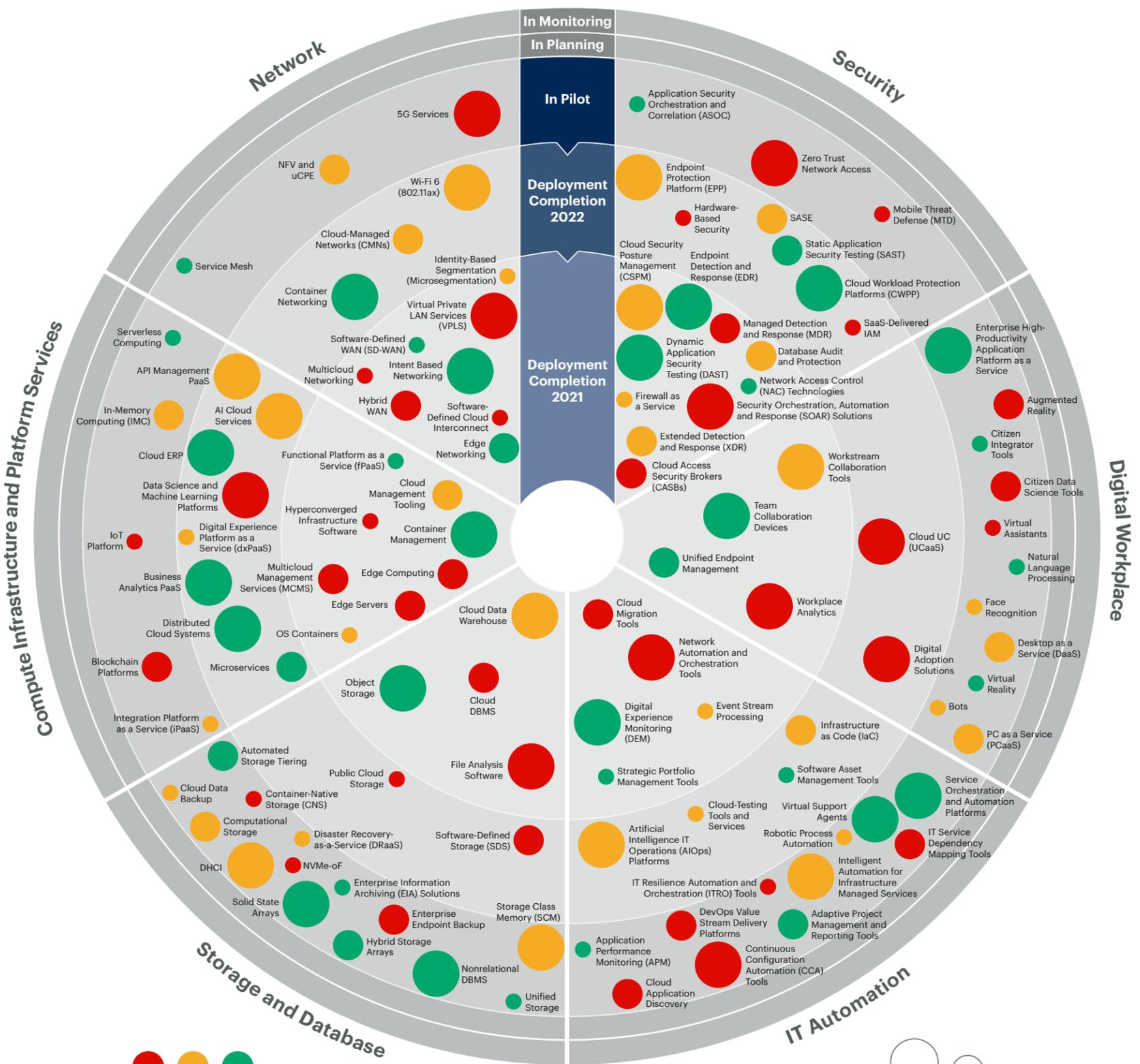


# 2021-2023 Emerging Technology Roadmap for Large Enterprises

IT Professionals from 437 Organizations Collaborated to Benchmark Adoption Plans, Anticipated Value and Risk for 111 Infrastructure and Operations Technologies



**Deployment Risk**

The risk factor awarded to each technology is based on the analysis of potential risks posed, including marketplace/vendor maturity, architectural fit/complexity, security risk, talent availability, regulatory compliance challenges, implementation cost, and disruption to existing processes and services.

**Enterprise Value**

The value factor awarded to each technology is based on the analysis of value drivers, including increasing cost-efficiency, improving speed and agility, enabling resilience, enhancing employee productivity, and increasing revenue through improved products and/or services.

**Key Take-Aways**

- I&O and IT leaders have increased the adoption of emerging technologies as organizations begin to recover from the pandemic by seeking innovation opportunities.** Across all technology domains, 58% of respondents reported either an increase or a plan to increase emerging technology investment in 2021, compared with 29% in 2020. In tandem, I&O functions have witnessed a reduction in deployment timelines, with all technologies in deployment expected to reach adoption within the next six to 18 months.
- Talent shortages are a rising and significant challenge for successful adoption of emerging technologies.** This year, 64% of respondents feel that talent availability is the largest challenge to emerging technology adoption, compared with just 4% in 2020 and 14% in 2019.
- The need for resilience drives the business case for the majority of emerging technology deployments this year.** A majority (64%) of enterprises are deploying emerging technologies to meet the objective of “enhanced resilience.” This is significantly different from last year when the investment justification most often cited was “increasing speed and agility” (cited by 66% of respondents).
- Emerging technologies that enable democratized delivery are becoming increasingly important for I&O leaders.** This year, 82% of I&O leaders either agree or strongly agree that enterprise leaders outside of IT influence emerging technology adoption decisions across all technology domains evaluated. Furthermore, 85% of respondents either agree or strongly agree that they have metrics in place to track customer experience before and after technology adoption. To enable self-service delivery, I&O functions are establishing several “as-a-service” technologies.
- I&O leaders are creating distributed platforms, supported by cloud technologies, that can enable an “anywhere operations” model for employees.** To allow the smooth movement of work environments and information between physical and virtual locations, organizations are investing heavily in creating a strong hybrid cloud base, supported by several multicloud technologies.
- Improving and maintaining IT infrastructure security is a significant priority for organizations as they tackle rising threats, particularly to endpoint devices in the new hybrid work environment.** From 2020 to 2021, the number of security technologies in deployment rose sharply — from 15% to 84% of evaluated technologies. Also, in 2021, 64% of respondents reported that they have either increased or are planning to increase investments in security technologies, a significant jump from just 31% in 2020.
- I&O executives are deploying highly disruptive emerging technologies to ensure continued, uninterrupted access to enterprise networks and effective delivery of network services within organizations.** Investments in network technologies have seen continued growth, as 53% of respondents note that they have increased or plan to increase investments in network technologies in 2021, compared with 32% in 2020.
- Organizations are investing in technologies that enable intelligent data and analytics capabilities to scale enterprisewide digital ambitions.** I&O functions are deploying enterprise technologies that can sculpt change in 2021, such as artificial intelligence (AI) cloud services, AI IT operations (AIOps) platforms and data science and machine learning platforms, while intelligent automation
- for infrastructure managed services, blockchain platforms and IoT platforms are in the pilot stage this year.
- Demand for new digital workplace technologies plateaued in 2021 compared to 2020 due to the maturing responses to the pandemic.** Only 12% of digital workplace technologies have moved ahead in the adoption cycle in 2021, compared with 41% in 2020.
- Enterprises are more selectively adopting technologies related to automation in 2021, leading to the cautious deployment of several emerging IT automation technologies.** Of all the IT automation technologies profiled this year, only 20% of them have moved ahead in the adoption cycle since last year, compared with 30% in 2020.
- Adoption of storage and database emerging technologies slowed this year as organizations seek to maintain and optimize existing data center infrastructure.** The number of storage and database technologies in the deployment adoption stage dropped this year — from 38% in 2020 to 30% in 2021. I&O leaders are working toward rationalizing their current storage and database infrastructure, with 50% of storage and database technologies remaining in the same adoption stage as in 2020.
- Edge technologies that enable swift analysis of information closer to the point of data generation are in focus.** Technologies such as edge computing, edge servers and edge networking are in deployment this year. Organizations that do not align their edge solutions to strong business use cases will face issues in their strategic adoption plans.

Source: Gartner  
Note: Large enterprises are defined as organizations with more than \$1 billion in revenue.