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Our dangerous illusion of technological progress

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Now that Barack Obama has been re-elected US president, every fantastic campaign promise will collide with the reality of the global economy. Mitt Romney made different promises but would have faced the same dead end. Although the election appeared to offer a choice of futures, both candidates were silent about the bright future gone missing: the age of scientific ingenuity we once expected to solve our problems.

During the past 40 years the world has willingly retreated from a culture of risk and exploration towards one of safety and regulation. We have discarded a century of can-do ambition built on rapid advances in technology and replaced it with a cautiousness far too satisfied with incremental improvements.

The 2008 crisis lingers. But its main cause goes back more than three decades to the depressed rate of technological progress since the 1970s. If we want to escape not just today's crisis but the whole post-1970 era of bubbles, busts and wage stagnation, our only option is to accelerate technological innovation.

Many investors practise a fake form of long-term thinking. Portfolio managers see the returns of the 20th century and project those far into the future. Tomorrow's retirees are betting their fortunes on the success rates of yesterday's companies. But the vast wealth registered by modern capital markets came from technological feats that cannot be repeated. If nobody takes the risk to invent products that produce new industries and new profits, then analysing historical returns from the 20th century will be no better guide to our future than researching crop yields from the 10th century. Without innovation, faith in the stock market is a kind of cargo cult.

The dotcom boom of the 1990s was a clear case of investors mistaking hype for innovation. But the housing bubble of the 2000s was similar because it was assumed that house prices would appreciate in a world of technologically driven growth. After all, it had always happened before.

However, we bounded forward in the 1950s and 1960s thanks to a generation of scientists who did not just believe in a better future but invented it. They popularised jet aviation, fed a growing world with the harvest of the "green revolution", switched on the first nuclear reactors for civilian power, launched the first satellites for communications and built the first integrated circuit, laying the foundations for decades of innovation in information technology.

The genuine progress in IT from the 1970s up to the 2000s masked the relative stagnation of energy, transportation, space, materials, agriculture and medicine. IT enabled the processes of globalisation and efficient management that delivered economic growth without increasing real median wages. But it also induced a misleading sensation of technological acceleration. We can now use our phones to send cute kitten photos around the world or watch episodes of *The Jetsons* while riding a century-old subway; we can programme software to simulate futuristic landscapes. But the actual landscape around us is almost identical to the 1960s. Our ability to do basic things such

as protect ourselves from earthquakes and hurricanes, to travel and to extend our lifespans is barely increasing.

Today when people say “tech” they think of a small cohort of computer-related companies rather than the continuing transformation of every industry that people envisioned back in the 1950s. On the campuses of Google and Apple, high-design bathrooms or espresso bars might look very different from the average non-tech company but their balance sheets show the same vast piles of idle cash you'll find at Pfizer or Chevron. If we were living in an era of accelerating technological progress, Apple could reinvest its returns in new projects instead of fighting patent battles over old ones while moonlighting as the world's biggest hedge fund.

Our culture has not caught up with the reality of stagnation. Our institutions are addicted to incrementalism. The only huge leap proposed is a leap backward: to slow down for the environment's sake. But the only means for humanity to consume fewer resources is through new technology. Governments are biased toward managing and thereby perpetuating problems. The cold war glory days of Nasa and the Defense Advanced Research Projects Agency are long gone. Meanwhile, Wall Street analysts' quarterly earnings expectations encourage short-term thinking at publicly traded companies.

The most innovative companies of the future will be private ones, which enjoy more freedom than governments or listed companies. They will have be able to invest in technologies too risky for politicians to endorse and too futuristic for venture capitalists to fund.

Above all the future will be created by individuals. Those with the most liberty to take on risk and make long-term plans, young people, should consider their options carefully. Education is invaluable but student debt can be crippling to entrepreneurship. The coming generation of leaders and creators will have to rekindle the spirit of risk. Real innovation is difficult and dangerous but living without it is impossible.

The writers are a former world chess champion and the founder of PayPal.