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Governing space

Access to space is growing, with more than 70 nations now operating space programmes. We urgently need to update international rules, says **Sarah Al Amiri**

A NEW space age is upon us. The two-horse race that characterised our early exploration of space has been transformed into a global, highly dynamic industry. Our existing models of space governance and collaboration are no longer effective and we urgently need new ones that address emerging geopolitical, economic and sustainability challenges.

The space industry is rightly seen as pioneering: not only does it continually expand the boundaries of exploration, but it enables growth at home. From communications to meteorology to engineering, it has an outsized impact on our economies, adding high-value services and creating skilled jobs. It isn't surprising that the market for global space systems and services is estimated to be worth \$1 trillion by 2040.

Nevertheless, the sector risks becoming a victim of its own success. As access to space grows, it is becoming more congested than ever. With more than 70 nations now operating space programmes, plus many private sector entrants, commercial uses for space have multiplied, as has the number of objects being launched into low Earth orbit.

This creates two key challenges. The first is the accumulation of human-made orbital debris, which, together with the overpopulation of satellites and assorted fragments in low Earth orbit, has raised the probability of accidents and collisions, rightly prompting



SIMONE ROTELLA

questions about environmental impact. If this is left unmanaged, our ability to navigate space safely will be compromised, which could lead to restrictions on space use and access. Spacefaring nations and private sector actors need to think about low Earth orbit as an extension of our environment and manage it accordingly.

The second challenge is the increasing militarisation of space, as the lines between commercial and military activity blur in new ways (see page 34). If satellites and spacecraft become targets for attack, the resulting debris could render entire orbits unusable. This

is troubling, and careful oversight is required. New multilateral efforts, including possible arms control agreements, need to be explored if space is to remain a safe domain used for good.

We are reaching an inflection point. The foundational United Nations treaties and international frameworks used to govern space – created largely during the cold war, when only the US and the Soviet Union had substantial access to space flight – are no longer fit for purpose.

While they provide a strong base, major upgrades and enhancements are needed to

regulate the activities of emerging players, particularly in areas like satellite use, traffic management, tourism and space exploration. Just as we have overhauled our global climate and energy policies, regulated the technology sector and reshaped privacy and data rights, it is time that we instigate a similar transformation in the space sector.

Diplomatic efforts to find a way forward have been slow to make progress. As space activity grows, existing rules of the game will come under increasing strain. To advance agreements on space governance, we need renewed international collaboration. Many government and non-government bodies are working to accelerate cooperation, including the UAE Space Agency where I work, which convened experts at the Abu Dhabi Space Debate in December.

Today, we face two divergent scenarios. Regulatory challenges and the possibility of space disasters could restrict innovation and leave the sector's promise untapped. Alternatively, global collaboration and clear governance structures could facilitate safe and sustainable uses of space. Achieving this will be no small task, but an open and thriving space community can only flourish if we do. ■



Sarah Al Amiri is chair of the UAE Space Agency and minister of state for public education and advanced technology