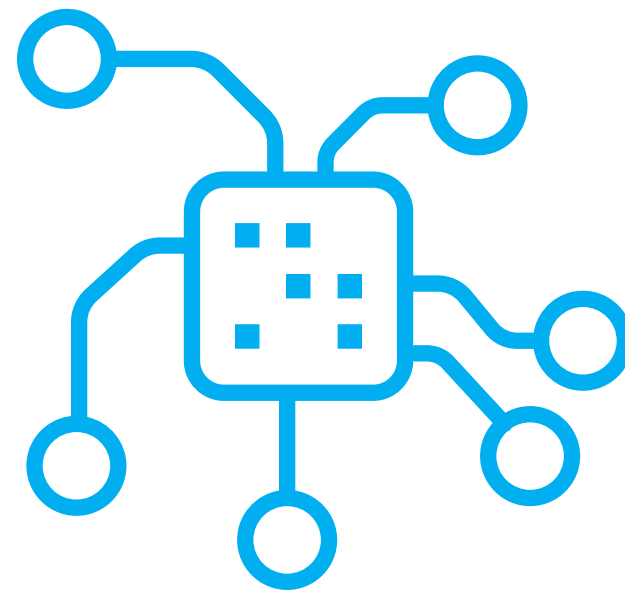


Media Tech Intelligence Briefing:

Content Infrastructure & Storage:

State of the Industry

June 2021



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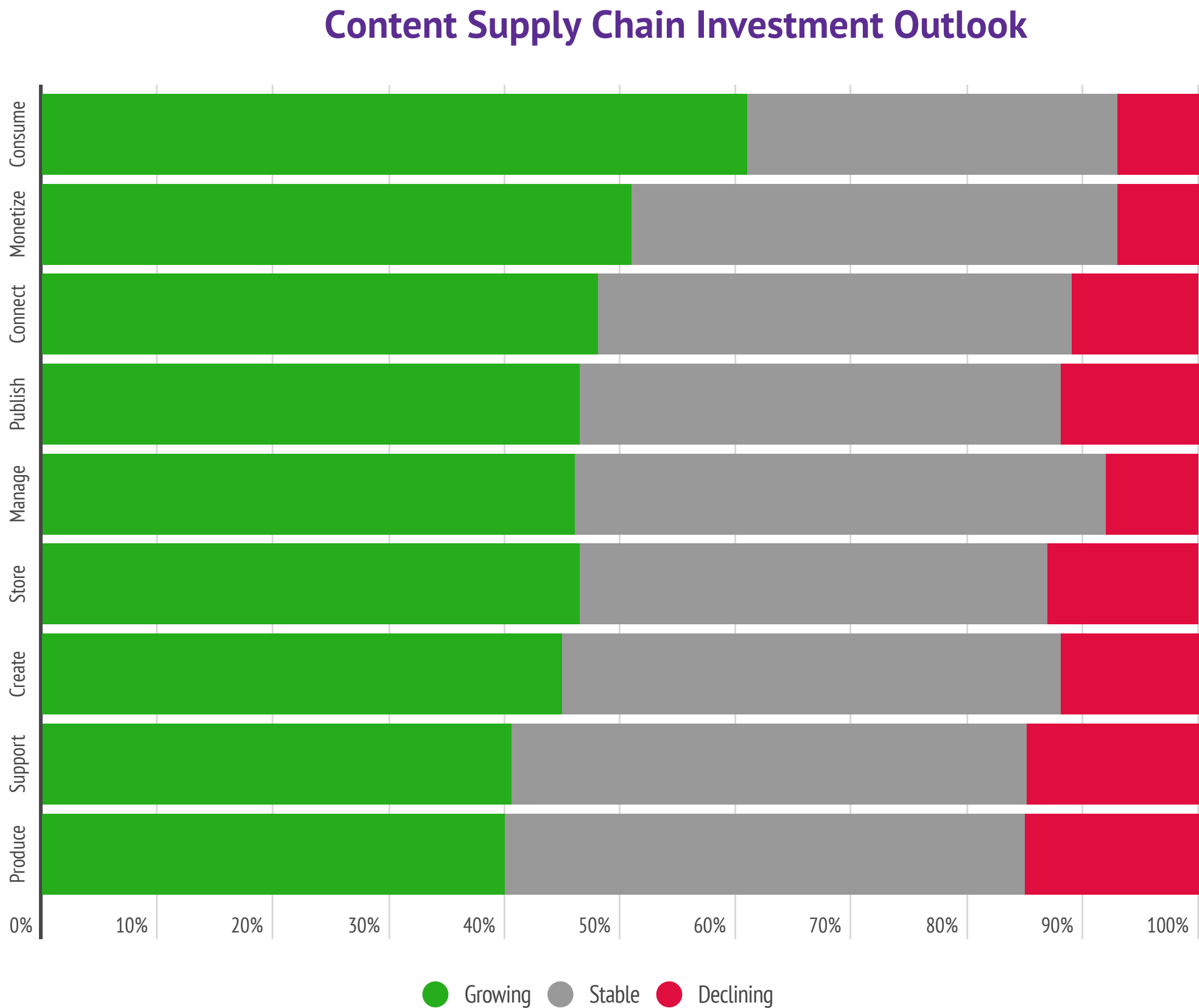
State of the Industry

The acceleration in media technology transitions such as the move to remote production models and the migration to cloud operating platforms is putting functions such as infrastructure and storage in the spotlight. IABM research shows for example that the accelerated move to remote production is prompting an increasing focus on connectivity resources. Moreover, the need for content to be accessible from multiple locations is driving investment in cloud storage, as we shall see later in this Briefing. While these digital transitions have been accelerated, other physical investments have been dramatically reduced. For example, IABM reported in a previous Briefing the worsening state of satellite investment due to the pandemic-induced effects. At the same time, the physical distancing guidelines and the dramatic reduction in travel have caused an accelerated decline in physical storage. This polarization of technology spending has translated into diverging fortunes for technology providers in Store and Connect. While providers focused on supplying the technological backbone for remote operations have grown significantly, vendors heavily reliant on physical offerings have seen their revenues decline in the last year. This Briefing focuses on identifying the most important investment drivers in Store and Connect through a mixture of sources, including survey data on technology priorities, company announcements and financial data.

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Investment in Store and Connect

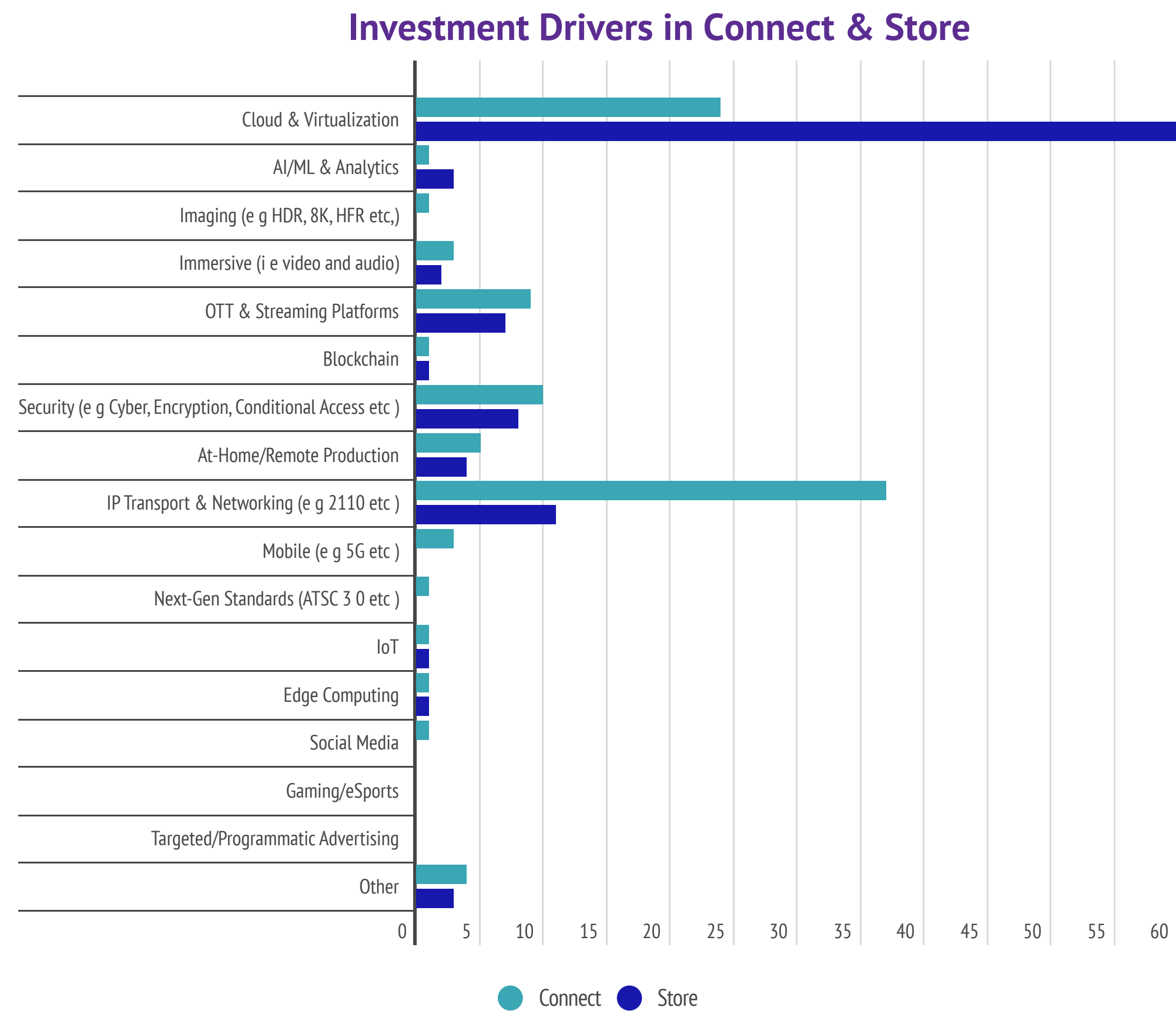
From an investment perspective, the pandemic has driven media companies to increase investment in Connect, which is the third most important spending priority for media businesses. According to our data, Connect is the top investment priority for media businesses that rank remote production as the most important trend in their technology roadmap, which reflects the effect of remote production on connectivity spending. Store is instead the sixth most important content supply chain priority and the second one for companies ranking remote production as the most important trend in their technology roadmap.



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Investment drivers

Media and technology companies in Connect and Store are very much focused on cloud and virtualization as well as IP transport and networking technologies. IP is driving most investment in Connect while cloud is the most important spending priority in Store. These two technologies are often being combined by media companies. The third most important driver in both segments is security. While remote production is the fifth most important driver in both segments, increasing investment in remote production has propelled a rising demand for IP connectivity at media businesses, as shown in our research on content creation and production.



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Investment drivers - Connect



Transition from SDI to IP driving new investment in infrastructure



Transition to remote working, cloud and remote production driving new investment in internet connectivity resources



Transition to cloud driving new investment in managing and securing cloud infrastructure



Declining investment in legacy connectivity technologies such as SDI and satellite



Cloud and remote production driving a rationalization of resources that is impacting certain categories



Declining investment in hardware-based offerings which accounts for a large share of revenues in this segment

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Investment drivers - Store



Growth in content investment driving more spending on storage solutions



Transition to remote working, cloud and remote production driving new investment in cloud-based storage



Increasing demand for storage solutions for digital archiving and virtual content access



Declining investment in physical and travel-dependent storage technologies



Slowdown in growth of historical drivers in this segment such as the transition to higher resolution formats

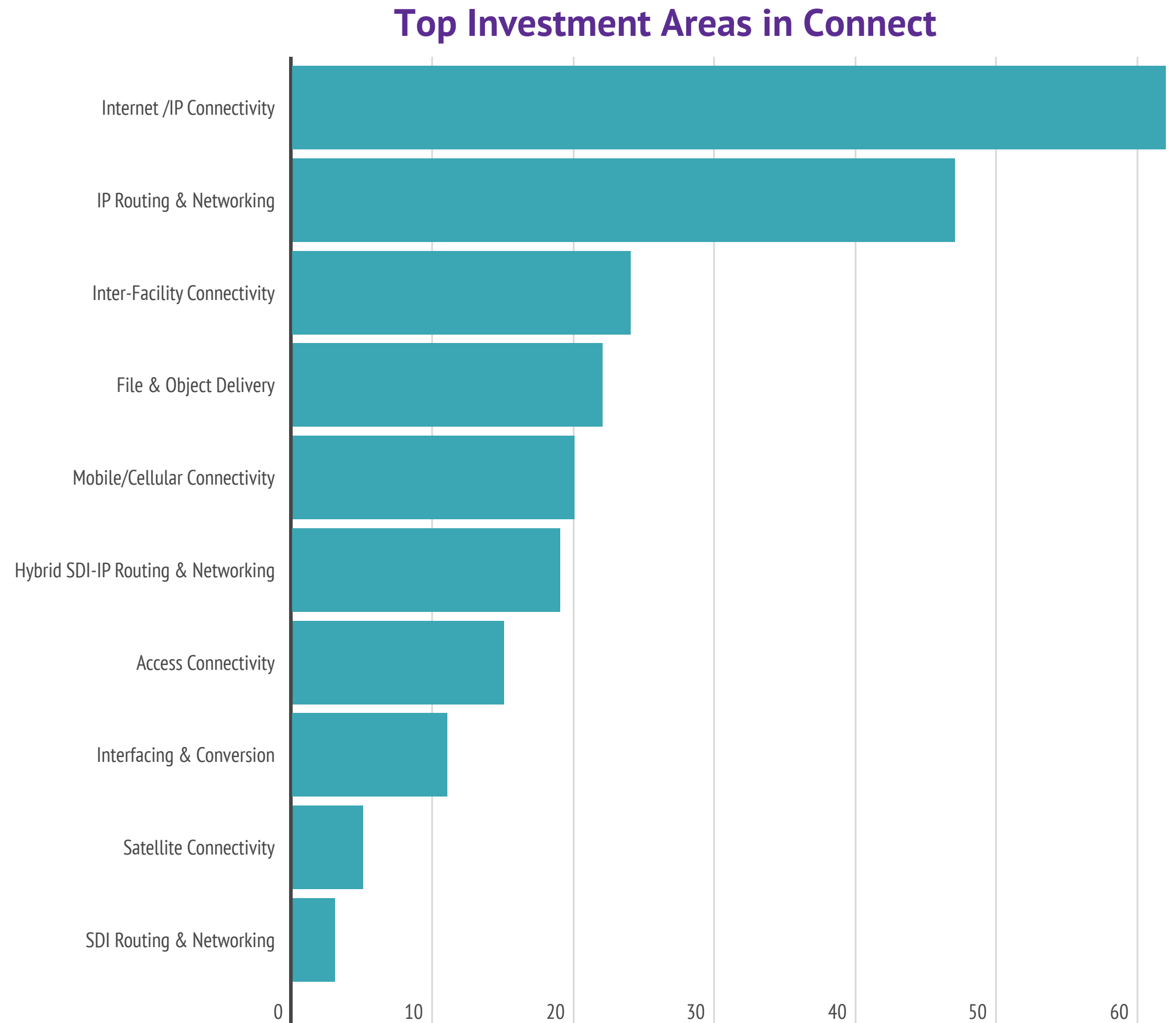


Declining investment in hardware-based offerings representing a large share of revenues in this segment

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Top areas of investment in Connect

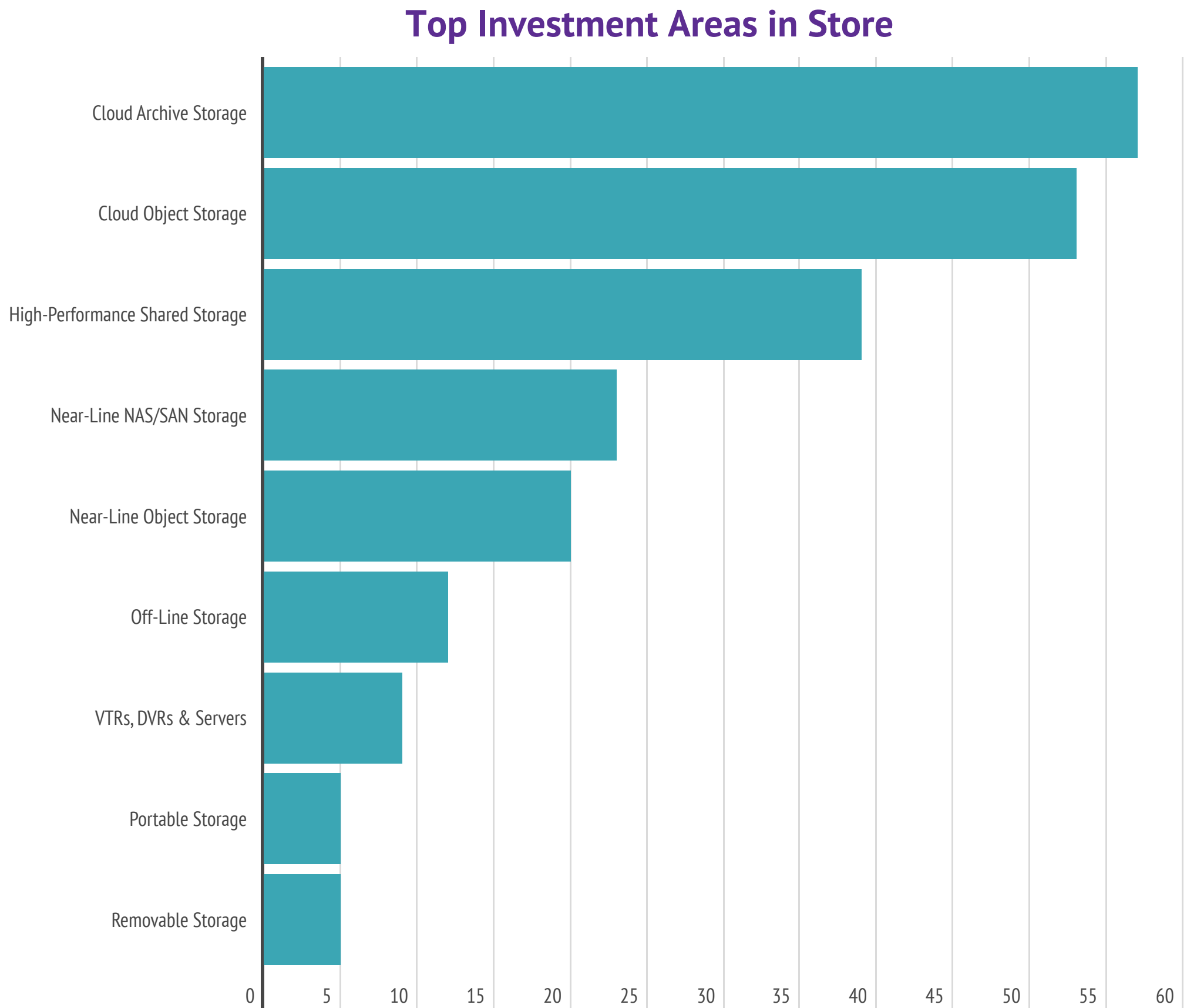
The top investment area in Connect is internet/IP connectivity, which has been propelled by the move to remote working and remote production at media businesses. The second most important investment priority is IP routing and networking which is becoming increasingly important as media businesses transition from SDI to IP facilities. The third most important investment area is inter-facility connectivity, which has grown due to the move to remote as well. At the bottom of this ranking, we can find legacy infrastructure technologies such as satellite and SDI as media businesses have accelerated their transition away from these technologies between 2020 and 2021.



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Top areas of investment in Store

The top investment area in Store is cloud archive storage, closely followed by cloud object storage. Media businesses have increased spending on these activities due to a variety of reasons, including content shortages prompting an increasing reliance on archives, an urgent need for solutions that enable virtual content access and collaboration, and an increasing reliance on data. At the bottom of the ranking, we can find legacy (and physical) storage categories such as VTRs, removable storage and portable storage, which have suffered from the move to virtual operations undergone by media businesses between 2020 and 2021.

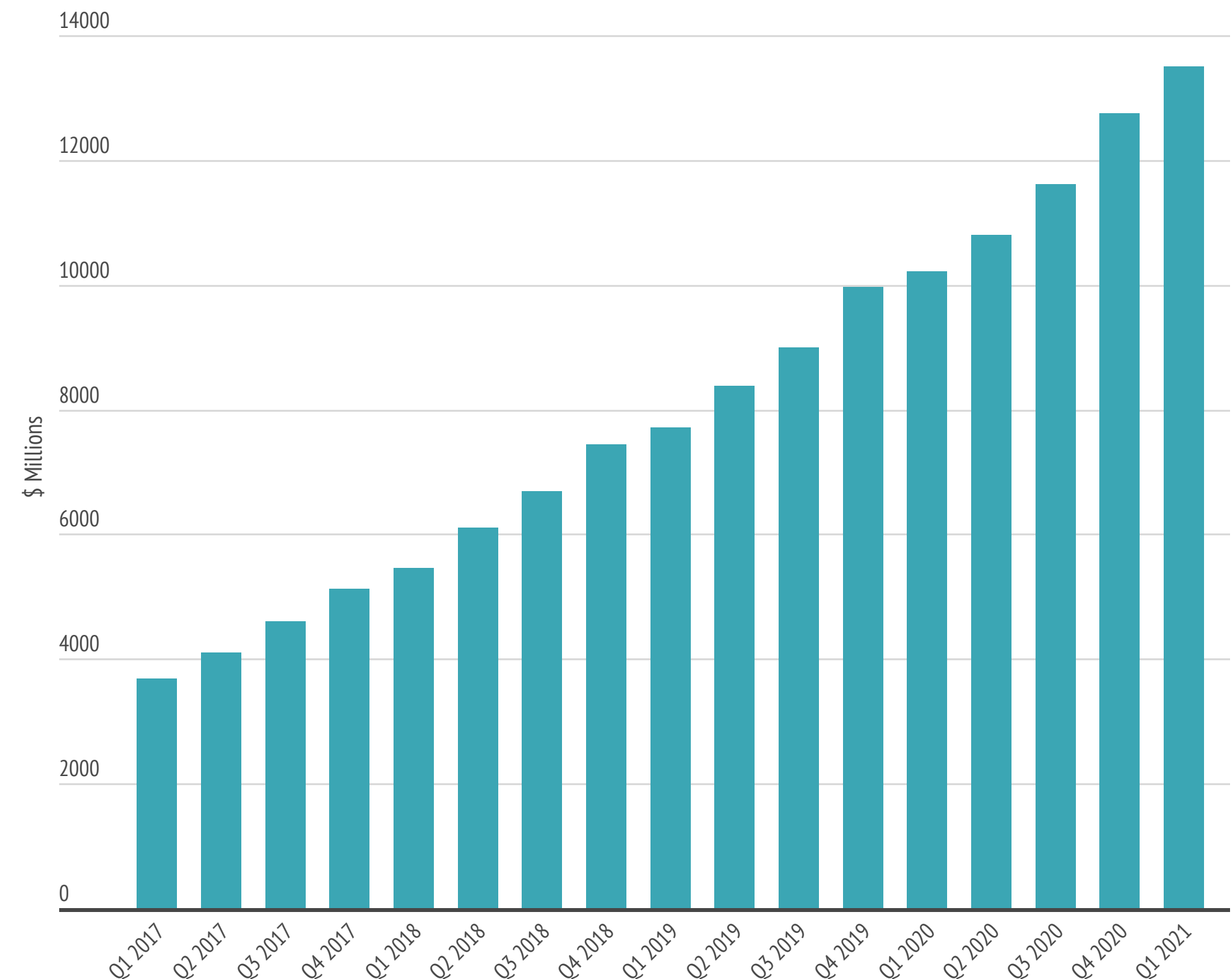


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Move to cloud operating platforms

Cloud is the top priority in Store and the second most important priority in Connect. Some major media companies have transitioned sizable parts of their infrastructures to cloud operating platforms between 2020 and 2021, reflecting greater investment in the technology within the media industry. Revenue growth at major cloud service providers decelerated, though it was still astounding. For example, AWS revenues grew by 30% and Google Cloud by 46%. In one of the latest major announcements in April 2021, Globo said that it will "migrate 100% of its data centers to Google Cloud, enabling scale in the production and distribution of media, and in launching new channels, among other initiatives."

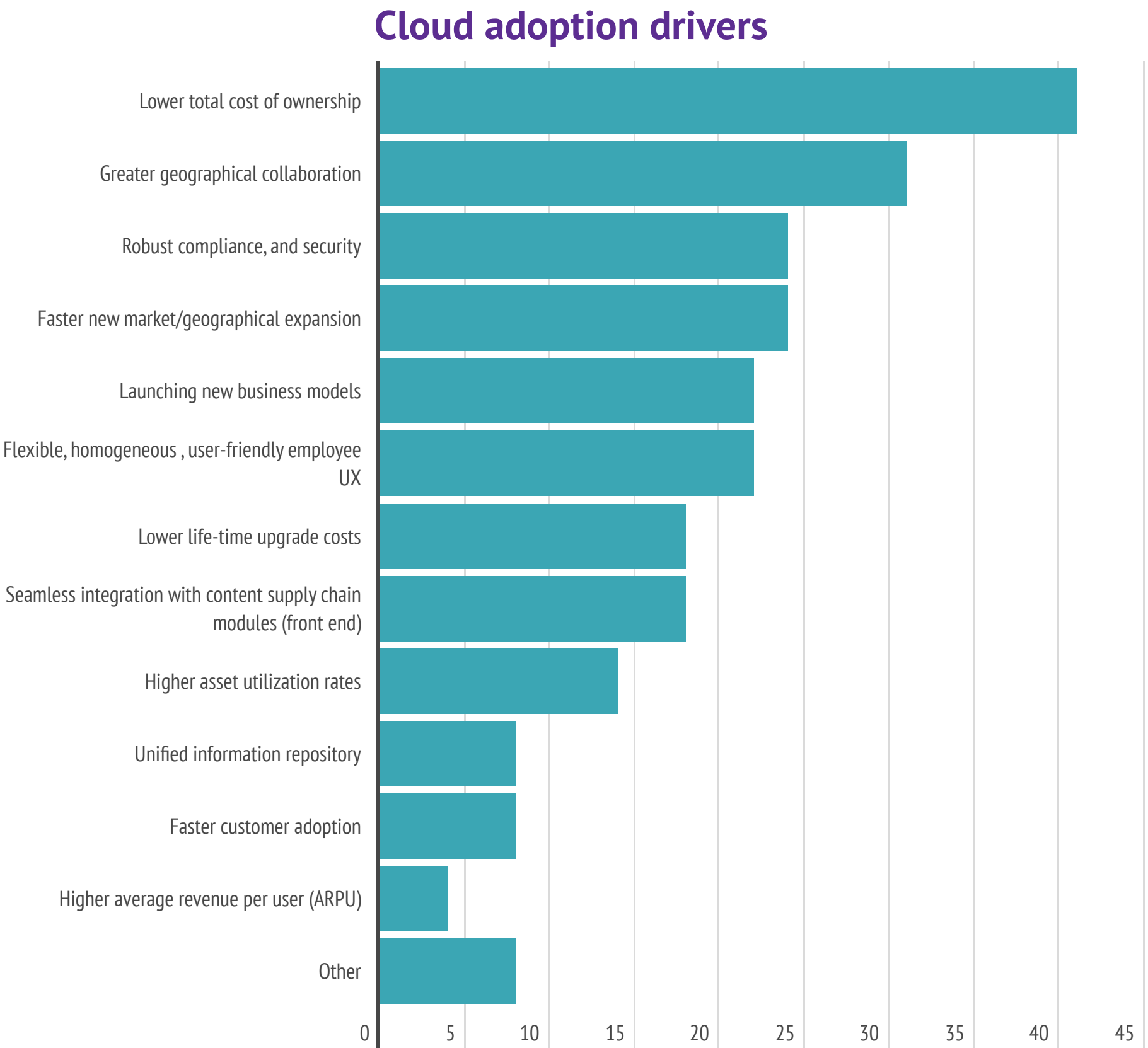
Quarterly Revenues at AWS, 2017-2021



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Move to cloud operating platforms

The combination of OTT and geographical reach also seems to be one of the main drivers behind increasing cloud investment. When Discovery moved its supply chain to the cloud in 2018, former CTO John Honeycutt said of the migration: “The move to cloud-based playout was part of a broader strategy to virtualize Discovery’s entire content supply and delivery chain... The main driver [for on premises] was access to satellites, but the cloud makes geography irrelevant.” Global streaming platforms such as Netflix, DAZN and Disney+ have heavily invested in the cloud to power their geographical expansion. Recent M&A activity leading to more global platforms (Discovery and WarnerMedia) could in turn boost cloud investment. However, cloud is also increasing complexity as we shall see later in this report.

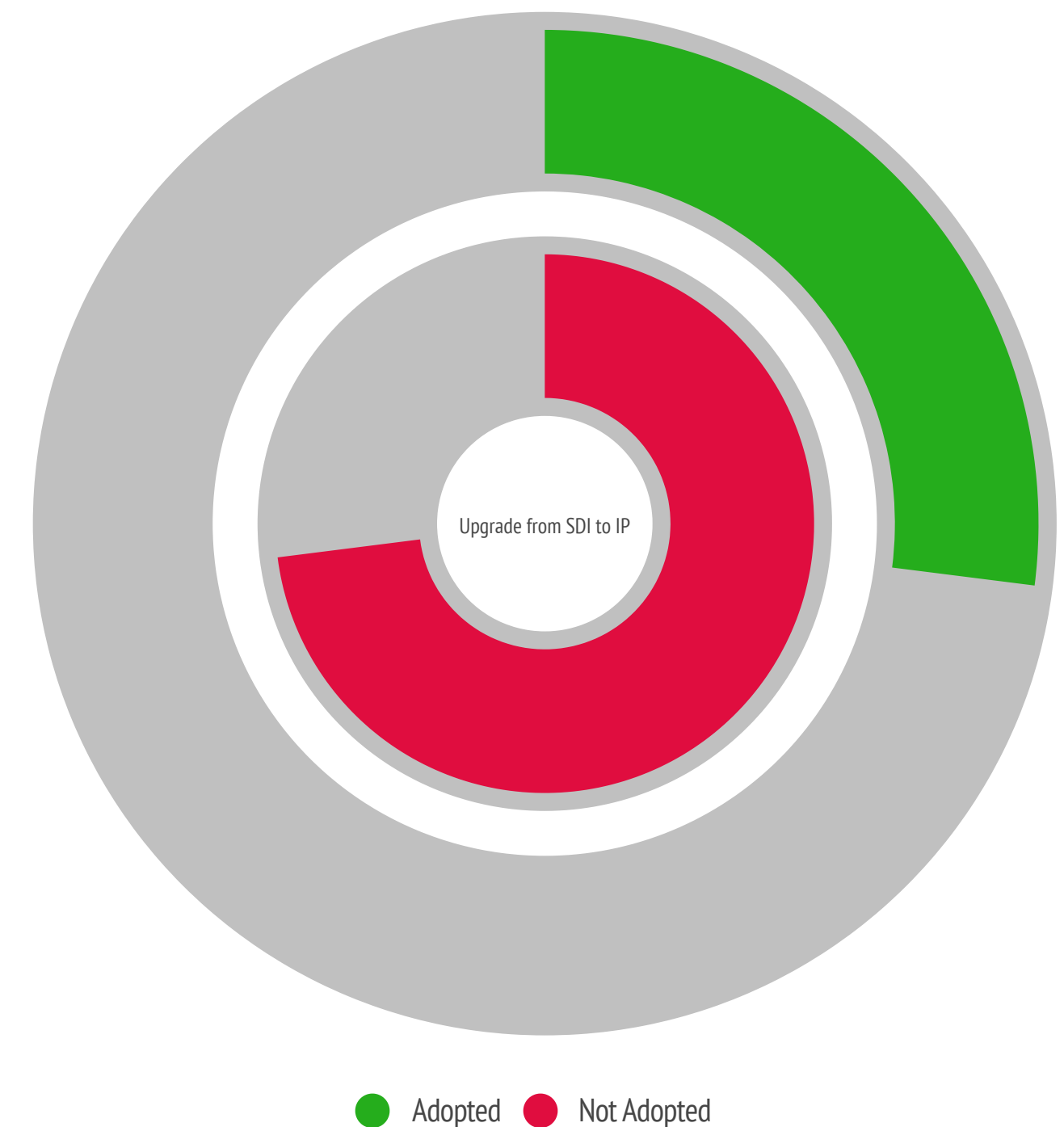


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Transition to IP infrastructures

According to IABM research, 27% of media businesses have upgraded their infrastructures from SDI to IP, and this certainly remains a strategic priority for media companies. However, as reported in our September 2020 Special Report, upgrading studios to IP remains a complex endeavor which is why most broadcasters continue to make this transition when moving to a greenfield facility. Most media businesses have focused on investing in internet/IP connectivity to support their remote efforts. For example, Qatari broadcaster Al Kass invested in Nevion's VideoIPath and Virtuoso to connect its main facility with three other sites. As a general proxy for investment in IP switching often used in broadcast infrastructures, the combined revenues of major IP networking and switching providers such as Arista Networks, Juniper Networks and Cisco declined by 3% on average between 2019 and 2020.

IP Adoption Tracker

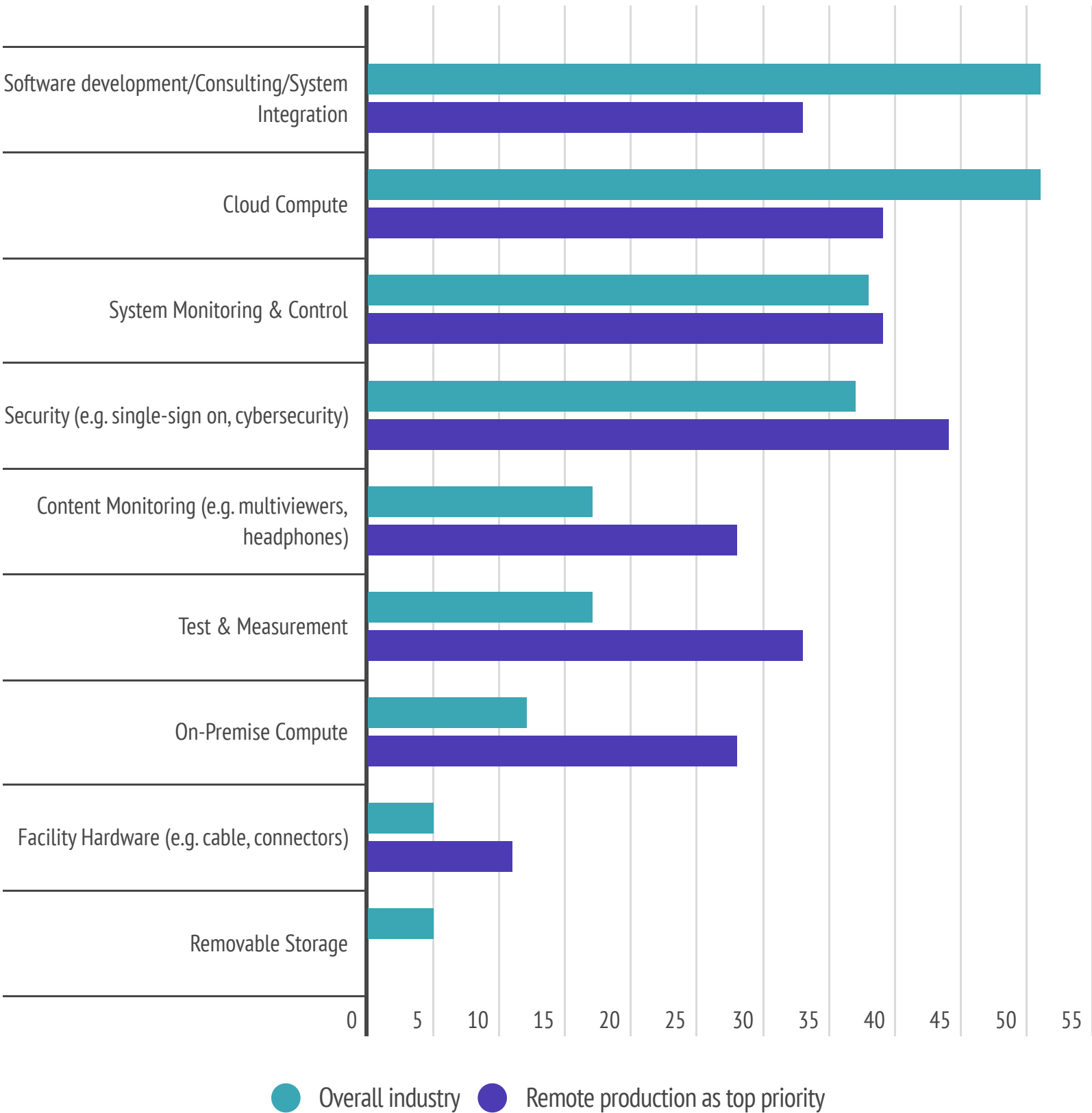


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Transition to remote production

As previously noted in this report, the move to remote production has had a profound impact on infrastructure investment. In fact, media businesses that were planning to centralize resources in remote production settings were forced to adopt a decentralized model featuring a central facility connected to a variety of external locations. This has contributed to increasing investment in cloud resources. According to IABM data, media businesses focusing on remote production are significantly more likely to increase investment in Connect, Store, and Support; these are the segments featuring the infrastructure joining content supply chains. It is worth noting that in Support they are more likely to invest in activities such as security and monitoring to address the complexity driven by distributed resources.

Top Investment Areas in Support



Sources: IABM