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## Abstract

We have to choose our future very quickly now: before 2030 we should bootstrap civilian space development, or the civilization will be scrapped. Climate extreme events, pandemics, economic recurrent crisis, unemployment, resource wars, big migratory flows, are the multiple crises which are jeopardizing civilization, and all together could soon close the "launch window", should the world remain closed, as Gregg Maryniak told us during an interview we had few months ago. To open the high frontier and start a space settlement agenda, we do need a strategy, what we call a global expansion plan, starting in Earth Orbit, progressing to the Moon, the Cislunar region, Mars Orbit, and beyond. Jeff Greason, in his speech at the 2017 ISDC, explained a strategy for settlement, that could work greatly: progressively mining the Moon, the Near Earth Asteroids, the Mars Moons and the Asteroid Belt, we can produce fuel in space, to be supplied in Earth Orbit, Cislunar Space and so on. Each global infrastructural level we will build, thanks to space fuel, will reduce the cost of missions and investments, making space more and more affordable for private enterprises. All of the stakeholders, the whole civilization in first place, will immensely benefit of such a cosmic renaissance. Some first steps are being made: Elon Musk, by his side, is doing an essential part of the above: realizing a fully reusable space vehicle. His strategy is focused on settlement on Mars, which in our vision could take place later, but what he is doing is essential and no one else has practically started to do the same, since the orbital launcher of Blue Origin for now is only a nice CGI. Astroelectricity, or SPS, proposed by Mike Snead and Arthur Woods, is great as well, but it only can work if included in a global expansion strategy. Using it for supplying energy, both to Earth and space customers, will be sustainable only when we will be able to collect raw materials on the Moon and the asteroids, and fabricate the solar panels directly in space. Richard Branson, and the space tourism entrepreneurs patrol, are doing a great work, since they are facing the big issue of transporting untrained civilians in space. But they are very late and the first private orbital crewed mission will be performed by SpaceX instead. Suborbital tourism run the risk of becoming outdated before starting, orbital tourism can be targeted soon – as soon as the Starship will be operational. Space tourism should take advantage of other advancements to develop quickly towards reaching orbit and, at the same time, contribute their civilian requirements to more ergonomic, safe and comfortable characteristics of the new space vehicles. Even if each solution has its own downsides, the settlement agenda can work only if all of these initiatives will be integrated with the other good solutions. The efforts for putting in service a fully reusable launcher will be precious for Moon and asteroid mining as well as development of space tourism, allowing the practical development of space based energy production – even if these launchers were initially conceived to reach Mars as soon as possible skipping all these developments. Therefore, as Greason says, the solution shouldn't be "take my solution and reject all of the other ones". We should promote and support an alliance among good solutions: Bezos to work with Musk, and the two of them to listen to Greason's strategical view. The governments to adopt space friendly policies, abandoning the current concept of military like space missions performed by air force officers. A big effort is needed to inform the public opinion at large to make people understand the immense potential of civilian space settlement and industrialization.



## A short bio

**Adriano V. Autino** is a space philosopher and small entrepreneur. President and co-founder of the Space Renaissance International 2008 - 2021. Diplomed in Industrial Electronics, Adriano studied Computer Science at University of Torino (Italia). He served as software engineer at Honeywell Information Systems Italia, and project manager in Sysdata CAP Gemini. He founded Andromeda s.r.l., dealing industrial automation and system engineering in real time and hard real time systems. He founded the web magazine Technologies of the Frontier. Published many articles and papers, on the subject of Astronautic Humanism and Civilization expansion into outer space, collaborating with many space activists world wide. Adriano also published several books, including: "A greater word is possible!", "La Terra non è malata: è incinta", both available on Amazon. Adriano personally manages several Space Renaissance's websites. Cv: [https://spacerenaissance.space/media/AVA\\_BIO.pdf](https://spacerenaissance.space/media/AVA_BIO.pdf) Linkedin profile: <https://www.linkedin.com/in/adrianoautino>

**Alberto Cavallo** is another cofounder of the Space Renaissance International 2008 – 2021. He graduated in Electrical Engineering at Politecnico di Torino and has a 35 year experience in design and installation of industrial electrical and control systems in automotive factories and power generation plants with the FIAT Group and more recently petrochemical, oil&gas and fertilizers with Maire Tecnimont. He has a long time interest in philosophy (western and eastern) as well as expansion of civilization into outer space. He manages the website <http://eurinome.it/> (Italian only). Linkedin profile: <https://www.linkedin.com/in/alberto-cavallo-58b580b/>