



by Michael Mainelli

Over-reliance on technology to deliver the next big thing has ultimately rendered it impotent.

Beyond the technology frontier

Since time immemorial, quixotic characters have used lodestones to seek touchstones, philosophers' stones and rolling stones, all in search of a quick buck. In the 1967 film *The Graduate* Dustin Hoffman's character, Benjamin Braddock, is given one word of advice by his father's friend, Mr McGuire, 'plastics'. In the 70s the word was 'computers', in the 80s 'internet', in the 90s 'biotechnology'. Mr McGuire was right, following the trail of Bakelite, any number of plastics were big. Mr McGuire showed that, oddly, you could see the next big thing coming. The next big thing is virtually the 'present big thing' and it's always some new technology.

But can we look deeper for trends in the next big thing? In medieval times, the next big thing was religious - the Holy Grail, saintly bones, shrouds, fashionable pilgrimages or challenging quests; or sacrilegious - alchemy, witchcraft or freemasonry. In early modern times the next big thing was the newest spice or exotic land. In more modern times, the next big things were socio-political ideas such as Adam Smith's invisible hand as well as in its nemesis communism, let alone fascism, socialism and other isms. Arguably, it is only in the past two centuries that technology has been accepted as a worthy, and consistent, lode for mining the next big thing. It has been a deep lode, from mass-produced steel to textile machinery to electricity to magnetism to railways to vaccines to plastics to atoms to computers to designer drugs to biotechnology.

To find the next technological big thing we can easily do the rounds of fanatics - as Churchill said, "a fanatic is one who can't change his mind and won't change the subject" - and some of them are likely to be proved right at some point. Several next technological generations already exist in research laboratories. It's very small - quantum computers, smart dust, light-emitting organics. It's very large - hydrogen power, space colonisation/power/shading/elevators, the global nervous system. It's cheaper - micro-power, artificial food, disposable and foldable electronic paper computers. It's faster - on-demand layered machinery, real-time chip programming, bio-nano hybrid bugs. It's specific or user-friendly - personalised drug design, mentally-merged machinery, dynamic anomaly and pattern response. Barring the demise of the human race, we must assume these things are likely to arrive simply because they are possible. The necessary business skill is correct application and timing.

Here it comes again

Ahh, timing - this author was propounding the internet as the next big thing, though sadly in the '70s and not the early '90s; German and Austrian scientists were pushing liquid crystals, but in the 1880s; Mendel published in 1866. One important characteristic of the next big thing is that it must have the power to surprise at the time it starts to become big, but surprise only a little bit. Talk about quantum computing with most people today and their eyes glaze over, much as most eyes glazed in the early 90s when you discussed a worldwide network. It's not whether you can see it coming; it's whether your neighbour doesn't, but only by a little bit. Your neighbour must also share the perception that the next big thing has the power to disrupt the current order. The next big thing is about perception more than reality.

Sheridan (1998) points out that around 80 per cent of technological forecasts are just wrong. New technologies take decades to be commercialised, not years; customers change slowly but change is sudden; the only law is the law of unintended consequences. So surprise is not to be expected. Moreover, technological change has become more predictable. Some, such as policy institutes, publishers, contract researchers and even this author (Parker and Mainelli, 2001), make a living out of technology commercialisation. Between the sigmoid curve of technology take-up and the portfolio management of large intellectual property holders, technology is losing its power to surprise. The common perception has become that technology will produce the next big thing. The paradox is that the more accepted this perception becomes, the less likely it is that technology can deliver the necessary surprise. Because technology is so watched, so pored over, everyone can see it coming, hence no surprise. To paraphrase Walt Kelly's Pogo, "we have met the technological next big thing, and it is us."

Francis Fukuyama questioned whether the combination of liberal democracy and capitalism had become accepted as the most fitting form of government and economics, the culminating form of civilisation (Fukuyama, 1993). With the demise of centrally planned economies, unable to support the demands of modern societies, Fukuyama mirrored Marx's contention that socialism would be the culminating form of civilisation. Is there a parallel 'The End of the Next Big Thing'? Could it be that the culmination of business and technology is the rationalised commercialisation of technologies?

Henceforth, can technology commercialisation be planned in increasing detail further and further into the future? Is the surprise being squeezed out? Or is technology simply a recurring fad, dating to ancient times, that comes and goes in waves of business attention? (Mainelli and Harris, 2000).

Gizmo's misadventure

There is concrete evidence that technology is losing its power to surprise. During a period of unprecedented technological expectation in the second half of the 1990s, the discount rate used for investment decisions dropped in all major economies and continues to drop in the early part of this decade. As the discount rate is a key indicator of investment uncertainty, despite the increasing hype and expectation of technological revolution, uncertainty decreased. The discount rate is very sensitive to perceptions. Perhaps investors expect the next technological thing to be well-managed and not as surprising, or to take a longer time to produce returns. Likewise, perceptions are strongly influenced by the discount rate. A low discount rate should encourage investment in longer-term ventures that don't require ridiculous returns in the short-term, encouraging people to dig harder for next big things. On the other hand, a low discount rate tends to bring forward prosaic rather than ground-breaking, projects. It could be argued that the discount rate incorporates many components of investment uncertainty other than technology and that these other factors, such as political stability or macro-economic certainty, drove the discount rate down. But sustaining that argument might be difficult given the scale of international political change since 2001 without a corresponding rise in the discount rate.

Possibly the next big thing isn't technological. Polanyi (1944) drew attention to a great transformation often overlooked, the transformation from socially and politically regulated markets to self-regulating markets from the 1600s to the 1800s. He charted the tremendous impact of these simple changes, "the hundred years' peace" of the nineteenth century, the change from a normal price for goods to letting prices be set by markets and the violence and disruption that accompanied that change - the Industrial Revolution, Chartists, Luddites, Corn Laws. It was a big change, a great transformation.

So the next big thing might just as easily be a political, social or economic revolution. One could imagine that the technological foothills of the internet lead to the peaks of ultra-participative democracy; that a critical mass of home-working and off-shoring reinvents the concepts of cities and villages and classical education is abandoned for online learning; that hyper-fluid capital invests directly in individuals' lives, their health risks, their careers and education; that genetic engineering leads to radical changes in sexual relationships; or that costless information leads to frictionless international firms and thus to geographically-unburdened states. These changes would create enormous business opportunities and would be, in many ways, somewhat tautologically, technology-dependent but with the principal impacts being on people and their relationships with other people. Our emphasis moves from the 'science' in science-fiction to the characters in the 'fiction'.

Discount me out

Maybe the next big thing is irrational. Prospect Theory (Kahneman and Tversky, 1979) attempts to describe why individuals make decisions that deviate from rational decision-making. Economists, and other social scientists with an interest in decision-making, have

found that differences between the rational model (how decisions ought to be made) and the real world (what decisions are made) are so significant that their rational models can be of little use. According to Prospect Theory, if you want to drive decision-makers towards a riskier decision, convince them that they are already losing. If you want to drive decision-makers towards a risk-averse decision, convince them that they are ahead and stand to lose quite a bit.

If it is herd behaviour that is driving us towards the next big thing, maybe it is the behaviour of a herd in panic, not euphoria. Is the next big thing mania born from panic at relative losses, not from excitement at potential gains? Do worry and fear drive people towards the next big thing? Even in the days of tulips and spices there was the Dutch Tulip Bulb Bubble of the 1630s and the South Sea Bubble of 1720. On the other hand, mayhap people follow Mark Twain's contrarian, anti-portfolio investment strategy (from Pudd'nhead Wilson) and seek to concentrate on the next big thing. **"Behold, the fool saith, 'Put not all thine eggs in the one basket' - which is but a manner of saying, 'Scatter your money and your attention', but the wise man saith, 'Put all your eggs in the one basket and - watch that basket'."**

So there are two interesting hypotheses one might propose. The first is that investors seek the next big thing out of 'fear of missing out'. 'Fear of missing out' leads us to act in a herd-like manner, all moving to implement whatever the crowd tells us is the next big thing, whatever fad is popular, leading to investment bubbles. The second hypothesis is that this irrational behaviour nevertheless offers a rational investment approach. By investing early and heavily in the next big thing, an investor inflates the bubble further, but is on to a sure market return regardless of whether the next big thing fulfils its promise, as long as he or she knows when to leave the market. To the savvy investor, the technological next big thing is no such thing, just a recurring, somewhat predictable, bubble to ride. "The next big thing is dead; long live the next big thing."

Over the long-term, we would expect these effects to diminish for the technological next big thing as investors learn. Perhaps these effects have already diminished as a reduced discount rate implies. A true seeker of the next big thing should seek outside the herd, well beyond the next technological frontier. In order to find the next big big thing, we have to eschew a rational, managed technological forecasting and tracking process for the paradoxical process of 'thinking the unthinkable'. The next big big thing may be more likely found in scary, surprising changes to politics, society or economics, than the well-trawled realms of advancing technology.

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