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Abundance

The Future Is Better Than You Think

Peter H. Diamandis and Steven Kotler • Copyright

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Science / Environment
Society

Take-Aways

- Achieving “abundance” means providing the basic essentials of life to everyone.
- “The Abundance Pyramid”: Safe drinking water and sanitation could save millions of people and fight hunger, poverty, disease and population growth.
- The cynicism that prevents people from envisioning positive possibilities is a byproduct of how the brain processes information.
- Abundance is possible due to four emerging forces shaping global living standards:
- First, “transformational technologies” can raise living standards.
- Second, hands-on innovators are solving problems that corporations and governments once had to fix.
- Third, “technophilanthropy” from tech millionaires is addressing basic living standards.
- Fourth, wireless technology enables “the rising billion,” formerly poor and disenfranchised poor, to become a new market force.
- Achieving abundance depends on accepting risk and harnessing innovators’ optimism.

Recommendation

Given today's remarkable technological and scientific breakthroughs, the world is in better shape than you might think. Medical doctor Peter H. Diamandis and journalist Steven Kotler insist that nothing is wrong that people can't fix. They argue that society stands poised to solve its most fundamental problems – famine, disease and energy depletion – in the coming decades. Critics and cynics may find fault with the book's optimism, but it is a well reasoned, compelling look ahead.

Summary

Achieving “abundance” means providing the basic essentials of life to everyone.

The issue of scarcity came to wide public attention when 18th-century British scholar Thomas Robert Malthus predicted that eventually the world would not have enough food to feed its population.

“Because of our negativity bias, standing up in today's climate and claiming that the world is getting better makes you appear addled.”

In 1972, the Club of Rome, a group of leading intellectuals, published *The Limits to Growth*, a bestseller that explained that the world was running out of resources. Many of its catastrophic forecasts have not come true, but its fundamental observations remain relevant: Famine and thirst kill millions, oil supplies are depleting, and species are becoming extinct. Some scientists predict that Earth will be unable to support its population within several decades. However, four emerging forces offer reason to hope. These massive influences will shape global living standards for the better:

1. **“Transformational technologies** – In certain instances, technology can compensate for natural resource shortages; in fact, technological advancement will raise living standards around the globe. In the future, 10 technologies will address world hunger in a meaningful way: “agroecological principles, GE crops, synthetic biology, perennial polycultures, vertical farms, robotics, AI [artificial intelligence], integrated agriculture, upgraded aquaculture and cultured meat.”
2. **The “Do-It-Yourself (DIY) revolution”** – Smart, motivated individuals and groups are developing technologies once only governments or major conglomerates generated. For example, in 2010, American biologist and entrepreneur Craig Venter created the world's first synthetic genome.
3. **“Technophilanthropy”** – Technological titans, including Bill Gates and Mark Zuckerberg, are backing projects that address global issues like water, hunger and disease. Other superrich donors are also supplying unprecedented philanthropy.
4. **“The rising billion”** – Thanks to the web and wireless communication, millions of poor people now can participate in the global economy, forming a new market force. Commerce can bring the poor better food, water, housing, health care and education.

“The Abundance Pyramid”: Safe drinking water and sanitation could save millions of people and fight hunger, poverty, disease and population growth.

The traditional approach to solving global problems begins with an examination of poverty and how to address it. Statistical data often paint a misleading picture, because poverty is relative. The poorest Americans enjoy a higher standard of living than the poorest Africans, making a global benchmark for poverty difficult to define.

“Abundance is an all-inclusive idea. It means everyone. It means the individual must matter, and matter like never before.”

Achieving abundance means providing every person with the basic necessities for survival, such as food and water, while eliminating devastating diseases like malaria. Abundance doesn’t mean luxury; it means ensuring that all people have access to life’s essentials and have the freedom to fulfill their abilities rather than having to focus solely on trying to survive. One way to consider world poverty is through the abundance pyramid model, which has these components:

- **“Physiological needs”** – Sufficient food, water and shelter form the foundation of the pyramid. Clean water and a 2,000-calorie-a-day diet, along with the necessary vitamins and minerals, would ensure good health. According to the Pacific Institute, in the 20-year span from 2000 to 2020, poor sanitation and unsafe drinking water will cause roughly 135 million deaths globally. Clean water would address many ills now plaguing society. Solving “this one problem” would greatly lessen fatal diseases; increase children’s survival rates, thus leading people to have fewer children; “preserve the biosphere”; and create a global “positive chain reaction.”
- **“Energy, education and information/communication”** – Simple electric cook stoves could change the lives of the 3.5 billion people who burn wood and dung for energy. Electrical power will reduce the need to chop down trees. It would cut exposure to indoor pollution, allow women to take jobs and enable children to go to school instead of gathering fuel. Other education concerns include refocusing from solely “fact-based learning” to foster creativity as well. Mobile phone technology continues to improve Africans’ lives. Farmers in Zambia use mobile phones to buy supplies, compare prices and schedule deliveries, so they can maximize their earnings. Experts expect 70% of the population to have cellphones by 2013. Cheap, available wireless communication enables those who are currently living on the periphery to participate in the global economic stream. Other developments, such as robotics, biomedical engineering and AI, will allow most of humanity to enjoy benefits that are now available only to a privileged few.
- **“Health and freedom”** – An abundant world demands good health. Due to difficulties in diagnoses and in the distribution of medications, millions of people in underdeveloped nations die each year from treatable diseases. A combination of exponentially growing medical technologies, such as zero-cost diagnostics, Lab-on-a-Chip (LOC) and cloud computing, will address these issues. Access to advanced communications technology has strengthened the democratic process and spurred economic growth in several African countries.

The cynicism that prevents people from envisioning positive possibilities is a byproduct of how the brain processes information.

Though the world's problems may seem insurmountable, humankind can achieve abundance within the next 25 years. Skeptics maintain that curing disease and solving hunger in such a short time frame is impossible. Some say that the situation is worsening, but such negative attitudes may be the largest obstacle to overcome on the way to abundance. Belief in the possibility of abundance doesn't come naturally. Human beings generally tend to lean more toward the negative than the positive.

People are generally reluctant to greet change with enthusiasm and are quite pessimistic concerning global issues, such as hunger and disease, over which they perceive they have little control. The habitual jadedness that makes optimistic possibilities seem impossible is a side effect of how the brain processes information. It's trying to make sense of "a global world with a system built for local landscapes."

"Since the road to abundance requires significant innovation, it also requires significant tolerance for risk, for failure and for ideas that strike most as absolute nonsense."

Popular misleading gloom-and-doom forecasts reinforce cynicism and pessimism. When people "start believing the apocalypse is coming, the amygdala goes on high alert, filtering out most anything that says otherwise." So the brain quakes in the face of reports like the 1980s statement by a Canadian official calling acid rain "one of the most devastating forms of pollution imaginable." Acting against the fear-driven cognitive biases that greet such threats, English science writer Matt Ridley investigated and found that acid rain caused few problems, mainly because the American Clean Air Act drastically reduced toxic emissions. Ridley investigated other "dark prophecies" and reported in his book, *The Rational Optimist*, that humanity's prospects are getting brighter, not darker.

Abundance is possible due to four emerging forces shaping global living standards:

Though they still face big problems, people in such countries as India, China and Nigeria are better off than they were 50 years ago. They have more access to goods, services, health care, housing, education and communication. Civil rights and democracy are a reality. Innovation has led to new time-saving processes. Inequality persists, but the gaps are narrowing. Four forces are coming into effect that can create the abundance necessary to change how people live worldwide:

First, "transformational technologies" can raise living standards.

Providing enough food for the world's population is an enormous undertaking. The United Nations reports that more than 900 million people are undernourished; nearly 11 million children die every year of starvation and related illnesses. Traditional food production methods are becoming less viable. Irrigation reservoirs are drying up, and harmful chemicals from pesticides and fertilizers are ruining water sources. Still, agriculturalists now can feed more people with less farmland. The challenge is to use all available experience, knowledge and technology without further harming natural resources.

“Within a generation, we will be able to provide goods and services, once reserved for the wealthy few, to any and all who need them. Or desire them.”

The pivotal step in solving hunger is increasing the Earth’s “primary productivity.” Two promising agricultural advances show progress: genetic engineering and hydroponics. Biotech farming’s popularity has grown dramatically since the 1990s, and the industry has resolved many doubts about its safety. Growing genetically modified food strengthens soil viability and requires fewer herbicides. Hydroponic farming – growing food in nutrient-fortified water – is “70% more efficient than traditional agriculture.” Indoor farms are immune to weather and eliminate the need for using petroleum fuels during seeding, plowing and harvesting. In 1983, Richard Stoner discovered another advance with great potential: Aeroponics, the ability to suspend and grow plants in midair and to nourish them with a fortified mist.

Second, hands-on innovators are solving problems that corporations and governments once had to fix.

During the US counterculture revolution in the late 1960s and early 1970s, Stewart Brand published the well-received *Whole Earth Catalog*, championing self-reliance, innovation and the potential of marrying technology and creativity. The power of do-it-yourself (DIY) innovation gained momentum in 1975 when DIY-er Fred Moore formed the Homebrew Computer Club, hoping his tech buddies could help him build a computer. Apple co-founders Steve Jobs and Steve Wozniak were among club’s members who eventually created more than 20 companies that contributed to the technological transformation of business.

“The best way to predict the future is to create it yourself.”

Other small groups of bright, dedicated people with state-of-the-art technology also have conquered challenges that formerly only governments and big corporations could handle. For example, Burt Rutan founded Scaled Composites, an experimental aircraft design company which in 2004 developed a spaceplane that outperformed the US government’s well-known X-15.

Third, “technophilanthropy” from tech millionaires is addressing basic living standards.

In the early 1900s, US industrial giants such as Andrew Carnegie, John D. Rockefeller and Cornelius Vanderbilt realized they could use their fortunes to better mankind. Carnegie’s essay “The Gospel of Wealth” explains why the rich should embrace philanthropy.

“The tools of cooperation can also create new possibilities for sharing mental resources.”

Many individuals who prospered during the high-tech explosion adopted that philosophy – and have taken aim at huge challenges, such as improving global health and living standards. For example, eBay’s first president, Jeff Skoll, created the Skoll Foundation which has provided \$250 million to 80 social entrepreneurs around the globe. Skoll believes philanthropy is more critical now than ever because significant local and regional problems tend to have global impact. In 2010, Bill Gates and Warren Buffett introduced the “Giving Pledge,” asking America’s billionaires to donate 50% of their fortunes to charity, and many luminaries signed up, including Facebook’s Mark Zuckerberg. But you don’t have to be a billionaire to

help. The Kiva website lets people support those in developing areas by making microloans, now aggregated to be worth millions and earning a 98% repay rate.

Fourth, wireless technology enables “the rising billion,” formerly poor and disenfranchised poor, to become a new market force.

Poor people were never considered a viable economic resource until 2002 when business school professors Coimbatore Krishnarao Prahalad and Stuart Hart co-wrote the paper “The Fortune at the Bottom of the Pyramid.” They suggested that, contrary to popular opinion, the four billion people on the lowest economic rung possessed enormous buying power. Businesses simply needed to reformulate their strategies to take advantage of this untapped market.

“Never before in history has the global marketplace touched so many consumers and provided access to so many producers.”

For example, Arvind Mills, one of the world’s largest manufacturers of jeans, couldn’t penetrate the market in India because people found \$40 to \$60 garments unaffordable. So the company offered a make-your-own jeans kit for \$6. Its Ruf & Tuf jeans are now by far the biggest seller in India. Millions more in the “bottom of the pyramid” (BoP) market are using cellphones, which have spurred exponential growth in mobile banking. As web access continues to expand, BoP consumers will join a global marketplace that thrives on its participants’ collective intelligence and creativity.

Achieving abundance depends on accepting risk and harnessing innovators’ optimism.

The road to abundance looks promising, but the journey necessitates significant risk. Bold, innovative ideas don’t always pan out, and pessimists will question any original concepts. Those who lead the world to abundance must learn from their mistakes and move forward.

“The gap between one’s day-to-day reality and one’s true potential was vast indeed. But in these extraordinary days, that chasm is beginning to close.”

Visionary Thomas Edison, who failed 1,000 times before devising a light bulb that worked, never let fear of failure paralyze his efforts. Much of the success of the US space program was due to the entrepreneurial spirit of scientists who didn’t know any better. Man landed on the moon because young, enthusiastic engineers believed it was possible. The promise of abundance also depends on accepting a degree of uncertainty and harnessing optimistic exuberance.

About the Authors

Peter H. Diamandis, a physician, is CEO of the X Prize Foundation and founder of more than a dozen space and high-tech companies. Journalist and entrepreneur **Steven Kotler** is the author of four books. His work has appeared in more than 60 publications, including *Wired*, *The New York Times* and *GQ*.



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