

Introduction

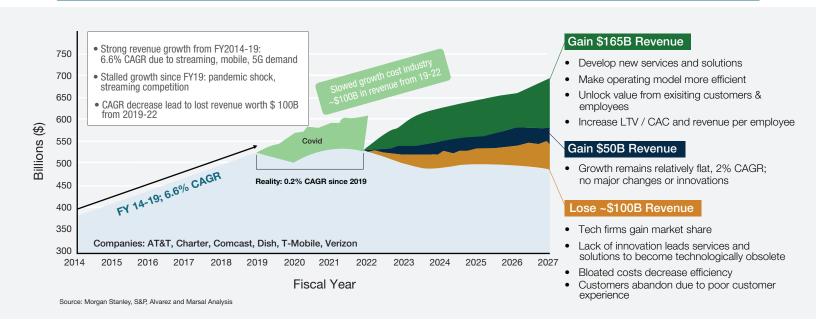
With shrinking profit margins and the emergence of technology ecosystem players operating in a more nimble and open manner, cable, telecommunications and satellite companies face the question of "what is after video" and the resulting imperative for transformation. The Enterprise Services market, often referred to as Business-to-Business (B2B), has become the leading viable source of revenue growth as well as commercial reinvention for communications service providers (CSPs).

However, it bears noting that the needs and business models for the expansive B2B market vary widely and are rapidly evolving. How should operators evolve to avail themselves of the market opportunity? How are leading operators making significant plays? In terms of transformation, there is a realization on the part of CSPs that they must learn from and adapt best practices from digital-native partners and competitors who are agile in their approach and cloud-native in their implementation.

What Can CSPs Expect During the Next Five Years?

The U.S. communications industry could miss more than \$165 billion in revenue opportunities over the next five years due to delayed adoption, price pressures and lost subscribers.

CSPs must quickly launch new services to maintain a competitive edge



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Industry revenue growth was strong from 2014-19, averaging a compound annual growth rate (CAGR) of 6.6 percent. Beginning in 2019, the industry's growth stalled to 0.2 percent due to the pandemic, but also due to other factors, most notably an increased rate of subscribers cutting the cord particularly in the video segment of the bundle. The overall effect was net loss revenue of \$100 billion from 2019-22.

While it is widely recognized that new products and services and more efficient operating models are required to attain the next wave of growth, A&M believes that there is untapped potential in the robust network infrastructures and platforms that already exist within the CSP environment.

To unlock this potential value, CSPs will not rely on their usual playbook to transform themselves this time around. This time, the playbook for change must take into consideration the dynamics of moving towards a portfolio model with scale and change management critical to future success.

Surveying the M&E Landscape: Pay-TV Subscriber Losses Amidst Soaring Demand for Broadband

From 2010-2020, the number of lost Pay-TV subscribers across cable, satellite and telco was in the millions. After decades of growth, CSPs experienced an 8.5 percent decrease in Pay-TV subscribers in 2022. During that 10-year period, Netflix reached 100 million subscribers and it took Disney+ just 16 months to reach that same number of subscribers.

Viewing patterns have also shifted. According to audience measurement firm Nielsen, U.S. TV-viewing time as of May 2023 was led by streaming at 36.4 percent followed by cable at 31.1 percent. In smaller markets where CSPs simply cannot pass along the increased costs of Pay-TV subscriptions to their customers, CSPs are electing to stop offering that component and are, instead, concentrating on offering broadband, telephony and additional services, such as home security and home automation. There may also be additional governmental oversight resulting in consolidation, merger and acquisition and perhaps even setting pricing ceilings. Pure gross margins on broadband services far outweigh those from Pay-TV. At the same time, as consumers continue to shift to streaming services, that, in turn, drives the desire for higher broadband bandwidth capabilities which lends itself to increased relevance for CSP infrastructure.

What External Factors Have Impacted the CSP Industry?

Global events such as the Covid-19 pandemic and the war in Ukraine have created significant demand for network connectivity and security as many firms adopted a hybrid work strategy.

Small and medium businesses continue to look for self-service network solutions. These global and marketplace events have resulted in growth acceleration of network connectivity services. According to Cisco Systems, the global network market is expected to grow at a CAGR of 28.7 percent over the next five years.

The popularity of Netflix and Amazon's Prime Video led the media conglomerates to launch their own streaming services, including Disney+, ESPN+ and Hulu. While these services have some original content, they also provide content that could previously only be found on linear channels. Content distribution feuds and the Disney-Charter carriage disagreement during the start of the 2023 National Football League (NFL) season are likely to occur more frequently as cable operators take a harder stance at their carriage fee structures with content owners.

Highly capitalized organizations also have entered the picture. For example, YouTube's successful bid for NFL Sunday Ticket rights for the 2023 season ended DirecTV's carriage which had begun in 1994. It very well may be the tipping point for how cable, telecommunications and satellite operators define themselves going forward, especially if video via Pay-TV plays a smaller role in their revenue streams and broadband connectivity becomes the focal point of their service offerings.



The consumption of streaming on-demand video is causing major growth in network traffic. From a 2019 peak of 100 million Pay-TV households, according to Statista more than 40 million households will continue to subscribe to some form of Pay-TV through 2027. Kagan predicts that the number of homes with broadband, but without a traditional Pay-TV subscription, will grow from 23.3 million in 2018 to 40.8 million in 2023.*

Further, the increased need for residential bandwidth is being driven by the growth of personal and home device use. The increasing difference between average usage and busiest hour usage is due to primetime viewing. Pay-TV subscriptions are transitioning to data subscriptions.

*https://www.statista.com/statistics/251268/number-of-pay-tv-households-in-the-us/

Factors in Driving Bandwidth Consumption

The Covid-19 pandemic caused a spike in data traffic as people turned to technology for communication, entertainment and work. In the first weeks of March 2020, in-home data usage increased by 18 percent compared to the same period in 2019. Total internet hits surged between 50 percent and 70 percent.

In 2022, global internet bandwidth rose by 28 percent. Total international bandwidth capacity is currently 997 Terabits (Tbps).

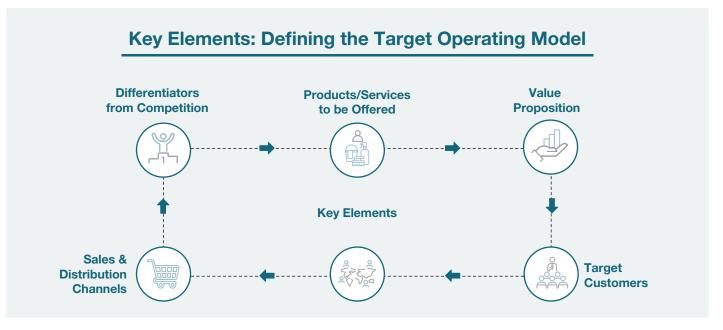
The largest source of internet bandwidth usage comes from video sites, which accounted for 65 percent of all internet traffic in 2022. Streaming, downloading and consuming audio and video content dramatically increases data usage.

How Can A&M Help CSPs Succeed?

A&M's Media & Entertainment practice team consists of proven business, operations and technology leaders who have led significant and lasting communications and media industry transformations. While CSPs are no strangers to competitive battles for the first- and last-mile, this time it's different. Because of the scope of change that is required at this time in the CSP industry's evolution, participants are going to require complex and well-choreographed transformation planning to be successful.

Prior to starting down that path of operating model redesign, defining future target state will ensure alignment across the company's product portfolio and the bold moves required to achieve that strategy. Many underperforming companies that A&M works with simply do not have an unwise strategy. Instead, what A&M most often observes is that there is a sub-optimal way of executing the steps towards achieving that strategy.

What we have learned is that unless the strategy is no longer valid, do not let the strategy discussion become an excuse to delay operational performance improvement. A change of strategy might lead to superior results in five or more years but a change of operating model may lead to significant benefits in one or more years.



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Why CSPs Should Have a Strategy (Not a Pivot)

The CSP industry is entering a new wave of transformation with fundamental implications for all facets of operations. This is not just a pivot towards a new product strategy. Change is not new to the industry. Operators have been reshaping themselves over the past decade by introducing new digital experiences, continuously focusing on operating costs as capital expenditure reflects infrastructure and network build-outs while deploying new technologies. Those CSPs that have successfully navigated these industry evolutions have leaders with bold vision who take an outcome-focused approach to achieving their goals.

Re-inventing and Re-imagining the CSP Model

A&M believes that amidst the rapid changes outlined above, CSPs need to reassess their business models and concentrate on growing and introducing services that maximize and leverage their greatest assets such as:



CSPs must exert efforts on offerings that de-emphasize past offerings which may easily have become market commodities with high levels of competition. Instead, CSPs should concentrate on areas that are surely going to be important in years to come and — this point cannot be overstated — that uniquely correspond to CSP strengths. The focus of those strengths is what needs to change.

Revisiting the Strengths and Differentiators of CSPs

- Network: Have built, maintained and operated robust network infrastructures which are stable, reliable and capable of handling voluminous amounts of network traffic.
- Video: Can sustain high quality video connections supporting 4K High Definition resolution.
- Broadband: Capabilities are significant with Gigabit symmetrical capabilities.
- Customer Knowledge Base: Possess significant data regarding subscriber management, billing, content access history, device usage and preferences in-home and out-of-home.
- Highly Regulated Industry: The industry is mature and regulations benefit the buyer of services by knowing that there is governmental oversight.

What does the future hold for CSPs?

Given the proven year-over-year decline in Pay-TV subscribers, what are some of the general offerings that CSPs are likely to focus on? CSPs cater to distinct customer market segments: Enterprises (i.e., Business-to-Business or "B2B"), Consumers and Business-to-Business-to-Consumer (B2B2C). Each group requires the core components that CSPs possess as their core strengths.



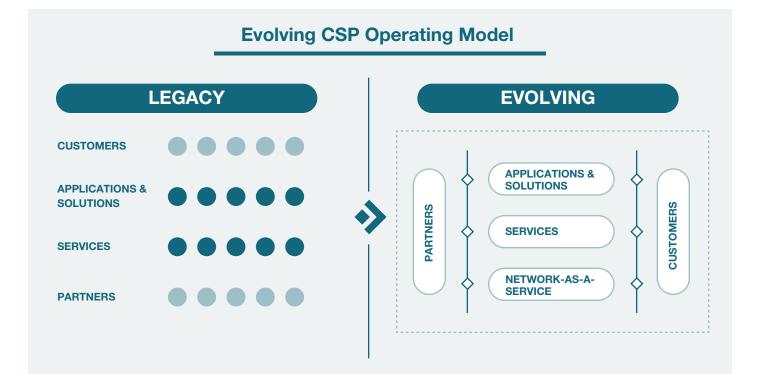
What are the component points that lend themselves to a directionally sound strategy? Normally, discussions of this type start from a technology aspect. Consider the following which, by no means, is an exhaustive list:

- How do enterprises exist today? How are they likely to exist in 10-20 years?
- How critical will "the network" be to their existence?
- What are the socio-economic predicted patterns for the country?
- Where are natural resources and predictable and lower cost utilities located?
- What historical consumer behaviors will continued to be transformed?
- How will medical and social services be delivered?

By starting with macro issues such as those, above, only then can CSPs better evaluate where operations should be located, what solutions will be necessary, not tomorrow or next year, but 10 years from now. And what commonalities will exist that will need varying degrees of their capabilities? For example, eSports Gamers require low latency for better interactivity. If we assume that there will be growth in telemedicine and, indeed, at some point telesurgery, what does that mean for network latency, connectivity and security?

CSPs have a very unique set of capabilities that lend themselves to the evolving, long-term macro trends of societies, in general. Connectivity solutions, data delivery, low latency, security, visibility and reporting are just some of the technology-driven aspects that will be required. Whether a business or an individual, the only difference will be the required scale of services. CSPs have a unique "head-start" in their capacity to re-invent and re-imagine their business models and offerings.

CSPs are evolving and rethinking their business model to address current industry challenges and to enable future growth. To unlock market share, the modern CSP business model is moving toward horizontal operating structures.





Referring to the figure depicting Legacy and Evolving operating models, CSPs are prioritizing collaboration across business functions to deliver high-quality products, services and experiences while managing costs and ensuring compliance with regulations.

CSPs have extensive sets of technologies that can be utilized to further the expansion of B2B offerings for a wide range of industries and sectors. Reliable, high-speed, low latency connectivity, scalable and on-demand edge services, data and AI services and extensive subscriber knowledge and management are key attributes to power the evolution of the CSP industry.

The Future Landscape for CSPs: De-emphasizing the Past and Focusing on the Future

It is certainly conceivable that CSPs will move on from offering consumer-focused Pay-TV packages. Those not vertically integrated will continue to partner with streamers, offering their considerable infrastructure as delivery and viewing platforms. Given the decrease in subscribers and revenue from Pay-TV, it is logical to assume that—over time—Pay-TV will be in the distant rear-view mirror of CSPs.

What, then, are logical areas for focus and growth and for CSPs to pursue charting a future based on their considerable infrastructure capabilities? Some possible approaches include:

- Leverage the capabilities of the considerable network infrastructure, connectivity, bandwidth and security capabilities.
- Leverage the extensive customer knowledge base and subscriber management and billing information.
- Concentration on B2B services for Internet of Things (IoT) deployments for energy and healthcare.
- Provide edge-based infrastructure for low-latency computational requirements for eSports, Gaming and Artificial Intelligence-centric applications for Generative, Modeling and Analysis.
- Enable B2B use of real-time video for enterprise business applications.

Embracing the Connected Network

CSPs are often viewed and judged based on their video offerings that are consumer-centric. In the next reinvention of the CSP industry, all factors point to the prominence of their network capabilities as being indispensable for business growth across a wide variety of industries and sectors. If we consider that virtually every B2B, Machine-to-Machine (M2M) and supply chain has some component of connectivity and analytics and that, increasingly, real-time visualization and analysis are most desirable and in some cases, a strict requirement, it is the CSP industry that has significant attributes to serve these ever burgeoning and growing needs.

These attributes combine to create a connected network which, in turn, becomes the CSP platform. With reference to considerable contributions via TMForum, the Connected Network Platform benefits greatly from:

• **Prioritizing ecosystem partnerships across the value chain:** Interoperability, integration and seamless data and message exchange are integral to the growth of the wider CSP ecosystem.

• Maintaining primary customer relations ownership: Leverage the extensive "last mile" customer knowledge base, subscriber and billing information for customer and product experience. Organize for customer interactions and experiences through feedback loops.

• Instantiating a Composable Component and Solutions Approach: TMForum's Open Digital Architecture (ODA) can be instrumental in the implementation of efficient and cost effective information technology (IT) systems and solutions that reduce complexity of deployment and management.



• Orchestration Services: Pervasive interconnectivity to 'help make the world run better' and service the demands of businesses, governments and consumers who require complex solutions development and orchestration.

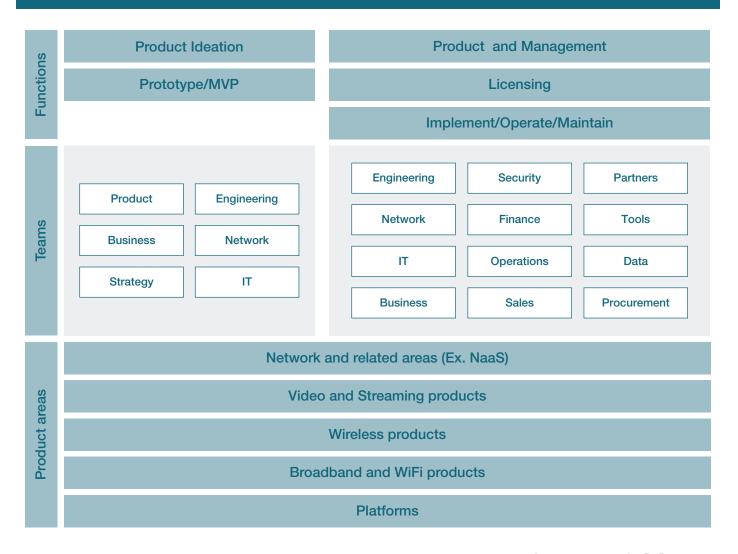
• Scalable and Customizable Networks: Harness the capabilities of considerable network infrastructure, connectivity, bandwidth and security capabilities in a cloud-like approach to scale up or down, define parameters (e.g., QoS) and add functionality (e.g., Generative AI, modeling, analytics).

Case study: A U.S. telecommunications and entertainment conglomerate has transformed from a siloed organization to a model oriented around connectivity products

The telecommunications industry, a cornerstone of modern connectivity, has undergone a profound transformation in recent years. This transformation is not just about the evolution of technology but also the restructuring of companies from siloed organizations into functional models oriented around technology and products. A U.S. based conglomerate recognized the imperative of this strategic shift, recognizing the inflection point as instrumental in ensuring the long-term success and adaptability of broader market evolution.

MNO's can leverage new and existing technologies for product syndication

New / Enhancement of Technology and Services Operating Model for Product Syndication



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As shown in the above figure, adopting a horizontally oriented functional model has allowed the CSP to offset flat residential subscription growth of broadband, while increasing top-line revenue by 4.4 percent for connectivity and platforms as average revenue per user (ARPU) rose. International broadband revenue grew by 26.7 percent annually from 2022 to 2023.

This industry shift necessitates a more agile and adaptable organizational structure. These innovations demand an organizational structure that can swiftly respond to emerging technologies and seamlessly integrate them into products and services. These include:

• **Customer-centric Approach:** In the age of heightened customer expectations and choices, delivering customized solutions and exceptional user experiences has become paramount. A functional model allows telecommunications companies to align their functions directly with customer needs, enhancing their ability to meet evolving demands effectively.

• Partner and Developer Friendly: As connectivity solutions become more cloud-enabled, automated and self-service by design, embedded capabilities are exposed and made accessible through network application programming interfaces (APIs) to business partners and developers, simplifying the CSP ecosystem.

• **Cross-functional Collaboration:** In siloed structures, various departments often operate in isolation, inhibiting collaboration and innovation. The functional model encourages cross-functional teams to work together on product development and service delivery, fostering innovation and creativity.

• Agility and Speed to Market: The telecommunications industry is marked by rapidly changing market conditions and customer preferences. Quick decision-making and responsiveness to market changes are essential. A functional model enables better coordination and faster decision-making, enabling companies to bring new products and services to market swiftly.

• **Competitive Edge:** Intense competition in the telecommunications industry, not only from traditional rivals but also from new entrants and tech giants, requires constant innovation and staying ahead of market trends. A functional model, oriented around technology and products, is crucial for fostering innovation and maintaining a competitive edge.

• **Regulatory Compliance:** The telecommunications sector is subject to rigorous regulations. Compliance with these regulations is essential for avoiding legal and regulatory risks. A functional model helps integrate compliance into all aspects of operations, reducing the company's exposure to legal and regulatory challenges.

Conclusion

The transformation of major telecommunications companies from siloed organizations into functional models oriented around technology and products is a strategic imperative. It aligns the industry with evolving market dynamics, technological advancements and customer expectations, while also enhancing efficiency, collaboration and global adaptability. Embracing this change is crucial for telecommunications companies to secure their competitive advantage and long-term growth in an ever-evolving sector. A&M has significant experience and capabilities pertaining to the CSP industry, ranging from acquisition and process strategy, operational transformation, supply chain analysis and talent and organizational structures.



The A&M M&E team has analyzed, developed and implemented strategies and solutions across a wide variety of fields and applications which include:

Digital Transformation
Technology & Operations Strategy
Media Supply Chain Optimization
Rights, Royalties & IP Management
Digital Commerce & Marketing
Kanagement
M&A Integration
TV & Film Studios
Broadcast & Cable Operators
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