



## Q&A Peter Diamandis

# The eternal optimist

*Peter Diamandis is the founder of the non-profit X Prize Foundation, which aims to kick-start research and development to solve humanity's biggest challenges. On the publication this week of his book *Abundance*, co-authored with journalist Steven Kotler, he explains how technological and social progress will enable us to provide enough food, water and energy for all.*

**Your book is optimistic about humanity's future. But aren't we already exceeding our planet's carrying capacity?**

The carrying capacity for Earth is a relative number. If I have an orange grove and I can reach only the lowest oranges on my trees, I need five trees to feed my family. If I can build a ladder, then I need only one tree. If humanity were to run out of food, our 'ladder' might be genetic engineering, or growing food hydroponically inside skyscrapers. It's not as if water is leaving the planet, or energy is not shining down, or we're not recycling food. These are all replenishable resources once we are able to use them more efficiently.

**How can we use resources better?**

We're living on a water planet; the challenge is that 98% is salt water. But there are technologies that can purify it — such as the Slingshot, a device the size of a mini refrigerator that can run on cow dung, which the Coca-Cola Company is helping to trial in

**Abundance: The Future Is Better Than You Think**  
PETER H. DIAMANDIS  
AND STEVEN KOTLER  
Free Press: 2012.  
400 pp. \$26.99

Africa. With food, we now have the ability to go from evolution by natural selection to evolution by intelligent direction using genetic engineering. We will make cleaner energy through solar and nuclear approaches, which are the only ones that can scale to meet our needs. Mobile-phone use is growing exponentially, and soon more than 70% of the world will have one; the Qualcomm Tricorder X Prize is asking teams to build a mobile app that allows users to diagnose themselves as well as a physician can.

**How quickly can such technologies develop?**

The world is full of exponential technologies. When the Human Genome Project started in 1990, people said that it would take 50 years and would consume every scientist on the planet. These things can happen much more quickly. And now

there are new forces making them happen. Through the X Prize Foundation, I've witnessed individuals and small teams do things that, in the past, only governments could do. There is the DIY innovator: the person or team empowered by extraordinary technology, such as parents of sick children who create biolabs in their own kitchens. There are the techno-philanthropists: 'centimillionaires' who are being created younger and younger and tackling global challenges — just as Bill Gates has tackled malaria. In 2010 there were some 2 billion people online; by 2020 that is going to rise to 5 billion. These people are going to join the global economy, and innovate on a zero-cost basis.

**Are things better now than in the past?**

Over the twentieth century, lifespan has doubled. We're living in the most peaceful time ever. Every generation thinks that their problems are the biggest, but eventually we get around them. That was an important insight for me. People idealize the past but they forget how horrible it really was. Seeing problems is an evolutionary survival trait. The easiest way to survive is to be hyper-vigilant for problems.

**What about the growing gap between rich and poor?**

That's immaterial at some point. In the United States, happiness correlates with income only up to about US\$75,000. It's about providing for your needs. If someone in Africa can have first-tier [basic] health and education and access to abundant energy, food and water, they might still have little income, but those changes represent a huge step forward.

**You write of fulfilling basic needs for free and automating menial tasks. How would that affect the future economy?**

I don't know. 'Work' as a defined activity in society didn't exist for the first 100,000 years of our species. It was invented. If I own a nanobot that can create my food, a shelter, a car and anything else, I have everything I need. But what do you do with all your spare time? Does everyone become an artist? A thinker? An explorer? It is going to be interesting.

**Do you plan to live long enough to find out?**

When I was a first-year medical student I saw a television show about some turtles that might live as long as 700 years. So I asked, if they can, why can't I? We are on the edge of a revolution in health. We're designing an organogenesis X Prize for spare body parts. I'm staying in touch with the smartest researchers and physicians I know. ■

INTERVIEW BY NICOLA JONES