China may spring surprises by taking technology lead

Alan Cane
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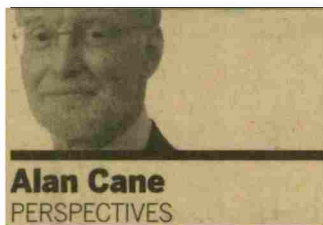
How long does it take for a nation state – a vast nation like China, for example – to become a world player at the highest level in advanced technologies?

China is, of course, already one of the world's great manufacturing nations. But, as with Japan in the 1980s, it has yet to demonstrate that it can hold its own with the inventors and entrepreneurs of Silicon Valley.

Some commentators are relatively downbeat about its potential for progress. Quoted in Rebecca Fannin's new book *Silicon Dragon**, Tony Perkins ,founder of the AlwaysOn network, argues: "My personal view is that China is long-term handicapped and has to have fundamental cultural change to be a serious competitive threat."

Ms Fannin, international editor of the Hong Kong weekly *Asian Venture Capital Journal*, quotes Joel Dreyfuss, editor-in-chief of Red Herring technology magazine: "I think it will be another 20 years before China moves up the value chain and reaches critical mass in cutting edge technologies." Also Jed Dorsheimer, vice president, equity research for the financial services group Canaccord Adams: "Right now, most of Chinese technology is mediocre and it would be hard to find a leading-edge technology company.

"At some point in time, technology breakthroughs from China will happen. The question is when."

It is worth considering, however, a set of statistics much used by technology historians to show the time lags between the introduction of specific consumer electronic

technologies – the telephone, radio, television, the personal computer and the internet – and their adoption by the public.

The telephone remained at 35 per cent penetration in the US between 1920 and 1940 before reaching 90 per cent in the 1970s. Radio took quite a few years to achieve over 50 per cent.

As for television, the first commercial broadcasts were made in 1939 but, according to figures from the US Consumer Electronics Association, 16 years later – in 1955 – 63 per cent of households had a set.

By comparison, it took only eight years, from 1994 to 2001, for the internet to find its way into just under 60 per cent of US households.

There are a number of elements involved in the rate of adoption of specific technologies – researchers in the field include factors such as complexity, compatibility, observability, trialability, relative advantage and, by no means least, risk.

There is also the accelerating effect of existing technologies. The spread of television was undoubtedly helped by publicity on the radio networks.

The spread of the internet was propagated by the ready availability of personal computers and the advent of broadband services at prices most families could afford.

In *Silicon Dragon*, essentially a series of case studies illustrating the growth of Chinese entrepreneurship, Ms Fannin, writing last year presumably, predicts that China's internet population will overtake that of the US.

In fact, the number of Chinese online surpassed the number of North American internet users in April this year.

According to Kai-Fu Lee, president of Google China, speaking on the Online NewsHour, the growth rate has been between 40 and 50 per cent a year.

One quarter of China's 1.3bn

people would be online by the end of the year, he predicted, pointing out that the average age of a Chinese internet user was 25 compared with 45 for a US user.

"So that means they're going to be more curious, more interested in any kind of information."

Internet growth in the US and Europe, however, has slowed down as it approaches market saturation.

At the same time, the number of trained scientists and engineers emerging from Chinese colleges and universities is much greater than in the west – 644,000 engineers annually, according to Ms Fannin, three times more than in the US.

Chinese entrepreneurs are perfecting the trick of developing a business plan, based probably on a US model, and raising finance in the US.

It is entirely possible that the internet will prove to be the accelerant for China just as, according to Edward Tian, chairman of Broadband Capital Partners, "the steam engine was for Europe and the automobile for the United States".

It remains to be seen whether the internet will prove in the end to be the catalyst for reform in Chinese infrastructure and society that many had hoped for but which has so far failed to emerge.

But the country that invented gunpower, paper and the compass may spring a surprise with the speed at which it achieves a lead in many modern technologies.

* *Silicon Dragon: How China is winning the Tech Race, by Rebecca A. Fannin, McGraw Hill*

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