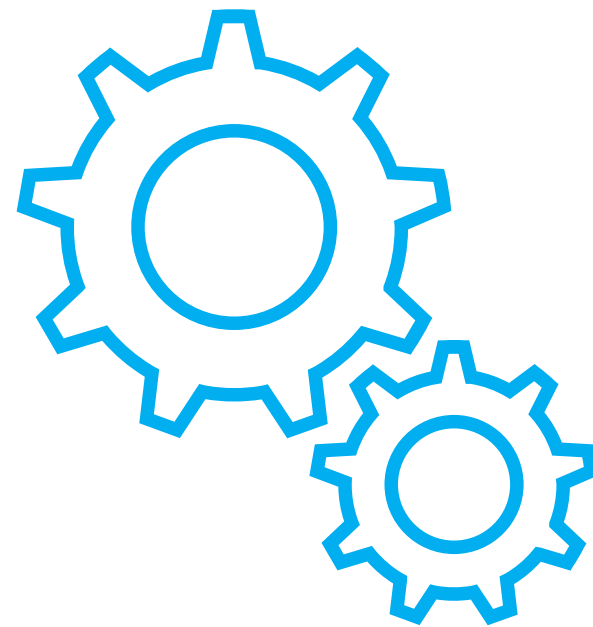


Media Tech Intelligence Briefing:

Content Management & Support:

State of the Industry

September 2021



Content Management & Support

State of the Industry

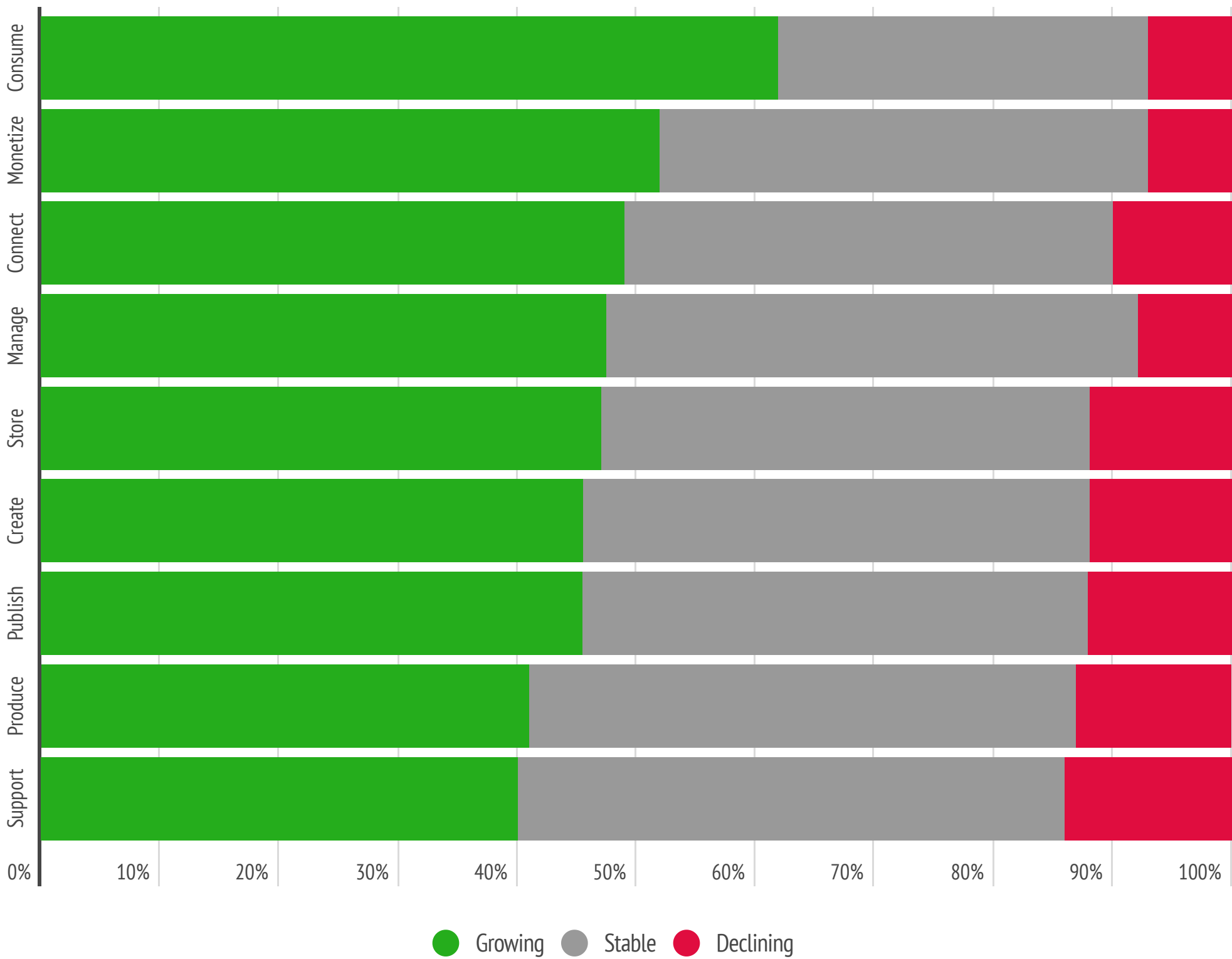
Content management and support sit at the heart of content supply chains, directing workflows and governing processes. Arguably, the COVID-19 pandemic has not made these areas more important than they were but rather emphasized the need for greater flexibility. Media companies are doing this in various ways. They are doubling down on initiatives to strengthen their data-driven capabilities in both segments with the dual objectives of automating workflows and tracking performance. This remains a strategic area of development for content management and support, and perhaps the most important one. Moreover, both content management and support segments are gradually migrating to virtualized platforms to allow remote access to content and technology tools. This migration had been slower than expected pre-pandemic, due to the bulky nature of legacy asset management systems, but the pandemic has escalated the need for change to flexible architectures. These segments remain heavily linked with other parts of the content supply chains. For example, in a recent Content Chain Trends Report, we highlighted that the increasing level of risk produced by the move to remote working models is prompting media companies to invest in security and monitoring technology. This Briefing focuses on identifying the most important investment drivers in Manage and Support derived from a mixture of sources, including survey data on technology priorities, company announcements, and financial data.

Content Management & Support

Investment in Manage and Support

From an investment perspective, Manage remains an important and strategic investment area for media companies - in our findings the fourth most important priority. Manage has increased in importance in 2021 relegating Publish to further down the list of priorities. Remote working is keeping Connect towards the top of the priorities list. Support is at the bottom of this investment ranking as several media technology activities in this segment have been materially affected by the pandemic - e.g., monitoring hardware, facility hardware, system integration, etc. However, as we shall see some other categories in Support are still central to media companies' future plans.

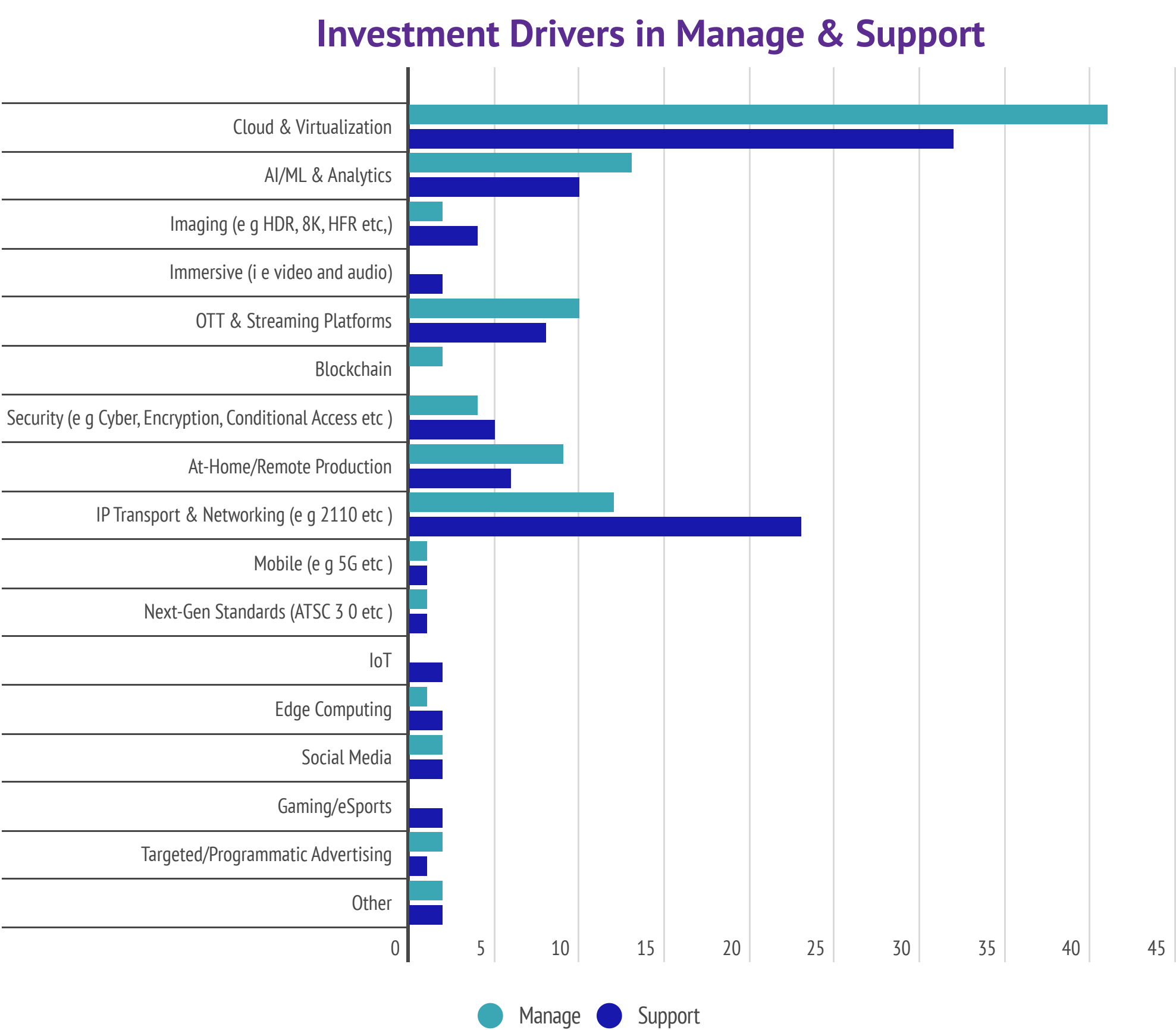
Content Supply Chain Investment Outlook



Content Management & Support

Investment drivers

Media and technology companies in Manage and Support are very much focused on cloud and virtualization to enhance system flexibility. IP is the second most important driver in Support, as spending on many activities in this segment hinge on IP installations. In Manage, AI/ML and Analytics has become the second most important driver of spending as media companies have started realizing the value their data holds for them. Other important drivers in both segments include OTT and Streaming and remote production - these drivers, like cloud, are affecting most segments in the content supply chain.



Content Management & Support

Investment drivers - Manage



Increasing importance of AI/ML and data analytics driving new investment



Increasing importance of activities such as orchestration and localization driving new investment



Management and orchestration systems remain mission-critical for media companies



Move to cloud challenging legacy business models



Some media companies insourcing mission-critical systems



Technology convergence blurring the lines of demarcation between MAMs and DAMs

Content Management & Support

Investment drivers - Support



Transition to remote and cloud driving new investment in supply chain governance



Technology upgrades such as IP installations driving new spending on support technology



Increasing demand software development and consulting for OTT platform builds



Move to cloud challenging legacy business models



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

Content Management & Support

Top areas of investment in Manage

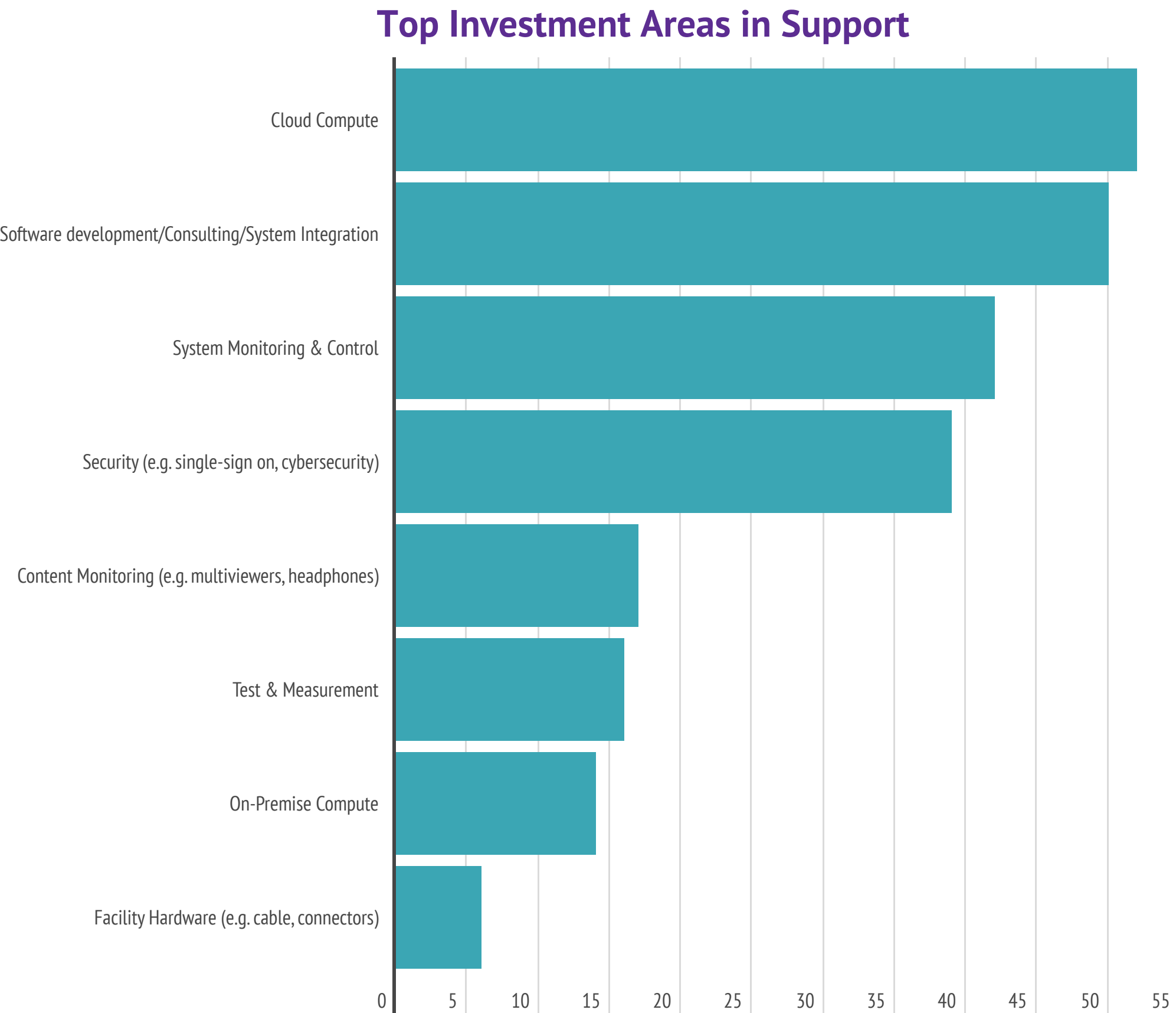
The top investment area in Manage is workflow orchestration, which has been fueled by the need to make operations more efficient, as budgets have been hit by the pandemic. The second most important investment priority is MAM though business models in this area are radically changing as they move to flexible systems. The third and fourth most important investment areas are data/metadata management and storage/archive management. These priorities reflect the increasing importance of data in media companies' strategies and the need to better utilize their archives, respectively. Areas of less focus now are QC and compliance.



Content Management & Support

Top areas of investment in Support

The top investment area in Support is cloud compute, closely followed by software development, consulting, and integration. Media businesses have increased spending on these activities as they moved to cloud-based and remote working models. Investment in software development is driven by the increasing complexity of developing effective OTT offerings. Monitoring and security, have been propelled forward by the move to remote working. At the bottom of the ranking, we can find legacy products such as facility hardware and on-premise compute, reflecting the lower spending on facilities.

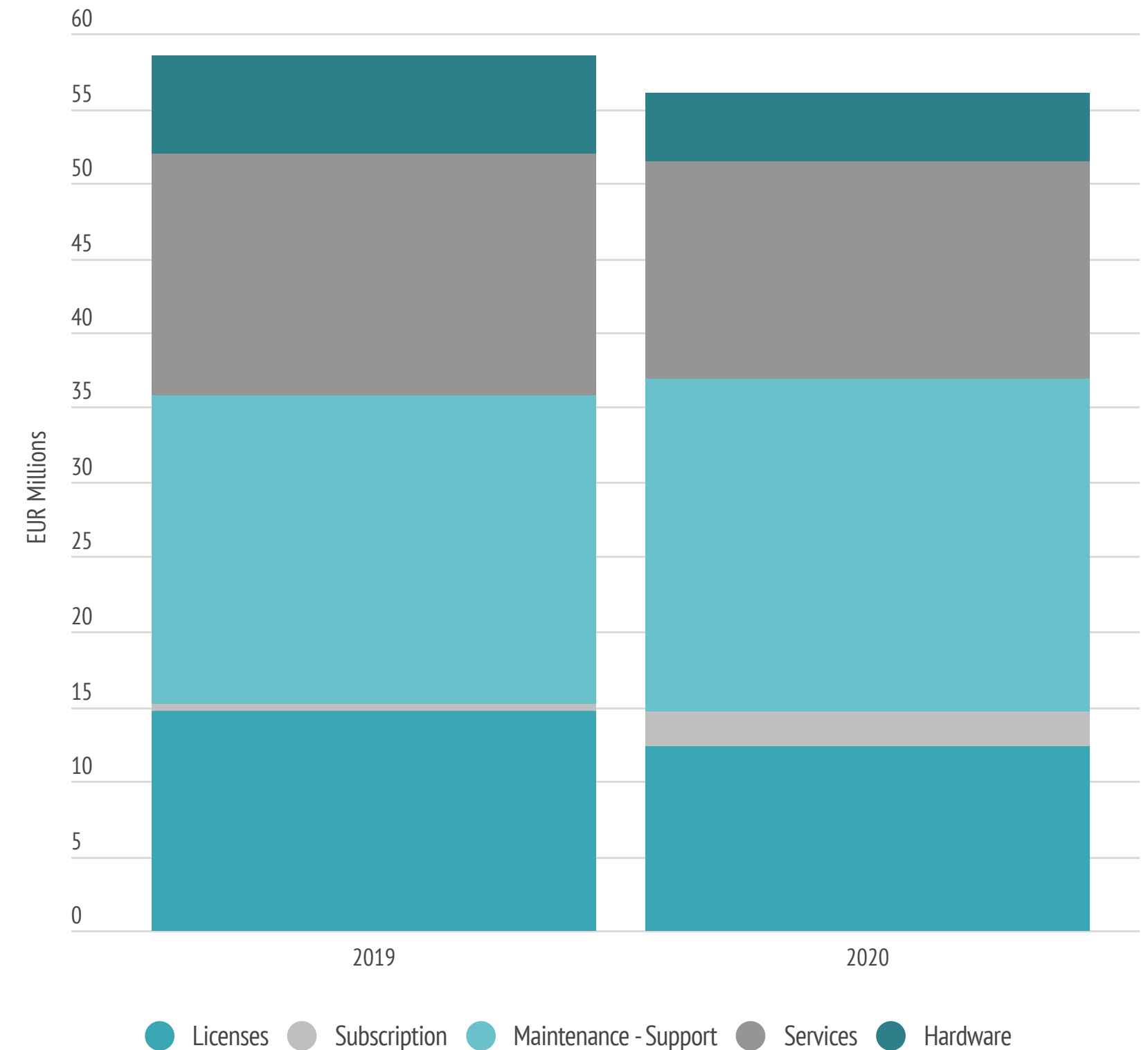


Content Management & Support

Move to cloud operating platforms

The move to cloud presently underway at media companies is radically influencing demand patterns in content management and support. Public companies providing these systems have consistently highlighted a demand spike for SaaS-based solutions over the last year. For example, Dalet reported that its subscription revenues had grown by 349% in 2020, although these still represent only about 4% of its total turnover. The company also reported that legacy revenues such as permanent licenses and hardware have experienced double-digit declines - Dalet recorded a -4% overall decline in revenues. This is illustrative of the business model transition underway at many media technology companies.

Dalet Revenues in 2019 and 2020



Content Management & Support

Move to cloud operating platforms

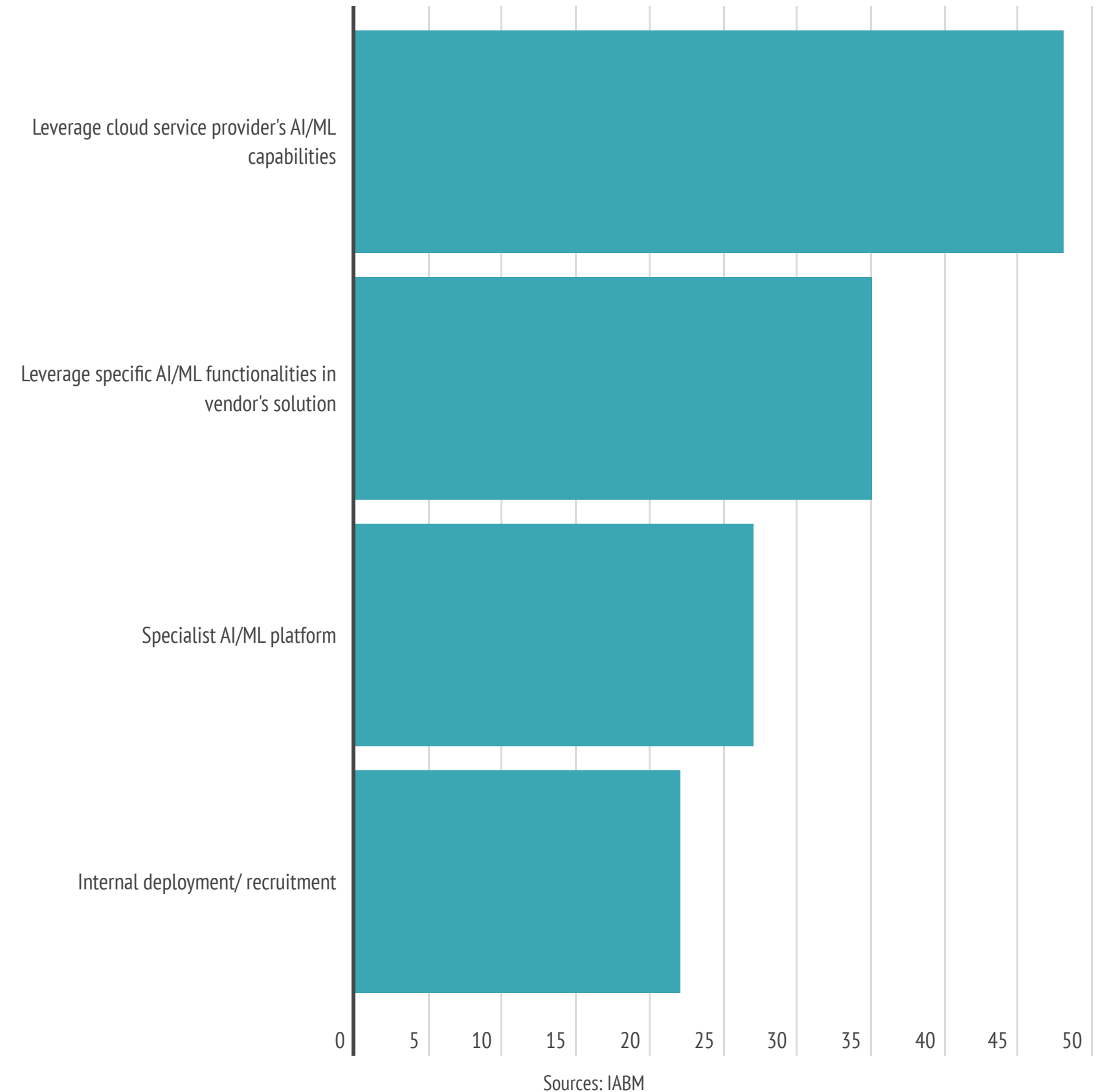
Other challenges brought by the increasing pervasiveness of cloud technology include the containerization of technology architectures as well as the blurring lines of demarcation between different content supply chain segments and even different industries. Regarding the latter trend, Avid's CEO Jeff Rosica said in his company's Q1 2021 earnings call: *"Another trend we began to see is our ability to go into adjacent markets outside of the traditional media and entertainment industry."* This trend is operating in both ways, representing both a challenge and an opportunity, though media technology solutions can still boast a unique proposition when it comes to handling content. Regarding the former convergence trend, some niche digital tools for content production have gradually incorporated some media management functionalities. The most positive development for media management systems is the fact that they are central to media companies' strategies when it comes to mission-critical areas such as distributed production models, data management, and OTT development. This is why content management retains such a high position in the investment ranking for media companies. When it comes to Support, the focus of media businesses remains similar: moving to SaaS-based solutions offering data-driven governance of media supply chains. As argued in a recent Content Chain Trends report, this could in the long-term spur demand for managing the complexity of multi-cloud environments.

Content Management & Support

Transition to data-driven and automated workflows

According to IABM research, most media businesses prefer to leverage AI/ML by using the services offered by cloud service providers. The recent deal between Globo and Google Cloud is particularly illustrative of this trend. Sophisticated data-driven capabilities are becoming cornerstones of management and support systems' growth. For example, Analytical tools are becoming integral parts of asset management systems and facilitate the tracking of the performance of operations through dashboards and KPIs. AI/ML algorithms are being deployed to automate tasks such as metadata extraction and short-form content production. The same applies to support systems for monitoring. Generally, this is leading to increased spending on data development at media companies.

Preferred Deployment Models for AI/ML



Content Management & Support

Transition to data-driven and automated workflows

Several large cloud moves were focused around the increasing use of data and analytics

Company	Year	Details
Discovery	2018	"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"
ProSiebenSat.1	2019	"With AWS, ProSiebenSat.1 is improving the time to market of new applications, and introducing advanced analytics and machine learning (ML) technologies across its organization"
Fox	2019	Fox's transition to the cloud included the move of its media supply chain for linear and digital delivery as well as the increasing reliance on analytics services
ViacomCBS	2020	ViacomCBS migrated its entire broadcast infrastructure to the cloud, including 425 linear TV channels and 40 global data and media centers
Globo	2021	Globo's transition to the cloud included the migration of 100% of its data centers to the cloud as well as the increasing use of machine learning services
Disney	2021	"Disney+ is expanding its use of AWS's industry-leading services to include more than 50 technologies, such as machine learning, database, storage, content delivery, serverless, and analytics."

Content Management & Support

Insourcing and outsourcing

The central role played by management systems and the data that they store deems them a core competency and therefore appropriate for insourcing. Some media companies have insourced the development (or part of the development) of their next-generation content management systems to control these mission-critical solutions. Previous IABM research has shown that this insourcing trend may affect just some elements of technology solutions such as the frontend of platforms or the bridges between different products utilized by media businesses. This trend is reversed when it comes to some other activities, as exemplified by the tendency to outsource global content preparation services. In these activities, the gains from scaling operations worldwide are outweighing the benefits of insourcing, as evidenced by the increasing M&A activity in sectors such as content localization and preparation services.



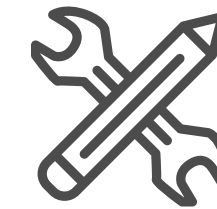
41%

Average percentage of technology solutions insourced by media companies



39%

Media companies saying that they are increasing their investment in in-house technology development



64%

Media companies saying that they are investing in in-house technology development to customize technology solutions

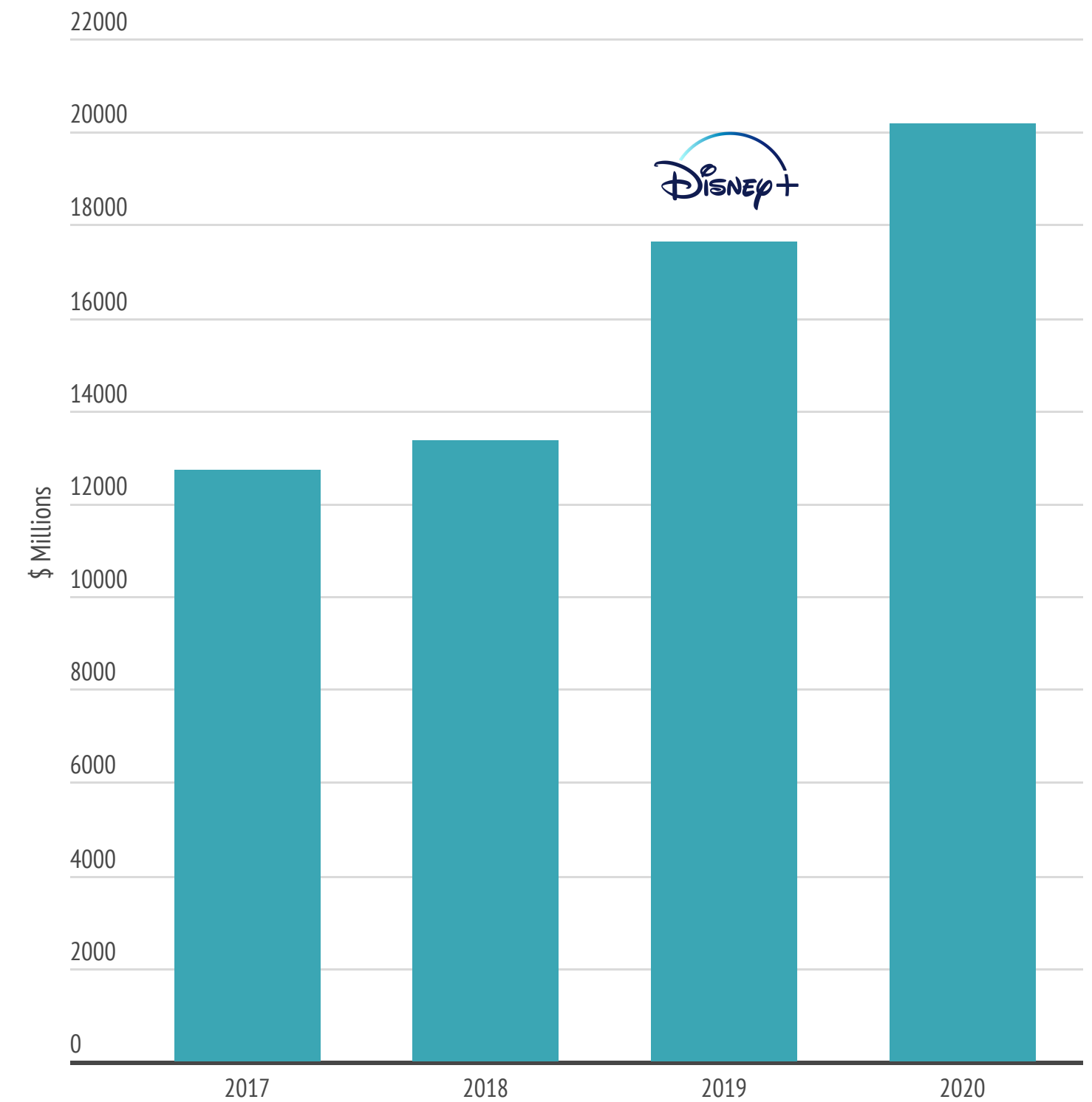


Content Management & Support

Content boom

Generally, the growth in content investment is a very important spending driver for solutions in this segment. This trend is also driving the adoption of data and analytics systems to manage the complexity of larger content libraries and optimize the use of content assets. Between 2020 and 2021, disruptions to content production schedules led media businesses to shift their focus to their archives, which still has driven investment in content management and support solutions for optimizing the use of historical content libraries and getting their data on content assets right. IABM reported a significant uptick in investment in both storage and archive management in September 2020 due to this new focus. Therefore, media companies' focus on content and data represents an important growth opportunity for technology solutions in this segment.

Spending on content, rights and production at Disney, 2017-2020



Content Management & Support

Virtual access

Finally, the move away from facilities and towards distributed production models is a very relevant trend to this segment as well. It makes the collaborative functionalities of asset management systems even more important than they were pre-pandemic. Asset management systems are in fact increasingly focused on enabling seamless content sharing. Think about the “collection” concept - being able to share groups of assets with users through a web platform or just a simple link. This strengthened focus also explains the growth of categories that enable virtual content access. An example of this is web-based monitoring in Support. More generally, this trend also includes a reduction in the time-to-market for content, with more content being uploaded onto cloud platforms to enable immediate content access to content creators. This implies a deeper link between production and asset management.

