup>44</sup> This paper outlines a number of dilemma's in the patent system such as the trade-off between protection of intellectual property and dissemination of knowledge. This analysis will be

translated into specific policy lines. Issues that will be addressed are e.g. the costs of patents for SMEs and the question whether it should be possible to apply for patents on business methods.

## **2.6 Conclusion: future policy mix**

Our analysis shows that already Dutch entrepreneurship policy is addressing a variety of obstacles for innovative entrepreneurs. Nevertheless, there remain a number of future policy challenges:

1. Adjusting the balance between risk taking and rewarding. The degree to which entrepreneurship can flourish is a function of the willingness of the population to accept risk (and the spread of risk) and the social and economic gains. In general, public policy should be geared towards rewarding the taking of risks wherever possible.<sup>45</sup> This implies institutional reform focussing on improving the incentive structure on a broad terrain ranging from the education system to the tax system.
2. What will be the balance between 'hard' aspects of entrepreneurship policy, such as deregulation and 'soft' aspects such as coaching/consulting?
3. We need more insight on the operationalisation of innovative entrepreneurship. Partly for practical reasons innovative entrepreneurship is in policy terms operationalised by looking at high-tech startups and high growth firms but we could ask ourselves the question how we can integrate the concept that innovation is broader than technological innovation into policy. For example, would it be feasible to broaden the concept of hightech start-ups out of universities to include non-technological spin-offs as well. Also, if innovation increasingly includes non-technological aspects does this also mean that the relationship between innovation and productivity growth changes?
4. Immaterial aspects of entrepreneurship should be looked deeper into. What role do these factors play in the innovation process. What does this imply for the functioning of the capital market? How can information asymmetries be solved? A possible approach lies in developing a spin-off from the SME Account for specific groups of entrepreneurs.
5. Integrating networks and policy areas. For example the networks for high growth companies can also play an important role in the networks focussed on improving the entrepreneurship in education and vice versa. Is it possible to streamline the variety of business plan contests and focus more strongly?
6. Real time feedback from entrepreneurs. The use of ICT makes it possible to receive more accurate feedback from entrepreneurs to policy makers. For example, the internet instrument SME Account gives policy makers important information about the actual behaviour and motives of entrepreneurs. This information could be used to refine policy measures and instruments.

To conclude: our analysis shows that entrepreneurship in general and more specifically the innovative forms of entrepreneurship are key in improving the innovative capacity of the Dutch economy. At the same time there still are obstacles for innovative entrepreneurship. In one of



the episodes of the 1980s BBC television series 'Yes Minister', Sir Humphrey Appleby tries to convince his boss, minister Jim Hacker that a policy of 'masterly inactivity' is really the preferred strategy to follow. Tempting though this may sometimes seem for policy advisers this should not prevent us from searching for ways to improve the entrepreneurial climate. This article has tried to contribute a little bit to that aim.

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# 3 *Innovation and entrepreneurship: Dutch policy in an international context*

Lois Stevenson

## 3.1 Introduction

In Chapters 1 and 2, Prince and Waasdorp provide evidence of the important role of new and innovative enterprises in economies that seek to raise their level of growth and dynamism, value-added productivity, wealth, and global competitiveness. Both emphasise the importance of new firm entry as a major element in innovative economies. They put forward a number of arguments in favour of policy oriented to stimulating 'innovative entrepreneurship' and describe the features of Dutch policy, but raise questions about the balancing of policy attention between support for innovative entrepreneurship versus ordinary entrepreneurship. They situate 'innovative entrepreneurship' as one form of entrepreneurial activity that emerges within the context of a dynamic entrepreneurial economy. They specifically identify three types of innovative firms – technology start-ups, technological spin-offs and fast-growing enterprises.

It is important to note that 'innovative entrepreneurship' is not a well-defined concept. In Chapter 2, Waasdorp talks about innovative entrepreneurs as agents of change who translate new discoveries and inventions into new products and services, who seek new possibilities and make new combinations, and whose actions will drive change and raise a nation's productivity levels. In Chapter 1, Prince describes innovation as a process concerning such aspects as innovation strategy, co-operation, the automation of business processes and changes in organisational structure, which lead to new or improved products, services and processes and related increases in firm revenue. Both express the difficulty of operationalising 'innovative entrepreneurship' for policy purposes. The concept carries connotations of technology-drive, growth and the production of new products, services or processes, but not all innovative firms are in technology sectors, necessarily grow rapidly, or implement radical innovations. And then there is the question of how individuals become innovative entrepreneurs. What influences people to pursue innovative entrepreneurship? What segments of the population are most likely candidates to become innovative entrepreneurs? What paths do they take? How can this path be influenced by government policy? What can be learned from knowing more about this?

Drawing on research findings by Stevenson and Lundstrom (2001),<sup>1</sup> this chapter outlines some parameters of entrepreneurship policy, including innovative entrepreneurship, highlights the most salient policy actions being undertaken by a number of central governments to stimulate innovative entrepreneurship, and points to the international best practice aspects of Dutch policy. It further presents a framework for thinking about the convergence of two relatively new and, what have been until very recently, two separate policy domains, those of entrepreneurship policy and innovation policy. It concludes by stressing the importance of a strong entrepreneurial culture and climate as the enabling context for the emergence of

innovative entrepreneurship and therefore argues for a balanced policy where measures in support of innovative entrepreneurship are developed within a broader holistic entrepreneurship policy framework and linked to innovation policy.

### **3.2 Entrepreneurship policy – A typology**

Entrepreneurship is rapidly becoming a priority of government policy but the formulation of entrepreneurship policy is still in its infancy stages. One of the first empirical studies to explore this is the Lundstrom and Stevenson (2001) study.<sup>2</sup> In their efforts to define entrepreneurship policy and to outline its parameters based on an examination of the practices of ten countries, Lundstrom and Stevenson found that governments in each of the countries were, over time, focusing more attention on how to increase the level of entrepreneurial activity and directing support measures towards the development of new entrepreneurs. However, depending on a range of country-specific contextual factors, these governments differed with respect to the approach taken and the emphasis placed on traditional SME policy elements and the newer entrepreneurship policy elements. Stevenson and Lundstrom (2001) categorised these approaches into a set of four Entrepreneurship Policy Typologies: 1) SME Policy 'Extension', 2) 'Niche' Entrepreneurship Policy, 3) New Firm Creation Policy, and 4) 'Holistic' Entrepreneurship Policy.<sup>3</sup> Each of these 'types' differs somewhat in terms of objective, focus, approach, and policy structure and each brings with it a set of limitations and/or challenges. As one might expect, countries cannot be neatly classified within these categories, but governments do tend to have a dominant policy approach.

**1. SME Policy 'Extension':** In this approach to entrepreneurship policy, activities in support of start-up entrepreneurs and new business owners are, in a piece-meal fashion, 'added-on' to existing SME programs and services, primarily ones that are delivered at a local level by small business support agencies and economic development organizations. This might include self-employment training, advice on start-up and business planning, local small business awards programs, or perhaps support for youth venture initiatives. The component of the SME service focused on starting and new firms tends to be somewhat marginalized and weakly resourced. The broader areas of regulatory barriers to entry, entrepreneurship education and promotion of an entrepreneurship culture are not normally strategically addressed. This 'extension' to SME policy often incorporates some form of tailored program measures to support groups within the population who are under-represented as business owners, for example, young people, women, or some ethnic minorities (see 'niche' entrepreneurship policy description).

**2. 'Niche' Entrepreneurship Policy:** In this case the government formulates targeted entrepreneurship efforts around specified groups of the population ('niches') where opportunities to increase business ownership rates are deemed desirable. These could be broadly categorized into two types: a) demographic segments of the population under-represented in the business ownership statistics, and b) people with high potential to become high-technology or innovative entrepreneurs.

a. The first type includes such groups as women, young people, ethnic minorities, persons with disabilities, Aboriginals, etc., whose members face some social, economic or attitudinal barriers affecting their ability to access the resources and supports necessary to pursue the successful start-up of a new firm. By addressing these barriers to enterprise creation governments seek to stimulate job creation activity, overcome labour market problems, and advance social inclusion objectives. These target group policy measures generally take the

form of dedicated business support services, such as youth enterprise centers or counselling services, as well as tailored micro-loan programs, and promotional, training, mentoring, and peer networking activities.

- b. The second 'niche' type targets people with the highest potential for starting high-growth potential firms – scientific researchers, inventors, university graduates, and people with technology experience.<sup>4</sup> The objective of this particular approach is to stimulate higher value-added, technologically innovative start-ups that will accelerate economic growth, wealth creation and economic prosperity, an objective closely aligned with innovation policy. The core set of common policy measures and incentives to achieve this includes support for the process of commercialisation of publicly-funded and university-based research, stimulation of both informal and formal sources of seed and venture capital, tax incentives that reward risk and encourage growth, funding of campus-based and community incubators, mentoring programs and peer networks, promotion of entrepreneurship among these groups and introduction of entrepreneurship education or training across post-secondary education programs. This approach tends to be pursued more aggressively by governments keen on improving innovation performance.

**3. New Firm Creation Policy:** This policy approach focuses on simplifying and facilitating the business creation process and reducing start-up barriers. This could include a review of Incorporation and business creation processes and procedures, a reduction in the time and costs associated with the business registration process, facilitation of the start-up process through the creation of one-stop shops and streamlined delivery of information and advisory services, etc. Again, efforts may be devoted to encouraging start-ups among specific target groups, for example, young people, women, and the unemployed.

**4. 'Holistic' Entrepreneurship Policy:** This comprehensive entrepreneurship policy approach incorporates the policy objectives and measures of the other E-policy types, integrating them into an over-arching policy framework. In this approach, entrepreneurship policy is embedded as a horizontal policy issue across government ministries and concentrated efforts are made to reduce barriers to entry and exit, improve access to start-up supports, including financing, integrate entrepreneurship in the education system and promote a stronger entrepreneurship culture and climate. Very few countries have advanced to this level of entrepreneurship policy-making; the Netherlands, Finland and the UK are notable examples.

Lundstrom and Stevenson outlined some of the salient distinctions between the more traditional SME policy and emerging policy emphasising entrepreneurship.<sup>5</sup> While a full discussion of these differences and their nuances goes beyond the scope of this paper, it may be useful to mention a few of the general differences. As national governments make the shift to entrepreneurship policy, they tend to set measurable objectives for increasing the business start-up rate, the number of new firms or the supply of potential new entrepreneurs. In doing so the policy mix traditionally associated with SME policy (e.g., reducing administrative burden, addressing market failures and information asymmetries, levelling the playing field for small firms) broadens to encompass the promotion of entrepreneurship, integration of entrepreneurship-related curriculum in the education system and tailored business support services to meet the specified start-up needs of defined target groups of the population. Because the major policy question becomes more about how to develop more entrepreneurs than about how to strengthen individual firms and sectors, measures tend to address regulatory and other barriers to business entry (such as competition policy, bankruptcy laws

and labour legislation), improving access to start up supports (including access to seed capital and higher-risk start-up capital), and the creation of incubating environments (education, training, mentoring, entrepreneurship web portals, etc.). The target of policy effort shifts more to individuals from firms (including specified target groups of the population) and in this context, stimulating an entrepreneurial culture is as important as creating a favourable business climate. This shift necessarily leads to a redefinition and broadening of the institutional support structures needed at the community level. In light of the requirement to create societal support for an entrepreneurship culture, the media, educational institutions, and community-based non-profit organizations take on more importance as economic development partners.

Since entrepreneurship policy is concerned more with individuals than firms, it is not surprising that each of the governments in the Stevenson and Lundstrom study tailored policies and actions around a number of identified 'niche' target groups. The objective of the remainder of this chapter is to more fully describe policy oriented towards innovative entrepreneurship (the techno-starter type of 'niche' entrepreneurship policy) based on the approach of governments in a number of countries,<sup>6</sup> including the Netherlands.

### **3.3 Supporting innovative entrepreneurship: policy insights from international case studies**

Increasingly, entrepreneurship is viewed as an integrated element of industrial, enterprise and innovation policy. As part of growth and national competitiveness strategies, the OECD and the European Union emphasise both entrepreneurship and innovation. The European Union states that R&D, industry and entrepreneurship are linked in the innovation agenda and that whatever is good for enterprise policy is generally good for innovation and vice versa. To respond to the demands of a knowledge-driven economy, the EU prescribes policy measures promoting R&D partnerships and high tech start-ups, improving the functioning of risk capital markets for financing of new technology-based firms, increasing the involvement of the private sector, and providing adequate framework conditions. As priorities for fostering innovation, the OECD adds to this list improving the effectiveness of public R&D spending (through stronger commercialisation efforts), reducing burdensome administrative regulations, and instilling positive attitudes towards entrepreneurship.<sup>8</sup> One of their most recent reports states that the factors and policies that may most facilitate enterprise start-ups include removing regulatory barriers, increasing access to venture capital, implementing tax regimes that foster entrepreneurship, and facilitating the use of stock options.<sup>9</sup> In addition, they advocate amending bankruptcy rules (to ease the exit process) and strengthening second-tier stock markets. The importance of high tech start-ups and new firms of an innovative nature, including spin-offs, is stressed by both the OECD and the EU.<sup>10</sup>

Although entrepreneurship and innovation are both critical elements of the 'entrepreneurial economy', governments differ in the extent to which they link entrepreneurship with the innovation agenda. Stevenson and Lundstrom (2001) found that while each of the countries in their study was interested in fostering innovation, the strongest links with entrepreneurship were made in the the Netherlands, the United Kingdom, Ireland and Australia. This was evident in their various White Papers where clear statements were made about increasing the economic benefits of public investments in R&D by improving technology-transfer capacities and supporting the incubation of new knowledge-based businesses and spin-off firms.<sup>11</sup>

In 1999, the Dutch government adopted an entrepreneurship policy. Its major goal was to create an environment that would lead to an 25% increase in the number of new firms starting up from 1999 – 2001. They also put in place several measures to encourage high technology start-ups and fast-growing firms<sup>12</sup>, with the objective of increasing the percentage share of both types of firms in SME statistics. Ireland's objectives are to increase the number of spin-off companies and start-ups arising from the R&D base of Institutes of Technology and universities, to foster the development of value-added start-ups, and to identify and encourage new start-ups companies with strong growth potential.<sup>13</sup> The Irish government has also prioritized the development of new vibrant technology start-ups in regional locations as a critical element in the success of regional development strategies. One of the goals of the Australian government is to *'offer a fast-track to commercialisation for high potential development especially from public sector research agencies by supporting spin-offs formed to commercialise significant innovations and maximise the return on Australian research'*.<sup>14</sup> In addition to making the UK *'the best place in the world to start a business'*, creating an enterprise culture where people from all walks of life have the opportunity to pursue their full potential through entrepreneurial activity, and enabling more people to start or restart businesses after failure, the British government has set a goal of increasing the number of 'successful high-growth business start-ups' from a base of 11,800 in 1995 to 20,000 by 2005.<sup>15</sup>

Although the US is often examined as a good practice in the development of innovative and high-growth firms by other countries, it is interesting to note that the National Commission on Entrepreneurship (NCOE) has recently criticized the Small Business Administration (SBA) and the Department of Commerce (DOC) for their lack of specific policies oriented towards innovative entrepreneurship.<sup>16</sup> The NCOE suggests that not enough distinction is made between the SBA small business policies aimed at levelling the playing field for small firms, and entrepreneurship policies that will foster the start-up and growth of innovative, high-growth and technology-based enterprises. Advocates at the Kauffman Foundation propose that a different set of public policy concerns and challenges applies depending on which groups (life-style or high-growth entrepreneurs) and outcomes (income generating and wealth creating firms) are prioritised.<sup>17</sup> Although the US can point to any number of good examples of initiatives leading to innovative entrepreneurship, these are not generally the outcome of any national entrepreneurship policies. Having said that, there is a strong emerging interest in support for high-technology start-ups, growth firms and innovative cluster initiatives in the economic plans of state and regional governments across the US and a growing interest in entrepreneurship policy.<sup>18</sup>

### **3.3.1 Innovative entrepreneurship - target groups**

The rationale for stimulating growth in the number of new, innovative firms and spin-offs is well articulated in Chapter 1. Who is most likely to start these kinds of firms, where can they be found and how can their numbers be increased? Because governments are increasingly interested in stimulating the creation of innovative new firms based on public investments in R&D, they are targeting university environments for the stock of potential future entrepreneurs; this includes new graduates, academic researchers and technologists. They are also interested in fostering the further development of higher-potential fast-growth firms; in some cases even using the immigration system to attract in technology-based entrepreneurs from elsewhere. National governments in Australia, the United Kingdom, Ireland and the Netherlands have been the most explicit in articulating these target group policies so their approaches will be used as the basis for the following discussion of policies and measures.



The five target groups identified by these governments include:

- a. *New graduates*: Given changing labour markets and growing interest in entrepreneurship as a career, more young people are exploring entrepreneurship as an option. The trend towards new graduates becoming entrepreneurs and setting up companies in towns and cities where they attended college is noted particularly in the United States.<sup>19</sup> A US-based study discovered that graduates of university entrepreneurship programs are more likely than other business graduates to start new businesses, work for or start high-technology companies and be involved in new product development, R&D activities and products with shorter spans.<sup>20</sup> The potential of new graduates for creating new enterprises was reinforced nicely by the Irish Minister of Enterprise, Trade and Employment who, when commenting on the success of the 2001 Graduate Enterprise Initiative, stated *'this is a clear indication that there is a wealth of entrepreneurial talent within our Third Level educational system which, given the right support and direction, can lead to the creation of new enterprises with the potential to grow rapidly'*.<sup>21</sup> Enterprise Ireland's Campus Companies Programme is particularly comprehensive in aiming to develop campus-based companies started by grads or campus staff.<sup>22</sup> Public policy efforts to encourage entrepreneurship among new graduates by supporting the integration of entrepreneurship programs in university environments is underway in Australia, the Netherlands, Sweden, Finland, the UK and Ireland.
  
- b. *Academics/scientific researchers*: The European Union stated in a recent communiqué that, *'the R&D sector could prove the most cost effective for promoting entrepreneurship by helping and encouraging researchers to market their innovative ideas and applications'*.<sup>23</sup> To improve national innovation performance and increase the rate of return on R&D investments, national governments in Australia, the UK, the Netherlands and Ireland are strategically funding initiatives to help 'pull' entrepreneurship out of academic environments by encouraging academic and scientific researchers to form ventures from the commercialisation of innovative projects arising from their R&D activity. This is seen as necessary for several reasons. Scientists and researchers often fail to detect business opportunities from their research, do not have the knowledge needed to create and manage a venture based on their scientific discoveries, have difficulty making the choice between scientific endeavour and entrepreneurial activity and often encounter several non-technical barriers when they do try to spin-off new firms. Among these barriers are rigid intellectual and industrial property rights, rules and statutes that inhibit the diffusion and exploitation of research results obtained with the support of public funding, unnecessary regulation which slows down the introduction of new products and services to the market, and outdated methods for reporting and documenting a company's intangible assets.<sup>24</sup> Typical government support measures to foster entrepreneurship among academics include technology transfer and incubation facilities, pre-seed funds, early-stage angel investment and matching services, mentoring support, education to improve knowledge about the commercialisation and new venture formation process, and efforts aimed at reducing the lack of knowledge researchers have about how to develop a patent strategy within the complexity of a university environment.
  
- c. *High-technology entrepreneurs*: To increase the number of high-technology entrepreneurs, governments are developing strategies to help overcome the higher risks associated with developing businesses based on innovative high-technologies. Such ventures are often subject to market failures in securing market information, developmental and early-stage

financing, and other venture supports. Governments targeting this group of entrepreneurs commonly focus on the funding of high-technology incubators (e.g., ICT and LifeSciences Incubator projects in the Netherlands), Business Innovation Centers, high-technology seed capital and investment funds, and mentoring projects.

- d. *Fast growers*: Governments have been primarily interested in fast-growth firms because, given their share of the total stock of firms, they contribute disproportionately to job growth and thus are a more efficient policy target. However, fast-growth firms are not easy to identify prior to actually having experienced growth and in addition, not all fast-growth firms are found in high-technology sectors. Although there is evidence that the group of firms with the highest growth rates tend to have higher shares of high-tech manufacturing firms, technology-based services and other knowledge-intensive firms (Delmar& Davidsson, 1999) and that high-knowledge firms tend to exhibit greater rates of growth than those in low-knowledge industries (Thornhill & Amit, 1998), growth firms can be found in all sectors and industries (Storey, 1996; Birch, 1999).<sup>25</sup> Since fast-growth seems to be heavily dependent on the entrepreneur's commitment and will to grow the firm (Rumball, 2001), yet positively influenced by factors such as density of entrepreneurial activity and a supportive entrepreneurial environment,<sup>26</sup> a broader set of policy measures than 'picking winners, is suggested. To further stimulate the growth prospects of fast-growth firms, governments are setting up 'fast-growth firm' web portals (e.g., Ireland and the Netherlands), networks for fast-growers (e.g., the Netherlands), High Potential Start-up Teams to work with fast-growers on their development plans (e.g., Ireland), and stimulating the supply of regional angel funds, seed capital and venture capital funds.
- e. *Expatriates*: Ireland and the UK have targeted expatriates as a source of high-technology and fast-growth entrepreneurs. Ireland's Millennium Entrepreneur Fund is used to attract highly skilled individuals and teams involving a key Irish national to relocate back to Ireland and start a high-growth firm in manufacturing or internationally traded services. The UK offers an Enterprise Scholarship to attract the brightest and best graduates from other parts of the world to come to the UK to start a company and also offers a 2-year Pilot Scheme for Entrepreneurs (under the UK Immigration and Nationality Directorate) designed to attract outstanding entrepreneurs whose business plan proposals would result in exceptional economic benefit to the UK in rapidly developing S&T sectors and e-business.<sup>27</sup>

It is apparent that in responding to the situational and contextual differences of these five target groups, somewhat tailored policy responses are warranted.

### **3.3.2 Innovative entrepreneurship - policy measures**

A considerable amount of support activity directed at these target groups centers around universities, Institutes of Technology and research organisations, the sources of new knowledge and innovative, technology-driven firms. The policy measures aimed at increasing the level of innovative entrepreneurship fall within seven broad categories. These are discussed below.

#### *Promotion of innovation and entrepreneurship*

Clearly, a lack of cultural support for entrepreneurship in a society is an inhibitor to the start-up and growth of firms (GEM 2001).<sup>28</sup> Comprehensive public policy initiatives to enhance this

public support are somewhat rare. Perhaps as Storey points out in Chapter 4, governments do not feel comfortable actively promoting attitude changes in favour of entrepreneurship as a career and life choice. However, one of the most effective ways to promote innovative entrepreneurship is by recognising success stories and holding up these examples as role-models to others. Most governments are involved with the private sector and non-profit organisations as sponsors, supporters, or lead organizers in entrepreneurship, small business and innovation awards programs. Under the Science, Technology and Innovation Awareness Programme the Irish government, in partnership with PriceWaterhouseCoopers and the Irish Times, hosts an annual National Innovation Award to enhance public awareness of science and technology and innovation. By highlighting innovative companies, it hopes to demonstrate that new products and processes can be successfully developed and commercialised in any part of Ireland. In the UK, a Queen's Award for Enterprise is given to encourage entrepreneurship and innovation. Award programs of this type are ubiquitous in the United States and Canada.

Making use of broadcast media to promote a stronger entrepreneurship culture has been most extensively employed as part of government policy in Finland and Taiwan,<sup>30</sup> although there are a multitude of good North American examples of mostly private-sector initiated and funded televised programs profiling interesting and innovative entrepreneurs. Australia and the UK are examples of two national governments that are actively promoting both innovation and entrepreneurship through national campaigns. A component of Backing Australia's Ability is an A\$35 million National Innovation Awareness Strategy aimed to ensure Australians recognise the importance of innovation and entrepreneurship to the future.<sup>31</sup> It celebrates the contributions of science, engineering and technology, supports awards for excellence in scientific research, and raises understanding amongst young people of the commercial potential of science and technology (*Promoting Young Entrepreneurs Initiative*). The aim of the British government's National Enterprise Insight Campaign is to 'create a substantial improvement in pro-entrepreneurial attitudes and a sustained increase in entrepreneurial activity in the UK'.<sup>32</sup>

### *Entrepreneurship education*

Research consistently reinforces that exposure to entrepreneurship courses should be part of a country's investment in 'entrepreneurial capacity' (motivation and skills).<sup>33</sup> Lack of know-how about how to start a business, find and evaluate business ideas, do business planning, execute a business plan, and manage a new business are impediments to entrepreneurial activity. Furthermore, because active entrepreneurs are drawn from all levels of education, there is a case for supporting entrepreneurship curricula at all levels of the education system.<sup>34</sup> Entrepreneurship education is evident as an important pillar of government entrepreneurship policy, particularly in the Netherlands (see Chapter 2), Australia, Finland, the UK and the Atlantic Region of Canada.<sup>35</sup> In terms of a general thrust to integrate entrepreneurship throughout all levels of the education system (from Kindergarten to post-secondary), Dutch, Australian and Finnish governments have approved national programs, incorporated entrepreneurial skills in national curriculum guidelines, and committed funding for the development of resource and curriculum materials, teacher orientation programs, resource databases and centres and information sharing mechanisms. In the UK, 'enterprise and entrepreneurial skills' are now part of the national curriculum guidelines, work has begun to

develop a cohesive strategy for cross-system integration of entrepreneurship education, and Science Enterprise Centers have been funded to bring business and entrepreneurship skills into science curriculum.<sup>36</sup> Several graduate enterprise pilots have been funded under the UK Graduate Business Start-up Scheme.<sup>37</sup> The UK New Entrepreneur Scholarship Program is aimed at providing an incentive to potential entrepreneurs of all ages to gain access to the entrepreneurial skills necessary to develop and realize business ideas. Although several entrepreneurship education initiatives are underway in the US, the national Department of Education has yet to adopt entrepreneurship education as a priority on the K-12 system. At the post-secondary level, most entrepreneurship courses are offered as electives within Business Schools programs and a low percentage of non-business students have the opportunity to be exposed to entrepreneurship curriculum, that is, students in IT, engineering, science and medicine, media studies, etc. To stimulate higher levels of entrepreneurship in the technology-oriented and knowledge-based sectors it is necessary to integrate entrepreneurship modules into these programs of study. Innovative programs such as the University of Twente's TOP Programme, a good practice being adopted by other European universities,<sup>38</sup> and Ireland's Graduate Enterprise Platform, a one-year, rapid incubation activity that provides training, business facilities, mentoring and financing to university/college graduates with industrial experience who want to start their own high-potential business, provide models of successful approaches.

Apart from these general thrusts towards entrepreneurship education, governments are initiating and funding a number of projects and activities to link entrepreneurship education with the innovation objective, the most popular of which are business plan competitions. The Dutch Ministry of Economic Affairs sponsors a New Venture Business Plan for third-level students ([www.new-venture.nl](http://www.new-venture.nl)); the Swedish government sponsors the Venture Cup business plan competition in which thousands of Swedish university students participate; and AusIndustry funds a University business plan competition under its Developing Young Entrepreneurs Program. There are many other country examples of regional and national competitions, often funded by the private sector. The success of the US-based MIT business plan competition and Venture Forum in spinning-off new, innovative, growth firms is a model being widely emulated.

#### *Incubation policies*

Central governments in Ireland, the United Kingdom, Australia and Taiwan are aggressively implementing policies to establish incubators in towns and cities and on university and college campuses throughout the nation as part of their start-up and innovative entrepreneurship policies, and setting up Incubator Funds to finance them. This is based on the assumption that the lack of start-up space with flexible leases, good communications, business advice, mentoring, and specialized equipment will inhibit the emergence of high-tech firms. For the most part, these incubators are structured for knowledge-based start-ups, often located on university/college campuses, totally wired with broadband Internet access, networked to a rich circle of researchers, technologists, venture capitalists, experienced entrepreneurs, and business consultants and advisers, and often equipped to meet the needs of clusters of firms within a similar growth sector. High-technology and knowledge-based firms benefit greatly from incubation environments where proximity to sources of knowledge and other cluster members accelerates innovation and reduces costs of doing business. Recent research

suggests that these 'networked incubators' are the nucleus of regional economic growth and one of the most successful initiatives to foster rapidly growing firms.<sup>39</sup> Research also shows that businesses started in an incubator have higher survival rates than other firms.<sup>40</sup>

The objective of funding university incubators is to expand the base of high tech companies operating on campuses. Campus-based incubators have proven to be an ideal framework for technology commercialisation as well as being a learning lab environment for engaging both students and faculty researchers in economic development activity.<sup>41</sup> The Irish Government has recently announced a funding program for the establishment of Campus Incubators (up to IER2.5M for each incubator) throughout Ireland<sup>42</sup> in order to foster the development of value-added start-up companies arising from or associated with R&D resources of the host Institute. One of the performance criteria is the number of spin-off companies, although its objective to increase overall campus company activity, including the start-up of new firms by graduates. The UK government has funded a number of University Innovation Centers (considered at the heart of cluster development and support of new start-up firms) and in 2001 launched a £75M Incubator Challenge Fund. It is expected that 75 incubators will be funded, spawning an average of 35 new firms a year, for a total of 2,625 new starts. Technology incubators are typically located on the premises of Finland's 17 Science Parks and Technology Centers. These birth about 350 enterprises annually. The Dutch government has funded two incubators to encourage entrepreneurs in ICT and LifeSciences. Both Bioparter and Twinning projects offer a) advice, coaching and support, b) incubators, and c) a StartFund for the financing of the start-up phase and a GrowthFund to finance firms in the growth phase. In 2001, the Ministry of Economic Affairs established a Subsidy scheme for the co-financing of university business plans proposing ways to facilitate techno-start-ups. Eligible projects could include funding for infrastructure, like an incubator, or for advice and coaching or networking facilities. Since 1996, over 50 incubators have been established under the the Taiwan government's National Incubator Strategy, mostly on university campuses. Educational institutions ranging from media and arts education, teacher education, humanities and technology are all involved in the Incubator Center Program. Networks between entrepreneurs, researchers, graduate students and local industries are encouraged. Over 670 businesses have started up in these incubators.<sup>43</sup> There are over 800 incubators in the United States, only 27% of which are currently affiliated with academic institutions. Under a recent Senators Bill, the creation of a US\$20 million fund is expected to provide competitive, matching grants to business incubation programs affiliated with colleges and universities.<sup>44</sup> The goal is to expose college students to the business incubation process early in their careers as a way of fostering the next generation of entrepreneurs.

Technology transfer centers and industry liaison offices also play a role in helping to spin-off new firms. Besides assisting researchers with the process of protecting their IP, Industry Liaison offices offer a full range of technical, management and commercial services, a cadre of experienced professional advisers and educational, promotional assistance. These exist on many university campuses in many countries and are seen as an essential intermediary in support of new innovative firms. Impact studies of university spin-off activities offer a rich area for future research.

### *Networks and business support*

Mentor networks, peer group networks for fast-growth entrepreneurs, and cluster networks are among the most significant innovations in business support for new high-technology and fast-growth firms. Government policy aims to facilitate interaction activity between university researchers, scientists and technologists, local entrepreneurs and companies, venture capitalists and investors, government agencies, and local support organisations in local and regional clusters and to encourage the formation of networks of high-technology and growth-oriented entrepreneurs. The rationale for government intervention is explained by the presence of 'systemic failures' and the need for government to facilitate linkages to capitalise on the externalities of R&D and knowledge spill-overs. The objective of policies is to accelerate the rate of commercialisation of new technologies and innovation through the transfer of knowledge and exchange of know-how and resources. In addition to the funding of networked incubators, this objective can be achieved in a number of ways. One option, adopted in the Netherlands, is the establishment of associations of fast-growth and ambitious entrepreneurs such as GrowthPlus and 'maak kennis met....' (highlighted in Chapter 2) to foster the exchange of experience between companies through business visits and the sharing of internal business strategies. Mentoring schemes for growth firms are in place in the UK and Ireland. Enterprise Ireland provides access to a database of mentors, defined as entrepreneurs (normally over 55 years of age) who have set up and developed a high-growth sector company, who are available to offer coaching and advice to entrepreneurs in emerging high-growth sector firms ([www.enterprise-ireland.com](http://www.enterprise-ireland.com)). The UK already has a Volunteer Business Mentoring Program, now being extended to include a Business Buddies Scheme. Business buddies are experienced entrepreneurs who agree to mentor new growth-oriented firms. Some governments are developing dedicated business support services for growth entrepreneurs. A recent example is the Excellerator Initiative in Ireland through which Enterprise-Ireland and Ernst&Young are facilitating the growth of high-potential start-up companies (in healthcare/life sciences, infomatics, digital media, and e-business services) by offering a comprehensive business life-cycle range of online and offline tools to empower selected entrepreneurial companies to learn, renew, challenge and accelerate their businesses ([www.enterprise-ireland.com](http://www.enterprise-ireland.com)). Enterprise-Ireland also offers an Executive Development Program for high-growth firms and the Dutch Ministry of Economic Affairs partners with the TIAS Business School to deliver Masterclasses for ambitious entrepreneurs.

### *Risk capital and financing*

As part of their general SME and entrepreneurship policies, governments emphasize the importance of access to and availability of both debt and equity financing for existing small businesses and new firms. In innovative entrepreneurship, characterized by high-technology and fast-growth firms, the lack of ability to access risk capital may be the most significant deterrent to development. This is particularly true for new firms in the pre-commercialization or start-up stage. The lack of established sources of financing for spin-off creation has proven to be the biggest barrier to creating and advancing these companies.<sup>45</sup> Potential investors are often discouraged by the long development times and lack of short-term returns associated with high tech start-ups, and because of a lack of concrete assets or easily identified markets,

many investors see these ventures as risky and difficult to value and finance. Risk capital gaps are perceived to exist at distinct stages of the innovation process from conceptualization and development to commercialization and growth. In addition to concern about the proportion of venture capital available for emerging-technology, new and early-stage firms (versus for established companies and management buy-outs), there is often an unequal regional distribution of these funds. In several countries, there is a gap in the market for equity deals below amounts normally considered profitable for formal venture capital firms. In addition, information asymmetries are seen to exist with respect to information about equity financing and deal-making, both for investors and entrepreneurs. New entrepreneurs are often inhibited in their efforts to secure financing because of lack of knowledge about types and sources of financing, especially equity financing, and their lack of ability to negotiate on their own behalf with venture capitalists and informal investors. To deal with this obstacle, governments are increasingly focusing on knowledge and information needs. This enhances the possibilities for new and growing firms to find their own capital and raise external capital.

Governments use market failure and information asymmetry arguments to justify incentive programs geared to increase the availability of investment and venture capital for higher risk and high-growth ventures and to support information and matching initiatives to improve the flow of knowledge among and between the communities of investors and innovative entrepreneurs. As part of their policy mix, governments implement tax credit schemes for investors, provide matching funds for private-sector managed venture capital programs, establish targeted pre-seed, early-stage risk financing and venture capital funds, organize angel databases and matching services, and set up financing portals on their small business web pages. It is noted that many of the government funded or backed seed and venture capital funds come with strategic advice, a network of business contacts, assistance with hiring, marketing, management and technical support, and are often delivered in conjunction with incubator or innovation center programs. A few illustrative examples of these government policy and program measures are presented in Table 3.1

Table 3.1 Financing innovative entrepreneurship

Financing Gap	Initiative and Objectives
To fill the gap for pre-seedfunds to enable new technology firms to get to the development point where they can attract private-sector venture capital	Ireland's R&D Capability Initiative helps new technology-based start-up companies with funding support for R&D projects and technical assistance.
	The UK High-Technology Fund invests in R&D innovation in key technologies.
	Australia's Commercialisation of Emerging Technologies Program (COMET) assists early stage innovative firms to overcome barriers to commercialisation; Australia's Biotechnology Innovation Fund seeks to increase the rate of commercialisation of new biotechnologies (funds the concept-to-proof stage).
To address the gap between scientific discovery and the release of a commercial product	Australia's Pre-Seed Fund is aimed at encouraging university researchers and public sector research agencies to commercialise their discoveries and create new firms; it covers the costs of the patenting process, proof-of-concept, prototypes, initial market studies and business plans.
	The UK University Challenge Fund targets university researchers, providing seed venture funds for investments in early-stage spin-off companies from university's knowledge base.
To fill the gap for higher risk technology start-ups	Australia's Innovation Investment Fund (IIF) provides a private-sector incentive to establish venture capital investment funds for new and early-stage technology-based firms based on Australia's strong R&D.
	The StartFund and Growth Fund are Dutch government sponsored venture capital funds to fill the financing gap for emerging ICT and Life Science start-ups. Special provision for technology start-ups and fast-growth firms is also available under the credit guarantee scheme (BBMKB).
	Enterprise Ireland has started up over 15 venture capital funds in partnership with the private sector, some of which are targeted at high-technology sectors.
	The Finnish SITRA National Fund for Research and Development concentrates on early-stage investments in new firms involved in commercialisation of technology and innovation (84% of all seed financing done in Finland in 1999).
To stimulate regional pools of venture capital to enhance their innovation capacity	The UK Regional Funds Development Scheme, Community Development Venture Capital Fund, and Regional Venture Capital Network provide greater access to pools of venture capital throughout UK regions.
	The US Small Business Administration New Market Investment Fund aids the development of regional venture capital funds.
To fill the gaps for smaller amounts of equity/venture capital, i.e., seed funds.	Ireland's Campus Capital Venture Capital Fund provides access to seed capital in amounts of less than IER 500,000 to staff and graduates of Irish universities who start campus companies. The Business Innovation Center Fund (Ireland) provides early stage seed capital in amounts between IER 10,000 and IER 100,000 for innovative, technology-led firms.



The Dutch solution to reducing the information asymmetry between financiers and entrepreneurs is the SME-Account, an internet-accessed service that helps entrepreneurs develop an annex on their yearly account and gain insight about ways to improve their business strategy. Industry Canada's Steps to Growth Capital modularized program provides training materials and seminars so both entrepreneurs and investors can become more competent in deal-making (<http://growth.ic.gc.ca>). Government facilitated angel networks are in place in Ireland, the US, the Netherlands, Canada and the UK. The Internet is also being employed to facilitate the matching of angel investors with entrepreneurs seeking equity (e.g., ACE-NET in the US).

### *Intellectual property rights policies*

Within the context of innovative entrepreneurship, policies affecting the protection of intellectual property clearly need to be examined. The most vivid examples of government attention to this are in the United Kingdom and Australia. There seem to be three or four areas requiring attention. In the UK, the government is seeking to increase the rate of patenting to protect the domestic market, to encourage more UK individuals and firms to file for and obtain patent protection and to ensure universities improve their management of intellectual property in line with leading public, private and international practice.<sup>46</sup> These objectives are similar to those of the Australian government.<sup>47</sup> Both governments are revamping the delivery of information on patents to simplify procedures, speed up patent approval processes and lower the entry threshold to the patent system by reducing patent fees and costs. Both have set up Intellectual Property Web Portals as a gateway to the range of advice on intellectual property rights; the UK has set up a 'private applicant unit' to deal with the patent applications of lone inventors and small businesses; and both are simplifying patent procedures and reviewing the special considerations for biotechnology firms. Australia has also released a guide to best practice on IP principles to help universities, non-government research institutes and hospitals to develop and maintain effective strategies for managing their intellectual property and is planning to fund an IP Research Center in 2002 to provide multi-disciplinary input to IP policy development and timely modification to patent laws.<sup>48</sup> Having said all that, evidence on the economic benefits of patents is not clear. Arundel (2000) argues that there is no short-term public benefit in increasing patent protection if non-patent incentives to invest in innovation are adequate.<sup>49</sup> In fact, he argues that patents can create monopolies and interfere with the diffusion of new inventions, a particular concern with enabling technologies. Providing educational materials to entrepreneurs to delineate the conditions under which patents are of value compared to other appropriation strategies is likely to be of great value, as well as policy actions that help entrepreneurs access patent data.<sup>50</sup>

Since appropriate protection of university technology and know-how is a prerequisite for commercialisation, and policies affecting the way ownership of publicly-funded intellectual property is shared may substantially impact on the rate of commercialisation of university and government funded research, these are also areas of concern vis-à-vis the stimulation of innovative entrepreneurship and spin-off firms. Although there is no standard formula and each university often adopts its own policy, there is evidence that commercialisation of research tends to be higher when the researcher owns all or at least part of the intellectual property rights. With respect to public sector research institutes, it is not unusual for them to be poorly equipped to manage their intellectual property for the benefit of firms.

How are government policies being employed to address these particular issues? The US government passed the Bayh-Dole Act in 1980 providing universities with the rights to intellectual property resulting from federally funded research projects. Following this, American universities started setting up technology transfer offices, which improved the situation, but barriers to the flow of university technology into commercial markets still remain a challenge.<sup>51</sup> In the case of Australia, applicants for university research funding have to submit Research and Research Training Management Reports to the government funding bodies including information on IP policies and commercialisation strategies. The UK Department of Trade and Industry is adopting the proactive practice of entering into partnerships involving several universities, trusts and technology transfer organisations to help the transfer of intellectual property into products by identifying ideas ripe for exploitation and pushing them through the patent process (e.g., the Biotech Exploitation Platform Challenge). The UK government has also recognized the importance of changing the rules for government-funded research so that the research bodies own the Intellectual Property Rights.<sup>52</sup>

### *Tax policies*

Most innovation policies address some aspects of taxation policy that will have an impact on the level of innovative entrepreneurship. To create incentives for new technological innovations and to increase the supply of capital for new and knowledge-based firms (cash flow, retained earnings, outside equity investment), the most popular fiscal policies include tax concessions for private sector R&D investments, tax credit schemes for venture capital and high-risk informal investments, reductions in Capital Gains Tax, and special tax treatment for employee stock options. As well, it is becoming quite common to reduce corporate income tax rates as a way of fuelling growth. Both the UK and Australia have attractive R&D tax concessions for qualifying firms – 150% and 125% of the eligible R&D investment, respectively. The UK has reduced Capital Gains Tax on unquoted businesses from 40% to 10% for the next four years as a way of encouraging entrepreneurs and outside investors to invest in entrepreneurial firms.<sup>53</sup> Ireland has the lowest corporate income tax rate; by 2003, all businesses will pay only 12.5%.

### **3.4 Dutch entrepreneurship policy: international good practice**

As outlined in Chapter 2, the Dutch approach to innovative entrepreneurship emphasises three major elements: 1) creating a more entrepreneurial culture by stimulating an entrepreneurial attitude in the education system, 2) stimulating high-tech start-ups out of universities to make better use of publicly financed R&D, and 3) reducing growth barriers by focusing on the coaching and networking of high-growth entrepreneurs. In relationship to the countries used to flesh out 'innovative entrepreneurship policies', the Netherlands stands out in a number of areas.

*Research contributions:* In Chapter 2, Waasdorp outlines Dutch research efforts to identify and quantify the specific contributions of innovation and entrepreneurship to economic growth and development. He also highlights the government's commitment to benchmarking the performance of the Netherlands against other countries. This research rigorously underpins the development of Dutch policy regarding innovative entrepreneurship and is an area where the Netherlands currently excels in comparison with other countries.

*More articulate identification and description of the target groups.* The Ministry of Economic Affairs has clearly identified three groups of innovative entrepreneurs (Chapter 1) and engaged in statistical and empirical research to develop a profile of each of them and to determine the elements or factors that could lead to an increase in their propensity. Policy measures are clearly focused on these targets.

*More systematic approach to the development of an entrepreneurship education agenda.* The Dutch approach demonstrates the most comprehensive approach to integrate entrepreneurship into all levels of the education system and developing a progression model of learning from Primary school through to university. The Ministry of Economic Affairs through the Commission on Entrepreneurship and Education has developed a partnership with the Ministry of Education that includes representatives from all levels of the education system. This approach is unique among the countries in the Stevenson and Lundstrom (2001) study. The objective of Dutch entrepreneurship education is to help students learn the process of becoming an entrepreneur; students who have finished their studies can be supported in the start of their own innovative enterprise by Regional Knowledge Centers, Syntens and organisations like Growth Plus. In the UK and Australia, officials place more emphasis on the acquisition of enterprising attributes and qualities at the K-12 level and less on the objective of producing entrepreneurs. In Ireland, in spite of their integrated program approach towards the creation of high-technology, high growth firms, there is limited indication of strategic efforts to formally infuse entrepreneurship within the national curriculum.

*Development of performance indicators and measures of policy effectiveness.* The Dutch government has identified a number of indicators to measure and monitor their performance in producing a more 'entrepreneurial society'. These include measures of entrepreneurial climate and culture, business entry rates, as well as growth in the number of techno-starter and high-growth firms. This data is collected through a number of sources: EIM's Business Starter panel, research tracking the gestation of a group of nascent entrepreneurs over time<sup>54</sup>, reports from the Chamber of Commerce, where corporations are obligated to register their annual accounts, and by watching the Europe 500 list. The Minister of Economic Affairs produces a quarterly publication, The Entrepreneurship Monitor, to report on and benchmark its progress towards meeting policy goals and targets. This data is widely distributed. Very few countries are as committed to collecting and reporting this performance data on such a regular basis. Dutch government officials also commit resources to developing measures of the effectiveness of its entrepreneurship policy approach and are ahead of other countries in assessing the impact of entrepreneurship policy options.<sup>55</sup>

*Horizontal policy structure and dedicated unit for innovative entrepreneurship and start-ups.* The Dutch government has assumed a horizontal approach to managing its policy priorities. Since both entrepreneurship and innovation are horizontal policy issues, this makes sense. Director-Generals of Innovation, Enterprise and Market Functions meet weekly to discuss mutual issues. The 'innovative entrepreneurship and start-ups cluster' team, which reports to the DG-Innovation, has responsibility for entrepreneurship and education, techno-starters and high-growth companies. Although the Ministry of Economic Affairs is not as directly involved in delivery of program measures as Ireland, the UK and Australia, it makes greater use of Chambers of Commerce and other private sector members, including post-secondary institutions, and has negotiated agreements within the framework of the 25 'big cities policy' to stimulate entrepreneurship in their regions.

*Not as directly involved in the financing of growth firms through seed and venture capital programs as the other countries.* Although the Dutch government has stimulated the creation of three private sector venture capital funds and funded the StartFund and GrowthFund associated with its technology incubators, the 2001 GEM report reported that the Netherlands has very low levels of venture capital and informal investors relative to the other 29 countries in the study. According to the EU Enterprise Scoreboard, the vast majority of Dutch venture capital is invested in more advanced rather than early stage firms.<sup>56</sup> Although Dutch entrepreneurs are less likely than entrepreneurs from other GEM countries to point to the lack of financing as a barrier, the question remains whether a lack of equity capital is impeding growth.

*Lack of incubation facilities relative to other countries.* The average number of incubators per million people in EU countries is 5.5. This ranges from 12 in Finland to 1-2 in the Netherlands.<sup>57</sup> Yet a lack of good locations for new enterprises has been identified as a barrier in the western part of the Netherlands. The NLG 100 million Subsidy Scheme, announced in late 2001, to seed incubators at Dutch universities will help to remedy this lack of infrastructure in the Netherlands.

*High relative cost of incorporating a company:* Dutch corporation law requires an initial paid-in capital of NLG 40,000 when incorporating a new company. While this is similar to corporation law in Sweden, only a nominal amount of capitalization is required in Canada, the UK, the US, and Ireland (only 1 EURO in the UK and Ireland). Since having a limited liability company is almost standard fare for high-technology and fast-growth firms, Dutch officials may want to review the extent to which this requirement is a barrier to innovative entrepreneurship.

*Less focus on use of intellectual property and tax policies to remove barriers to innovation and commercialisation.* In Chapter 2, Waasdorp reports that the Dutch Parliament is currently reviewing a paper on patent issues. It remains to be seen what changes will be made in government and university policies.

### **3.5 Conclusions**

Innovative entrepreneurship policies aim primarily to increase the number technology-oriented start-ups (including spin-offs from R&D activity) and to stimulate the growth path of higher-growth potential firms. The primary focus of policy orientation and funding support is tertiary level universities, colleges and Institutes of Technologies and research institutions, places where new knowledge is being created and new technologies spawned. Based on an examination of government practices in a number of countries, policy measures are being justified to address a number of barriers inhibiting the development of innovative new firms – intellectual property issues, lack of adequate premises, lack of pre-seed developmental and early stage equity financing, lack of entrepreneurial and management skills, lack of interaction effects between possible innovations and potential entrepreneurs and lack of a dynamic environment to stimulate overall entrepreneurial activity.

In Chapter 2, Waasdorp raises the question of how innovative entrepreneurship differs from 'ordinary entrepreneurship'. First of all, these two types of entrepreneurship may result in different economic outcomes. The main contribution of ordinary entrepreneurship is job creation, the majority of these founders 'lifestyle entrepreneurs' whose businesses will not

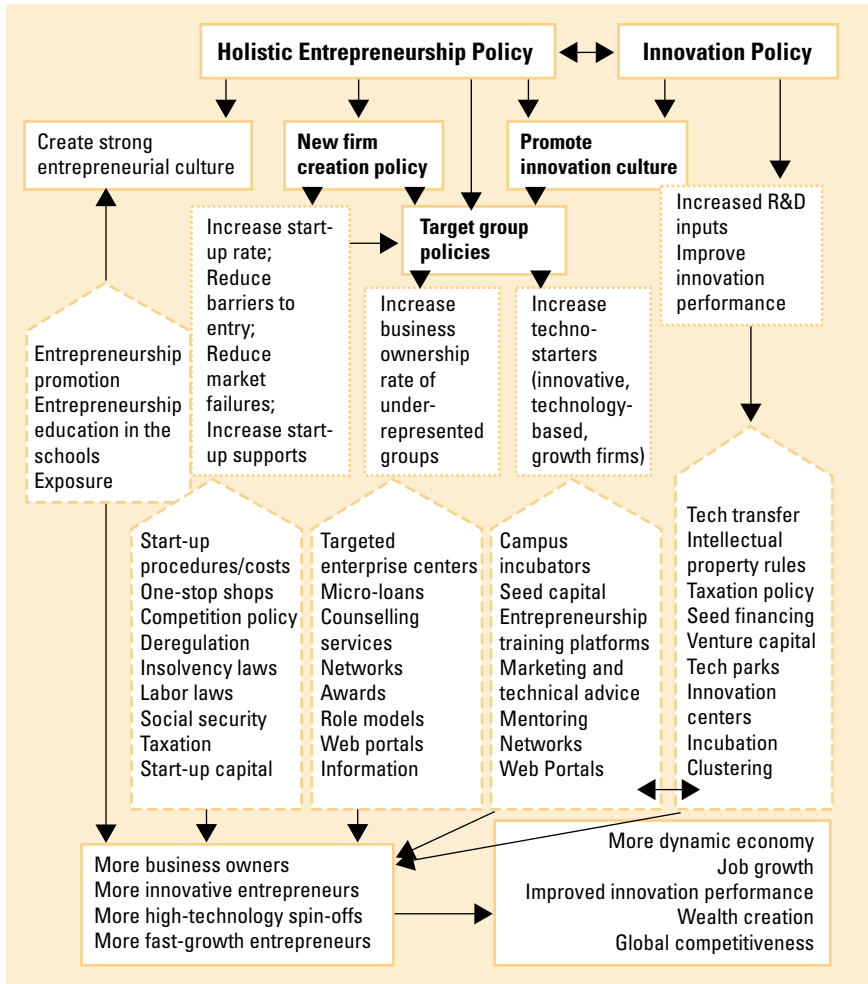
grow beyond a very small size. Innovative entrepreneurship is more likely to lead to higher value-added jobs and wealth creation, their founders perhaps more compelled by the opportunity of the venture and its innovativeness. As well, innovative firms appear to have higher growth rates. This, in many instances, leads to the targeting of government support in the higher-growth potential, technology-oriented sectors. On the other hand, 'ordinary entrepreneurship' can be the seed-bed for growth businesses as well as the incubator for more experienced, serial entrepreneurs.

Evidence exists to support the idea that innovative entrepreneurship is likely to be more effective in environments conducive to high levels of general entrepreneurial activity, that is, in environments where entrepreneurship is highly valued and supported by society. Clarysse et al. (2000) found in their study of spin-off firms in different regions, that the development of the entrepreneurial climate in a region, to a large extent, determined the number of start-ups and early growth research-based spin-off firms. In weak entrepreneurial environments, few opportunities are offered for external knowledge acquisition, starting entrepreneurs depend more on trial and error learning and the incubation phase of their start-ups often takes longer. Such environments create a lower incidence rate of high-growth ventures than supportive environments where entrepreneurs have the occasion to exchange experience, to make use of professional specialized services to build the business model and access seed capital.<sup>58</sup> This point is confirmed in Chapter 2; countries with the highest levels of economic creativity are countries that focus on access to technology and to a healthy entrepreneurial climate. This paper therefore proposes that policies in favour of innovative entrepreneurship (as a target approach) should be considered in the context of a 'holistic' entrepreneurship policy framework which addresses all the other issues, such as societal support for an entrepreneurship culture, promotion of entrepreneurship, entrepreneurship education in the schools, general administrative, regulatory and legislative barriers to business entry, flexible labour markets and business support measures for the development of nascent entrepreneurs in their pursuit of any manner of business idea. As well, it should be linked to the innovation policy agenda. (See Figure 3.1 for a graphic of the convergence between innovation policy, entrepreneurship policy and innovative entrepreneurship policy measures).

In addition to the fact that the effectiveness of a stand-alone 'niche' innovative entrepreneurship (or techno-starter) policy may be impeded if the culture for entrepreneurship is under-developed, the density of business owners too thin, the full range of education support missing, etc., policymakers should be aware of other risks in such an approach. A sole focus on opportunities in high technology sectors may well overlook growth opportunities in lower and non-technology areas. Balje and Waasdorp (1999) state that high-growth businesses form a kind of indicator for the capacity to innovate,<sup>59</sup> but make the point that the growth of low technology, retail and service firms can be propelled by non-technological innovations in distribution, marketing and management or by the application of technology to aspects of operations. Since innovative entrepreneurship is targeted primarily at the better-educated segments of the population, other 'niche' groups (e.g., under-represented groups) may become secondary policy targets and the economic opportunity from potentially successful entrepreneurial activity hampered (not that the two groups are mutually exclusive). A techno-starter strategy does not necessarily incorporate efforts to integrate entrepreneurship throughout the education system and thus, the long run benefits of producing a large number

of competent future entrepreneurs will be lost. Governments seeking to increase the level of innovative entrepreneurship and the entry rate of high-technology and fast-growth firms should also pay attention to the strength of their entrepreneurial culture and their overall level of firm dynamism.

Figure 3.1 – Convergence of entrepreneurship policy and innovation policy



The Dutch government has adopted a 'holistic' entrepreneurship policy, which in addition to incorporating a focus on innovative start-ups has the broader objective of creating a more entrepreneurial society. Thus its entrepreneurship policy incorporates measures in the areas of entrepreneurship education, reduction of barriers to business entry, growth and exit barriers, support for institutional structures at the local level to assist new entrepreneurs through the start-up process and the targeting of under-represented groups of the business owner population (e.g., ethnic minorities), in addition to the techno-starter policies. The Dutch government excels in its entrepreneurship policy-making process, in the identification of

performance measures for entrepreneurship policy and in the conduct of research to measure the success of its policy orientation. Much success has been realized in the past two years. The objective for new start-ups has been surpassed; the business entry rate is now 10%, very close to the US entry rate. However, the showing of the Netherlands in the GEM 2001 Total Entrepreneurial Index (TEA) indicates that it is performing less well than other countries in entrepreneurial prevalence rates. There is less density of entrepreneurship in the country, less employment share in small firms, a relatively low level of exposure to entrepreneurship role-models, and a weaker culture of entrepreneurship. In 2000, only about 40% of Dutch people stated they would prefer to be self-employed rather than have a paid job. This compared to almost 70% in the United States, over 60% in Ireland, and 48% in the United Kingdom.<sup>60</sup> This suggests there may be systemic barriers in the structure of the labor market and continuing work to be done in the areas of promotion, exposure, and education. A dense entrepreneurial base is important to sustained and accelerated levels of entrepreneurial activity in the long-term, an advantage which the US certainly has. But it takes time to build and the Dutch government should persist in its current direction. With a continuing commitment to research on its innovative entrepreneurs and the tracking of government policy performance in producing higher levels of innovative, technology-oriented and fast-growth entrepreneurs, there will be much to learn from the Dutch case.

## Notes Chapter 3

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- 2 Lundstrom Anders & Lois Stevenson, *Entrepreneurship Policy for the Future*, Special edition for the EU SME Forum, Vaxjo, March 2001, Swedish Foundation for Small Business Research, Stockholm, March. The ten economies studied include Australia, Canada, Finland, Ireland, the Netherlands, Spain, Sweden, Taiwan, the United Kingdom and the United States.
- 3 For more detailed discussion, see Stevenson & Lundstrom, 2001, pp. 41-47.
- 4 Ireland is currently the most aggressive with this policy orientation, followed by the Netherlands, Australia and Taiwan.
- 5 Lundstrom & Stevenson, Chapter 2.
- 6 The primary countries for comparative purposes are Australia, Ireland, the United Kingdom and the United States. Specific measures from the other four countries in the study (Canada, Finland, Spain, Sweden, and Taiwan) are profiled in cases where they exhibit particular strength in supporting innovative entrepreneurship policies.
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- 37 ([www.dfee.gov.uk/heqe.gbsupproj.htm](http://www.dfee.gov.uk/heqe.gbsupproj.htm)).
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# 4 *Innovative entrepreneurship in the Netherlands: observations from a UK perspective*

David Storey

## 4.1 Context

With the possible exception of Sweden, the Netherlands is the best illustration, within the EU, of collaboration between small business/Entrepreneurship policy makers and the research community. The current documents illustrate the “good practice” of deriving new policy developments from careful research. They also illustrate a keen awareness of experience and research findings, from within and outside, the Netherlands.

This is not a characteristic of many countries. More common is insularity amongst policy makers and their apparent willingness only to be influenced by those with ‘practical experience’ in running small businesses. In many instances legislation is introduced ahead of any research-based case. Once implemented, too many policy makers seem determined to ensure that the objectives and targets of policy are so opaque as to preclude any subsequent evaluation.

This commentary seeks to provide some personal reflections on the Netherlands policy objective of fostering Innovative Entrepreneurship, whilst also seeking to enhance the number of new businesses started.

It is a commentary on the three chapters by Yvonne Prince, Pieter Waasdorp and Lois Stevenson, and the bulk of the comments relate to assessing the effectiveness of policies discussed in all three chapters. Where, however, the issue/policy is addressed by only one author, I make it clear to which author I am referring.

I begin with a personal statement in Sections 2 and 3, which constitutes the framework for the bulk of the text in Section 4.

## 4.2 Is there a market failure?

The comments set out below inevitably reflect my own philosophical starting point in discussions of Enterprise policy. It is the standard economists perspective that the rational, informed individual chooses and switches between self-employment, unemployment and paid employment according to the relative utility in the three states.

Whilst the assumptions of rationality and information are important, my initial starting point is that governments intervene, as in any other market place, only where there is evidence of market failure. But, market failure is a necessary but not a sufficient condition for intervention, since it cannot always be assumed that intervention is beneficial.

In the Entrepreneurship/small business area, the most likely cause of market failure is imperfect information. Three illustrations are provided. The first is that, for some reason,

people do not realise (are not aware of) the benefits of self-employment. They may not realise that they have entrepreneurial talent, perhaps because they are not made aware of the entrepreneurial option. Policies to enhance entrepreneurial awareness can therefore be justified on these grounds.

A second justification for intervention is where there are specific barriers preventing individuals entering self-employment. The classic example is discrimination in credit markets on the grounds of ethnicity or gender.

A third case for intervention, based upon information imperfection, justifies programmes seeking to increase the number of 'technology-based' entrepreneurs. Here the persuasive argument is that financial institutions are both risk-averse and unable to accurately assess the returns from technology ventures. Furthermore, because of the high fixed costs of assessment, technology-based businesses, requiring equity capital, are disadvantaged because they are high risk/high return ventures. All these factors mean that without some financial underpinning from the state, the number of technology-based ventures could be sub-optimal.

In principle therefore the standard economic approach to public policy intervention is to identify the presence of market failure, and then to assess whether public intervention will help to reduce such imperfections.

### **4.3 Beyond market failure and into social engineering?**

The current Netherlands documents, but particularly the recommendations of the Lois Stevenson paper, however go significantly beyond intervention based upon market failure. Whilst the economist is comfortable with taking current societal attitudes as a given, he/she is less comfortable with programmes that seek to change attitudes. Probably a key dividing line is that whilst programmes to raise awareness, leading to better information for dissemination are acceptable, programmes to change attitudes – make society more entrepreneurial – make the economist uneasy.

Nevertheless at the heart of the policy document is a programme to both increase the number of new firms started 1999-2001 by 25% and secondly to increase the percentage of high tech and fast growth firms. Furthermore, as part of the attitudinal change being sought, there are initiatives to 'ease' the burden of bankruptcy. The latter changes are justified on the grounds that those who have failed in business will be more likely to start again – and by implication perform better on the second than on the first occasion – if the stigma of bankruptcy is lower than is currently the case.

Lois Stevenson argues for the more radical objectives of an Entrepreneurial Society, which she defines as "holistic", to include issues of culture, education, barriers to entry and support for nascent entrepreneurs in all types of business. Indeed her view is that greater emphasis on "techno-starters" could eclipse the achievement of these wider aims.

My personal view is that it is not the role of government to change the attitudes of its people. Government campaigns to change attitudes, however well intentioned, smack of social engineering. But my personal opinions carry no more or less weight than those of any other

individual in society. Where I may, perhaps, claim to comment with more authority is on evidence of whether the policies discussed in the three chapters have been effective.

#### **4.4 So, will such programmes work?**

This section will examine six questions.

- Can birth rates be raised?
- Is it possible/desirable to raise business ownership/start ups amongst under-represented groups?
- Do more births lead to more jobs?
- Will changing bankruptcy laws lead to more births?
- Why have tailored policies for “innovative Entrepreneurship”?
- What is the link between Innovative Entrepreneurship and Growth Firms?

##### *a. Can public policy programmes raise Birth Rates?*

The evidence from the United Kingdom on the success of programmes that seek to raise birth rates of firms is, at best, mixed. In some cases there is a clear direct, but possibly only short-term, effect. In other cases it is more difficult to identify an impact.

One example of a clear direct influence is the UK’s Enterprise Allowance Scheme (EAS). Introduced in 1981, it triggered a huge rise in new firm formation.<sup>1</sup> This can be seen from comparing self-employment rates between the UK and the Netherlands. In 1980, prior to EAS, UK non-agricultural self-employment rates were 6.7%, compared with 8.8% in the Netherlands. Whilst self-employment rates in the Netherlands throughout the 1980s remained broadly flat or falling slightly, those in the UK rose sharply to a peak in 1990 of about 12%. This was clearly linked to EAS which provided public subsidies to encourage primarily unemployed individuals to enter self-employment. At its peak in 1989 the programme cost the UK taxpayer around £200 million per annum with about 100,000 people participating<sup>2</sup>.

By 1991, just before the demise of the programme, UK self-employment rates had reached 12% - more than 4% higher than the Netherlands. Yet, after the programme ended UK self-employment tracked down, at a time when the Netherlands tracked up. By 1998 the difference in self-employment rates between the two countries was only 1.4%. Extrapolating the current trends, it is possible that by 2002 the Netherlands may have re-established the lead in self-employment that it had prior to EAS.

This experience suggests it is possible to raise birth rates but, if this is to be achieved in a short period of time, it requires the input of massive resources. It also could imply that, when programmes come to an end, there is a falling-back to a more “natural” or unsubsidised level that could be comparable to that prior to the programme.

But not all programmes have the impact of EAS. A programme to raise business birth rates in Scotland began in 1993, with its impact having been assessed by Fraser of Allander<sup>3</sup>. The programme had three priorities, cultural change in attitudes, improving support infrastructure and the unlocking of potential. In total about £16/£17 million has been spent. The report concluded that business birth rates had failed to meet the targets specified although it did,

using econometric evidence, find that there had been a systematic but small underlying increase in rates. Probably the key finding, for the current context, is that the impact on new starts is significantly slower than Scottish policy makers had hoped.

These two UK examples suggest it is possible to raise business birth rates quickly, particularly at a time of high unemployment, by providing substantial public subsidies to the unemployed to encourage them to transfer into self-employment. What is a much more lengthy process however is one that seeks attitudinal changes to enterprise among the population.

*b. Is it possible/desirable to raise business ownership/ start-ups amongst under-represented groups?*

The Lois Stevenson paper raises the issue of policies targeted at under-represented segments of the business ownership population. The issue is tricky both from an analytical and a political perspective.

Lois' paper seems to imply that if groups such as women, ethnic minorities or young people are under-represented in the business-owning population that this justifies policies to raise these rates. This is on the grounds that these groups face barriers that mitigate against their business ownership.

This is a curious argument for several reasons. The first is that "under-representation" may be for reasons wholly unrelated to "barriers". The second is that, in practice, some ethnic groups are often "over-represented" amongst the business population. Does this imply a policy to lower their participation? Clearly that would seem odd, but it does then raise the issue of whether "representative" is a valid term. To illustrate this point, it may be that the ethnic group with high business ownership rates enter and stay in self-employment primarily because of difficulties in obtaining alternative suitable work, whereas others may favour self-employment even where there are good alternative opportunities. Finally, of course, there is nothing sacrosanct about being "national average".

There would, however, be strong support for the view that no group in society should experience discrimination on grounds of race, gender, religion or age. If it can be shown that such discrimination leads to a reduced likelihood of starting/growing a business then that indeed is a "barrier" that it is appropriate for policy makers to address.

The economic definition of discrimination is where the terms of a transaction are affected by personal characteristics of the participant that are not relevant to that transaction. Empirical work on access to bank loans has primarily been undertaken in the United States using the US Small Business Finance Survey. Both Bates<sup>4</sup> and the more recent study by Blanchflower et al<sup>5</sup> find evidence of racial discrimination. Blanchflower et al show that Blacks are 25% more likely than Whites to be denied bank funding, even when a wide range of other human capital and credit-worthiness explanatory variables are taken into account.

The evidence on discrimination against females in accessing bank loans is less clear. To this author's knowledge there are no studies, employing the econometric sophistication of Blanchflower et al, that show a gender effect. Indeed the Blanchflower et al study does include

gender as a variable but it is insignificant in the final equation. Of course, discrimination against females could be more subtle than that on racial grounds.

To conclude, policies to raise business ownership amongst under-represented groups need careful thought, apart from where discrimination is clearly present. There anti-discrimination needs to be pursued with vigour and, if the US experience is applicable, the top priority will be Blacks in society. The clear caveat is that US experience may not be applicable to the Netherlands.

*c. Do more births lead to more jobs?*

Probably the most oft quoted current piece of research that seeks to link Entrepreneurship/new business formation and job creation is the Global Entrepreneurship Monitor (GEM). The GEM<sup>6</sup> report shows there is a non-significant positive correlation between the prevalence of new firms and national economic growth amongst all GEM countries. However, when a number of countries are excluded, to generate the Alpha Group, the correlation does become statistically significant.

Nevertheless, even those contributing to GEM would acknowledge that this inference requires a number of assumptions to be made. The first is that, given that births and job creation are measured over the same time period, the effect is assumed to be instantaneous. Given the observations about Scotland noted in the section above, this appears unlikely. The second assumption is that it is the increase in births that cause the increase in employment creation and not vice versa. Thirdly it is also assumed that we can exclude the possibility of spurious correlation, i.e. that the same factor – for example, education – is influencing both births and job creation simultaneously.

My own research has looked at these issues in an area of the United Kingdom which has very low rates of business formation, defined as business births per year per 10,000 working population. This is the area known as Teesside or Cleveland, concentrated around Middlesbrough. Storey and Strange<sup>7</sup> examined new firm formation in this area in the 1970s, when there was effectively no policy to promote enterprise, and compared it with the 1980s when there was an active policy. The research showed that, whilst new firm formation rose, perhaps as much as three-fold, between the 1970s and the 1980s, the impact on job creation was negligible. Gross job creation varied little between the two decades because the new firms started in the 1980s were considerably smaller than those started in the 1970s. The greater number of firms was therefore cancelled out by their smaller average employment size.

It is possible that matters have changed in the 1990s, with new firm formation being more strongly linked to job creation. Some evidence of this seems to be provided by Audretsch and<sup>8</sup> Fritsch. They show, for labour market areas in the former Western Germany, that in the 1980s there was no association between business birth rates, and subsequent job creation. However in the 1990s they find a positive relationship to exist. Some support for this is also emerging from work that I am currently undertaking with Andre Van Stel at EIM for UK regions, 1980-99. The more significant finding is that, the relationship between births and employment change seems to become stronger the longer the period over which it is analysed. This is intuitively plausible, since new firms take a number of years to reach peak employment, and attitudinal change will be even lengthier.



*d Will changing bankruptcy laws lead to more births?*

A number of European countries, including the UK and The Netherlands have sought to reduce the stigma associated with bankruptcy. The justification for this is to recognise that Entrepreneurship is risky and that entrepreneurs make judgements that sometimes are incorrect. The view is that, if incorrect judgements are made but without any attempt to defraud creditors, that the individual should not be debarred automatically from starting in business again. This is because the business owner may have obtained valuable experience that can be put to use in the subsequent business. Lowering the penalty of failure may also encourage people to choose the high risk/high return option business, which, if successful, benefits them and the whole of society. The more simplistic justification is that the penalties for bankruptcy in the United States are significantly lower than in all European countries and that a number of currently highly successful entrepreneurs have experienced business failure. The inference is that, if Europe became more like the United States in this respect, this would encourage development of more enterprising and risk-taking businesses.

Like many aspect of folklore, whilst the above sounds plausible, it is striking that this proposition seems to have received little careful analysis. Even US studies of rapidly growing businesses do not seem to have analysed the impact of prior business failure on performance. In short the current author is unaware of any careful research that identifies whether an individual who has previously been in business and failed, is more or less likely to subsequently start a rapidly growing business than an individual with no prior business experience.

Perhaps the most interesting finding is from by Gropp et al<sup>9</sup>. They examine bankruptcy legislation in states within the United States. In some states the bankrupt is allowed to keep a much higher proportion of their wealth than in others. The bankruptcy penalty therefore varies spatially. What Grope et al show is that in states where the bankruptcy penalty is low the 'side-effect' is that it is more difficult for new businesses to obtain bank funds. The simple inference is that rational banks are less prepared to lend to new businesses where they feel that in the event of default, they will receive a smaller proportion of any outstanding loan.

This emphasises the importance of recognising the inter-dependency of legislative decisions in one area of Entrepreneurship upon others.

*e. Tailored policies for "innovative entrepreneurship"?*

Pieter Waasdorp's paper makes the case for specific policies to stimulate innovative Entrepreneurship. There can be little doubt, even arguing from a market failure perspective, that Waasdorp is correct to distinguish Innovative from "normal" Entrepreneurship. As he acknowledges there are issues that are common to both, but the innovative entrepreneur faces additional problems.

In the review that I conducted with Bruce Tether<sup>10</sup> of EU NTBF policies during the 1990s, we concluded:

“Our strong impression is that in many respects the ‘special’ requirements of new technology-based firms are not adequately reflected in the framework of support services available. In most countries, whilst support is available to new and small technology-based firms, the same support is also available to other types of enterprises.

Yet new and small technology-based firms are ‘special’ in two respects: they differ from other types of small firms; but they also differ from the larger enterprises in their sector’s activity. These differences are grounded in the fact that NTBFs are often seeking to cover the cost of undertaking research and development, the returns from which are likely to be long term and uncertain. This is because of the greater difficulty of making an accurate assessment of a new product/service than one already sold within the market place. Technology-based firms may also be characterised by short ‘windows of opportunity’. So that, if investments are not made at the appropriate times, all may be lost. The characteristics of technology-based entrepreneurs are also fundamentally different from those in conventional sectors – they are much more likely to be highly educated, yet they often lack the managerial skills accumulated by entrepreneurs from other occupations.

Finally, and most importantly, new technology-based firms have the potential to fundamentally transform the ways in which societies and markets operate. They are, quite simply, crucial to the long term development of an economy and in this sense deserve special treatment.

Our judgement is that policy makers have, in most European countries, failed to recognise the special qualities and requirements of new and small technology-based firms. Where policies have been focused exclusively upon these firms – as in Germany and the United Kingdom – the policies themselves appear to have been extremely successful. On the other hand, where they have been a comparatively small component of general industry or state support programmes, a positive impact upon these technology-based firms is more difficult to determine”

Given the above comments I believe the market failure-based case for some form of support for Innovative Entrepreneurship to be clear. That case is based, not only on failure in the finance markets, but also on information imperfections. As noted in section 2, there is clear evidence in several countries that new graduates view self-employment and business ownership as low status (income) activities. This may partly reflect a lack of awareness of the fact that, whilst many self-employed/ business owners have low incomes, they are also disproportionately found amongst the wealthy. Policies to raise awareness of the opportunities provided by self-employment, particularly amongst graduates, are therefore justifiable on these grounds.

*f. The link between innovative entrepreneurship and growth firms*

The paper by Yvonne Prince reports a Dutch study of employment change 1994-8 that finds 8% of fast growing enterprises are responsible for 60% of all employment growth in this period. This confirms the findings of many other studies that emphasise the disproportionate contribution to job creation of a tiny minority of firms<sup>11</sup>. Whilst there is a clear recognition of this finding amongst the research community, it has been interpreted in many and different ways by policy makers.

The obvious interpretation is that such firms should be the targets of attention, either to create more of them or to enable them to grow even faster. But here problems arise immediately, such as:

- How do you identify them?
- What is it that makes them grow fast?
- Will they continue to grow fast?
- Will assistance really make them grow "even faster"?
- Since innovative and "fast growth" firms are broadly similar, surely the two groups can be considered as identical?

Addressing these issues, the recent Dutch empirical research reviewed by Yvonne Prince suggests that rapid growth firms are different from other enterprises according to a number of dimensions. First they are strongly characterised by innovation, they conduct R&D, they plan, and they place a greater emphasis on training and education. In these circumstances their identification is easy because they appear to behave in a "text book" manner. It is also the case that there is clear overlap between fast growth and innovative firms.

The word of caution is that the UK research on fast growth SMEs does not reach the same clear conclusions. Barkham et al<sup>12</sup> found that fast growth firms exhibited considerable diversity. The powerful influences related to business strategy, but where new product introduction was only modestly significant. The educational qualifications of the owner were not significant; neither were research or formal business planning. A study by Patterson et al<sup>13</sup> found that examining small firm performance over six years only 1% of performance was explained by variations in technological sophistication and 6% by R&D expenditure. For Patterson et al the key influence is the Human Resource Management performance of the firm.

This result, however, contrasts starkly with my own studies of rapidly growing UK middle market firms.<sup>14</sup> Whilst these studies also found R&D and innovation broadly unrelated to performance, it also found HRM difficult to link to performance. Instead the defining characteristic appeared to be the ability of the owner, often in a highly informal manner, to identify and exploit a market niche. In many cases, however, the niche proved to be temporary, so that rarely was high growth maintained over a long – greater than 5 year - period.

With these more ambiguous findings the development of a policy to encourage the development of more rapidly growing firms is considerably more challenging in the UK than in the Netherlands. The "well-behaved" characteristics of Netherlands fast growth firms' means the central issue for policy is whether the policy can provide real additionality

#### 4.5 Conclusions

The UK now has more than two decades of experience in seeking to create the Entrepreneurial culture now being sought by the Dutch government. The purpose of these observations has been to distil some of that experience to prevent the Netherlands repeating the UK errors.

Some mistakes are clearly not going to be made. Currently Dutch policy development is much more strongly influenced by the findings of high quality research than is the case in the UK. Equally importantly, and again in contrast with the UK, the objectives of current policy are clear and the targets are set.

Nevertheless seeking to make a whole country more “entrepreneurial” is a very challenging agenda. The underlying rationale for such a change is that, for some reason, more “entrepreneurial” countries perform better than less “entrepreneurial” countries. The observations put forward in this paper suggest the evidence in support of this assertion is not wholly compelling.

But, even if it were compelling, there do not seem to be a set of clearly identifiable policies that will ensure the achievement of an entrepreneurial society within even the medium term time-frame. As an illustration, self-employment rates in the UK are currently lower than they were prior to Margaret Thatcher coming to power in 1979 seeking to create an “enterprise culture” in the UK.

Whilst there are no policy “silver bullets” for transforming society as a whole, a focus on technological Entrepreneurship is both desirable and feasible. Technology- based firms are capable of contributing substantially to job and wealth creation and those founding and running such businesses do face problems over and above the normal travails of business ownership. They are also problems that government can reduce.

The UK experience is, however, is twofold. The first is that whilst there is overlap, fast-growth SMEs and technological SMEs are not coincident and that public policies for the two groups need to differ. The second is that simultaneously trying to both increase birth rates and the proportion of “high growth” firms is challenging. The UK experience is that increasing birth rates is likely to lead to a lowering of quality and the challenge for the policy maker is to choose the appropriate trade-off.

## Notes Chapter 4

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## About the Authors

### **Drs. G. Ybema, State Secretary of Economic Affairs, the Netherlands**



Gerrit Ybema (1945) studied economics at the State University of Groningen and graduated cum laude. After working for the municipality of Enschede and the province of Friesland, he was elected a member of the Lower House of the Dutch Parliament in 1989, where he has been chiefly concerned with financial and fiscal matters and with foreign economic relations. In 1994 he was appointed chairman of the Standing Committee for Finance. During his time as an MP he chaired the parliamentary committee investigating the supervision exercised by the Insurance Chamber with regard to the collapse of the Vie d'Or insurance company. In 1998 Gerrit was appointed Minister for Foreign Trade and State Secretary of Economic Affairs in the second Cabinet headed by Prime Minister Kok.

### **Drs. A.M. van der Laag, Policy Advisor, Ministry of Economic Affairs, the Netherlands**



Astrid van der Laag (1969) is a policy advisor at the Entrepreneurship Unit of the Ministry of Economic affairs. She started working at the Ministry in 1999 as a Human Resource Officer, specialised in training and development. Since 2001 she deals with several topics related to innovative entrepreneurs. Astrid graduated in Social Sciences at the University of Amsterdam.

### **Drs. J.A.H. Sniijders, Business Manager EIM Business & Policy Research**



Jacqueline Sniijders (1959) graduated in International Monetary Economics at the University of Tilburg. She started in 1988 at the International Department of EIM where she mainly carried out research on behalf of the European Commission on a broad number of subjects a/o the European Observatory for SMEs. Since 2001 she is responsible for the projects carried out by EIM on sectoral development, business and physical planning and sustainable business and consumption. This is the fifth year that she is editing the annual report prepared in the series Entrepreneurship in the Netherlands.

**Dr. Y.M. Prince, director EIM Business & Policy Research**



Yvonne Prince (1963) graduated in Operations Research at the Erasmus University Rotterdam. In 1994 she finished her PhD-research in Industrial Economics. Since 1988 she is working at EIM Business & Policy Research on several research topics in various functions. She started as researcher and in 1996 she became business unit manager. At present, she is director of EIM bv. She is specialised into research on the areas of market competition, innovation and export.

**Drs. P.M. Waasdorp, Head of Entrepreneurship Unit,  
Ministry of Economic Affairs, the Netherlands**



Pieter Waasdorp (1968) graduated in economic policy at Erasmus University Rotterdam. Since 1991 he has been working at the Ministry of Economic Affairs. He advised on a variety of topics in macroeconomic policy, such as benchmarks of the Dutch economy, taxation and corporate governance issues. Since 1998 he is working in the field of entrepreneurship policy, e.g. as editor of the policy paper The Entrepreneurial Society. Also, he was appointed coordinator of the national bankruptcy reform committee.

**Professor L. Stevenson, Wilford White Fellow, International Council  
for Small Business, Canada**



Lois Stevenson is a Past-President of the International Council of Small Business and in 2001, was selected as one of its Wilford White Fellows. She has held positions as Director of Policy for SMEs and Director, Entrepreneurship Development within the Canadian federal government, spent ten years as a university professor, and researched and written extensively on issues related to small business and entrepreneurship. She recently completed a major study of entrepreneurship policy in ten countries on behalf of the Swedish Foundation for Small Business Research

**Professor, D. Storey, University of Warwick, UK**



Professor David Storey is the Director of the Centre for Small and Medium Sized Enterprises at the University of Warwick, UK. The Centre is the UK partner contributing to the SME Observatory report undertaken for DG Enterprise of the European Commission. Professor Storey is an applied economist whose research is concerned with economic aspects of small firms such as factors influencing their birth and death, financing and public policy.

## *Earlier publications in the series*

EZ/EIM, *Entrepreneurship in the Netherlands. New economy: new entrepreneurs!*, Den Haag/Zoetermeer, 2001

EZ/EIM, *Entrepreneurship in the Netherlands. Opportunities and threats to nascent entrepreneurship*, Den Haag/Zoetermeer, 2000

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