Transformational Change:
Building a Collaborative Future

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Digital Infrastructure Laying the Basis for a Future-Ready World

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Space Digital Infrastructure

- Space technology, applications, and international cooperation together underpin global progress in exploration, research, and societal benefit. International cooperation has expanded through programs in satellite telecommunications, Earth observation, navigation, and disaster management. The International Space Station is a leading example of this collaboration, uniting the US, Russia, Europe, Japan, and Canada.
- Cooperation enhances shared access to resources, technology transfer, and utilization of space assets for services such as disaster alerts and environmental monitoring. Space applications now encompass commercial, humanitarian, and sustainable development goals, going beyond purely scientific or military uses. Global frameworks are increasingly focused on data coordination, satellite sharing, and space transport.
- Initiatives like the UN's Human Space Technology Initiative promote the inclusion of developing nations to build capacity and ensure peaceful use of space. The emergence of regional agencies such as the African Space Agency highlight the widening accessibility of space technology. Overall, international collaboration has become essential for leveraging expertise, reducing costs, and advancing the use of space.

The New Key Drivers

- The modern space landscape is defined by three major drivers—sovereignty, climate action, and exploration—that together shape national and global agendas.
- Sovereignty has become central as geopolitical tensions prompt nations to safeguard control over space assets and data. Space-based communications systems are now viewed as strategic national infrastructure. This influences new regulations and international negotiations balancing national interests with global interconnectivity.
- Climate action relies on space-based Earth observation to track environmental change, support disaster management, and advance sustainable development goals. Satellites provide vital data on greenhouse gases, deforestation, and sea levels. Space technology serves as a cornerstone of the global climate and sustainability agenda.
- Exploration inspires technological breakthroughs and international collaboration through Moon, Mars, and deep space missions. Agencies and private companies are developing systems for resource utilization, robotics, propulsion, and human habitation. These efforts expand scientific knowledge while driving innovation.
- Collectively, these drivers— sovereignty, climate action, and exploration—interact to define the direction of policy, investment, and international cooperation in space.