

Jason Dunn - "The power of asking a different question"

These are the highlights of Jason Dunn's talk at the SingularityU South Africa 2020 Summit.



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Jason Dunn is the co-founder of Made in Space, a company that pioneers 3D printing, advance manufacturing and space robotics. Inspired by Jerry O' Neil in the 1960's and 1970's, Dunn's vision is to build cities in space.

In the book, *Limits to growth*, researchers explained that we are headed towards a point where growth on Earth will become limited due to limited resources. Dunn believes that the solution to this is to look towards space, because there resources are abundant. Over 300 objects for the International Space Station have been built using 3D printing.

Dunn explains, we found great power by asking a different question. For example: What if we didn't need to launch everything?

Soon we'll be sending robots to space that will be able to build things that were too fragile to send to space the traditional way. Or too big. For example, a set of robots could build a 1 kilometre sized antenna that could give broadband internet connection to the entire Earth.

We often do the digital designs before we have the technology to build it. We do these using new technology called generative design algorithms. Using this algorithm, we are no longer in the driver's seat. We let the software come up with

the solution. In the time it would take us to devise 1 solution, the software comes up with dozens of solutions. The system can also do complex simulations.

Dunn referred to one project as an example, a huge solar farm in space, 30 MW, with 500 metre sides made of aluminum. Using a system called Arkanaut, the system can design and build, in 3D printing, long structures and uses robotics to assemble these structures together. The system iterates its own solutions. In the end we get the most incredible solutions, ones we could never have never imagined. This will also be how we transform our environments here on Earth.

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