

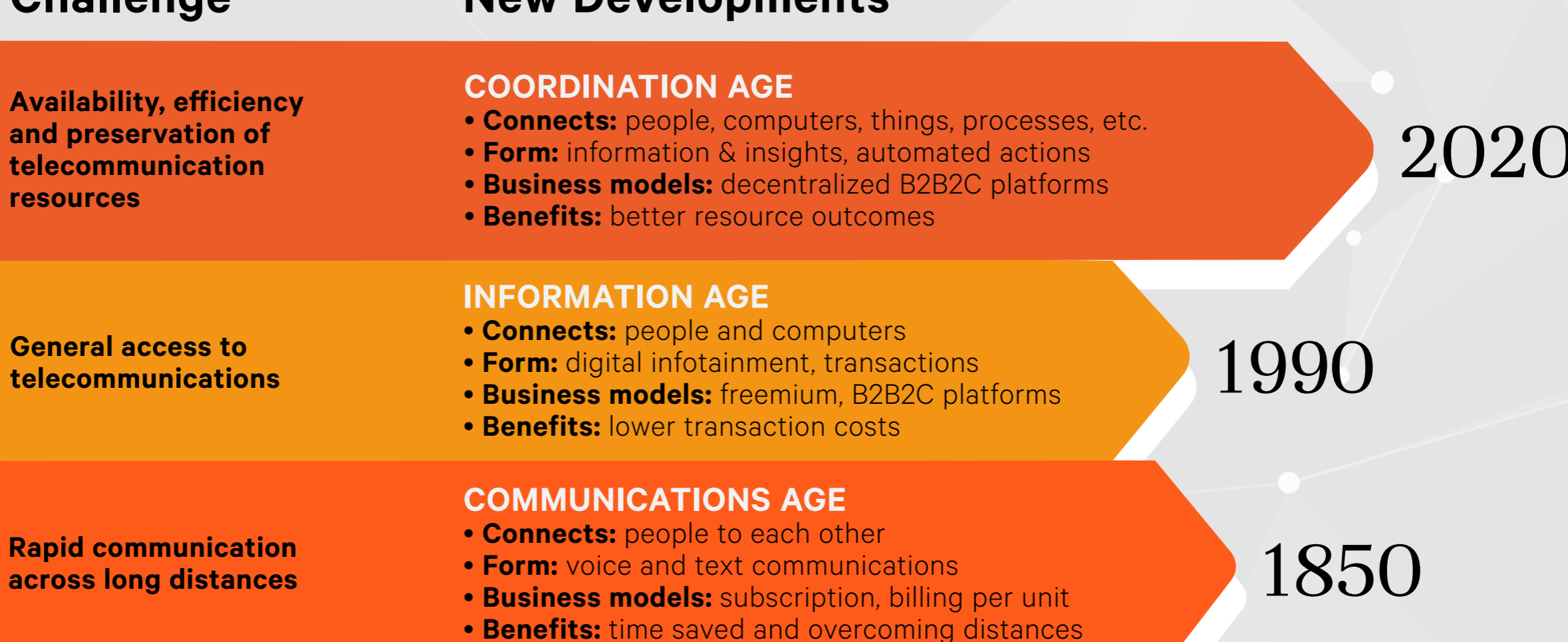
5G The New Network's Success Will Depend on Its Energy Management



Telecommunications and their cellular network technologies have come a long way:

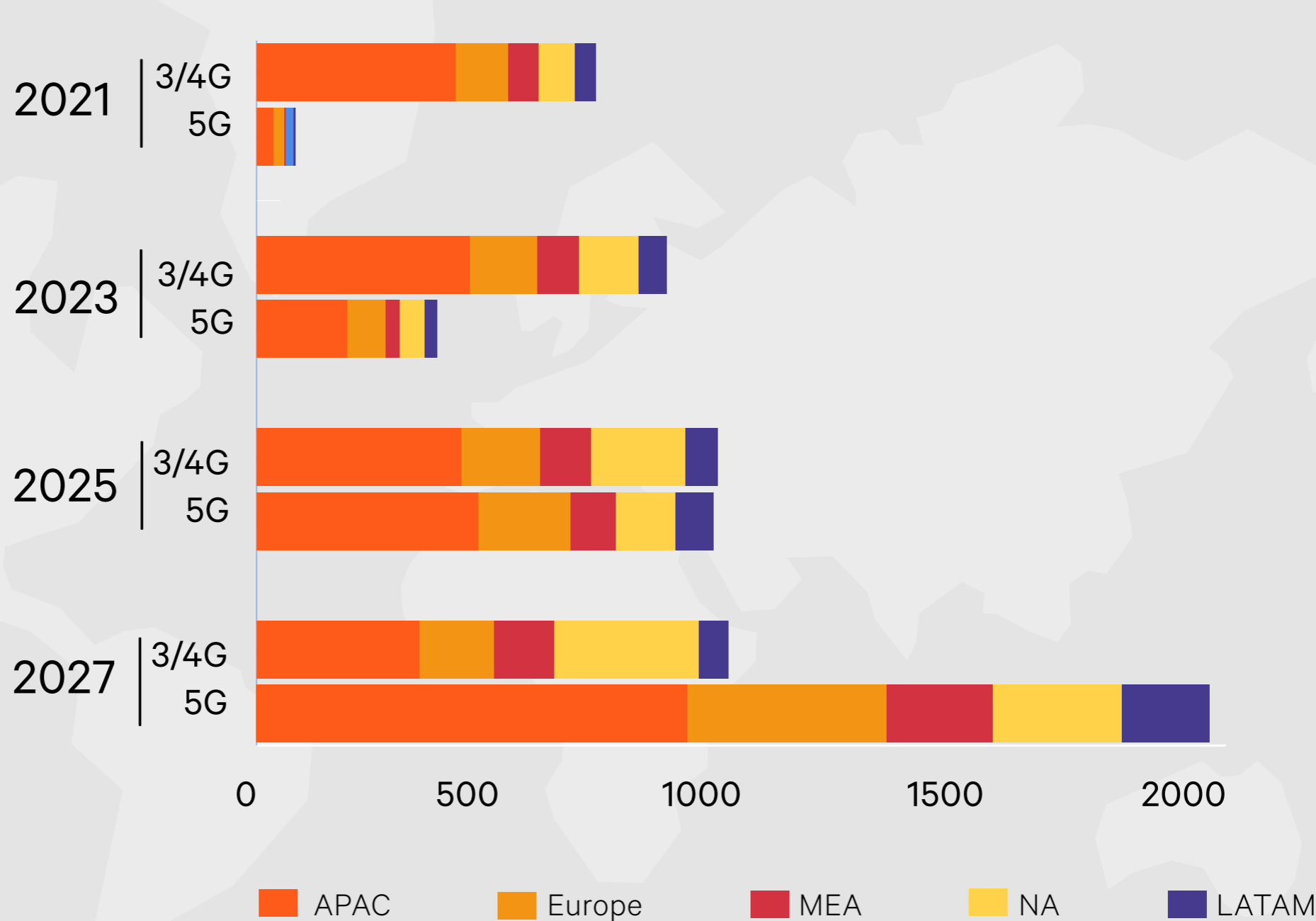
From the first telegraph masts of the 19th century and the dial telephone in the 20th century, through to the omnipresent internet of the 21st, telecommunications have developed rapidly. The next step: 5G. However, it will take effective energy management for the new cellular network to prevail.

Telecommunications Through the Ages



The Rapid Development of 5G Data Traffic

Data Traffic Volume Per Year



2021 > 100 exabytes 2025 ~ 1000 exabytes By comparison, 3/4G will stagnate at approx. 1000 exabytes
 2023 ~ 400 exabytes 2027 ~ 2000 exabytes

5G: Savior or Energy Hog?

5G can curb excess energy use...

- 90% more energy-efficient per data unit than 4G
- Greater "energy elasticity" means that 5G can be turned down during off-peak periods
- Virtualization means faster, cheaper renewal cycles and better performance
- Greater opportunity for resource sharing
- Decommissioning of 2, 3 and 4G networks

...but challenges remain

- Data traffic will grow due to higher performance and reduced costs for end users
- Up to twice as many cell sites for the same network coverage
- Cloud native infrastructure that requires a data center environment (cooling, UPS)
- Increase in edge data centers including "brownfield" conversions

Save Energy with the Right Implementation

Best practices in design, deployment and management of 5G networks save large amounts of energy:

Energy Reduction Impact
 Short-Term Long-Term



5-10% 10-15% 15-30% 30% +

Find out more at Vertiv.com/5G



All findings are taken from the "Why Energy Management Is Critical To 5G Success" report by STL Partners and Vertiv. This document uses research results, including a survey of 500 companies worldwide, to outline the challenges facing telecoms companies given increased energy consumption and costs associated with 5G.

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