

# THE FIRST FEMALE SPACE TOURIST ON WHAT WE CAN DO IN ORBIT

*Anousheh Ansari, the chief executive of the XPrize Foundation, says that storing data and growing human organs would be easier off Earth—but moon vacations are a ways off*

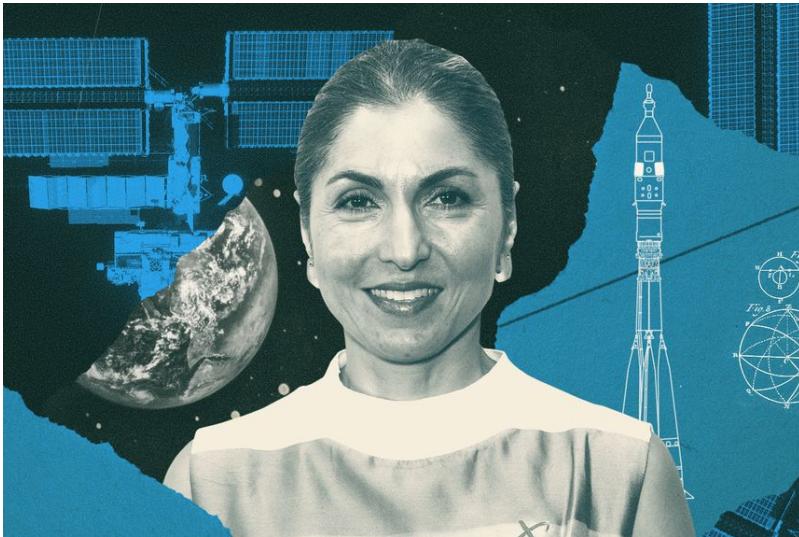


ILLUSTRATION: MARK WEAVER; PHOTO: LEV RADIN/ZUMA PRESS

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## READING TIME

5 MINUTE READ

**A**nousheh Ansari is no stranger to high-flying challenges. In 2006, the Iranian-born computer engineer and entrepreneur became the first female space tourist by embarking on an 11-day private mission to the International Space Station.

In October, she became chief executive of the XPrize Foundation, which runs incentive competitions to solve humanity's biggest problems. To jumpstart innovations in commercial rocketry, her family funded the \$10 million Ansari XPrize for the first private company to launch a reusable manned spacecraft into space twice within two weeks, a prize awarded in 2004 to the experimental spaceplane SpaceShipOne. To tackle climate change, the foundation is offering a

\$20 million prize for inventors who find ways to convert carbon dioxide emissions from industrial facilities into building materials or alternative fuels. It's also offering a \$10 million prize to create an "Avatar" system to allow someone to sense, feel and control things at a distance, whether at a far-flung factory or on another planet.

In 2006, she co-founded Prodea Systems, a digital technology company developing health and elder-care applications for the Internet of Things, a catchall term for internet-connected objects. Last year, she co-founded The Billion Dollar Fund for Women with a goal of investing \$1 billion in women-founded companies.

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Ms. Ansari spoke with The Future of Everything about the long road ahead for space tourism, the prospect of growing organs in orbit and the need to regulate smart devices.

## Data Storage Will Go Into Orbit

As our need for storing data and use of data with cloud computing increases, just having cloud computer systems here on Earth doesn't make sense except for very time-sensitive, real-time applications. But there's plenty of energy from the sun in space. So there is no need for us to pollute our own environment. Creating massive data

centers and putting them in orbit would make a lot more sense. Then imagine, you don't have the cost of cooling and energy, so the cost probably will be lower for companies like Google and Facebook and Amazon.

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## Human Organs Will Be Grown in Space

Certain things will be better manufactured in space, especially, for example, growing organs. It's hard to grow large organs here on Earth. [Biomedical engineers are experimenting with 3D-printing technology to print living human tissue for grafts and organ transplants, but gravity hampers efforts to create the tiny blood vessels that nurture living tissue.] As we master the art of printing

organs, it would make sense to do them in space. And everything that I talked about in orbit can also be implemented perhaps even cheaper or easier on the moon. More importantly, I think for us to go anywhere in our solar system, we need to build a colony on the moon and operate it for a

long time because we just need to learn how to live in space and do things in space. Even for [future settlements on] Mars, I believe that starting it out on the moon makes sense. And the first colony, I don't think will be commercial. It could be a public-private partnership type of a project. I see, again, early signs of that, where NASA and perhaps even the European Space Agency would collaborate with some large private entity that's funded through private investment to create a base.

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*What kinds of extra-planetary projects should private space companies and government agencies prioritize, if any? Join the conversation below.*

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## **Don't Book Your Moon Vacation Just Yet**

There will be people like me always that would do anything to go to space. In order for it to really be an industry, you have to have some volume of people doing this. And right now, it's difficult. The training required for [going into space] is very long. The cost is tremendously high. We will see space tourism flourishing in suborbital flight [about 62 miles above sea level]. It will give you that glimpse of space and that experience of space with a lot less danger. We won't see a lot of things happening, as far as tourism goes, in orbit and beyond.

## **Without Regulations, Smart Devices Will Be Vulnerable**

The Internet of Things will be part of our homes, our cities, our work environment, everywhere. The part that concerns me is the data privacy side of it. We're sort of like children with a shiny toy in front of us who are so mesmerized with the shine that we're not asking the right questions. Who is using it? How is our data collected? How much do we know? The vulnerabilities that come with a smart device are not known to people. There will be hacks. We will have disasters and then we will hopefully course-correct properly so we don't repeat the mistakes. Frankly, I'm not big on government involvement, but I think there are some areas we need regulation because businesses won't take the responsibility on their own. We need some regulation that would be enforceable and require a certain level of privacy and security on all IoT devices that would hold the manufacturer responsible. We need also a very, very simple and easy way for people to have control over what information is collected about their life and whatever interaction they have. That also requires regulation, so that it says, "In one paragraph, you have to tell people what you're collecting, and in one click, they need to be able to turn it on or off."

*This interview has been condensed and edited.*

*Anousheh Ansari will appear at WSJ Tech Live in Laguna Beach, Calif., Oct. 21-23.*

*Forward Thinking is an interview series from The Future of Everything where noteworthy figures from business, culture and technology reveal what lies ahead.*

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