An Entrepreneurial Tree Sprouts in Europe

Although their numbers are small compared to the United States, scientists in Europe are leaving academic research in growing numbers to start new high-tech companies

HO SI KHUONG REMEMBERS his 30th birthday well. It was on that day, back in 1985, that the young, Vietnamese-born, French-trained computer scientist took a long, hard look at his promising career with France's national postal service—and decided to give it all up. Four years after striking out on his own—in the best Silicon Valley tradition—Khuong runs ACK, a software house employing 31 scientists and engineers.

British microbiologist Chris Evans had a different conversion. In the mid-1970s, armed with a brand new Ph.D. from the University of London, Evans left his homeland to seek an academic career in the United States. But he found something very different: consultant work for various West Coast biotechnology companies gave him a taste for the world of business. A decade later, he helps run the Cambridge-based company Enzymatics, which he co-founded 2 years ago and is now reportedly worth more than $10 million.

In the United States, such stories are legion. What makes Khuong and Evans special is that they represent a small but growing number of European scientists who have been bitten by the entrepreneurial bug. Until now, Europe has lagged far behind the United States in fostering small, risk-taking enterprises in expanding areas of science-based technology.

But that is changing. Although no one has yet begun to collect the statistics to prove it, by one estimate in Britain alone, there are between six and seven thousand such companies. That may sound paltry when compared to the United States, but for the island nation, it is a huge transformation given that there were only a few hundred high-tech start-ups in the late 1970s.

And this is beginning to happen across the Channel as well. "We have seen a surge of growth in the small firms sector in Europe over the past few years," says Roger Quince of the U.K. management consultants Segal Quince Wicksteed. "Britain seems to be in the lead on this, but Germany and, to a lesser extent, France are not far behind, and there are similar things happening in almost every other European country."

What's taken so long? The obstacles in Europe have been formidable. A deep-rooted distaste for commerce in the university world has, for example, discouraged entrepreneurial thinking in the research community. And the secure, risk-free careers offered by large private corporations and public research organizations have had a powerful, negative influence on scientists' and engineers' willingness to set up in business on their own. Indeed, many blame the lack of individual entrepreneurialism in Europe on a culture that discourages risk-taking in general (see box).

But despite all this, small-scale high-tech capitalism is beginning to flourish as a new breed of young scientists and engineers learns to overcome the inhibitions of an earlier generation and throws itself wholeheartedly into the business of using bright ideas to make money.

Khuong argues that one reason for his success in the initiative-stifling culture of contemporary France was straightforward: he was prepared to step out of line and take a risk, something he realized when he turned 30. "I said to myself, I could stay with the postal service forever, but there would not have been any challenge," he says. "So I decided to drop everything and set up my own company."

But Khuong didn't wait until his 30th birthday to display a willingness to overturn his career path. In fact, he started out as a physical chemist, having taken a degree from one of the nation's prestigious *grande école* in Marseilles. He then spent 3 years working toward a doctorate in the chemical structure of heat-resistant compounds but abruptly changed disciplines to computer science.

That set Khuong up for the biggest change in his life: After several years developing new software systems for the PTT (the French postal service) in Paris, Khuong found himself, one day, working on the kitchen table with a friend, Phan Huy Duong, then the technical director of a large French software company, to develop their own software system offering companies an integrated approach to industrial management.

That system met considerable success and formed the basis for their company, named ACK, computer shorthand for "acknowledge." Today, ACK has 33 employees and their software is being used by clients ranging from the Paribas Bank to the car rental

Risk Phobia: Europe's Disease?

Paris

"There is an old axiom in France that bankruptcy is a type of sin and that bankrupt is therefore a horrible thing to be," says French research minister Hubert Curien. "As a result, you cannot fail in one enterprise and then just start again in another."

Throughout Europe, a cultural climate that discourages risk-taking and treats business failure as a form of social disgrace is the most frequently cited explanation of the relative dearth of start-ups when compared to the United States.

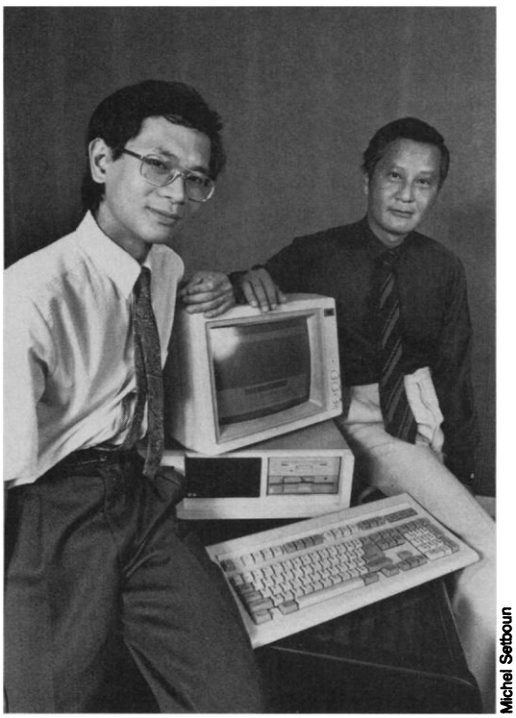
"In the U.S., people are always thinking about ways of making money, and the best way of making money is to take risks," says Jean-Claude Porée, director of communication and international activities for France's National Agency for the Exploitation of Research (ANVAR). "But in France, people are not prepared to take their own risks.

"It is not in our culture, for example, to set up 'spin-off' companies [from major corporations] as it is done in the U.S.," adds Porée, whose agency is responsible for finding ways of commercializing the results of research carried out in government-sponsored laboratories. "And when you fail, you cannot start again in French society."

The problem is not confined to France. John Catto, technical administrator of the small U.K. image processing company Synoptics,

ANVAR

Porée. *Moneymaking requires risk-taking.*



Michel Setboun

Software entrepreneurs. *Ho Si Khuong and Phan Huy Duong began their company on the kitchen table.*

Michael Manni

Academic-turned-businessman. *Microbiologist Chris Evans (with the Duke of Edinburgh) says, "Getting out of the university world was the best thing that I have ever done."*

company Europcar International and the city administration in Paris. The company's turnover is now more than $1 million a year, and it recently won a prestigious innovation prize awarded jointly by the French Ministry for Industry and the National Agency for the Exploitation of Research (ANVAR).

Europe's new entrepreneurs share more than a willingness to throw over their academic careers. They speak with the fervor of the recently converted when discussing their new life-styles.

"As an academic, I used to work longer hours, but I ended up less tired; here I get a kick out of making things that people will buy," says Philip Atkin, a former research engineer at Cambridge University who 4 years ago joined several university colleagues in setting up Synoptics, a company that makes products from computer-based processing of electron microscope images.

Conforming to the model pioneered in the United States, the company is a direct spin-off from work carried out in the university's research laboratories. And as often occurs in the States, some of its founder members have remained with the university, often wishing to hedge their entrepreneurial bets.

Others, however, have severed their university ties—and have few regrets. Atkins is one of these: "I do miss some aspects of the academic life, such as the opportunity to concentrate on ideas rather than on the day-to-day business of running a company," he points out: "If you go bankrupt in the U.K., you have big problems. . . . You may not even be able to raise a bank loan to buy a house."

European scientists who have set up their own business say there are two basic differences between the entrepreneurial climate in the United States and Europe. One is social stigma of failure, but a second is that engineers and scientists employed by large corporations are seldom willing to give up secure, well-paid jobs for the inevitable uncertainties of striking out on one's own. "Ninety percent of people here are looking for security and would never join a company like ours," says Karsten Henco, who left the research division of the chemical giant BASF 4 years ago to help set up the small biotechnology company DIAGEN. Thinking back to the days just prior to his departure from BASF, Henco notes: "There was not a single person who understood what I was doing. They all asked how could I leave such a secure job, to take on one with such a risk, and one which—initially at least—is likely to pay less money?"

Ho Si Khuong, president of the French software company ACK, tells a similar story. When he resigned his research post at France's national postal agency, the PTT, to set up on his own, "no one wanted to join me," he says. "They are very well paid there."

The same is true for sources of funding. European venture capital firms, although prepared in principle to seek out risky investments, are still seen as considerably less willing to take chances on a long-term payoff than their American counterparts.

"Part of the British problem is that there is a propensity to take a short-term view, even among venture capitalists," says Walter Heriot, who, as the former manager of Barclays Bank in Cambridge, was responsible for arranging funding for many start-ups in his area. "And I think it is getting worse; it is part of the Thatcherite ethos, which says that you are in business to perform—in other words, to produce a quick profit."

As for the general skepticism toward entrepreneurialism in the scientific community, French minister Curien suggests that changing traditional attitudes requires broad-focused remedies. "One thing that research institutions can do would be to take more account of the activities of young scientists outside their laboratories," he says. "Academics in France are not very inclined to reward young people who dedicate a significant part of their time outside the normal scientific environment."

But changing the mind-set in the scientific community is not easy. "There is a problem with this in all European countries," Curien says. "Whenever we have to create a committee to distribute funds, we have to ask people to spend time on it. But if you ask very young scientists, they say that they do not have the time, and you end up asking the old scientists. It does not help when you are trying to change things."

The solution? "Perhaps we need a second revolution," he quips, although adding quickly: "a bloodless one this time."

■ **DAVID DICKSON**

says. "But I don't miss the grant application game at all."

But he also admits to a certain culture shock in moving from the cushioned world of academe into a world of high-powered marketing and a consistent pressure to innovate. "It's not like the U.S.," says Atkin. In Europe, "when you are involved in university research, [setting up your own company] is not something you ever imagine yourself doing. Five or six years ago, I had no idea what a venture capitalist was; it was just not part of my consciousness."

This may be the single biggest hurdle that faces political leaders like Britain's Margaret Thatcher or French research minister Hubert Curien who would like to see more Khuongs, Evanses, and Atkins. They have introduced policies that try to make it easier for small start-up companies to raise money, as well as encouraging a new entrepreneurial culture. But it is the enthusiasm of individuals, rather than the support of politicians, that is the key motivating factor, and only lately have there been enough risk-taker role models for the entrepreneurial bug to become infectious.

"Getting out of the university world was the best thing that I have ever done," says Evans, who worked for two different biotechnology companies—one in Canada, the other the U.K. subsidiary of a U.S. company—before setting up Enzymatics with another scientist-turned-entrepreneur, John Meers.

As was the case 30 years ago in the United States, the success of small companies such as Enzymatics depends critically on the ability of the founders to spread their entrepreneurial fervor to a young work force. "The average age here is between 27 and 28," says the company's business development manager, Ph.D. chemist Edwin Moses. "People are very motivated to make the company successful, and there is no comparison to the atmosphere here. If people can't make something work by six in the evening, they stay here up to nine or ten at night."

But, as Atkins testifies, the necessary enthusiasm is not always easy to find in Europe, where both social status and professional success tend to be associated with working for large and well-known organizations. Khuong learned this the hard way when he tried to persuade others to join his recently formed company.

"At the beginning, it was very difficult," he confesses. "You need to recruit high-level people for a company like this, but no one wanted to work with us; we were asking people to leave large companies, where they are well paid, for a company which is very small, not well known, and could fail from one day to the next."

This fear of failure has itself created a problem which is not found in the United States: a severe shortage of experienced technical managers prepared, like the scientists, to spread their wings and test their entrepreneurial skills outside the protected world of large organizations.

In some cases, the need for these skills has been learned from devastating experience when they are absent. Walter Heriot, who as a former manager of Barclay's Bank in Cambridge was responsible for raising financial support for many local start-up companies, says one reason a number of these failed was because they didn't understand marketing. An experienced manager might have been able to point out the problems with a technology-led rather than market-led approach to introducing a new product.

The lessons from these failures were not lost on German molecular biologist Karsten Henco. He decided to abandon his top research position with the multinational chemical and pharmaceutical company BASF and join with two friends from the University of Düsseldorf, Jürgen Schumacher and Metin Colpan, in starting DIAGEN, a biotechnology company specializing in chemicals for laboratory, analytical, and diagnostic techniques.

"In Germany, it is nearly impossible to get a senior person from a large company to join a small start-up."

—Ulrich Aldag

Part of the reason for DIAGEN's success, says Henco, was that the three scientists realized from an early stage that they needed the help of a professional manager. For this, they recruited biochemist Ulrich Aldag, who had 20 years of experience in the pharmaceutical industry in both West Germany and California's Silicon Valley.

"As scientists, there is always a tendency to follow very interesting science," says Henco. "This is why we decided to hire our managing director from the industry right from the beginning. He is the one who always asks [the important questions]: where are we now, where are we going to be tomorrow, where is the market, when does the premarketing stage start, and so on."

Aldag confirms from his own experience that one of the biggest difficulties facing start-up companies in Europe compared to the United States is the lack of experienced people available to manage them. "There is a whole culture in the U.S." encouraging people to move into such jobs, he says. "In Germany, it is nearly impossible to get a senior person from a large company to join a small start-up."

Many venture capitalists would agree. Jos Peters, for example, managing director of a Belgian-based venture capital company, describes the "entrepreneurial gap" between Europe and the United States as "Europe's Achilles' heel" and says that Europe's crucial failing is at the managerial level. "It severely lacks people with a grounding in innovation management who know how to launch a high-tech product," he says.

Another handicap faced by European start-up companies, says Aldag, is that, in contrast to their U.S. competitors, the tax system makes it impossible to offer the type of incentives that can initially be used in place of large salaries. "In the U.S., there are mechanisms such as stock options that you can use to attract people on board at an early stage. But, at least in Germany, you cannot do that type of thing," he says.

Not everyone is convinced that drawing Europe's best science graduates into small high-tech companies, and thereby diverting them from larger companies which still dominate the innovation process, is necessarily a desirable strategy.

"These companies tend to be very 'nichy,' in the sense that their main markets depend on relatively narrow technological opportunities in fields opened up by others, rather than acting as major forces for technological innovation," says David Wield of the Technology Policy Group at Britain's Open University.

Conversely, the companies themselves often complain that their small size means they are in practice unable to commit the time and effort needed to apply for—and subsequently monitor the expenditure of—government grants. Nor are they always in a position to benefit from participation in European-level research projects in the same way as large companies such as West Germany's Siemens or Britain's General Electric.

"As a small company, you have to view all these activities with a certain amount of suspicion," says John Catto, technical administrator of Synoptics. "If you are not careful, you spend all your time sitting on committees and filling in paperwork, and we are not big enough to be able to spare someone with the time to do this."

But, whatever the problems they face—and whatever qualms may be expressed about their growing presence on the technology scene—there is little doubt that high-tech entrepreneurialism is at last becoming an integral part of Europe's industrial landscape. ■ **DAVID DICKSON**