Telco Republic

Whitepaper

Telcos' Tech Makeover: Amplifying Telcos' Techco Transition with Next-Generation Business Support Systems (BSSs)

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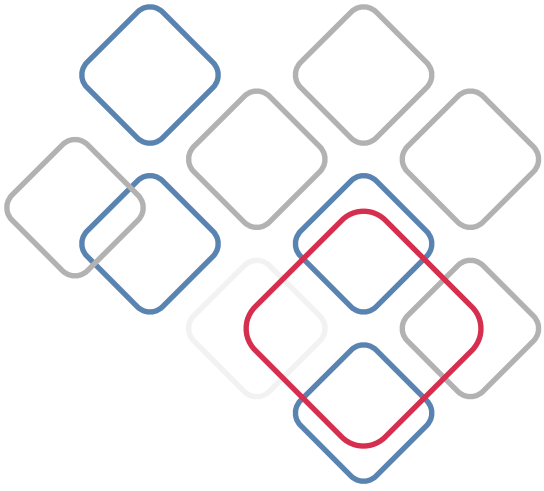

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The transformation required for CSPs to become techcos involves a series of interrelated changes that fundamentally affect their business operations. These changes include the development, deployment and utilization of modern and agile BSSs.

Key Takeaways

- Most existing BSSs lack the necessary capabilities to meet evolving requirements related to 5G, IoT and cross-industry offerings. They are unable to support the pace and scale of new product launches associated with non-connectivity based and partner-centric business models.
- Modern CSP BSSs should be based on an open, standards-based, modular, cloud-native and AI-native foundation, supporting intelligent orchestration, automation and a consolidated BSS. It uses microservices, containerization, multi-cloud adaptiveness and CI/CD.
- Next-gen techco BSSs extend the capabilities of legacy BSSs into business orchestration by incorporating customer engagement as well as channel management across any channel.
    - They combine consumer and B2B2X operations with customer experience management and select OSS capabilities.
    - They allow CSPs to dynamically monetize any service from any customer on any network, whether they are consumers, large enterprises, SMBs, vertical industries, marketplaces or ecosystems.

Recommendations for CSPs

- Conduct a thorough assessment of your current BSSs to determine which where they fall short of supporting your current and future 5G and IoT products and services.
- Plan to migrate your legacy BSSs to a cloud-native, consolidated and agile BSS that allows you to dynamically monetize any service from any customer on any network.
- Redefine the scope of your BSS as a business orchestration system that combines consumer and B2B2X operations with customer experience management as well as select OSS capabilities.
- Select your next-gen BSS based on its modularity, standard compliance and cloud-native and AI-native architecture to enable a step-by-step migration starting with their most urgent needs.
- Ensure that your next-gen BSS comes embedded with AI and genAI capabilities to enhance customer experience and improve your operational efficiency.

Executive Summary

Key Takeaways

- BSS with embedded traditional AI, machine learning (ML) and generative AI (genAI) is becoming crucial due to the need for enhanced customer experience, operational efficiency and the ability to manage complex data from IoT and 5G services. This integration allows for real-time insights, automation and improved decision-making, driving better business outcomes and agility.
- Most CSPs prefer a gradual transition to next-generation BSSs, rather than a wholesale replacement.

Industry Trends: From Telco to Techco

Communications service providers (CSPs) are on a transformation journey as they recognize that their future growth and profits are constrained by a stagnant consumer market. CSPs are seeking to monetize the vast array of opportunities presented by 5G and IoT by expanding beyond the provision of undifferentiated connectivity to consumers and enterprises, including voice, data, messaging, video and value-added services (VAS).

The key requirements for CSPs are to expand their business in the face of commoditized connectivity services and intense competition for new services. They must also leverage new technologies to optimize operational efficiency and retain and attract customers by delivering a highly personalized experience.

Grow the Business

- Capitalize on new digital business models, combining connectivity services, network slicing, edge computing, VAS and partner products and services.
- Expand into new target markets and industry verticals, including consumers, large enterprises, SME, MSMEs and SOHOs.
- Expand core assets with platform services.

Optimize the Business

- Use new delivery models, such as the public cloud, the private cloud and SaaS.
- Improve internal efficiencies by system consolidation and optimization.
- Lower opex and capex.

Enhance the Customer Experience

- Individualize offers based on customer value.
- Provide a consistent user experience across all channels.
- Introduce new services and bundles.
- Orchestrate the customer experience.

To meet these requirements, CSPs are transforming themselves into techcos, becoming business enablers instead of being mere delivery organizations.

This requires achieving greater self-sufficiency by regaining control of core competencies while also venturing into new markets and technologies to leverage opportunities presented by 5G and IoT.

Rather than taking an incremental approach to digital transformation, techcos must reinvent their entire organizational foundation.

Techcos must address the most pressing challenges facing the industry today:

- How to shift from network-based architectures to software-driven, service development architectures.
- How to promptly respond to customer needs by quickly launching and innovating new products, overcoming long development cycles.
- How to migrate legacy infrastructure to the public, private or hybrid cloud.
- How to reinvent their organizational setup to foster internal innovation and develop the necessary skills.
- How to manage and orchestrate digital value chains instead of relying on a small number of large suppliers.

Evolving user requirements and the emergence of new target markets will have a significant impact the services CSPs offer to both consumers and enterprises, as well as their ability to expand into vertical industries.

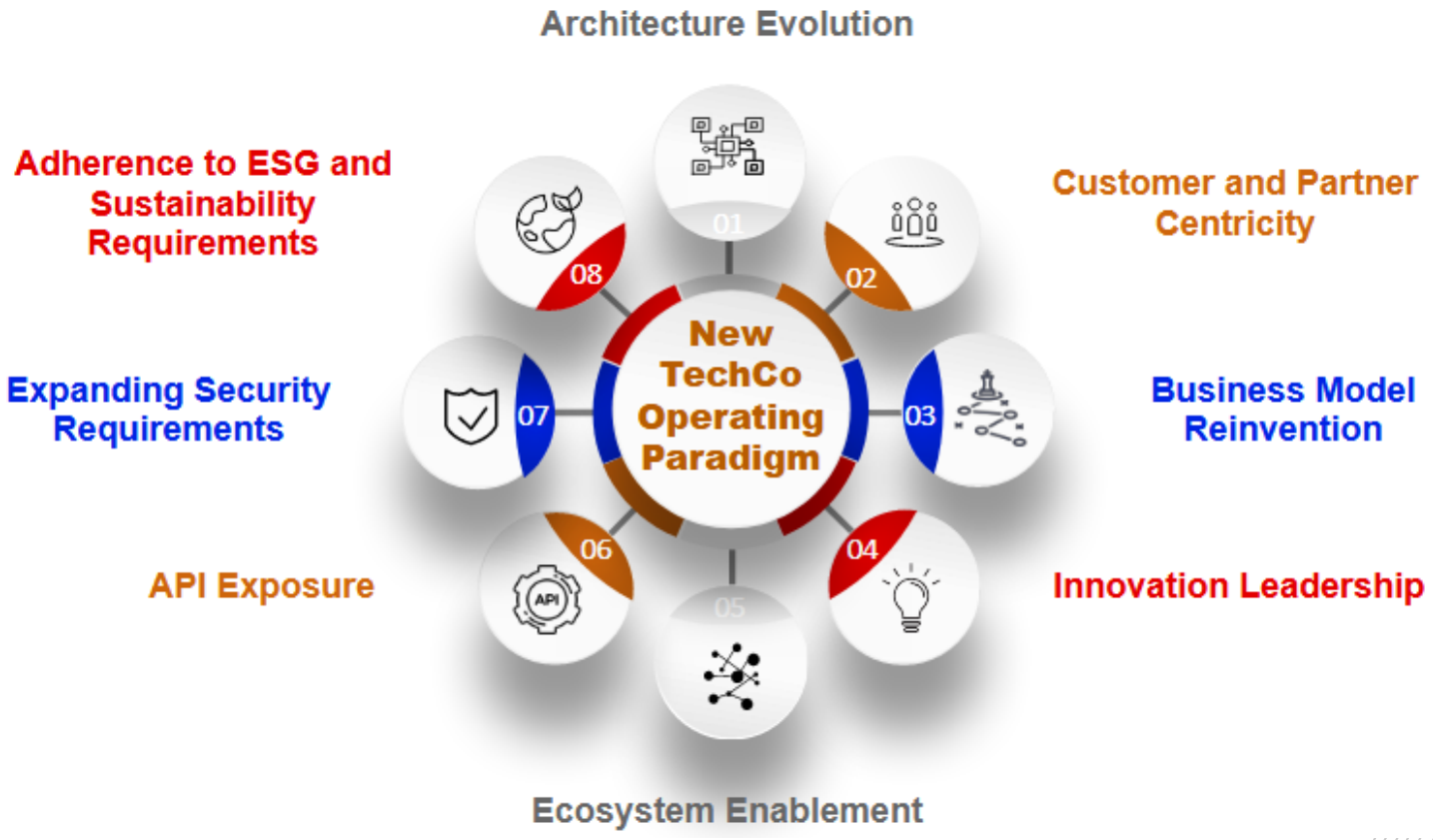
To achieve this, CSPs should consider establishing and enabling digital ecosystems and marketplaces that allow them to combine and bundle their services with those of third parties.

Rather than taking an incremental approach to digital transformation, techcos must reinvent their entire organizational foundation.

The New Techco Operating Paradigm

The transformation required for CSPs to become techcos involves a series of interrelated changes that fundamentally affect their business operations. These changes include the development, deployment and utilization of modern and agile BSSs.

Figure 1. The New Techco Operating Paradigm



Source: Telco Republic, 2024

Architecture Evolution

A modern CSP BSS should be based on an open, standards-based, modular, cloud-native and AI-native foundation, supporting intelligent orchestration, automation and a consolidated BSS. It uses microservices, containerization, multi-cloud adaptiveness and CI/CD.

Customer and Partner Centricity

CSPs are faced with the challenging task of launching hundreds or thousands of new cognitive, transactional, interaction-based and event-driven service offerings each year.

They must collaborate with customers and partners to co-create these services and experiment with new bundles and pricing schemes that can adapt quickly to changes in customer demands and the competitive landscape.

Business Model Reinvention

CSPs must become agile, DevOps-governed software development companies that excel in developing or co-developing their own code to effectively expand their focus from the consumer to the B2B segment. The use of low-code/no-code platforms, which employ visual tools to map out business processes and rules, can play a significant role in this transformation.

Low- and no-code platforms facilitate collaboration between IT and business departments, including sales and marketing, by minimizing the amount of coding required to implement or change functionality. This will result in more efficient software changes without the need to involve IT or the software vendor.

Innovation Leadership

CSPs must develop specialist knowledge and skills in cloud, automation and orchestration, as well as artificial intelligence and ML technologies informed by industry best practices, such as CI/CD/CT and DevSecOps.

Ecosystem Enablement

CSPs must orchestrate a new platform-as-a-service business model that spans various different industries, partners, ecosystems and value chains. In the future, enterprises and SMBs will increasingly source 5G and IoT-enabled solutions through digital B2B marketplaces rather than through one-on-one deals.

CSPs can leverage their incumbent position as connectivity providers by combining their own services portfolios with third-party solutions to deepen the stickiness of their engagements with enterprises and SMBs.

API Exposure

The implementation of open APIs has the potential to significantly reduce the complexity of back-office operations and to lower the cost of integrating BSSs with other IT systems and CSP networks.

Open APIs reduce the time-to-market for new services by ensuring plug-and-play interoperability. Another advantage of API exposure is that its allows CSPs to pursue a platform and ecosystem model by exposing BSS capabilities to partners.

Expanding Security Requirements

The expansion of CSPs into digital ecosystems and B2B2X, as well as the launch of 5G, network virtualization and hybrid multi-cloud computing, has led to an increase in security threats. Consequently, CSPs are now required to implement measures to secure a diverse range of systems and services, including OSSs and BSSs, web front-ends, IT services, exposed APIs, edge deployments, CDNs and cloud-based data lakes.

Cloud-native functions consisting of small decomposed microservices present a challenge for CSPs in detecting vulnerabilities. The responsibility for security has shifted from networking and infrastructure security – CISOs, CSOs, heads of SecOps – to line-of-business leaders and developers.

Adherence to ESG and Sustainability Requirements

CSPs are facing mounting pressure from a range of stakeholders, including customers, regulators, employees and investors, to enhance their sustainability efforts by reducing carbon emissions.

Currently, over 60 CSPs, representing over 60% of the global industry revenue, have committed to a science-based target to significantly reduce their direct and indirect emissions by 2030, as part of the GSMA Climate Action Taskforce.[1] The impact of ESG on BSS includes various measures such as:

- **Optimizing Energy Consumption**
  AI models predict and adjust the energy usage of network components, ensuring they operate at peak efficiency.
- **Smart Resource Allocation**
  Dynamically allocating network resources based on demand, AI reduces wasteful energy consumption.
- **Peer-to-Peer Energy Exchange**
  Energy transactions with smart contracts with partners and large B2B customers.
- **Network Design and Planning**
  AI helps design more efficient network architectures that consume less energy and require fewer resources.
- **Predictive Maintenance**
  GenAI proactively identifies potential equipment failures, significantly reducing the need for frequent maintenance dispatches.
- **Sustainability Reporting**
  Collecting, monitoring and reporting on sustainable metrics, helping CSPs to track their sustainability targets achievement.

[1] GSMA, *Mobile Net Zero State of the Industry on Climate Action 2023*.

5G and IoT Raise the Bar for BSS

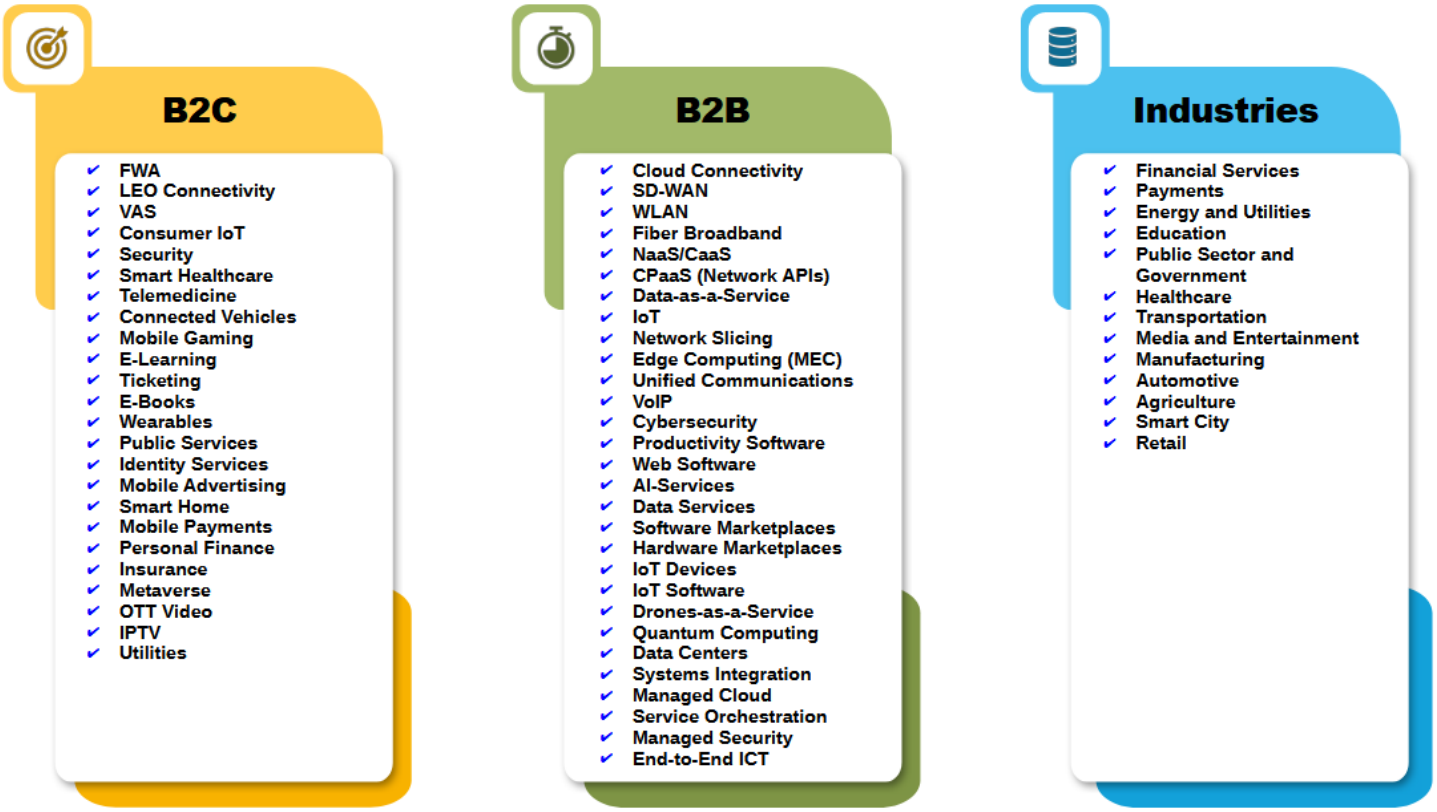
The transition from telco to techco is being driven by the emergence of 5G and IoT. These technologies bring about **numerous new use cases for both consumers and enterprises**, as illustrated in Figure 2.

Most existing BSSs lack the necessary capabilities to meet these evolving requirements. It is not uncommon for CSPs to have multiple BSSs, each designed to support specific services or individual businesses. Legacy BSSs often accrue technical debt over time in order to maintain operations.

CSPs must constantly innovate and experiment by introducing new products and services to maintain their competitive edge. Yet, most current legacy BSSs are unable to support the pace and scale of new product launches.

While legacy BSSs can support the launch of five to ten products per year, innovative CSPs are targeting hundreds or thousands of new product launches.

Figure 2. 5G Use Cases



Source: Telco Republic, 2024

BSS Challenges for Techcos

CSPs are challenged to capitalize on the opportunities presented by 5G and IoT. Their existing BSSs lack the flexibility required to effectively monetize these opportunities. The following are some of the main challenges that CSPs are currently facing.

Legacy Systems, Technical Debt and System Sprawl

Over time, CSPs have accumulated dozens or hundreds of separate BSS. These systems tie up resources that could be better used to drive growth and innovate in new products and customer relations.

The best-of-breed strategy of the last decade has resulted in multiple parallel BSSs, each supporting different products, services, lines of business or enterprise clients.

CSPs' tendency to maintain multiple BSSs can impede BSS modernization and lead to higher support and maintenance costs relative to investment in innovation. This may be attributed to a general culture of risk avoidance and a belief in the sunk cost fallacy.

Lack of Integration

The process of manually integrating BSSs with OSS and other IT systems can be quite time-consuming and labor-intensive, which in turn can lead to a high fallout rate and customer churn.

Islands of Automation

While CSPs have made progress in automating their operations through proprietary interfaces and robotic process automation (RPA), this automation is currently limited to their respective BSS rather than enterprise-wide automation. As a result, customer self-care through digital channels is not yet fully supported and manual intervention, including expensive customer service calls, is still required.

No End-to-end Customer Visibility

The existence of multiple, dispersed product and LOB-specific BSSs can make it challenging to obtain a 360-degree view of each customer's experience across diverse products and channels, especially if customers subscribe to multiple services.

Unable to Support Business Model Innovation

The slow launch of new products and a one-size-fits-all go-to-market strategy prevents the ability to provide granular, needs-based account management and customer support.

Poor Data Quality

Challenges related to data quality and disconnected BSSs can impede the ability to provide a seamless customer experience and personalized customer interaction. This can make it challenging to monetize 5G and IoT services, offer dynamic bundles and subscriptions that cater to individual customer needs and increase average revenue per subscriber (ARPU).

Suboptimal data quality can impede CSPs' ability to effectively leverage analytics, ML and AI to transform their business.

Limited Support for Partner Ecosystems and Digital Marketplaces

The CSP partner ecosystem is currently limited to CSPs' own services and reselling partner services. This is due to the manual onboarding and settlement processes required for users and partners. Therefore, CSPs are unable to co-invent with partners and customers, resulting in missed opportunities.

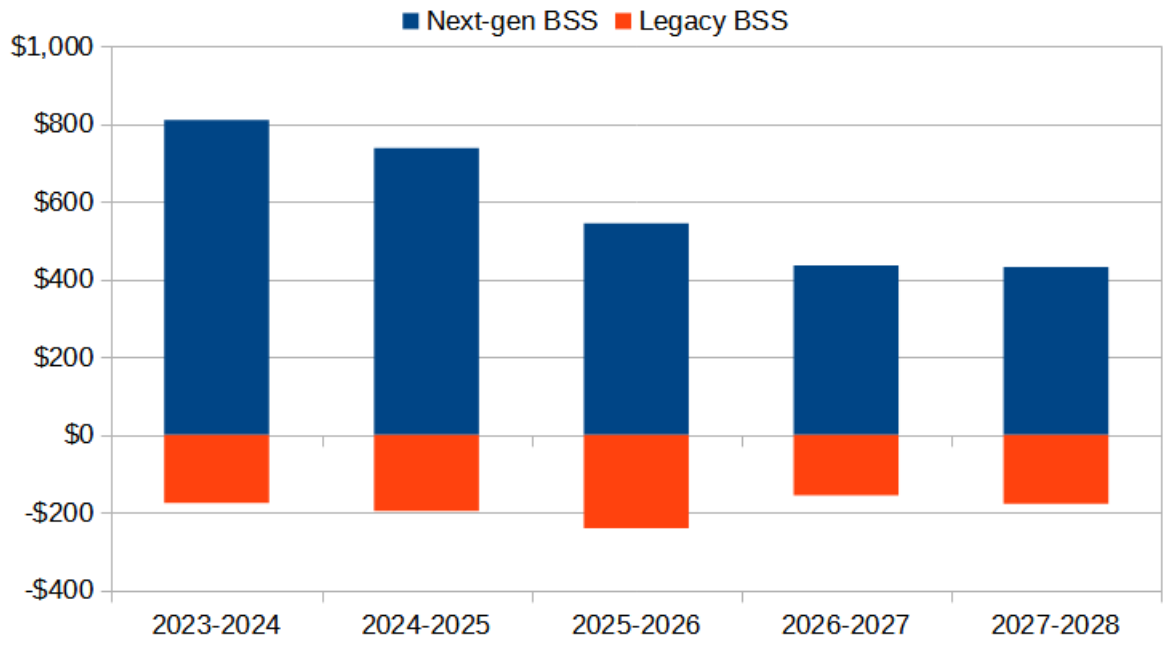
Market Opportunity: From Legacy BSS to Next-Gen Techco BSS

CSPs are aware of the constraints of their current BSSs and are exploring the possibility of transitioning them to next-gen techco BSSs.

Most CSPs prefer a gradual transition rather than a wholesale replacement. In order to facilitate this approach, next-gen BSSs should possess a flexible and modular architecture based on microservices and DevOps.

According to Telco Republic's estimates, CSPs are projected to increase their global investment in next-gen BSS by $3 billion from 2023 to 2028, while decreasing their spending on legacy BSS by almost $1 billion, as illustrated in Figure 3. It is expected that next-gen BSS will experience a compound annual growth rate (CAGR) of 6.1% during this period, in contrast to a CAGR of -1.1% for legacy BSS.

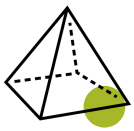
Figure 3. Incremental New Next-Gen and Legacy BSS Spending, Worldwide, 2023-2028 (in US$ Million)



Source: Telco Republic, 2024

The 16 Traits of a Next-Gen Techco BSS

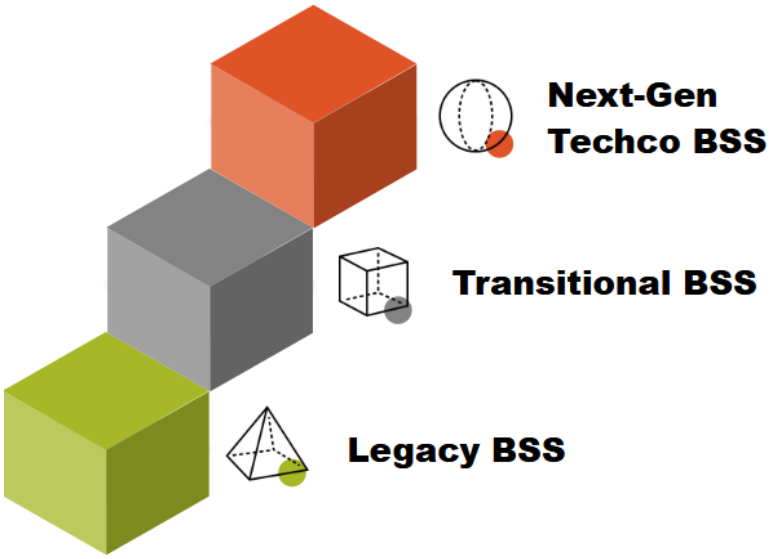
Current BSSs only offer partial support for the demands of 5G and IoT services. As a result, most CSPs are utilizing features from legacy BSS and transitional BSSs as illustrated in Figure 4. As they transition to techcos, CSPs must also transition their current BSSs to next-gen techco BSSs.



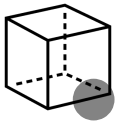
Legacy BSSs

Legacy BSSs are designed to optimize revenue management by leveraging capabilities for billing, rating, charging, invoicing and payment for traditional connectivity services and VAS. Legacy BSSs are stable monoliths, purpose-built for specific services, lines of business or customers. They enable CSPs to launch and support a limited number of new products and services.

Figure 4. From Legacy to Next-Gen BSS



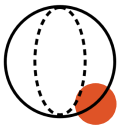
Source: Telco Republic, 2024



Transitional BSSs

Transitional BSSs extend the scope of legacy BSSs to encompass select customer-facing capabilities, such as contract management, product management, revenue management, industry management and system management. They enable CSPs to monetize connectivity services, VAS and third-party services, while taking into account customer preferences.

Transitional BSSs accomplish this through the use of islands of automation, proprietary APIs and partial digitalization. They tend to be grafted onto legacy BSSs or operate alongside them, which may require manual customization and integration. This can result in additional technical debt for the legacy BSSs.



Next-Gen Techco BSSs

Next-gen techco BSSs extend the capabilities of legacy and transitional BSSs into business orchestration by incorporating customer engagement as well as channel management across any channel.

These platforms combine consumer and B2B2X operations with customer experience management as well as select OSS capabilities.

They are agile platforms based on a cloud-native and AI-native, standard-compliant and modular architecture.

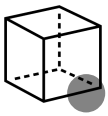
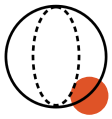
They allow CSPs to dynamically monetize any service from any customer on any network, whether they are consumers, large enterprises, SMBs, vertical industries, marketplaces or ecosystems.

Next-gen techco BSSs empower business leaders and marketing specialists to operate independently of IT experts. Non-technical staff can launch new products and services in a matter of hours, using low-code and no-code interfaces.

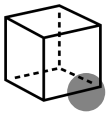
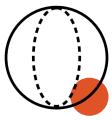
Next-gen techco BSSs provide hyper-individualized services to both consumer and business users not only through any channel but through the optimal channel. Users and sales reps can use zero-touch, CPQ-assisted account management, enabling them to configure the best options based on individual needs with the assistance of AI and ML.

CSPs may assess their position on the spectrum from legacy to next-generation BSS by comparing their current capabilities to those listed in Table 1.

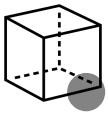
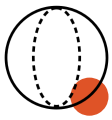
Table 1. Next-Gen Techco BSS Maturity Matrix

Capabilities	Legacy BSS	Transitional BSS	Next-Gen Techco BSS
1 **Scope**	✔ Billing ✔ Rating ✔ Charging ✔ Invoicing ✔ Payment	✔ Self-service ✔ Web portal ✔ Policy management ✔ Order management ✔ Enterprise product catalog (EPC) ✔ Revenue assurance	✔ Customer experience management ✔ Ecosystem management ✔ CPQ ✔ Loyalty management ✔ Chatbots ✔ Decisioning engines ✔ Customer journey management ✔ Product lifecycle management
2 **Monetization**	✔ Separate LOBs ✔ Own telecom services ✔ Pricing based on lists	✔ Converged LOBs ✔ Own telecom services ✔ Partner services resale ✔ Pricing based on lists and simple discounts	✔ Dynamic, multi-monetization: Any service, any customer, any network ✔ Real-time revenue management ✔ Partner and party management ✔ Pricing based on usage, volume, sessions, time of day, traffic, location, device type, number of devices, QoS/SLA guarantees, network slice, uplink/downlink speed, latency, etc.
3 **Architecture**	✔ Monolithic ✔ Mainframe-based ✔ Service and use case specific ✔ Overprovisioning	✔ Convergent ✔ Best-of-breed ✔ Mix of on-premise, hybrid cloud, public cloud ✔ Service and use case specific ✔ Overprovisioning	✔ Modular, componentized, integrated ✔ Microservices and DevOps-based ✔ Cloud-native ✔ Any service, any use case ✔ Dynamic scaling combined with DevOps
4 **Process Automation**	✔ Manual process management ✔ Frequent order fallout	✔ Order automation ✔ Digital storefronts	✔ One-click sales-to-order-to-cash automation

Capabilities	Legacy BSS	Transitional BSS	Next-Gen Techco BSS
5 **Integrations**	✔ Proprietary ✔ Hard coded ✔ Complex, expensive and time consuming	✔ Proprietary APIs ✔ Complex, expensive and time consuming	✔ Standards compliant ✔ Well-documented open APIs
6 **Customization**	✔ Hard coded ✔ Manual ✔ Labor intensive ✔ Led by IT department	✔ Customized ✔ Manual ✔ Labor intensive ✔ Led by IT department and suppliers	✔ Off-the-shelf ✔ Configuration only ✔ Low code/no code ✔ Quick changes ✔ Led by functional teams, such as marketing or business
7 **Delivery Method**	✔ On-premise ✔ License-based	✔ Managed service ✔ Outsourced ✔ Private cloud ✔ License-based	✔ Multi-cloud ✔ Usage-based ✔ Value-based
8 **Time-to-Market**	✔ 6-8 months ✔ 0-5 new products and services per year	✔ 2-8 weeks ✔ 6-10 new products and services per year	✔ Hours ✔ 10s to 1,000s of new products and services per year
9 **Sales Approach**	✔ Undifferentiated ✔ Targeting individuals and enterprises ✔ Pre-defined solutions	✔ Semi-differentiated ✔ Targeting individuals, households, large enterprises, SMBs based on value, geography, behavior, firmography or demography ✔ Limited bundling options	✔ Needs-based ✔ Guided recommendations ✔ Targeting individual requirements, customer segments, vertical industries ✔ Infinite bundling options based on quality, brand perception, customer service, collaboration and pricing ✔ Dynamic bundling

Capabilities		Legacy BSS	Transitional BSS	Next-Gen Techco BSS
10	**Account Management**	✔ Manual ✔ Spreadsheet-based	✔ Semi-automatic ✔ Pre-defined templates ✔ Ad-hoc adjustments ✔ Self-design and configuration	✔ Zero-touch ✔ CPQ assistance ✔ Automated service configuration and purchasing ✔ Custom discounts ✔ Dynamic, real-time promotions ✔ Account-based promotions
11	**Ecosystem Management**	✔ Walled garden	✔ Digital storefronts	✔ Open ecosystem ✔ Co-creation wit customers and partners zero-touch partner onboarding ✔ Real-time settlements
12	**Digital Marketplaces**	✔ Web storefront ✔ Own solutions and services	✔ Online portal ✔ Resale of partner solutions and services	✔ One-click purchasing ✔ Zero-touch partner onboarding ✔ Dynamic configuration of bundles
13	**Artificial Intelligence (AI) and Machine Learning (ML)**	✔ Basic analytics and dashboards	✔ AI and ML optimized for point solution ✔ Bolted onto existing solutions	✔ AI and ML optimized for corporate strategy ✔ Embedded in enterprise architecture
14	**Security and Privacy**	✔ Recurring security breaches ✔ Recurring outages	✔ Occasional security breaches ✔ Occasional outages	✔ Zero trust security ✔ Multi-cloud security
15	**User Focus**	✔ Consumer focused ✔ Customized for individual enterprises or enterprise divisions	✔ Consumer and household focused ✔ Simple B2B capabilities	✔ B2B2X capabilities ✔ Combines wholesale, resale and B2B operations
16	**Personalization**	✔ Generic one-size-fits-all ✔ Product specific ✔ Multiple incoherent experiences	✔ Personalized ✔ Multichannel ✔ Multiplay ✔ Predefined product offers	✔ Hyper-individualized ✔ Optichannel ✔ Zero-touch ordering ✔ Recommendation engines ✔ Flexible offer configuration

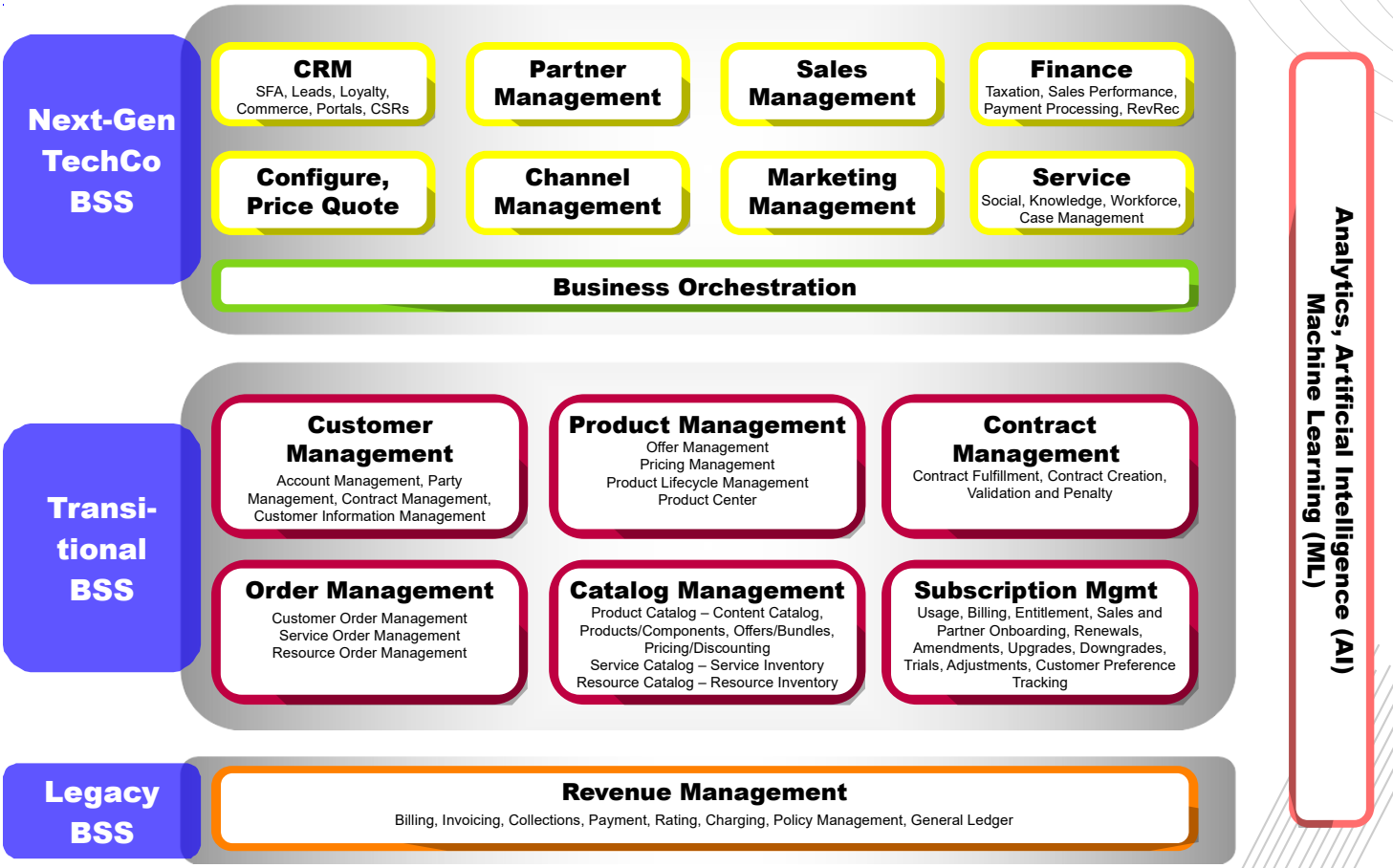
Source: Telco Republic, 2024

Next-Gen Techco BSS Reference Architecture

A next-gen techco BSS adheres to a cloud and AI-native, component-based architecture with open APIs to integrate with third-party systems, as shown in Figure 5. It is uses microservices, containerization, multi-cloud adaptiveness and CI/CD.

This architecture allows CSPs to gradually transition to a next-gen architecture, avoiding the need to replace all BSS components simultaneously, thus minimizing disruption to their current business operations.

Figure 5: Next-Gen Techco BSS Reference Architecture



Source: Telco Republic, 2024

Key Innovations in Next-Gen Techco BSS

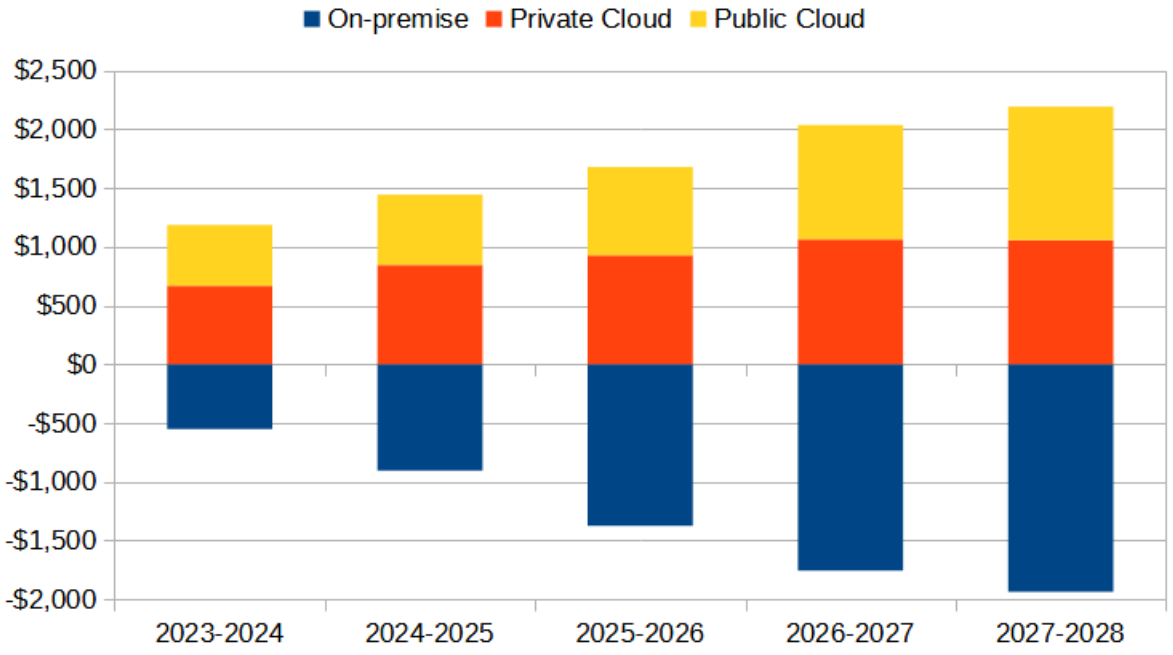
Next-gen techco BSS stands to benefit from a number of innovations that go beyond the current mainstream BSS technologies. Telco Republic has identified four key innovations that are of particular importance for CSPs who are upgrading their legacy and transitional BSSs.

Adopting the Public and Private Cloud

Customer-centric innovation requires BSS architectures that are cloud-native, microservices-based and metadata-driven. These architectures enable developers to build loosely coupled systems that are scalable, fault-tolerant, observable and easy to manage in the public, private or hybrid cloud. By connecting disparate systems, minimizing downtime and allowing CSPs to launch new services on demand, these architectures can help ensure a seamless customer experience.

According to Telco Republic, CSPs are projected to increase their global investment in BSS in the private and public cloud by $4.5 billion and $4.0 billion respectively between 2023 and 2028, while reducing their spending on on-premise BSS by $6.5 billion, as illustrated in Figure 6. It is expected that private and public cloud spending will experience a CAGR of 8.1% and 21.7% during this period, in contrast to a CAGR of negative 11.1% for on-premise BSS.

Figure 6: Incremental New BSS On-Premise and Cloud Spending, Worldwide, 2023-2028 (in US$ Million)



Source: Telco Republic, 2024

2 Becoming an AI-Native Organization

AI and ML can assist CSPs in addressing the three main challenges they face: Expanding their business, streamlining their operations and enhancing the customer experience. Traditional AI, genAI and ML can enhance both the internal operations of CSPs and their customer-facing solutions, thereby increasing revenue, efficiency and customer satisfaction.

To achieve optimal results, the next-gen BSS architecture should prioritize AI-native capabilities rather than simply integrating AI capabilities into existing BSS modules. It is essential that all BSS components are able to communicate effectively with one another.

An AI-native BSS is built with a data-centric architecture that utilizes intent and event-driven logic, along with a hierarchy of business rules. By minimizing the need for manual intervention, AI-native BSSs can optimize business outcomes, even in the most complex of scenarios.

From an **internal** perspective, BSS stands to gain considerably from the implementation of AI and ML technologies, which will allow it to integrate data sources from a multitude of siloed applications.

By leveraging AI and ML, CSPs can gain actionable insights and make more effective decisions, ultimately leading to improved business outcomes. These include intelligent customer segmentation, usage analytics, customer analysis, customer yield optimization, price optimization, churn prediction, customer retention, invoice anomaly detection, fraud and anomaly detection, revenue and cost predictions, autonomous sales automation, product development, lead-to-quote-to-order-to-fulfill automation, simulations, process re-engineering, process automation, customer experience management and quality improvements.

From an **external** perspective, AI and ML have the potential to enhance hyper-individualization. The latest developments in generative AI can streamline processes by enabling customer interaction analysis, sentiment analysis, the provision of personal digital assistants, decision support (such as next-best action recommendations), multilingual chatbots, cost deflection via enhanced self-service, seamless ordering and targeted, personalized marketing campaigns.

Managing the Ecosystem

Digital marketplaces and ecosystems present CSPs with a new opportunity to enter the enterprise and SMB market.

Enterprises and SMBs are investing in 5G and IoT for a variety of purposes, including industrial automation, robotics, drones, asset tracking, security, autonomous vehicles, artificial reality/virtual reality (AR/VR), connected health, smart agriculture, smart manufacturing, connected mobility, smart cities, smart grid, smart factories, telematics, fleet management, device-as-a-service, smart metering, private cloud, data analytics, quantum computing and other applications.

Enterprises and SMBs will likely source these solutions primarily through digital B2B marketplaces, rather than through one-on-one deals. CSPs can leverage their incumbent position as connectivity providers to support enterprises and SMBs with their 5G and IoT solution requirements.

CSPs have the opportunity to increase their revenue by receiving a percentage from the third-party non-connectivity services they manage and orchestrate. Additionally, they can enhance their product and service offerings by combining their own solutions with third-party offerings, which can strengthen their relationships with enterprises and SMBs.

CSPs can differentiate themselves by creating marketplaces that cater to the unique industry-specific workflows of enterprises and SMBs.

By managing these digital marketplaces, CSPs can optimize the fast-growing number of use cases associated with 5G and IoT, as well as the dynamic and changing ecosystem of suppliers that support these use cases.

A next-generation BSS can empower CSPs to offer tailored pricing models that align with the specific needs of both enterprise and SMBs. These models can be based on a number of parameters, including usage, volume, sessions, time of day, traffic, location, device type, number of devices, QoS/SLA guarantees, network slice, uplink/downlink speed and latency.

4 Unlocking the B2B2X Potential

CSPs can generate significant revenues by enabling connections between enterprises and their end users (B2B2X). CSPs are focusing on the enterprise opportunity to drive new revenues, with B2B revenues currently representing on average only around 30% of their revenues. The value and growth of B2B revenues varies significantly between CSPs, with some generating more than 40% of their total revenues from this source, while others generate less than 10%.

It is important for CSPs to monetize long-tail services by creating and managing digital ecosystems with agility, flexibility and speed, especially when extracting value from 5G and IoT-enabled intangible digital assets.

Utilizing their current BSS is not the most effective way to engage with enterprises and SMBs, as the opportunities presented by 5G differ significantly from those of previous generations.

In the 3G and 4G era, CSPs operated in a closed environment, converting physical assets into connectivity and value-added services. In addition, they collaborated with a limited number of partner solutions.

5G and IoT are transforming the way CSPs approach their business, particularly in terms of creating, designing and delivering services for enterprises, SMBs and consumers. To meet the needs of enterprise and SMB customers, CSPs must effectively combine, reconfigure and manage a growing number of digital and physical products and services from both their own portfolio and third-party suppliers.

In a B2B2X scenario, a next-gen techco BSS should support any type of network, whether it is public or private, including 5G, edge computing, cloud or Wi-Fi. The system should also be able to support real-time and on-demand services, provide dynamic, event-based charging and pricing for usage, service quality, or location, device-based services, network slicing and other features.

A next-gen BSS should enable bundles of multidimensional products and services across various industries, digital value chains and ecosystems, while accommodating industry-specific monetization, such as connected cars, smart home devices and other vertical solutions.

AI-driven CPQ systems, alongside robust product management and enterprise product catalogs (EPCs), are essential for multi-vertical monetization in a vendor-agnostic environment.

These technologies streamline complex sales processes across multiple industries by automating product configuration, pricing and quoting, which increases operational efficiency, reduces errors and ensures consistent, accurate and rapid product configuration and pricing.

They enable organizations to quickly respond to diverse market demands, optimize product offerings and deliver personalized customer experiences while maintaining a competitive edge across industries.

In a vendor-agnostic scenario, AI increases flexibility and interoperability, allowing companies to quickly adapt to changing market demands without being tied to specific vendors.

Vendor Spotlight: Netcracker Technology

Netcracker addresses all the requirements of a next-generation techco BSS, for consumers, enterprises and digital ecosystems in a variety of B2B2X scenarios and business models. Its key functions include the following:

- **Customer Management**: Channel management, customer journey management, sales management.
- **Digital BSS**: Product management, customer management, partner management, sales management, revenue management.
- **Cloud and Analytics**: Cloud platform, integration and API management, advanced analytics and partner management

Netcracker differentiates itself as follows:

Netcracker's **Generative AI solution** for telecom demonstrates the company's innovation leadership position.

- **A mature multi-cloud strategy**. Its comprehensive deployments with major hyperscalers position the company at the forefront of the fast-growing market for OSS/BSS cloud service delivery, including PaaS and SaaS in B2B2X scenarios.
- **A complete best-of-breed solution portfolio coupled with transformation leadership capabilities**, supported by a strong professional services methodology, as well as operational KPIs suited for digital business and enterprise service delivery scenarios.
- **The ability to support multi-domain and multi-technology orchestration scenarios** across all layers of a CSP's (hybrid) infrastructure, from the core and 5G to the edge.

For details see: ***Disrupter Quintant for Next-Generation Telecom Operations and Business Support Systems (NG-TOBS), 2023***.

About Telco Republic

We are the go-to, thought-provoking market research and advisory firm for the new telecom software market.

Our mission is to track ongoing disruption and innovation related to telecommunications business and operations.

As a boutique firm we focus specifically on emerging management systems and applications that allow operationalization and monetization of emerging technologies, operating models and market value creation ecosystems.

- We advise technology vendors on their strategic positioning and messaging. This includes innovation start-ups.
- We advise communications service providers on their strategic purchasing decisions.
- We advise investor clients regarding their strategic investment decisions.

Our Commitment

Within three months, we can help you define a new strategic technology vision and guide you on initial execution of this vision.

We provide rigorous, in-depth benchmarking analysis of the players in this market. Our services center on rigorous, well-vetted market ranking & capability assessments, based on a proven, fact-based rating methodology of respective companies in a given market. In this context, we advise technology vendors on their strategic positioning and messaging, and we advise communications service providers regarding their strategic purchasing decision making.

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