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## X-Prize AMA: Hi I'm Peter Diamandis, futurist and founder of the XPRIZE. I created a way to go to outer space without the government's help, I've written 2 NYT bestsellers and I was named one of "The World's 50 Greatest Leaders" by Fortune Magazine. AMA!

PETER\_DIAMANDIS [R/SCIENCE](#)

Good morning, Reddit! This is Peter Diamandis here to answer your questions. You may know me from the XPRIZE Foundation or Singularity University. 20 years ago, I had a vision to use an incentive prize – a \$10 million prize– to jumpstart the private space industry, and it worked! Now I'm trying to solve all the world's grand challenges with incentivized competition. You can read more about me in a new book called, [How to Make a Spaceship](#), by Julian Guthrie. AMA!

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Peter\_Diamandis , r/Science , X-Prize AMA: Hi I'm Peter Diamandis, futurist and founder of the XPRIZE. I created a way to go to outer space without the government's help, I've written 2 NYT bestsellers and I was named one of "The World's 50 Greatest Leaders" by Fortune Magazine. AMA!, *The Winnower* 3:e147454.45060 , 2016 , DOI:

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Would you ever consider making an XPRIZE for something like cost efficient ways for desalination and purification of water or efficient ways to remove pollution from the air?

[rendog97](#)

YES, we're working on that at this very moment. I think large scale desalination that is energy efficient (and economical) is how we turn water scarcity into water abundance. We also are working on an XPRIZE out of India to capture water (humidity) in the air and turn it into drinking water economically for families throughout the developed world, especially India where the humidity is high.

Medicine is going to be one of the fields that is going to be upended the most going forward. What do you think the average Western family physician's job is going to be like in 20 years, and do you think going to medical school right now is worth it, considering the enormous time sink and future uncertainty about the role of physicians in the future?

You probably have a unique perspective on this considering you are Harvard Medical School grad who decided not to practice and now plans to effectively transform the healthcare industry with the medical Tricorder x-prize.

[glioblastomas](#)

Great question. I personally wouldn't go to med school unless you're interested in the Science or being an entrepreneur in the area. I think we're going to see AI and Robotics demonetize and dematerialize many of the key functions that Doctors do today. There will always be those patients who want a

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human, and there will some need for the "western doc"... but the best diagnostics will be AI and sensors, and the best ("perfect") surgeons will be Robots (and Robot operating systems).

Dear Peter: I believe your Self-Replicating Systems prize concept arose from a suggestion that I submitted to the XPRIZE Foundation website back in 2011 (I never received any feedback or confirmation, but this prize concept appeared shortly after that, and used very similar language). How does your team try to find potential funders for prize concepts? --Charles

[tchad49](#)

Typically they come from two channels... they approach us to design and fund a prize for an area they are passionate about; or, alternatively I go out and pitch philanthropists and corporations to pitch prizes that we think are GREAT XPRIZES.

Hi Peter, you are an inspiration to entrepreneurs and future-minded individuals. I have a child in the education system, and there's a lot about it that just seems wrong, wasteful, and inadequate. What do you think about an X-Prize for AI-based tutoring that can largely replace teachers for middle school and high school education? With neural networks becoming very useful in the past couple of years, is the timing right for this?

[defender](#)

I Agree with you. As the father of two 5 year old boys, I think about this a lot. Ultimately (and I'm talking 10 – 20 year horizon) we're going to have AI as the ultimate teacher that is able to democratize the best education on the planet. Just like Google democratized access to information, and the poorest child on a smart phone has access to the same information that the wealthiest child has access to, the same will happen with both education and healthcare.

Right now at XPRIZE we have the \$15M Global Learning XPRIZE that Elon Musk funded. This is focused on having autonomously teaching kids in Tanzania basic reading, writing and numerous in an 18 month period without access to schools or literate adults. We expect this prize to be won in 2 – 3 years, so I have great hope for what we'll see in 10 – 20 years.

Do you think Hyperloop is a real possibility, and if so when?

[IAmMyOwnWife](#)

Yes, we have 200 engineers working and will have our Kittyhawk moment within the next 6 months. I see deployment of the first commercial system before 2020.

Hi Peter! What are Xprize's goals long-term besides the commercialization of space operations?

[shattersquad710](#)

While space is important, we go WAY beyond this area. Our goal is addressing humanity's grandest, biggest challenges that aren't being addressed by Government or industry. So we're focused on exploration (space, oceans), Energy (creation, storage, transmission), environment, education, health, etc... We've launched about \$120M of prizes (\$40M of that is space-related) and have another \$100M of prizes under development.

Hi Peter! Thanks for coming out!

What kind of timeline to you see for commercialized space travel? As in how long do you think until it becomes a norm? And then what's the next step? Do you think long term space travel is coming soon?

[JasonsBoredAgain](#)

A number of elements on the timeline... today anyone can fly into weightlessness aboard our Boeing 727 ([www.goZerog.com](http://www.goZerog.com)), we've flown 20,000 people including Steven Hawking. We'll see Suborbital flight from both Virgin and Blue Origin taking paying PAX within 24 months, hopefully sooner. SpaceX will take astronuat to the ISS in 18 months, and take a human to Mars within a decade... All of these are great HUMAN-SPACE firsts... and beyond that, of course, in the robotic realm we have the Google Lunar XPRIZE (\$30M) which we hope will be won by the close of 2017, and Planetary Resources targeting our first asteroid rendezvous in 2019.

I figure I have 10-15 years to improve my skills, in order to get a chance at moving to Mars with the first 50,000 people. What skills/knowledge/abilities should I focus on and master, in order to be valuable enough to be picked? Obviously engineers and botanists are a dime a dozen - what are the roles that will be harder to fill? Where are the skills gaps?

[243F6A888](#)

Elon Musk has stated that he expects to take humans to Mars by 2024, and later the Mars Colonial Transporter will be able to take people there (round trip) for a price of \$500,000. Even if he's off by 10 years, and off by 10x on price, that is of course revolutionary. I imagine that \$500K - \$5M can be an amount of money that people could work towards, finance, borrow... so first skill is fundraising J of having enough network. Beyond that, I believe that we're going to have a need for genetic engineers, sociologists, psychologists, and programs... I won't put it past the "community" to have a significant need for Mr. Fix It either. We are talking about the frontier. However, the totally honest, if we're talking 20+ years from now, AI and Robotics will have 90% of the Skills needed. So being a person that everyone likes may well be your differentiating advantage!

What do you think of the relationship between Nature and Technology?

-Kimbal Musk was the last person to answer me this question on Reddit

Met with Jose Cordeiro last Monday and I just happen to have the same mindset as people from SU since I was a child

I also met Chris and Caitlin and others from Planetary Resources on the last NewSpace16 in Seattle since I was invited to learn about the latest projects in person, really exciting stuff

[ExponentialTraveler](#)

I believe we are going from "evolution by natural selection" (which is Darwinism, or nature) to "evolution by intelligent direction." We are being more empowered than ever before to accelerate evolution. We are no longer dependent upon the extremely long timelines and haphazard nature of evolution.

People forget that Nature can be BRUTAL. A few billion years ago Earth's atmosphere was mostly methane and hydrogen (a reducing atmosphere) and that is what anaerobic life depended upon... and then when photosynthesis came into the picture and started producing the POISEN called Oxygen, it started destroying countless life forms. We now assume the what is "Natural" is what we have, and we don't want it to change... but nature is always changing.

Hey Peter, I loved *Abundance* and am excited for the new book!

There was almost twice as much VC cash invested in private space in 2015 than the past 15 years, combined. There's no doubt that the private space industry is very real and growing exponentially. But some would argue that it's been a slow start. I remember after the Ansari X-Prize in 2004, people were predicting regular commercial manned flights by the end of the decade, which has yet to happen. Is there anything we can do to close the gap between the end of the incentive prize and the beginning of the mature industry?

[SkywayCheerios](#)

I AGREE... the last decade since the winning of the Ansari XPRIZE has been slower than I would have liked. The good news is that I'm seeing more money being invested in space startups than any time (by a factor of 10x – 50x)... and we now have a number of wealthy and passionate billionaires committed to opening up space. For these reasons there's a lot to hope for in the decade ahead.

What we truly need more than anything else is what I call a "netscape" moment... if and when a company like SpaceX or Blue Origin go public (which, by the way, they won't), and investors make a lot of money in space, then it will bring a landside of investment. This is what happen with the IPO of netscape.

We also need to see some of the "new space" companies actually get profitable and deliver consistent and useful products and services.