

The Intersection of Audacity and Achievability

An Interview with Peter H. Diamandis, Founder and Executive Chairman, XPRIZE Foundation

EDITORS' NOTE Recently named by Fortune as one of the "World's 50 Greatest Leaders," Peter Diamandis is the Founder and Executive Chairman of the XPRIZE Foundation, which leads the world in designing and operating large-scale incentive competitions. He is also the Executive Founder of Singularity University, a graduate-level Silicon Valley institution that counsels the world's leaders on exponentially growing technologies. As an entrepreneur,



Peter H. Diamandis

Diamandis has started over 25 companies in the areas of longevity, space, venture capital, and education. He is the Co-Founder and Vice Chairman of Celularity, Inc., a cellular therapeutics company, and the Co-Founder of BOLD Capital Partners, a venture fund with \$250 million investing in exponential technologies. Diamandis is a New York Times Bestselling author of three books: *Abundance – The Future Is Better Than You Think*; *BOLD – How to Go Big, Create Wealth & Impact the World*; and *The Future is Faster Than You Think*. He earned degrees in molecular genetics and aerospace engineering from MIT and holds an MD from Harvard Medical School.

FOUNDATION BRIEF XPRIZE Foundation, Inc. (xprize.org) is a not-for-profit corporation fostering and sponsoring competition to create innovative breakthroughs for the benefit of humanity. The Foundation conducts competitions in seven prize groups: *Learning and Human Potential*; *Energy and Resources*; *Space and New Frontiers*; *Civil Society*; *Health and Wellness*; *Planet and Environment*; and *Shelter and Infrastructure*. In addition, the Foundation provides and operates education and outreach programs related to its mission. These activities consist of speeches, visual presentations and educational materials in partnership with key academic institutions, as well as research and publication of information in the general public interest. XPRIZE was incorporated in 1994 and is currently headquartered in Los Angeles, California.

What was your vision for creating XPRIZE and how do you define its mission?

When XPRIZE was started back in 1994, it had a singular focus on opening up the space frontier. This came from my deep desire to get

to space myself and, more importantly, to make space a commercial effort versus a government effort. I had watched for 20 years as the government after the Apollo program failed to really engage in a compelling vision, so after reading *The Spirit of St. Louis* and learning that aviation started as a result of aviation prizes in the 1910s and 1920s, I thought that a space prize could hopefully light the fuse and it did. The vision for XPRIZE originally was X being a variable relating to the

Nobel or, in the case of the prize that Lindbergh won, the Orteig prize. It took me so long to find my first title sponsor, which was the Ansari family, that the X stuck around and we turned it into a platform. So, the mission as we defined it originally was to open up space commercially and prove that private teams could raise the capital, that we could change the regulations, and that the general public was interested in this subject, in order to light the fuse for commercial space flight.

How has XPRIZE evolved and what have been the keys to XPRIZE's impact and notoriety?

When the XPRIZE was won by SpaceShipOne on October 4, 2004, after a decade of hard work and struggles and people saying that this was a crazy idea that would never work, we captured the world's imagination with front-page stories around the world. On the heels of this, I was able to recruit Larry Page, Elon Musk, and Jim Cameron onto our board, and enlist a number of very high-profile Silicon Valley donors. We transformed the XPRIZE from a single competition to a platform that looked for challenges that were not being solved, but that should be solvable if we focus the right minds, tech, and capital to finding a solution. This became the XPRIZE's new mission and purpose in life – to create clear, measurable, objective targets around which people could rally and for which innovators and technologists could build technologies to solve. Cleaning up oil spills in the ocean, mapping the ocean floor, pulling water out of the atmosphere, or pulling CO² out of the atmosphere, are all examples of these targets. This platform seems to be highly efficient because we have gotten a winner all but two times. I like to say that if all of our prizes are won, it is too easy,

and if all our prizes are lost, it is too hard – we are looking for the intersection of audacity and achievability, and the notoriety comes from the audacity of the prizes and the actual teams who compete and win them.

You are the Executive Founder of Singularity University, a graduate-level Silicon Valley institution that counsels the world's leaders on exponentially growing technologies. What interested you in creating SU and will you discuss its impact strategy?

It began in 2008 after the XPRIZE had been won and I was focused on where XPRIZE and space technology would go next. Just as Lindbergh's book, *The Spirit of St. Louis*, set me off on the journey that became XPRIZE, another book, *The Singularity is Near*, by Ray Kurzweil, captured my attention. When I read this book, while I knew much of what was in the book, the way that Ray framed it – how exponential technologies, computations, sensors, networks, AI, robotics, 3D printing, synthetic biology, augmented virtual reality and blockchain were transforming the world – stopped me in my tracks and I felt that there was nothing more important than how we can use these technologies to transform the world.

The mindset I had for the XPRIZE was to challenge the world's brightest minds to solve the world's biggest problems, and Singularity University came out of that same mindset. I had started a university 20 years earlier when I was out of college and medical school. It was called the International Space University which is one of the leading institutions for the study of space and is 35 years old this year, which is amazing. As I read Ray Kurzweil's book and his descriptions of all of these technologies and how they were converging, it hit me that there was no place that one could go today to obtain an understanding of these technologies and how they are impacting industries. I wrote in the margins of Ray's book the words, "Singularity University." When I returned from my travels, I called Ray and we had a very auspicious dinner during which we shook hands on creating Singularity University with the mission of giving the world's leaders an overview of technologies that are going to change their industries and what is possible in the world, and to study how these technologies allow us to solve the world's biggest problems. This is the common theme between XPRIZE and SU as they are two sides of the same coin.

You have started more than 25 companies in the areas of longevity, space, venture capital and education. Did you always know that you had an entrepreneurial spirit and desire to build companies?

I typically start a couple of companies a year. During my childhood and teens and even into my early 20s, my mission was opening up space and I thought that I would be an astronaut or a scientist. It was really in my mid-20s that I realized that, as the saying goes, “the best way to predict the future is to create it yourself.” The future that I wanted to see happen in space was not being created, so I needed to do everything I could to create it myself. This led to forming the International Space University, a company called Zero-G that I cofounded, and becoming CEO of a company called Space Adventures. I also cofounded the XPRIZE Foundation and a multitude of other space companies. As I did this, I realized that entrepreneurship is an incredible art form that allows one to create a clear vision of the future, compel the right people to join in the pursuit of this vision, and organize the right technology and capital to bring that future into existence. My entrepreneurial spirit got lit in my 20s and my first real success was a group called SEDS, Students for the Exploration and Development of Space, that was a student-based space group that I founded while I was at MIT that grew into an international space organization.

I look at entrepreneurship as a means to bring a vision to reality.

Do you feel that entrepreneurship can be taught or is it a skill and ability that a person is born with?

I think that entrepreneurship comes as a result of passion and as a result of frustration. I believe it is an answer for someone who wants more than what already exists. I have 11-year-old twin boys and what I most want for them is the following: to find their passion, whatever that might be; to learn to ask great questions and to have curiosity; and to have grit and not give up. I think these are the attributes that make for a great entrepreneur and I do believe that they can be taught and that they can emerge from a person, but only when it is driven by this emotional need and an inner fuel and energy to solve a problem and achieve a goal. It is hard work to do anything big and

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bold – entrepreneurship is hard work and it has to be fueled by that emotional drive and inner passion to invest the decades it might take to reach your goal.

What interested you in writing your latest book, *The Future is Faster Than You Think*, and what are the key messages you wanted to convey in the book?

We had just turned the page on the last decade in 2020, and I wanted to look at what the decade ahead might hold. This book focuses on converging exponentials – it is not one exponential technology but two, three, or four of them coming together and impacting industries. The message of the book is that every industry is going to be reinvented this decade and that if you are not looking to disrupt yourself, someone else will. We are going to reinvent healthcare, education, retail, insurance, finance – every industry. The beneficiary is going to be the consumer, but many of the existing monolithic industries like healthcare and education will topple and be reinvented. We are going to move healthcare out of the doctor’s office and hospital and into the home. We are going to move education into a personalized AI-centered experience in the metaverse.

You have said that in the next decade we will experience more technological progress than in the past 100 years. Will you elaborate on this concept?

The speed of change is accelerating – every year we have access to more capital and that capital is being invested to drive the creation of new companies and breakthroughs. At the same time, the cost of doing things, whether it

is genome sequencing or compute or memory, is dropping precipitously while there are more people connected on the planet than ever before working on these problems. As a result, the rate of change is not constant – it is accelerating. Ray Kurzweil talks about this as well and, as a result, the next decade ahead is equivalent to the amount of change in the last century or more in fact.

What role do you feel technology can play in addressing global crises such as climate change, the water crisis and mass extinction?

Technology is the only means by which we are going to address the planet scale issues of climate change and water and mass extinction. There is no question that technology caused a number of these things, but technology will also solve them. There is a perfect example that I wrote about in my first book, *Abundance*. The environmental disaster of the 1880s and 1890s was horse manure. As people moved out of the rural areas into downtown Detroit, New York, and Chicago, they brought with them their motive force – the horse. As the number of people started climbing in downtown cities, so did the number of horses and the amount of horse manure to the point that it became an environmental disaster and a health disaster. The predictions were dire – the smell was awful and disease was rampant. Rather than reinventing a new horse or getting people to use less horses, what occurred was that the car came along. The car was orders of magnitude better than the horse resulting in the population of horses dropping precipitously.

We are going to be seeing quantum computing and AI give us new catalysts to help us pull fresh water out of salt water, pull CO² out of the atmosphere – we are seeing CRISPR bring back species that have been extinct.

What is a technological innovation that you are most looking forward to seeing occur during your lifetime?

It is not any one thing; it is a multitude. I would say that I am very excited about age reversal and extending the healthy human lifespan – not only extending it, but reversing age and being able to regain the youthful cognition, aesthetics, and mobility that you had in your 20s and 30s. I am looking forward to technologies that are able to increase our cognitive capabilities – brain-computer interface connecting

with the cloud, expanding the capacity of our hundred billion neurons. I am looking forward to living in a hyper-realistic virtual world where I can enter and be in a simulation that is indistinguishable from real life. I am looking forward to using the advances in space technology to allow me to go and stand and walk around the moon and on the surface of Mars.

With all the advances in technology, do you worry that the human connection is going to be a thing of the past?

I think that human connection is fundamental to being human and if we lose it there will be very dire consequences. I think we are going to change human connection. I think we are going to be connecting in new ways – it may be connecting in simulation in the metaverse. In other words, it may be that high bandwidth brain-computer interface allows me to know your thoughts in such a level of connection and intimacy that I am closer to you than you could possibly imagine and that as we humans connect to the cloud and a multitude of people connect to the cloud, we are almost creating a new meta-intelligence. The way I think about that is that each of us as individuals are a collection of some 40 trillion cells – you are not one living organism, you are a collaboration of 40 trillion organisms, and in the same way that those cells all connect to make you, the question is: Are we, in the future through this level of brain-computer interface, going to connect with each other at a level to make something of an even higher life form?

You devote a great deal of your time and efforts to the issue of human longevity, which you have said is one of the world's biggest business opportunities. What interested you in this work and will you discuss your views on the future of aging?

There was a study recently out of Harvard, Oxford, and London School of Business that said adding one year of healthy life globally to every person is worth \$38 trillion to the global economy, so it is big business. A man or woman who has their health has a thousand dreams; a man or woman who does not have their health has but one. I think health is the new wealth and that there is no greater gift that one can get than health. I think that being able to add 20 or 30 healthy years to a person's life is one of the biggest business opportunities. Age is the number one correlating factor with all disease and if you can reverse aging, you will reverse disease, suffering, and the cost of healthcare – it is a super-high leverage point. I do believe that we are going to start to learn why we age, how to slow it, stop it, and potentially reverse it. There are species on this planet from the bowhead whales to sea turtles to Greenland sharks that live two, three, four, five hundred years, and if they can, why can't we. Whether it is a hardware problem or a software problem, the tools that we are getting today are the tools



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that are going to allow us to truly probe this further and then understand how to slow down the aging process.

You have worked with some of the leading entrepreneurs and business leaders of our time. Will you highlight some of the people that have made an impact on your work and life?

There are a multitude. Ray Kurzweil has been one of the dominant players and a mentor in my life. Ray is considered one of the most brilliant thinkers in the field of AI. He was my Co-Founder of Singularity University and is now at Google. He really helped frame my exponential mindset.

The team at Google – Larry Page, Eric Schmidt, Sergey Brin – were extraordinary in supporting the XPRIZE transition from a focus on space to a focus on solving the world's biggest problems.

I have known Jeff Bezos for 40-plus years, since college, when I was the Chairman of the Students for the Exploration and Development of Space and Jeff was the President of the Princeton chapter. Just watching his absolute commitment and entrepreneurial skills has been awe-inspiring.

This is the same with Elon Musk who I have known for over 20 years. Seeing him go from being a person who just had a passion in space with no educational background in it and starting with an aerospace textbook to becoming the chief designer as well as the CEO of SpaceX provides the realization that when you are driven by passion and abiding by the laws of physics, you can make anything happen. These are all incredible individuals.

You have achieved so much during your career in founding and building companies and supporting entrepreneurship. Do you take moments to reflect and celebrate what you have accomplished or are you always looking to the future?

The reality is that I am always looking to the future. I think the pride I get in reflection is through the entrepreneurs I have supported and

the entrepreneurs on my team and through the companies I have helped mentor and watched succeed. I remember when the XPRIZE was won in 2004 – it was the end of an 11-year-long journey and I remember the moment the vehicle had reached 100 kilometers in altitude, and then landed safely on the runway. I reflected back in my mind about how this long journey was accomplished and I had this mental image of me standing at the top of a mountain that I had just climbed, and as I looked around, all I saw were taller mountains. The realization was that it is the journey, not the destination, and every time you are successful in creating something, it just opens up bigger opportunities for you. Being clear about your purpose in life and being able to use the resources, the people, the connections with your drive to make the world a better place,

is what truly matters.

What do you see as the keys to effective leadership and how do you describe your management style?

I think the keys to effective leadership are around mindset and I teach this now more than ever. I focus on having an abundance mindset which means recognizing there will be more opportunities next year and not to look back. An abundance mindset drives the desire for collaboration. I have a free 30-day course on my website that talks about this mindset for leaders. Think about the greatest leaders in the world and what made them succeed: Was it their money? Was it their technology? Was it their relationships? Or was it their mindset? I think it was their mindset. I focus on teaching an abundance mindset, an exponential mindset, a longevity mindset, a moonshot mindset, and then for me, additionally, a gratitude and curiosity mindset which I think are so important.

My management style is one of having a clear vision of what success looks like and where we are going – without a target, you will miss it every time. It is also about inspiring my team and pumping energy into the organization so they feel great about what they are doing and what we are doing. Additionally, while I used to be a micro-manager, I have too much going on to do that now and it is about building an amazing team and then trusting that team. It is about the people you hire, supporting them, giving them the resources they need, and letting them do their jobs.

What advice do you offer to young people beginning their careers during this challenging and unprecedented time?

This is the most exciting time ever to be alive. As an individual, despite all of the challenges on the planet, you have access to more capital, more computational power, more people connections, and more knowledge than any time in human history. The single most important thing you need to do is to discover your true passion and purpose and, once you have found that, everything else falls into place. ●