The Economist

Global heroes

A special report on entrepreneurship

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Global heroes

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Despite the downturn, entrepreneurs are enjoying a renaissance the world over, says Adrian Wooldridge

IN DECEMBER last year, three weeks after the terrorist attacks in Mumbai and in the midst of the worst global recession since the 1930s, 1,700 bright-eyed Indians gathered in a hotel in Bangalore for a conference on entrepreneurship. They mobbed business heroes such as Azim Premji, who transformed Wipro from a vegetable-oil company into a software giant, and Nandan Nilekani, one of the founders of Infosys, another software giant. They also engaged in a frenzy of networking. The conference was so popular that the organisers had to erect a huge tent to take the overflow. The aspiring entrepreneurs did not just want to strike it rich; they wanted to play their part in forging a new India. Speaker after speaker praised entrepreneurship as a powerful force for doing good as well as doing well.

Back in 1942 Joseph Schumpeter gave warning that the bureaucratisation of capitalism was killing the spirit of entrepreneurship. Instead of risking the turmoil of "creative destruction", Keynesian economists, working hand in glove with big business and big government, claimed to be able to provide orderly prosperity. But perspectives have changed in the intervening decades, and Schumpeter's entrepreneurs are once again roaming the globe.

Since the Reagan-Thatcher revolution of the 1980s, governments of almost every ideological stripe have embraced entrepreneurship. The European Union, the United Nations and the World Bank have also become evangelists. Indeed, the trend is now so well established that it has become the object of satire. Listen to me, says the leading character in one of the best novels of 2008, Aravind Adiga's "The White Tiger", and "you will know everything there is to know about how entrepreneurship is born, nurtured, and developed in this, the glorious 21st century of man."

This special report will argue that the entrepreneurial idea has gone mainstream, supported by political leaders on the left as well as on the right, championed by powerful pressure groups, reinforced by a growing infrastructure of universities and venture capitalists and embodied by wildly popular business heroes such as Oprah Winfrey, Richard Branson and India's software kings. The report will also contend that entrepreneurialism needs to be rethought: in almost all instances it involves not creative destruction but creative creation.

The world's greatest producer of entrepreneurs continues to be America. The lights may have gone out on Wall Street, but Silicon Valley continues to burn bright. High-flyers from around the world still flock to America's universities and clamour to work for Google and Microsoft. And many of them then return home and spread the gospel.

The company that arranged the oversubscribed conference in Bangalore, The

Indus Entrepreneurs (TiE), is an example of America's pervasive influence abroad. TiE was founded in Silicon Valley in 1992 by a group of Indian transplants who wanted to promote entrepreneurship through mentoring, networking and education. Today the network has 12,000 members and operates in 53 cities in 12 countries, but it continues to be anchored in the Valley. Two of the leading lights at the meeting, Gururaj Deshpande and Suren Dutia, live, respectively, in Massachusetts and California. The star speaker, Wipro's Mr Premji, was educated at Stanford; one of the most popular gurus, Raj Jaswa, is the president of TiE's Silicon Valley chapter.

The globalisation of entrepreneurship is raising the competitive stakes for everyone, particularly in the rich world. Entrepreneurs can now come from almost anywhere, including once-closed economies such as India and China. And many of them can reach global markets from the day they open their doors, thanks to the falling cost of communications.

For most people the term "entrepreneur" simply means anybody who starts a business, be it a corner shop or a high-tech start up. This special report will use the word in a narrower sense to mean somebody who offers an innovative solution to a (frequently unrecognised) problem. The defining characteristic of entrepreneurship, then, is not the size of the company but the act of innovation.

A disproportionate number of entrepreneurial companies are, indeed, small start-ups. The best way to break into a business is to offer new products or processes. But by no means all start-ups are innovative: most new corner shops do much the same as old corner shops. And not all entrepreneurial companies are either new or small. Google is constantly innovating despite being, in Silicon Valley terms, something of a long-beard.

This narrower definition of entrepreneurship has an impressive intellectual pedigree going right back to Schumpeter. Peter Drucker, a distinguished management guru, defined the entrepreneur as somebody who "upsets and disorganises". "Entrepreneurs innovate," he said. "Innovation is the specific instrument of entrepreneurship." William Baumol, one of the leading economists in this field, describes the entrepreneur as "the bold and imaginative deviator from established business patterns and practices". Howard Stevenson, the man who did more than anybody else to champion the study of entrepreneurship at the Harvard Business School, defined entrepreneurship as "the pursuit of opportunity beyond the resources you currently control". The Ewing Marion Kauffman Foundation, arguably the world's leading think-tank on entrepreneurship, makes a fundamental distinction between "replicative" and "innovative" entrepreneurship.

Five myths

Innovative entrepreneurs are not only more interesting than the replicative sort, they also carry more economic weight because they generate many more jobs. A small number of innovative start-ups account for a disproportionately large number of new jobs. But entrepreneurs can be found anywhere, not just in small businesses. There are plenty of misconcep-

All in the mind

A different breed of manager

IN 1995 Captain G.R. Gopinath, a retired military officer, had a chance encounter with an unemployed helicopter pilot that got him started on setting up India's first helicopter company. He spent three years lobbying government bureaucrats to obtain the necessary licences and sold all his possessions and mortgaged his house to raise capital.

Even in his darkest years he never had any doubt that he was destined for success. "I knew this could not go wrong. I knew the money would come," he says. And sure enough his business eventually took off. That allowed him to pursue a new vision—cheap flights. Why should Indians travel the length and breadth of their huge country on trains when Americans got on planes? He established India's first low-cost airline, Air Deccan, pushing the government to relax regulations and using the internet to cut booking costs.

Entrepreneurs operate in all kinds of ways. Some see a market opportunity and draw up a business plan to take advantage of it. Others are more like the captain, driven by an inner force to start a business and unwilling to take "no" for an answer.

A growing body of evidence suggests that entrepreneurs have certain distinctive psychological traits. Noam Wasserman, of HBS, suggests that many entrepreneurs are unusually, sometimes excessively, confident. They are convinced that, against all the odds, they will be able to turn their dream into reality. This sometimes allows them to do something at which most people fail, but it also means they hardly ever hit the forecasts in their business plans.

According to Mr Wasserman, entrepreneurs are strongly attached to their companies. They habitually talk about "their babies". This motivates them to give their all to their companies, whether they make money or not. But it can also be their Achilles heel. Once they get started, they hate giving up control of their companies, even if they are no good at management.

Entrepreneurs are also highly tolerant of risk. A group of scientists at Cambridge University studied the brains of 16 entrepreneurs, chosen because they had started at least two high-tech companies, as well as 17 regular managers. They found that when making rational decisions, the two groups produced the same results. But when making "hot" or risky decisions, entrepreneurs were consistently bolder.

Entrepreneurs also share some more surprising psychological traits. Julie Logan, of the Cass Business School in London, found in separate surveys in 2001 and 2007 that 20% of the British entrepreneurs and 35% of the American entrepreneurs she studied were dyslexic. (By contrast, only 1% of corporate managers are similarly afflicted.) Famous dyslexic businessmen include Richard Branson, Charles Schwab, Ted Turner, John Chambers and Henry Ford. Two possible explanations are that dyslexics learn early in life to delegate certain tasks to trustworthy people, and that they do well in business to make up for doing badly at school.

tions about entrepreneurship, five of which are particularly persistent. The first is that entrepreneurs are "orphans and outcasts", to borrow the phrase of George Gilder, an American intellectual: lonely Atlases battling a hostile world or anti-social geeks inventing world-changing gizmos in their garrets. In fact, entrepreneurship, like all business, is a social activity. Entrepreneurs may be more independent than the usual suits who merely follow the rules, but they almost always need business partners and social networks to succeed.

The history of high-tech start-ups reads like a roll-call of business partnerships: Steve Jobs and Steve Wozniak (Apple), Bill Gates and Paul Allen (Microsoft), Sergey Brin and Larry Page (Google), Mark Zuckerberg, Dustin Moskovitz and Chris Hughes (Facebook). Ben and Jerry's was formed when two childhood friends, Ben Cohen and Jerry Greenfield, got together to start an ice-cream business (they wanted to go into the bagel business but could not raise the cash). Richard Branson (Virgin) relied heavily on his cousin, Simon Draper, as well as other partners. Ramana Nanda, of Harvard Business School (HBS), and Jesper Sorensen, of Stanford Business School, have demonstrated that rates of entrepreneurship are significantly higher in organisations where a large number of employees are former entrepreneurs.

Entrepreneurship also flourishes in clusters. A third of American venture capital flows into two places, Silicon Valley and Boston, and two-thirds into just six places, New York, Los Angeles, San Diego and Austin as well as the Valley and Boston. This is partly because entrepreneurship in such places is a way of life—coffee houses in Silicon Valley are full of young people loudly talking about their business plans—and partly because the infrastructure is already in place, which radically reduces the cost of starting a business.

The second myth is that most entrepreneurs are just out of short trousers. Some of today's most celebrated figures were indeed astonishingly young when they got going: Bill Gates, Steve Jobs and Michael Dell all dropped out of college to start their businesses, and the founders of Google and Facebook were still students when they launched theirs. Ben Casnocha started his first company when he was 12, was named entrepreneur of the year by *Inc* magazine at 17 and published a guide to running start-ups at 19.

But not all successful entrepreneurs are kids. Harland Sanders started franchising Kentucky Fried Chicken when he was 65. Gary Burrell was 52 when he left Allied Signal to help start Garmin, a GPS giant. Herb Kelleher was 40 when he founded Southwest Airlines, a business that pioneered no-frills discount flying in America. The Kauffman Foundation examined 652 American-born bosses of technology companies set up in 1995-2005 and found that the average boss was 39 when he or she started. The number of founders over 50 was twice as large as that under 25.

The third myth is that entrepreneurship is driven mainly by venture capital. This certainly matters in capital-intensive industries such as high-tech and biotechnology; it can also help start-ups to grow very rapidly. And venture capitalists provide entrepreneurs with advice, contacts and management skills as well as money.

But most venture capital goes into just a narrow sliver of business: computer hardware and software, semiconductors, telecommunications and biotechnology. Venture capitalists fund only a small fraction of start-ups. The money for the vast majority comes from personal debt or from the "three fs"—friends, fools and families. Google is often quoted as a triumph of the venture-capital industry, but Messrs Brin and Page founded the company without any money at all and launched it with about $1m raised from friends and connections.

Monitor, a management consultancy that has recently conducted an extensive survey of entrepreneurs, emphasises the importance of "angel" investors, who operate somewhere in the middle ground between venture capitalists and family and friends. They usually have some personal connection with their chosen entrepreneur and are more likely than venture capitalists to invest in a business when it is little more than a budding idea.

The fourth myth is that to succeed, entrepreneurs must produce some world-changing new product. Sir Ronald Cohen, the founder of Apax Partners, one of Europe's most successful venture-capital companies, points out that some of the most successful entrepreneurs concentrate on processes rather than products. Richard Branson made flying less tedious by providing his customers with entertainment. Fred Smith built a billion-dollar business by improving the delivery of packages. Oprah Winfrey has become America's richest self-made woman through successful brand management.

The fifth myth is that entrepreneurship cannot flourish in big companies. Many entrepreneurs are sworn enemies of large corporations, and many policymakers measure entrepreneurship by the number of small-business start-ups. This makes some sense. Start-ups are often more innovative than established companies because their incentives are sharper: they need to break into the market, and owner-entrepreneurs can do much better than even the most innovative company man.

Big can be beautiful too

But many big companies work hard to keep their people on their entrepreneurial toes. Johnson & Johnson operates like a holding company that provides financial muscle and marketing skills to internal entrepreneurs. Jack Welch tried to transform General Electric from a Goliath into a collection of entrepreneurial Davids. Jorma Ollila transformed Nokia, a long-established Finnish firm, from a maker of rubber boots and cables into a mobile-phone giant; his successor as boss of the company, Olli-Pekka Kallasvuo, is now talking about turning it into an internet company. Such men belong firmly in the pantheon of entrepreneurs.

Just as importantly, big firms often provide start-ups with their bread and butter. In many industries, especially pharmaceuticals and telecoms, the giants contract out innovation to smaller companies. Procter & Gamble tries to get half of its innovations from outside its own labs. Microsoft works closely with a network of 750,000

small companies around the world. Some 3,500 companies have grown up in Nokia's shadow.

But how is the new enthusiasm for entrepreneurship standing up to the worldwide economic downturn? Entrepreneurs are being presented with huge practical problems. Customers are harder to find. Suppliers are becoming less accommodating. Capital is harder to raise. In America venture-capital investment in the fourth quarter of 2008 was down to $5.4 billion, 33% lower than a year earlier. Risk, the lifeblood of the entrepreneurial economy, is becoming something to be avoided.

Misfortune and fortune

The downturn is also confronting supporters of entrepreneurial capitalism with some awkward questions. Why have so many once-celebrated entrepreneurs turned out to be crooks? And why has the free-wheeling culture of Wall Street produced such disastrous results?

For many the change in public mood is equally worrying. Back in 2002, in the wake of the scandal over Enron, a dubious energy-trading company, Congress made life more difficult for start-ups with the Sarbanes-Oxley legislation on corporate governance. Now it is busy propping up failed companies such as General Motors and throwing huge sums of money at the public sector. Newt Gingrich, a Republican former speaker of America's House of Representatives, worries that potential entrepreneurs may now be asking themselves: "Why not get a nice, safe government job instead?"

Yet the threat to entrepreneurship, both practical and ideological, can be exaggerated. The downturn has advantages as well as drawbacks. Talented staff are easier to find and office space is cheaper to rent. Harder times will eliminate the also-rans and, in the long run, could make it easier for the survivors to grow. As Schumpeter pointed out, downturns can act as a "good cold shower for the economic system", releasing capital and labour from dying sectors and allowing newcomers to recombine in imaginative new ways.

Schumpeter also said that all established businesses are "standing on ground that is crumbling beneath their feet". Today the ground is far less solid than it was in his day, so the opportunities for entrepreneurs are correspondingly more numerous. The information age is making it ever easier for ordinary people to start businesses and harder for incumbents to defend their territory. Back in 1960 the composition of the *Fortune* 500 was so stable that it took 20 years for a third of the constitutent companies to change. Now it takes only four years.

There are many reasons for this. First, the information revolution has helped to unbundle existing companies. In 1937 Ronald Coase argued, in his path-breaking article on "The Nature of the Firm", that companies make economic sense when the bureaucratic cost of performing transactions under one roof is less than the cost of doing the same thing through the market. Second, economic growth is being driven by industries such as computing and telecommunications where innovation is particularly important. Third, advanced economies are characterised by a shift from manufacturing to services. Service firms are usually smaller than manufacturing firms and there are fewer barriers to entry.

Microsoft, Genentech, Gap and The Limited were all founded during recessions. Hewlett-Packard, Geophysical Service (now Texas Instruments), United Technologies, Polaroid and Revlon started in the Depression. Opinion polls suggest that entrepreneurs see a good as well as a bad side to the recession. In a survey carried out in eight emerging markets last November for Endeavor, a pressure group, 85% of the entrepreneurs questioned said they had already felt the impact of the crisis and 88% thought that worse was yet to come. But they also predicted, on average, that their businesses would grow by 31% and their workforces by 12% this year. Half of them thought they would be able to hire better people and 39% said there would be less competition. ■

An idea whose time has come

Entrepreneurialism has become cool

VICTOR HUGO once remarked: "You can resist an invading army; you cannot resist an idea whose time has come." Today entrepreneurship is such an idea.

The triumph of entrepreneurship is driven by profound technological change. A trio of inventions—the personal computer, the mobile phone and the internet—is democratising entrepreneurship at a cracking pace. Today even cash-strapped innovators can reach markets that were once the prerogative of giant organisations.

The internet provides a cheap platform for entrepreneurs to build interactive businesses. Meg Whitman grew rich by developing an online marketplace, eBay, where people could buy and sell without ever meeting. An army of pyjama-clad bloggers has repeatedly outsmarted long-established newspapers on breaking stories. Automated news-collecting services such as RealClearPolitics and Memeorandum, using tiny amounts of capital, have established themselves as indispensable tools for news junkies.

The development of "cloud computing" is giving small outfits yet more opportunity to enjoy the advantages of big organisations with none of the sunk costs. People running small businesses, whether they are in their own offices or in a hotel half-way round the world, can use personal computers or laptops to gain access to sophisticated business services.

The mobile phone has been almost as revolutionary. About 3.3 billion people, or half the world's population, already have access to one. The technology has allowed entrepreneurs to break into what used to be one of the world's most regulated markets, telecoms. And many developing countries have been able to leapfrog rich ones by going straight to mobile phones, cutting out landlines.

This has resulted in a cascade of entrepreneurship. Iqbal Quadir, a Bangladeshi who emigrated to America to become an investment banker and then a business academic, had a dream of bringing mobile phones to his homeland. He struck up a relationship with Muhammad Yunus, the founder of Grameen Bank, which provides microfinance, to turn the dream into reality. If the bank was willing to lend women money to buy cows, why not mobile phones? Bangladesh now has 270,000 phone ladies who borrow money to buy

The best and the worst

1

Ease of doing business rankings

Top ten

2009	2008	Business region
1	1	Singapore
2	2	New Zealand
3	3	United States
4	4	Hong Kong
5	5	Denmark
6	6	Britain
7	7	Ireland
8	8	Canada
9	10	Australia
10	9	Norway

Bottom ten

2009	2008	Business region
172	171	Niger
173	173	Eritrea
174	175	Venezuela
175	176	Chad
176	177	São Tomé and Principe
177	174	Burundi
178	178	Congo-Brazzaville
179	179	Guinea-Bissau
180	180	Central African Republic
181	181	Congo

Source: World Bank *Doing Business* database

specially designed mobile-phone kits equipped with long-lasting batteries, and sell time on their phones to local villagers. Grameen has become Bangladesh's largest telecoms provider, with annual revenues of around $1 billion; and the entrepreneurial phone ladies have plugged their villages into the wider economy.

Thanks to the combination of touch-screen technology and ever faster wireless networks, the mobile phone is becoming the platform of choice for techno-entrepreneurs. Since July last year Apple has allowed third parties to post some 20,000 programs or applications on its "app store", allowing phones to do anything from identifying the singer of a song on the radio to imitating the sound of flatulence. So far around 500m "apps" have been downloaded for about a dollar a time.

These developments have been reinforced by broad cultural changes that have brought entrepreneurialism into the mainstream. An activity that was once regarded as peripheral, perhaps even reprehensible, has become cool, celebrated by politicians and embraced by the rising generation.

Britain's Oxford University used to nurture one of the longest traditions of anti-entrepreneurial prejudice in the world. The dons valued "gentlemanly" subjects such as classics or philosophy over anything that smacked of "utility". ("He gets degrees in making jam/at Liverpool and Birmingham," went one popular ditty.) The students dreamed of careers in the civil service or the law rather than business, still less entrepreneurship. "How I hate that man," was the writer C.S. Lewis's tart comment on Lord Nuffield, his city's greatest entrepreneur and his university's most generous benefactor.

Today Oxford has a thriving business school, the Saïd School, with a centre for entrepreneurship and innovation and a growing business park that tries to mix the university's scientists with entrepreneurs. Oxford Entrepreneurs is one of the university's most popular societies, with 3,600 student members and a record of creating about six start-ups a year.

No longer niche

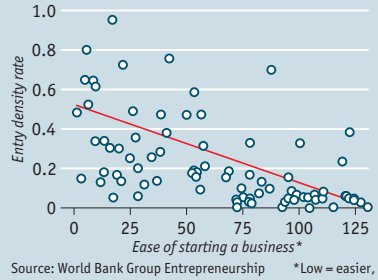
The story of Oxford's conversion to entrepreneurship is being repeated the world over as a growing number of respectable economists discover the new creed. For most of the post-war period entrepreneurs were all but banished from economics. Practitioners concentrated on the traditional factors of production—land, labour and capital—and on the price mechanism. Schumpeter was almost alone in arguing that the most vital competitive weapon was not lower prices but new ideas.

Today entrepreneurship is very much part of economics. Economists have realised that, in a knowledge-based economy, entrepreneurs play a central role in creating new companies, commercialising new ideas and, just as importantly, engaging in sustained experiments in what works and what does not. William Baumol has put entrepreneurs at the centre of his theory of growth. Paul Romer, of Stanford University, argues that "economic growth occurs whenever people take resources and rearrange them in ways that are more valuable…[It] springs from better recipes, not just more cooking." Edmund Phelps, a Nobel prize-winner, argues that attitudes to entrepreneurship have a big impact on economic growth.

Better mousetraps

2

Relationship between regulatory environment and business entry density



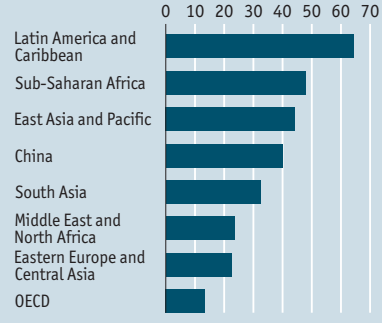
Source: World Bank Group Entrepreneurship Survey (2008), *Doing Business* (2009)

*Low = easier, high = harder

Make it snappy

3

Number of days* it takes to start a business in:



Source: World Bank *Doing Business* database *2009 figures

Another reason for entrepreneurship becoming mainstream is that the social contract between big companies and their employees has been broken. Under managed capitalism, big companies offered long-term security in return for unflinching loyalty. But from the 1980s onwards, first in America and then in other advanced economies, big companies began slimming their workforces. This made a huge difference to people's experience at the workplace. In the 1960s workers had had an average of four different employers by the time they reached 65. Today they have had eight by the time they are 30. People's attitudes to security and risk also changed. If a job in a big organisation can so easily disappear, it seems less attractive. Better to create your own.

Yet another reason for the mainstreaming of entrepreneurship is that so many institutions have given it their support. In 1998 HBS made entrepreneurship one of the foundation stones of business education, partly in response to demand from students. The school's Arthur Rock Centre for Entrepreneurship now employs over 30 professors. Between 1999 and 2003 the number of endowed chairs in entrepreneurship in America grew from 237 to 406 and in the rest of the world from 271 to 536.

The media have also played a part. "Dragons' Den", a television programme featuring entrepreneurs pitching their ideas to businesspeople in order to attract venture capital, is shown in 12 countries.

"The Apprentice", a programme that had Donald Trump looking for a protégé, has produced numerous spin-offs. Even China's state-owned Central Television has a show about entrepreneurs pitching ideas to try to win $1.3m in seed money.

A welcome mat for business

The world's governments are now competing to see who can create the most pro-business environment. In 2003 the World Bank began to publish an annual report called *Doing Business*, rating countries for their business-friendliness by measuring things like business regulations, property rights and access to credit. It demonstrated with a wealth of data that economic prosperity is closely correlated with a pro-business environment. This might sound obvious. But *Doing Business* did two things that were not quite so obvious: it put precise numbers on things that people had known about only vaguely, and it allowed citizens and investors to compare their country with 180 others.

This "naming and shaming" caused countries to compete fiercely to improve their position in the World Bank's rankings. Since 2004 various countries have brought in more than 1,000 reforms. Three of the top reformers in 2007-08 were African—Senegal, Burkina Faso and Botswana. Saudi Arabia too has made a lot of progress. *Doing Business* is also encouraging countries to learn from each other.

Most rich countries are working all the time to make it easier to start new businesses. In Canada, for example, it is now possible to start a business with just one procedure. But the list of top reformers includes all sorts of unexpected places, and the range of reforms that have been undertaken is impressive. India has concentrated on technology, for example, introducing electronic registration for businesses; China has put a great deal of effort into improving access to credit. Robert Litan, of the Kauffman Foundation, suggests that the World Bank may have done more good by compiling *Doing Business* than by lending much of the money that it has. ■

The United States of Entrepreneurs

America still leads the world

FOR all its current economic woes, America remains a beacon of entrepreneurialism. Between 1996 and 2004 it created an average of 550,000 small businesses every month. Many of those small businesses rapidly grow big. The world's largest company, Wal-Mart, was founded in 1962 and did not go public until a decade later; multi-million dollar companies such as Google and Facebook barely existed a decade ago.

America was the first country, in the late 1970s, to ditch managerial capitalism for the entrepreneurial variety. After the second world war J.K. Galbraith was still convinced that the modern corporation had replaced "the entrepreneur as the directing force of the enterprise with management". Big business and big labour worked with big government to deliver predictable economic growth. But as that growth turned into stagflation, an army of innovators, particularly in the computer and finance industries, exposed the shortcomings of the old industrial corporation and launched a wave of entrepreneurship.

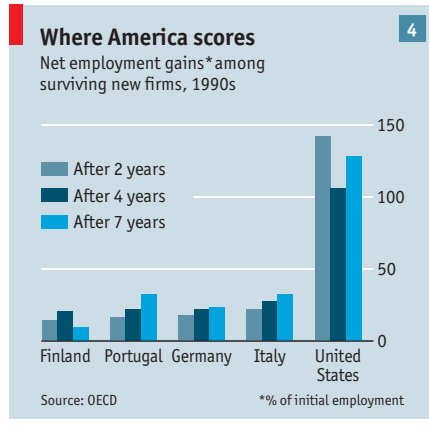
America has found the transition to a more entrepreneurial economy easier than its competitors because entrepreneurialism is so deeply rooted in its history. It was founded and then settled by innovators and risk-takers who were willing to sacrifice old certainties for new opportunities. American schoolchildren are raised on stories about inventors such as Benjamin Franklin and Thomas Edison. Entrepreneurs such as Andrew Carnegie and Henry Ford are celebrated in monuments all over the place. One of the country's most popular television programmes, currently being recycled as a film, features the USS *Enterprise* boldly going where no man had gone before.

If anything, America's infatuation with entrepreneurialism has deepened further of late. People like Bill Gates and Steve Jobs have all the upsides of Carnegie and Ford without the downsides—the useful products and the open-handed philanthropy without the sweatshops and the massacres. Preachers style themselves as pastorpreneurs. Business books sell in their millions. "When I was in college, guys usually pretended they were in a band," comments one observer. "Now they pretend they are in a start-up."

Advantage America

American companies have an unusual freedom to hire and fire workers, and American citizens have an unusual belief that, for all their recent travails, their fate still lies in their own hands. They are comfortable with the risk-taking that is at the heart of entrepreneurialism. The rewards for success can be huge—Google's Mr Brin was a billionaire by the time he was 30—and the punishments for failure are often trivial. In some countries bankruptcy spells social death. In America, particularly in Silicon Valley, it is a badge of honour.

America also has several structural advantages when it comes to entrepreneurship. The first is the world's most mature venture-capital industry. America's first venture fund, the American Research and Development Corporation, was founded in 1946; today the industry has an unrivalled mixture of resources, expertise and customers. Highland Capital Partners receives about 10,000 plausible business plans a year, conducts about 1,000 meetings followed by 400 company visits and ends up making 10-20 investments a year, all of which are guaranteed to receive an enormous amount of time and expertise. IHS Global Insight, a consultancy, calculates that in 2005 companies that were once backed by venture capitalists accounted for nearly 17% of America's GDP and 9% of private-sector employment. ▸▸



The second advantage is a tradition of close relations between universities and industry. America's universities are economic engines rather than ivory towers, with proliferating science parks, technology offices, business incubators and venture funds. Stanford University gained around $200m in stock when Google went public. It is so keen on promoting entrepreneurship that it has created a monopoly-like game to teach its professors how to become entrepreneurs. About half of the start-ups in the Valley have their roots in the university.

The third advantage is an immigration policy that, historically, has been fairly open. Vivek Wadhwa, of Duke University, notes that 52% of Silicon Valley start-ups were founded by immigrants, up from around a quarter ten years ago. In all, a quarter of America's science and technology start-ups, generating $52 billion and employing 450,000 people, have had somebody born abroad as either their CEO or their chief technology officer. In 2006 foreign nationals were named as inventors or co-inventors in a quarter of American patent applications, up from 7.6% in 1998.

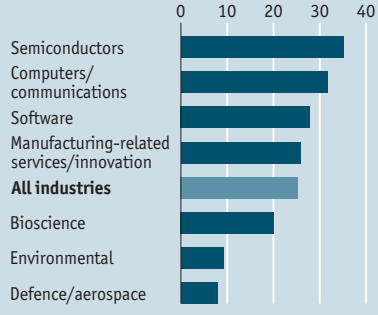
Amar Bhidé, of Columbia University, suggests a fourth reason for America's entrepreneurial success—"venturesome consumers". Americans are unusually willing to try new products of all sorts, even if it means teaching themselves new skills and eating into their savings; they are also unusually willing to pester manufacturers to improve their products. Apple sold half a million iPhones in its first weekend.

America faces numerous threats to this remarkable entrepreneurial ecology. The legal system can be burdensome, even destructive. One of the biggest new problems comes from "patent trolls"—lawyers who bring cases against companies for violating this or that trumped-up patent. Because the tax system is so complicated, many companies have to devote a lot of time and ingenuity to filling out tax forms that could be better spent on doing business. And the combination of the terrorist attacks on America on September 11th 2001 and rising xenophobia is making the country less open to immigrants.

Today more than 1m people are waiting in line to be granted legal status as permanent residents. Yet only 85,000 visas a year are allocated to the sort of skilled workers the economy needs, and there are caps of 10,000 on the number of visas available for applicants from any one country, so the wait for people from countries with the largest populations, such as India and China, is close to six years.

Vigorous newcomers 5

Immigrant-founded US companies by industry
%



Source: Kauffman Foundation, *Kauffman Thoughtbook* (2009)

Yet despite these problems, America plays a vital role in spreading the culture of entrepreneurialism around the world. People the world over admire its ability to produce world-changing entrepreneurs, such as Bill Gates, wealth-creating universities, such as Harvard and Stanford, and world-beating clusters, such as Silicon Valley. Simon Cook, of DFJ Esprit, a venture-capital company, argues that Silicon Valley's most successful export is not Google or Apple but the idea of Silicon Valley itself.

Foreigners who were educated in America's great universities have helped to spread the gospel of entrepreneurialism. Two of Europe's leading evangelists, Sir Ronald Cohen and Bert Twaalfhoven, were both products of HBS. Chinese and Indian entrepreneurs, who cut their teeth in Stanford and Silicon Valley, are now returning home in ever larger numbers, determined to recreate Silicon Valley's magic in Bangalore or Shanghai.

America is putting hard financial muscle behind this soft power. The Kauffman Foundation spends about $90m a year, from assets of about $2.1 billion, to make the case for entrepreneurialism, supporting academic research, training would-be entrepreneurs and sponsoring "Global Entrepreneurship Week", which last year involved 75 countries. Goldman Sachs is spending $100m over the next five years to promote entrepreneurialism among women in the developing world, particularly through management education.

Old Europe

The other two of the world's three biggest developed economies—the EU and Japan—are far less entrepreneurial. The number of innovative entrepreneurs in Germany, for instance, is less than half that in America, according to the Global Entrepreneurship Monitor (GEM), a joint venture between the London Business School and Babson College. And far fewer start-ups in those countries become big businesses. Janez Potocnik, the EU commissioner for science and research, points out that only 5% of European companies created from scratch since 1980 have made it into the list of the 1,000 biggest EU companies by market capitalisation. The equivalent figure for America is 22%.

This reflects different cultural attitudes. Europeans have less to gain from taking business risks, thanks to higher tax rates, and more to lose, thanks to more punitive attitudes to bankruptcy (German law, for example, prevents anyone who has ever been bankrupt from becoming a CEO). When Denis Payre was thinking about leaving a safe job in Oracle to start a company in the late 1980s, his French friends gave him ten reasons to stay put whereas his American friends gave him ten reasons to get on his bike. In January last year Mr Payre's start-up, Business Objects, was sold to Germany's SAP for €4.8 billion.

European egalitarianism, too, militates against entrepreneurialism: the EU is much more interested in promoting small businesses in general than in fostering high-growth companies. The Europeans' appetite for time off does not help. Workers are guaranteed a minimum of four weeks' holidays a year whereas Americans' vaca-

tions are much less certain. Europeans are also much more suspicious of business. According to a Eurobarometer poll, 42% of them think that entrepreneurs exploit other people's work, compared with 26% of Americans.

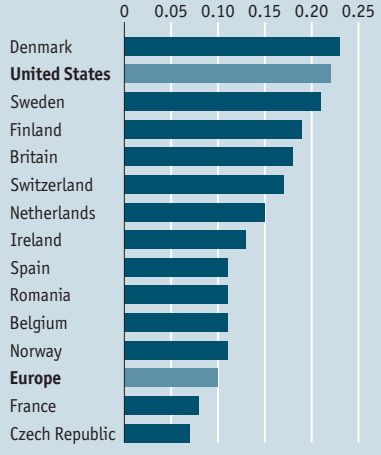
These cultural problems are reinforced by structural ones. The European market remains much more fragmented than the American one: entrepreneurs have to grapple with a patchwork of legal codes and an expensive and time-consuming patent system. In many countries the tax system and the labour laws discourage companies from growing above a certain size. A depressing number of European universities remain suspicious of industry, subsisting on declining state subsidies but still unwilling to embrace the private sector.

The European venture-capital industry, too, is less developed than the American one (significantly, in many countries it is called "risk" capital rather than "venture" capital). In 2005, for example, European venture capitalists invested €12.7 billion in Europe whereas American venture capitalists invested €17.4 billion in America. America has at least 50 times as many "angel" investors as Europe, thanks to the taxman's greater forbearance.

Yet for all its structural and cultural problems, Europe has started to change, not least because America's venture capitalists have recently started to export their model. In the 1990s Silicon Valley's moneybags believed that they should invest "no further than 20 miles from their offices", but lately the Valley's finest have been establishing offices in Asia and Europe. This is partly because they recognise that technological breakthroughs are being made in many more places, but partly also because they believe that applying American methods to new economies can start a torrent of entrepreneurial creativity.

Not very venturesome 6

Venture-capital investments across Europe and US
By country of portfolio firm, 2007, % of GDP



Source: Deutsche Bank Research

Between 2003 and 2006 European venture-capital investment grew by an average of 23% a year, compared with just 0.3% a year in America. Indeed, three European countries, Denmark, Sweden and Britain, have bigger venture-capital industries, in relation to the size of their economies, than America. Venture-capital-backed start-ups have produced more than 100 "exits" (stockmarket flotations or sales to established companies) worth more than $100m since 2004. Tele Atlas, a Dutch mapping outfit, was recently bought by TomTom for $4.3 billion.

The success of Skype, which pioneered internet-based telephone calls, was a striking example of the new European entrepreneurialism. The company was started by a Swede and a Dane who contracted out much of their work to computer programmers in Estonia. In 2005 they sold it to eBay for $2.6 billion.

Several European universities have become high-tech hubs. Britain's Cambridge, for example, has spawned more than 3,000 companies and created more than 200 millionaires in the university. The accession of ten eastern European countries to the EU has also tapped into an internal European supply of scientists and technologists who are willing to work for a small fraction of the cost of their pampered western neighbours.

Slowcoach Japan

The Japanese can hardly be accused of aversion to long hours. Big Japanese companies have an impressive record of incremental improvement, particularly in the electronics business. But for the most part the Japanese have been less successful than the Europeans at adapting to entrepreneurial capitalism. The latest GEM global report gives Japan the lowest score for entrepreneurship of any big country, placing it joint bottom with Greece. The brightest people want to work for large companies, with which the big banks work hand in glove, or for the government. Risk capital is rare. Bankruptcy is severely punished. And the small-business sector is wrapped in cotton wool, encouraging "replicative" rather than "innovative" behaviour. Over the past quarter-century the rate at which Japan has been creating new businesses has been only one-third to half that in America. ■

The more the merrier

India and China are creating millions of entrepreneurs

GURCHARAN DAS, an Indian venture capitalist, consultant and author, tells a story about stopping at a roadside café in southern India and chatting to a 14-year-old boy who was waiting at tables. The boy said that he needed the money to pay for computer lessons. His ultimate ambition was to run a computer company just like his hero, Bilgay, the richest man in the world. He may have got the name slightly wrong, but the sentiment was spot on.

Over the past couple of decades India has been transformed from a licence Raj into a land of uncaged entrepreneurs. Everybody knows about companies like Infosys, but there is more to Indian entrepreneurialism than software. Bollywood produces 1,000 films a year that are watched by 3.6 billion people (the figures for Hollywood are 700 and 2.6 billion). The Narayana Hrudayalaya hospital, founded by Devi Shetty on the outskirts of Bangalore, is turning heart surgery into a Wal-Mart-like business. Kingfisher beer is popular wherever spicy curries are eaten. The global slowdown will no doubt pose serious problems for India. But the country's mood has changed fundamentally since the government began opening up the economy in 1991: fatalism has been replaced by can-do optimism.

India has drawn heavily on its expatriate population, particularly the 1m who

live in America, to kickstart its entrepreneurial economy. Rajat Gupta, a former head of McKinsey, did as much as anybody to create the Indian Business School in Hyderabad. Gururaj Deshpande, who sold his company, Cascade Communications, to Ascend for $3.7 billion, is a ubiquitous cheerleader for entrepreneurialism. Draper International, which in 1995 became the first foreign venture-capital fund to invest in India, relied on money from Silicon Valley's Indian community.

India has now begun to reverse the brain drain, summoning its prodigal children back home. In 2003-05 some 5,000 tech-savvy Indians with more than five years' experience of working in America returned to India. Such people have helped to fill some of the skills gaps created by the country's recent boom. They have also reinforced India's already numerous links with high-tech America.

India's other advantage is its higher-education system, the top end of which is very good at discovering and developing first-class brains. The British introduced the ideal of meritocracy to India; Jawaharlal Nehru gave it a technocratic twist by launching the Indian Institutes of Technology; and India's natural love of argument did the rest. These institutes, so oversubscribed that only one in 75 applicants gets in, are now as bent on producing entrepreneurs as they were once determined to produce Fabian technicians.

From knock-off to innovation

Communist China's conversion to entrepreneurialism is even more surprising than Fabian India's. When Wu Yi, the country's then vice-premier, visited America in 2006, she took more than 200 entrepreneurs with her. About 60 Chinese companies are now traded on NASDAQ. The Central Party school even offers special courses for entrepreneurs, known as red capitalists.

In some ways China has had a more difficult task than India. The Cultural Revolution destroyed the country's intellectual and managerial capital. Few Chinese speak good English. The state is more interested in grand projects—from state-owned companies to giant infrastructure schemes—than in letting a hundred flowers bloom. But China shares one important advantage with India: the army of overseas Chinese who have made their home in America, particularly Silicon Valley. China has used them well.

The Chinese authorities are fully aware of the part that the overseas Chinese played in Taiwan's economic take-off. Since the late 1990s they have been doing everything they could to tempt expats back, upgrading their universities, often working with foreign institutions, setting up science parks and welcoming foreign companies. So many Chinese expats have returned in the past few years that Valley-slang has given them a special name, B2C (back to China).

Many of China's most successful entrepreneurs have done little more than produce knock-offs of American companies, mostly those they studied when they first went to America. Baidu is a Chinese Google; Dangdang is a Chinese Amazon; Taobao is a Chinese eBay; Oak Pacific Interactive is a mishmash of MySpace, YouTube, Facebook and Craigslist; Chinacars is a Chinese American Automobile Association. But even producing knock-offs takes skill, particularly when the original companies are determined to colonise the Chinese market. And imitative Chinese entrepreneurs can bring innovative management methods to China. Baidu's founder, Robin Li, raised funds from American venture capitalists and offered stock options to his earliest employees.

China is also producing some genuinely innovative entrepreneurs. Jack Ma uses a website, Alibaba, to sell goods from China's thousands of corner shops to other businesses. Mr Ma has also created a college for entrepreneurs. Jeff Chen has developed an internet browser which has attracted venture capital from Denmark and is available in 20 languages.

Some of the most innovative entrepreneurs are working with mobile telephony, which is even more important in China than it is in the West. Liu Yingkui is selling insurance, mutual funds and bank services over the mobile internet. Charles Wang is trying to get subscribers addicted to his free text-messaging service, PingCo, so that he can start signing them up for premium services such as backing up address books, selling astrological charts and providing weather updates.

Watch this space

Both India and China have a long way to go. The Indian government is a lumbering elephant riddled with favouritism, the country's legal processes move at glacial speed, much of the infrastructure is a mess and over a third of the people are illiterate.

As for China, Yasheng Huang, of the Massachusetts Institute of Technology, has shown how Chinese capitalism is being distorted by the influence of politics. Some 40% of entrepreneurs are members of the Communist Party. State-backed businesses receive a disproportionate share of capital. Even sound businesses are frequently opaque: the Chinese reportedly maintain three sets of books, one for their bankers, one for their accountants and one for the government. Businessmen often neglect their firms because they spend so much time cultivating political connections.

But both countries have already come a long way. HBS's Tarun Khanna points out that the entrepreneurial spirit is beginning to breathe new life into India's public sector. Bangalore has replaced its dilapidated airport with a splendid new one, with the help of some private money. As for China's red capitalists, however much they are being held back by the party, they in turn are forcing the party to change.

The opening up of China and India is releasing millions of new entrepreneurs onto the world market. Many of them have already shown themselves able not just to translate Western ideas into their local idioms but also to drive technological advance of their own. The world has only just begun to feel the effects. ■

Lands of opportunity

Israel, Denmark and Singapore show how entrepreneurialism can thrive in different climates

DOV MORAN'S desk is littered with the carcasses of dismembered phones. Mr Moran has already had one big breakthrough: inventing the now ubiquitous memory stick. But he dreams of another one: he wants to separate the "brains" of the various gizmos that dominate our lives from the "bodies" to enable people to carry around tiny devices that they will be able to plug into anything from phones to cameras to computers. Mr Moran sold his memory-stick business to SanDisk for $1.6 billion, creating a thriving technology cluster near his office. This time he wants to build an Israeli business that will last, challenging the giants of the camera and phone businesses.

Israel is full of would-be Dov Morans. It is home to 4,000 high-tech companies, more than 100 venture-capital funds and a growing health-care industry. Innovations developed in the country include the Pentium chip (Intel), voicemail (Comverse), instant messaging (Mirabilis, Ubique), firewalls (Checkpoint) and the "video pill", which allows doctors to study your insides without the need for invasive surgery.

Even more than other countries, Israel has America to thank for its entrepreneurial take-off. A brigade of American high-tech companies, including Intel and Microsoft, have established research arms there. And a host of Israelis who once emigrated to America in search of education and opportunity have returned home, bringing American assumptions with them. Many Israeli entrepreneurs yo-yo between Silicon Valley and Tel Aviv; almost 70 Israeli companies are traded on NASDAQ.

The Israeli government helped by providing a ready supply of both human and physical capital. Israel has the world's highest ratio of PhDs per person, the highest ratio of engineers and scientists and some of the world's best research universities, notably Technion. The country's native talent was supplemented by the arrival of 400,000 well-educated Jewish refugees from the former Soviet empire.

However, Israel's main qualification for entrepreneurialism is its status as an embattled Jewish state in a sea of Arab hostility. The Israeli army not only works hard to keep the country at the cutting edge of technology, it also trains young Israelis (who are conscripted at 18) in the virtues of teamwork and improvisation. It is strikingly common for young Israelis to start businesses with friends that they met in the army. Add to that a high tolerance of risk, born of a long history and an ever-present danger of attack, and you have the makings of an entrepreneurial firecracker.

Danish dynamism

Compared with a lion like Dov Moran, Frederik Gundelach is a mere cub, but he has some of the same sense of purpose about him. Sitting in one of Denmark's "growth houses" (incubators for entrepreneurs), he

places a flask on the table and launches into an elaborate explanation.

Mr Gundelach claims that he and his father have discovered a novel way of boiling water that does not require the application of heat. He hopes to sell the flask to outdoor types and soldiers, but that is not the limit of his ambition. The chemical reaction that heats the water can also be used to heat or cool houses, he claims, radically reducing the cost of domestic heating and the threat of global warming.

It is too early to say whether Mr Gundelach's flask will turn out to be a miracle in a bottle or a pipedream, but the Danish government is doing everything it can to give him the support he needs. Denmark is engaged in a social experiment to test whether it can embrace capitalist globalisation yet continue to preserve its generous welfare state. The Danish economy has traditionally been divided between big multinational companies (such as Carlsberg, a brewing behemoth) and a welter of small family firms. The government now wants to add a third economic force: start-ups with the potential for rapid growth.

The government has done everything a tidy-minded Scandinavian country can to cultivate these start-ups. The World Bank ranks Denmark fifth in the world for ease of doing business. There is a network of growth houses—ready-made offices that provide start-ups with many of the advantages of large companies such as consulting advice, legal services and conference rooms. The government has created a public venture-capital fund, the Vaekstfonden, and is now trying to change attitudes to entrepreneurs and promoting "education for entrepreneurship".

When Muslim countries boycotted Danish goods in 2005 after a Danish newspaper published some disrespectful cartoons of the prophet Muhammad, wags joked that this hardly mattered because the only things that Denmark produced were beer and bacon. But the government's embrace of entrepreneurialism is clearly changing the economy. Denmark is already home to about 20% of Europe's biotech companies. It also has thriving clean-technology, fashion and design industries. As a proportion of GDP, Danish companies attract more venture capital than any other European country.

Sizzling Singapore

At first sight Denmark and Singapore do not have much in common, yet they share not only the same official enthusiasm for entrepreneurialism but also many of the same policies. Singapore's government has invested heavily in digital media, bioengineering, clean technology and water purification, creating huge incubators and enticing foreign scientists with fat pay packets, as well as setting up a public venture-capital fund that has in turn brought in lots of private venture capital. More than 5% of Singapore-based companies are ▸▸

backed by venture capital.

The government has done everything in its power to make life easy for entrepreneurs, which has earned it first place in the World Bank league table for ease of doing business. It is also trying hard to encourage a traditionally passive population to become more innovative. Schools teach the virtues of entrepreneurialism. The universities put ever more emphasis on business education and links with industry. The Nanyang Technological University (whose chairman, like that of the National University of Singapore, is an alumnus of Hewlett-Packard) offers a graduate degree in technopreneurship and innovation.

Singapore sees entrepreneurialism as a prerequisite to future growth. It has spent the past few decades climbing up the "value chain" from manufacturing to services and from trade to finance. Its biggest test yet may be to create knowledge industries and produce companies that can commercialise intellectual breakthroughs.

All three countries have both advantages and disadvantages when it comes to embracing entrepreneurship. Israel depends too heavily on America and is being hit hard by the downturn there. Denmark is too egalitarian. A top personal-income-tax rate of 63% drives the most successful entrepreneurs out of the country.

Singaporeans have even deeper cultural problems with entrepreneurship. The best and brightest have little appetite for risk-taking entrepreneurship, and most people suffer from an excessive fear of bankruptcy, according to Monitor. The country's consumers are anything but venturesome: for all the island's cultural diversity, they remain obsessed by Western brand names. The country is paying a heavy price for this. A Singapore-based company, Creative Technology, invented a digital music player, the NOMAD, two years before Apple launched the iPod, but Creative's NOMAD looked like a clunky CD player rather than a miniature fashion accessory. It received $100m from Apple for patent infringement, but that did not make up for the loss of a mass market.

Still, the governments of all three countries remain enthusiastic supporters of the entrepreneurial idea. The Danes and the Singaporeans regard it as their ticket to success in a global economy and the Israelis as a matter of survival. All three are also helping to spread the creed in their regions. Arab countries are beginning to realise that the best way to deal with Israel is to copy its vibrant economy. Denmark serves as a model to European leaders such as France's Nicolas Sarkozy who want to combine dynamism with social protection. The Chinese regard Singapore as a useful laboratory for reform. In the 1980s China asked Goh Keng Swee, Singapore's former finance minister, to advise on the development of its special economic zones; today it is keeping a watchful eye on the city-state's model of state-sponsored entrepreneurship. ■

Magic formula

The secrets of entrepreneurial success

KING MIDAS wished for everything he touched to turn to gold, which turned out to be a bad idea. His modern equivalents hope that everything they touch will turn to Silicon, which may not be such a good idea either. The world now glories in dozens of would-be Silicon Valleys: Silicon Alley in New York, Silicon Glen in Scotland and even, depressingly, Silicon Roundabout in London.

Siliconitis is the most common example of what is now an almost universal search among policymakers, local as well as central, for the secrets of entrepreneurial success. It is also the most instructive. A few attempts to replicate Silicon Valley, most notably in Israel, have succeeded. But most are embarrassing failures.

The most basic mistake politicians make in trying to foster entrepreneurship is to assume that there is only one model of a successful entrepreneurial cluster. There is no point in trying to create the next Silicon Valley without the Valley's remarkable resources: two world-class universities, Stanford and Berkeley, and a big financial centre, San Francisco. Instead, would-be emulators should concentrate on their own particular strengths.

In addition to the classic Silicon Valley model, Monitor identifies three other successful entrepreneurial ecologies. One is the anchor-firm model. Alfred Marshall, one of the first economists to write about entrepreneurship, said that successful entrepreneurs are like large trees in a forest, towering over their neighbours and depriving them of light and air. In fact, the big trees usually produce lots of little ones. They spin off subsidiaries, provide experience to employees who then decide to go it alone, and nurture dozens of suppliers.

The research triangle in North Carolina was a successful exponent of the anchor-firm model, recruiting big companies such as IBM, Alcatel and Union Carbide which then either spawned or attracted lots of smaller operators. Hindustan Unilever, a food and personal-care giant, is another, less self-conscious exponent. The firm employs 45,000 women across India to market its goods to 150m consumers in rural areas. These saleswomen not only earn an income, they also learn about products, prices and marketing, sending a ripple of entrepreneurship throughout rural India.

A second, currently topical, model is driven by crisis. People become entrepreneurs when the economy stops supplying jobs. This happened in the San Diego region in the 1990s when the end of the cold war threw hundreds of highly trained military scientists out of work. Local start-ups such as Qualcomm hoovered up the talent and put it to new uses.

A third is the local-hero model in which a local entrepreneur sees an opportunity, starts a business and turns it into a giant. When Earl Bakken founded Medtronic in Minneapolis in 1949, he was creating a local industry as well as a company. Having developed the world's first heart pacemaker, Medtronic grew into the largest medical-technology company in the world, spawning huge numbers of smaller ones.

A matter of luck

Two other things complicate the search for success—the role of chance and the importance of culture. The Indian Institutes of Technology were designed to create technocrats rather than entrepreneurs. It was more a matter of luck than good planning that they were churning out exactly the sort of people that the Indian software industry needed.

David Landes, an influential economic ▸▸

historian, has argued that "if we learn anything from the history of economic development, it is that culture makes almost all the difference." You can build as many incubators as you like, but if only 3% of the population want to be entrepreneurs, as in Finland, you will have trouble creating an entrepreneurial economy.

This complicates policymakers' work, but it does not make it impossible. Culture is not the only factor: economic policies matter too. Overseas Indians and Chinese thrived abroad in the 1950s and 60s even though their cousins were languishing back home. And culture can be changed. The Thatcher government shook Britain out of its anti-business torpor in the 1980s. More recently India and China have become the second and third most entrepreneurial countries in the world, trailing only America, according to Monitor.

What should countries do to improve their chances of getting it right? At the minimum, they need to implement the policies that the World Bank lays down in *Doing Business* to achieve things like transparency, convenience and rule of law. At best, they should emulate two qualities of some of the world's most successful entrepreneurial clusters.

The first is a vibrant higher education system. Business is increasingly dependent upon knowledge, particularly technical knowledge. Some 85% of all the high-growth businesses created in America in the past 20 years were launched by college graduates. University research departments have helped to drive innovation in everything from design to entertainment.

The second is openness to outsiders. Emigrés have always been more entrepreneurial than their stay-at-home cousins: the three most entrepreneurial spaces in modern history have been the ones inhabited by the Jewish, Chinese and Indian diasporas. In today's knowledge economy educated émigrés are at the cutting edge of innovation. They create more firms than regular folk; they circulate ideas, money and skills; they fill skills gaps; and they mix and match knowledge from different parts of the world.

Born global

In fact, today's smart entrepreneurs start global. They search for materials, talent and opportunities the world over and define their competitive environment globally rather than locally. This reflects the fact that entrepreneurs are springing up in every corner of the world, complicating the battlefield still further.

Take EyeView, a quintessentially modern start-up, which was a global citizen from its very first day. The company uses "rich media"—a combination of videos and audios—to teach customers how to use websites. Most of the company's customers are international, so the videos are produced in many different languages and watched the world over.

The company currently occupies an upper floor of a nondescript building in Tel Aviv, but in its earliest years it lived on three continents. Two of the company's founders were based in Boston, the third in Sydney and the fourth in Tel Aviv. The company made its first videos in Australia and its first customers were on America's West Coast.

Daniel Isenberg, of HBS, points out that today's entrepreneurs are pioneering a new business model. In the old days globalisation was incremental. Companies first established themselves in their local markets and then expanded abroad slowly, starting in their own regions. Now a number of them span the globe right from the beginning.

Successful entrepreneurs are coming from some surprising places. Bento Koike has built Tecsis, one of the world's most successful manufacturers of wind-turbine blades, in Brazil, his home country, even though both the company's raw materials and its customers are in Europe and America and the huge blades are difficult to ship. He has taken out a patent on his innovative packaging technology.

New Zealand, despite its geographical isolation, has turned itself into an entrepreneurial powerhouse, leading the world in the creation of small and medium-sized enterprises, thanks in part to enlightened government policies. It has done particularly well with applying innovation to woollen underwear. Its Icebreaker brand is popular with young, image-conscious outdoor enthusiasts.

Successful entrepreneurs are also forming some surprising cross-border collaborations. Shai Agassi, an Israeli-American businessman based in Palo Alto, California, is promising to upend the car industry by going electric, in alliance with politicians, entrepreneurs and companies in Israel, Denmark, Japan and France. Israel and Denmark are both building networks of recharging stations. Danish entrepreneurs are working on technology that will prolong the life of batteries. Renault and Nissan are building electric cars.

Still, it would be a mistake to conclude from all this that entrepreneurship is killing distance entirely. Many of today's start-ups have to grapple with logistical problems that used to be the preserve of large companies. Entrepreneurs need to travel the world to check on far-flung operations, organise globe-girdling supply chains and comply with a plethora of legal and regulatory systems.

Talk to any budding entrepreneur and you soon discover, too, that local cultures matter. The more globalised the world becomes, the more people look for comparative advantages that cannot easily be bought or replicated; and the more far-flung their business operations, the more entrepreneurs rely on bonds of trust with their fellow businessmen. One reason why Mr Koike decided to base Tecsis in Brazil was that the country has a thriving aerospace industry and a successful Aeronautical Institute of Technology. The two leading founders of EyeView, Tal Riesenfeld and Oren Harnevo, grew up in the same village in Israel and served in the army at the same time. They decided to concentrate their activities in Israel, rather than remaining scattered all over the world, partly because they thought that they needed to share the same "mind-space", and partly because they wanted to do something to help their country. ■

Saving the world

Entrepreneurs are trying to do good as well as make money

THE Iskcon Sri Radha Krishna-Chandra Temple feels like a bit of ancient India preserved in the heart of modern Bangalore. The faithful wait in long lines, their faces daubed with paint. The air is filled with chants of "Hare Krishna" and "Hare Rama". Monks in orange robes offer flowers and food to the gods and produce haunting sounds on conch shells.

In fact, India's entrepreneurial revolution is as visible here as anywhere. The temple has a conference room equipped with state-of-the-art audio-visual aids. Its board of directors includes several leading software billionaires and their wives, providing it with money as well as connections. The monks are entrepreneurs as well as holy men, one moment talking about reincarnation and the next about sustainable delivery models.

The temple provides 200,000 local schoolchildren with free meals every day. It achieves this miracle of abundance by a combination of mechanisation and careful management. The temple's 250 employees use giant machines to clean rice and prepare chapattis. They then pack the food into steel containers and load it into a fleet of custom-made vans which keep the food warm as they crawl through Bangalore's traffic-clogged streets.

Entrepreneurship is reshaping the voluntary sector as much as the private one. Rich people have often turned their hand to philanthropy in their later years, but this old story has acquired some new twists. Today's entrepreneurs routinely apply business techniques to philanthropy. Some of them are even using a venture-capital model, investing in a range of promising start-ups and making longer-term funding conditional on performance.

Riders for Health was created when a couple of motorbike enthusiasts discovered that the vehicles being used by health-care providers in Africa were not being maintained. The organisation now helps to provide 11m people with health care in inaccessible parts of Africa, often using motorbikes. Teach for America started when a Princeton student, Wendy Kopp, conceived the idea of persuading Ivy League graduates to teach in state schools for a while. The trick was to ask them to compete for the honour of doing something that, a few years earlier, none of them would have been remotely interested in. The programme has now been copied around the world.

Social entrepreneurs often blur the distinction between making money and offering charity. Some use the profits from their main business to cross-subsidise their charitable work. India's Aravind Hospitals, which perform 250,000 eye operations a year, do 60% of their work for nothing. Other social entrepreneurs establish for-profit social enterprises, also known as "FOPSES", that try to make money as well as doing good.

Vinod Kapur, for example, has built a successful company with the purpose of feeding India's rural poor. He invested $1m—and many years of his life—in breeding a superchicken. The result was the Kuroiler: multicoloured, resistant to disease, capable of surviving on farmyard scraps, strong and wily enough to fight off predators, and producing twice as much meat and five times as many eggs as ordinary chickens. Mr Kapur has built an entire supply chain around the Kuroiler, including specialist farms that breed them and vendors who sell them across rural India.

Shane Immelman has built a successful company by trying to bring the benefits of education to poor schoolchildren in South Africa. Appalled that 4m children did not even have desks, let alone schoolrooms, he invented a "lapdesk" that sits on the child's lap and provides a stable surface. The desks are covered in advertisements, so Mr Immelman is able to hand them out free, but they have proved so popular that better-off people have started to buy them, and some of them are now being exported to other developing countries.

Take care of the pennies

In the long run, however, the best thing that entrepreneurs can do for the poor may be simply to see them as workers and customers. A rising number of Western companies are pursuing what C.K. Prahalad, a management professor at the Ross School of Business at the University of Michigan, calls "the fortune at the bottom of the pyramid". Businesspeople have realised that billions of pennies can add up to a lot of money. Cemex, an innovative Mexican cement firm, employs thousands of poor Mexicans. Casas Bahia, a Brazilian retailer, specialises in serving poor customers. India's ICICI Bank uses technology and customer service to reach poor rural Indians.

Allowing people to experience the benefits of the market sometimes means helping them to join the market economy. Hernando de Soto, a Peruvian economist who helped to inspire the World Bank's *Doing Business*, has long argued that creating property rights in the developing world is a precondition for encouraging entrepreneurialism there. Regional development banks such as the African Development Bank and the European Bank for Reconstruction and Development claim they are trying to build local environments in which entrepreneurs can flourish.

This seems to hold out the prospect of a continuous cascade of prosperity as successful entrepreneurs discover new markets and then use the fruits of their efforts as social entrepreneurs to generate yet more successful enterprises. But the world is never as simple as that: entrepreneurship creates uncertainty and competition as well as innovation and prosperity. ■

The entrepreneurial society

Better, on the whole, than managed capitalism

THE rise of the entrepreneur, which has been gathering speed over the past 30 years, is not just about economics. It also reflects profound changes in attitudes to everything from individual careers to the social contract. It signals the birth of an entrepreneurial society.

How can policymakers adjust to this change? The first thing they need to do is shed some common misconceptions about the meaning of entrepreneurial capitalism. In any discussion of entrepreneurship, the phrase most frequently invoked is Schumpeter's "creative destruction". That can be unhelpful, implying that "destruction" and "creation" carry equal weight and that mankind will be in for a rough time in perpetuity.

Columbia University's Mr Bhidé points out that a great deal of creation is of the non-destructive variety. Rather than displacing existing products and services, many innovations promote and satisfy new demands. William Nordhaus, an economist at Yale University, points out that about 70% of the goods and services consumed in 1991 bore little relationship to those consumed 100 years earlier. There are worlds of non-destructive creation yet to be conquered—new cures for diseases, say, or innovations that will improve the life of elderly people. And even when the creation does involve some destruction, there is usually not a lot of it. Most innovations increase productivity and improve the general standard of living.

It's fine to be brilliant

Entrepreneurialism promotes individual creativity as well as economic dynamism. One of the most chilling chapters in William Whyte's "The Organisation Man" (1956), a study of corporate America at the height of managed capitalism, was entitled "The Fight Against Genius". The thinking at the time was that well-rounded team players would be more valuable than brilliant men, "and a very brilliant man would probably be disruptive." Entrepreneurial capitalism has brought the rehabilitation of the "very brilliant man".

Entrepreneurial capitalism is not as disruptive as many of its friends—and most of its enemies—imagine. It produces a bigger

pie and allows more people to exercise their creative talents. But it is disruptive nonetheless. It increases the rate at which companies are born and die and forces workers to move from one job to another. Policymakers have to find the right balance between flexibility and security.

The most urgent need for reform is in continental Europe. Policymakers in the larger European economies need to learn from the Scandinavian countries that it is possible to have a safety net without clogging up the labour market. If people are hard to sack, start-ups find it more difficult to get off the ground. And high unemployment rates discourage people from branching out on their own because they might not find another job if they fail.

America suffers from serious rigidities of its own. The mobility of American workers is severely restricted by the country's reliance on employer-provided health insurance, a relic of the second world war. New firms often have to pay more for their health care because they have smaller "risk pools" than larger companies. America's health-care system is bad at controlling costs, imposing a heavy burden on the whole economy, particularly the newest and most fragile firms.

"Every generation needs a new revolution," Thomas Jefferson wrote towards the end of his illustrious life. The revolution for the current generation is the entrepreneurial one. This has spread around the world, from America and Britain to other countries and from the private sector to the public one. It is bringing a great deal of disruption in its wake that is being exaggerated by the current downturn. But it is doing something remarkable: applying more brainpower, in more countries and in more creative ways, to raising productivity and solving social problems. The "gale" that Schumpeter celebrated is blowing us, a little roughly, into a better place. ■