Hauser, Hermann

Article

Nothing ventured, nothing gained

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1. Introduction

Even though the industrial revolution started in Europe, many commentators suggest that European entrepreneurship has become an oxymoron. The facts of the case are, however, growing against them. For instance, Europeans nowadays run a fair share of Silicon Valley companies. Examples include phone.com – one of the most successful new mobile software companies – or LSR logic, a major semi-conductor business. At the same time Europeans have established enterprises that have become respected leaders in mobile telephony as well as in the data communication sector – well known examples here include Ericsson, Nokia and Vodafone. The “old” continent clearly is swiftly re-discovering its entrepreneurial genes in creating a number of successful companies worldwide. It is, however, venturing in a different direction. While the era of the PC belongs to the US, Europeans are betting far more heavily a future era of wireless communications.

Nonetheless, it seems that Europe as a whole has progressed less speedily in the digital economy than the US. This paper aims at examining two key factors supporting the arrival of new technologies. More specifically, it will focus on the role of venture capital on the one hand, and entrepreneurial mentality on the other.

The remainder of the text is organised as follows. The next section will go into the differences between the engine-rooms of the EU and US high-tech business – i.e. the availability of venture capital. Some asymmetries in entrepreneurial attitudes on both sides of the Atlantic will be briefly described in Section 3. A final section summarises and concludes.

2. The role of venture capital

“What would life be if we had no courage to attempt anything?”
Vincent Van Gogh

2.1 Trends in venture capital investment

Although cultural differences exist and should not be ignored they cannot be the sole reason why Europe has progressed less speedily than the US. Much of the explanation has to do with the availability of investors that are willing to take on the risk of financing new innovations. Commercialising new technologies is indeed characterised by considerable risks. Firstly, high technology is often a business in which the “winner takes all”. At the same time, there is always the possibility of business stealing – that is, that another company builds upon a patent and launches a more advanced version of the original product. Obviously, this would render the original design worthless. When, in extremis, a high probability of business stealing is expected, innovative activity may vanish.

Venture capitalists are willing to buy such risks in exchange for shares in a company and a sufficient expected rate of return. Overall risk is managed by having a diversified portfolio of

Hermann Hauser is a Director of Amadeus Capital Partners.
companies. As alternative sources of finance are limited, venture capital can play an important role in fostering economic growth. As has been set out elsewhere in this volume, the state of the art of technology determines possible total factor productivity (TFP). Increasing the supply of venture capital may influence the rate of technological change, and hence TFP, which is the most important source of long-run growth.

**Figure 1.** Venture capital in the UK high-tech sector (all stages)

Source: BVCA

**Figure 2.** UK high-tech venture capital by stage

Source: BVCA
European venture capital investments are still dwarfed by what is seen in the US. However, venture capital investments were until recently rather uncommon in Europe. Figure 1 shows, for instance, that in the UK - which accounts for 50 percent of Europe’s total venture capital - investments increased rapidly from approximately GBP 50 million in 1984 to just over GBP 1 billion in 1999 - an average compound growth rate of about 23 percent a year. During the second half of the 1990s, between 85 and 90 percent of the total went to investment at a later stage of the company’s life (see Figure 2), for example to finance management buy-outs (MBOs). Yet, the fastest growth - about 60 percent a year on average in the last part of the 1990s - took place in high-tech seed-money investment, that is, early stage finance for high-tech start-ups.

Nonetheless, European venture capital investments are still dwarfed by what is observed in the US. Measured as a percentage of GDP, the UK currently stands only at one-third of the US ratio, as shown in Figure 3. Since the UK makes up half of the European venture capital market, it can be conjectured that Europe is lagging far behind the US with regards to venture capital investments.

**Figure 3.** High-tech venture capital in the UK and the US.

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<th>US</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>1998</td>
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Source: BVCA

**Figure 4.** Average high-tech venture capital deal size in the UK and the US.

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<table>
<thead>
<tr>
<th>Year</th>
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<th>US</th>
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<tbody>
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<td>3.48</td>
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<tr>
<td>1997</td>
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<td>3.73</td>
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<tr>
<td>1998</td>
<td>1.14</td>
<td>4.18</td>
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Source: BVCA
Also in terms of the deal size - that is, the average amount invested per contract - the difference between the US and Europe is noticeable. Figure 4 reveals that the disparity is reducing slowly. But even though the deal size has almost doubled in Europe since 1995, it still only mounts to GBP 1.14 million, compared to GBP 4.18 million in the US.

3. Does it show?

It is well known that technology stocks have done extremely well in the US. For instance, if one compares the evolution of the NASDAQ - a typical high-tech composite index - with the evolution of the FT All Share index - indices in which “old” economy firms have a high weight - the difference is spectacular. But also in Europe the increase in availability of venture capital may already be paying off. Figure 5 shows for instance that the European equivalent of the NASDAQ - the Neue Markt index - has behaved well over the same period, too. In fact, the key message that we learn from the graph is that the premium for European technology companies has been at a record when compared to the traditional sectors.

![Figure 5. Stock market performance](image)

It is, moreover, likely that the current rate of technological change will go on for quite some time. The power of semiconductors has long followed Moore’s law, i.e. a doubling of the computer’s processor power every 18 months. Data storage capacity per unit price has been doubling every year, while the performance of fibre optics has been doubling every 9 months. If this trend persists, there will be plenty of market opportunities for venture capital to continue growing as well.

3.1 Venture capital is a necessary, but not a sufficient condition for long-run growth

Although venture capital may enhance the speed of arrival of new technologies, it does not suffice. The most important condition obviously is that an adequate number of ideas are generated in the economy. Consequently, regions or nations that aim at being successful are implicitly engaging in a race for talents and knowledge.
Human capital - as it is generally referred to - can, of course, be developed by maintaining good educational standards, and stimulating on-the-job training programs. However, talent can also be imported from abroad. It is revealing that in Silicon Valley, more than 50 percent of the CEO’s are currently non-Caucasian whites. Consequently, the key question should be how policy can make Europe more attractive for highly skilled foreigners as a place where they want to live and work. Craig Barret - Intel’s fourth CEO - suggested, for instance, to give a work permit to everyone who has a B.Sc. from a recognized university in the world, because that might be the best way to ensure America’s future. Are European policy makers on the same wavelength?

There can be little doubt that European entrepreneurs face a “skill deficit”. Education and training systems provide too few a people with IT competence, while restrictive immigration laws worsen the situation by preventing businesses from attracting the required skills from outside the EU. This deficit is often exacerbated by the way in which European governments tax stock options, bonuses and other types of risk-based pay (e.g. as income rather than capital). Policy makers should not forget that in the current global economy, marginal variations in tax treatments could make the difference between someone wanting to stay in a European country or moving to the US. In modern, knowledge-driven economies, entrepreneurs succeed because they can rely on a pool of talents that constantly exploits new opportunities.

Finally, next to a well functioning real estate market, good basic infrastructure, and accessible services such as legal and accounting advice, most healthy clusters of entrepreneurial activity - Silicon Valley being the example par excellence - are characterised by a high degree of social capital. This term refers to the ability of people to be part of a social network, and to be able to rely on it when input for solving problems is required. Technology clusters have started to appear in Europe - examples can be found in the Cambridge region, Munich, and at Sophie Antipolis - though there is much scope to develop these further.

Clearly, universities as centres of excellence are helpful institutions in these networks. They are, however, not sufficient. Silicon Valley developed around Stanford University, but a similar phenomenon did not take place around Harvard, or the older European universities of Leuven, Paris, or Bologna, to name but a few. In fact, the transition from academia to business is often helped by the existence of one or two successful companies. Such companies provide a training ground in business to bright researchers. As these people leave to set up their own companies, they provide fertile ground to develop a powerful network of venture capitalists. Fairchild played this catalyst role in Silicon Valley, and it is possible that my first company, Acorn, helped Cambridge’s Silicon Glen to become what it is today.

Thus, aptitude for exploitation of an academic breakthrough is at least as important as anything else. Differences in entrepreneurial attitudes are precisely what the next section will focus on.
4. Entrepreneurial attitudes

“Defeat doesn't finish a man - quit does. A man is not finished when he's defeated. He's finished when he quits”
Richard M. Nixon

Attitudes towards entrepreneurship can be sand or grease in the cogwheels that drive the delicate process of innovation. Four differences between the EU and the US may have had an impact on the speed of arrival of new technologies. These are views on job safety versus job creation, academic research versus commercial exploitation, attitudes towards failure, and personal financial control versus broader shareholder ownership.

A notable difference between the EU and the US used to be the attitude towards job safety. According to the stereotype, Europeans care about social protection and job security - Americans only about profit. Although there may be some truth in this statement, and it should be admitted that both views have laudable goals in their own right, it is also probably fair to say that there is a trade-off between the level of individual social protection and overall job-creation. For instance, according to the World Competitiveness Yearbook, 7 million jobs were destroyed in Europe in the 1980s and early 1990s. In the US, by contrast, as many as 30 million jobs were lost over the same period of time. Yet while the newly created workplaces in the United States amounted to 70 million - a net creation of 40 million - Europe could only offer some 6.5 million new jobs, resulting in increased overall unemployment. In Europe, much of this phenomenon can be attributed to the fact that some unprofitable sectors were artificially kept alive by means of heavy government intervention. In that way, a number of low skilled workers were saved from the personal drama of job loss. The reverse side of the coin, however, were high taxes, resulting in high wage costs and therefore low job creation. However, the rising structural unemployment rate has moved the political way of thinking in Europe away from maintaining old jobs towards fostering job-creation. As a result, Europe now has a better-equilibrated attitude towards labour market policies, and it has established a more favourable environment for employment generation.

Likewise, the European attitude towards commercial exploitation of academic research has only recently started moving in the right direction. Contrary to a decade ago, it is now considered reasonable for an academic researcher to engage in the commercial development of spin-offs from applied research by starting up a company. This has been the case for much longer in the US. Nonetheless, not everything is all right yet. One should not expect all spin-offs to become superstars. In the high-tech sector, things may fail for a number of reasons such as false market expectations, or because another company was faster in setting the standard. In this respect it is perhaps worth mentioning that the attitude towards failure is still quite different on both sides of the Atlantic. Whereas in the US failure is seen as an opportunity for learning - Henry Ford once said “failure is simply the opportunity to begin again, this time more intelligently”- it is still often stigmatised in Europe as a criminal act of fraud that should be punished. Therefore, bankruptcy and the tolerance of failure in businesses may be areas in which European policymakers could improve current legislation.
Job-creation through entrepreneurship may also have been hampered by the European mentality of having full financial control. Whereas in the US, people are quite happy to end up with, say, 10 or 20 percent of the shares when they start a business, a European entrepreneur feels that he or she should have a substantial majority of the shares, if not full control. From a purely investment point of view, this may not be optimal. Besides the fact that there is no good reason to presume that the view of many shareholders would be inferior to that of one, a large shareholder base usually also means that more resources can be raised – venture capital being one of the options. As a result, the company may grow faster into becoming an important market player.

5. Conclusion

This paper has related the European and American positions regarding the arrival of new technologies, to two key factors - the availability of venture capital and entrepreneurial attitudes.

The greatest benefit from venture capital is that it shifts risk away from the entrepreneur to the venture capital company, which diversifies the individual risk away in its portfolio. Consequently, this way of financing start-ups, in particular high-tech ones, may substantially affect the speed of development of new technologies, and thus long-run economic growth. However, in spite of a swift increase, the supply of venture capital in Europe is still dwarfed by the levels that are observed in the US. Lack of this type of capital may be one of the reasons why Europe as a whole has progressed less speedily in the digital economy.

Yet even with the institutional framework in place - the UK is, for instance, not particularly more risk averse than the US - closing the gap will require more than just venture capital. Increasing the rate of technological change first and foremost depends on the supply of new ideas. Therefore, regions need to have a sufficient amount of the right skills in their economy to generate and exploit new opportunities. Consequently, generating economic growth will be preceded by a race for talents. If Europe wants to end up among the top performers, it will need to accept a change of values towards such things as accumulating wealth as a driving incentive behind innovative activity, towards the willingness to allow the immigration of skilled foreigners, and towards a respect for failure.