WHITE PAPER

From Telco to Techco

The Imperatives, How Network Observability Can Help

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EXECUTIVE SUMMARY

Today's telecommunications firms (telcos) are in the midst of significant disruption and transition. While the options and opportunities are numerous, one thing is clear: Sticking with the same services and legacy monitoring tools is a recipe for failure, now and over the long term. This paper offers a look at a key journey telcos have embarked upon: transforming into technology companies. It outlines why telcos have had to make this move, and it reveals why establishing true network observability is now a must in order to make this transformation a successful one.

INTRODUCTION: TELCOS AT A CROSSROADS

Today, the telecommunication industry stands at a critical inflection point. Telcos face structural challenges that demand fundamental transformation. Here are just a few key factors that are fueling the need for change:

- **Revenues from core connectivity services are stagnating**. Telcos' traditional services, including voice, data, and television, have grown highly commoditized, with pricing under constant pressure. As a result, revenue per user is typically either flat or declining. While sales volumes from these services may be high, margins definitely aren't. These existing services remain vital, but they're not sufficient to fuel or sustain a telco's growth.
- **Competition is intensifying**. The reality for most telcos is that they're operating in markets with already high market penetration and tougher competition. Increasingly, these firms are facing intensifying competition, not from incumbents, but from large cloud service providers, like Amazon, Google, and Microsoft—companies often referred to as hyperscalers. Every day it seems, these hyperscalers are offering more services to enterprises, including cloud connectivity, edge computing, and network functions as a service. In the process, they're beginning to cut telcos out of the value chain.
- **Market demands are shifting**. As enterprises and government agencies pursue their digital transformation initiatives, their needs are fundamentally changing. Today, teams in many organizations are seeking specific, industry-focused digital services and solutions. This is particularly true for businesses in industries like healthcare, finance, and manufacturing. Organizations need compliant, high-performance platforms that offer an end-to-end solution to their business problems.

In response to these changes, telcos need to transform, moving beyond their traditional role of communication service providers and instead become technology-enabled service providers. They must evolve from commodity providers of connectivity to delivering secure, data-driven, and tech-enabled services. In short, they need to move from being telcos to technology companies (techcos).

ELEMENTS OF THE TELCO-TO-TECHCO TRANSFORMATION

The telco-to-techco transformation is a broad and all-encompassing one. Here are a few of the aspects of this evolution:

- **Digital transformation**. Just like the enterprises they serve, telcos need to embrace digital transformation. For telcos, this means moving from being infrastructure managers to digital solution providers. To make this move, telcos need to modernize legacy systems, adopt cloud-native architectures and agile methodologies, and foster a culture of innovation so they can keep pace with rapid technological evolution. In addition, they must invest in R&D to facilitate the shift to data-driven, software-based business models.
- **Diversification into tech services**. Telcos should expand beyond their core business of providing connectivity and enter new areas, such as enterprise IT services, cloud computing, IoT, AI, and cyber security. This will require investments in advanced technologies and effective alignment with digital platforms.

- **Move to cloud and edge computing**. The advancements delivered through the emergence of 5G networks, edge computing, and other innovations represent key enablers for telcos. In fact, the shift to 5G isn't just a technology upgrade; it lays a foundation for the techco model. 5G enables telcos to establish new business models like network slicing, private networks, industry-specific, low-latency apps, and more.
- **Partnerships and ecosystem plays**. Many telcos will gain a range of advantages by collaborating with cloud providers, software companies, and other tech players. This enables firms to leverage complementary strengths. In addition, telcos can expand their ecosystem presence and deliver enhanced customer value by promoting interoperability through the use of open standards and APIs.
- **Customer experience and personalization**. To compete with the large tech companies, telcos need to focus on improving customer experiences, particularly through enhanced personalization. This will place a premium on enhancing data analytics, which can play an integral role in the identification, optimization, and delivery of new service offerings that are tightly aligned with the requirements and preferences of customers.

PHASES OF TRANSFORMATION

The telco-to-techco transformation is multi-faceted, and will progress across three key phases:

Phase 1. Build a Digital Foundation

Telcos need to make the shift toward cloud-native computing and software-defined networking. Through partnerships with hyperscalers, integrators, and platform providers, telcos can be optimally prepared for what's coming next.

Enhanced observability enables teams to leverage service level monitoring, basic experience data, and centralized visibility across hybrid networks. These organizations also need to embed AI and automation into network operations. These innovations help set the stage for agility, flexibility, and innovation. Today, most telcos are well on their way to building this foundation.

Phase 2. New Market Expansion

In this phase, transformation accelerates. Telcos start to become techcos, offering services like managed security, private 5G, IoT, and industry-specific solutions. At this phase, firms can introduce various service tiers that offer increasing levels of value.

Observability becomes outcomes focused at this stage. Network operations teams can track and optimize key user-experience KPIs. In software-defined environments, teams can track underlay and overlay performance in a correlated fashion.

At this phase, AI and closed-loop automation support proactive and predictive network management. In addition, telcos deepen the customer relationship, moving from service providers to digital transformation partners.

Phase 3. Delivering a Seamless Customer Experience

At this phase, telcos truly become techcos, firms that are agile, data driven, and platform oriented. Leveraging AI and observability feedback loops, networks become self-optimizing, hyper-personalized, and continuously tuned.

With these capabilities, firms can blend cloud, edge, AI, and observability into seamless vertical offerings. This will enable them to build and monetize industry-specific digital platforms, from connected hospitals to automated factories. Fueled by real-time insight, ecosystem co-creation, and end-to-end service visibility, services revenue will shift to outcome-based models.

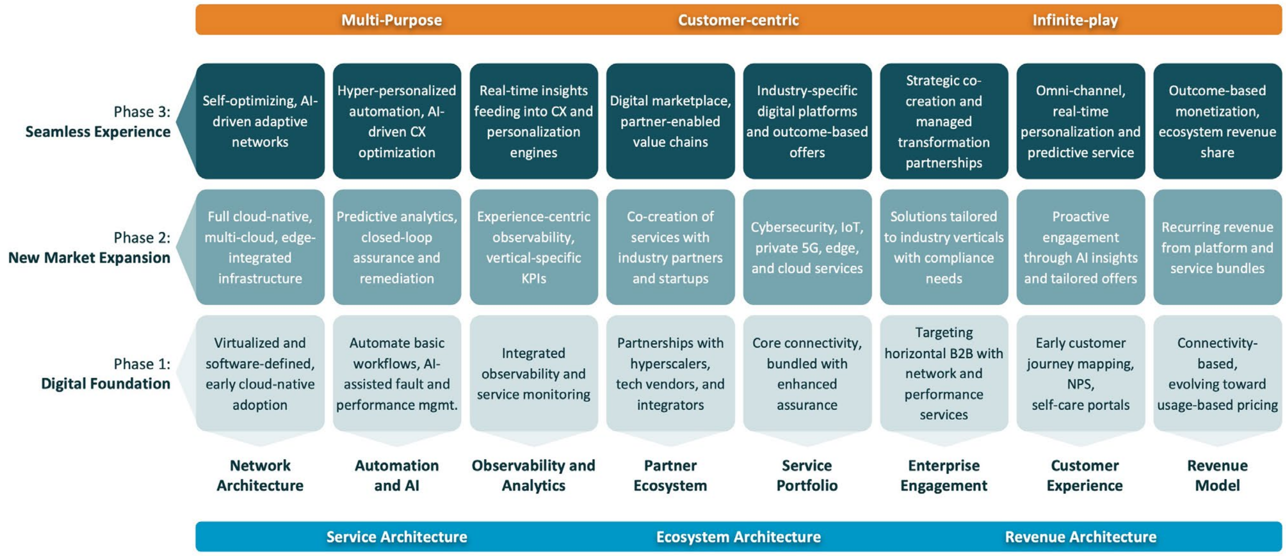

Figure A. The telco-to-techco transformation is a foundational shift that spans three key phases. (Diagram author: Arnold Hoogerwerf)

During this transformation, telcos need to organize their services in a disaggregated, cloud-based service architecture that offers modular capabilities for building complete services. However, a platform is more than just a technical service architecture. There are two other pillars of equal importance:

- **Revenue architecture**. The platform must support multiple monetization streams from services. It needs to engage enterprise customers with flexible, scalable, and dynamic business models. For example, a platform should accommodate offerings like "everything-as-a-service" (XaaS) solutions, tiered, value-based offerings, pre- and post-paid services, and more. With these capabilities, a solid revenue architecture reduces friction to customer adoption and promotes scale.
- **Ecosystem architecture**. The platform needs to foster open and collaborative ecosystems with multiple partners, fueling a multi-channel approach and enabling multiple go-to-market (GTM) strategies. At the same time, the platform can't simply become a commoditized "pipe" for other, more dominant players. For example, telcos should enable value through co-creation, marketplaces, data exchanges, and so on.

When designing these platform pillars, it is important to keep the following principles in mind:

- **Multi-purpose architecture**. Establish a composable architecture in which components can be re-used in many different services.
- **Customer-centric approach**. Ensure the platform offers relevancy, is easy to consume, presents a low barrier to entry, and balances customer and provider control.
- **Infinite play**. Design for an infinitely sustainable and healthy business—not a specific end state.

This vision is within reach, but to succeed and lead in a digital economy, telcos must move fast, leverage the right enabling technologies, and embrace a platform mindset.

LIMITATIONS OF TRADITIONAL MONITORING

As telcos make the move to become techcos, traditional network monitoring simply doesn't cut it anymore. These tools fall short in several arenas:

- **Cloud-native infrastructure**. As telcos pursue digital transformation, they'll increasingly be leveraging approaches like cloud-native infrastructures. In these environments, network operations teams need deep visibility into containers, virtual machines, and APIs—but legacy monitoring tools weren't built to provide these capabilities. This limitation stifles modernization efforts before they get started.
- **AI and automation**. Increasingly, telcos will be embedding AI and automation into operations. To track user experience in these environments, it is vital to establish end-to-end, real-time visibility. However, most teams are struggling with traditional tools that are scattered across various organizational and technological silos. These disparate tools offer limited, fragmented visibility that impedes the establishment of predictive operations.
- **Partner ecosystems**. As telcos expand their partnership ecosystem, such as with hyperscalers, systems integrators, and enterprises in various industries, operations teams need to extend their visibility across organizational and technical boundaries, including domains operated by third parties. Without the required visibility, collaboration and co-innovation efforts are compromised, and telcos run the risk of falling short of their SLAs.
- **New service offerings**. Telcos will increasingly need to be offering premium services, such as observability as a service, and offering differentiated SLAs, such as those based on actual user experience rather than basic availability or performance metrics. Fundamentally, traditional tools lack the deep visibility needed to support these offerings.
- **Industry-specific offerings**. As telcos look to expand penetration with offerings tailored to organizations in specific industries, they must contend with added layers of complexity, such as industry-specific KPIs and distinct multi-tenancy requirements. Legacy monitoring tools can't support the scale and complexity associated with these offerings. This limits the telco's ability to boost differentiation and expand market share.
- **Personalization**. When it comes to personalization, user experience is everything. But teams in many telcos struggle to concretely, objectively measure what the user experience is actually like. This limited visibility leads to missed monetization opportunities and makes it harder to build loyalty.
- **Omni-channel support**. In today's omni-channel world, customers connect with businesses in several different ways: interacting with apps and web sites, personnel in physical stores, and agents in call centers. With legacy tools, teams can't correlate app performance with network conditions and user behavior. This makes it difficult to resolve complaints and deliver a seamless experience across different channels.

To sum up, with legacy monitoring tools, modernization stalls, services underperform, and customer experience suffers.

OBSERVABILITY AND ANALYTICS: NEW IMPERATIVES

To overcome all the obstacles outlined above, telcos need a modern observability platform built for hybrid, cloud-native, and customer-centric environments.

Platforms must address the following requirements:

- **Full-chain visibility**. First, telcos need full-chain visibility across physical networks, virtual infrastructure, public and private cloud, and edge computing. This enables teams to gain end-to-end visibility, and ensure optimized service levels in increasingly complex, distributed environments.
- **Real-time analytics, AI integration**. Second, they need real-time analytics, powered by AI and machine learning. They must be able to seamlessly integrate with third-party vendors. This allows for predictive operations, closed-loop automation, and ecosystem-wide visibility, which are crucial for agile-driven service delivery.

- **Experience metrics**. Third, observability must include not just monitoring data, but true experience metrics, like application response time or voice conferencing quality. This enables telcos to shift from monitoring network performance to ensuring optimized digital experiences. They can monetize services based on customer outcomes, not just up time.
- **Multi-tenancy and industry support**. Fourth, platforms must support multi-tenant and industry-specific views. This enables telcos to scale business-to-business services, address industry-specific KPIs, and provide self-service to customers.
- **Flexible and deep integrations**. Finally, observability should offer deep integrations with CRM systems, customer data platforms, and DevOps pipelines. This enables richer insights into a range of areas, including into customer preferences and requirements as well as tactics for optimizing operations. Data from different systems starts to flow together, enabling better personalization, faster rollouts, and more proactive services.

PROMISE OF NETWORK OBSERVABILITY

Ultimately, observability isn't just a back-end function, it's a strategic enabler of the telco-to-techco transformation. Here are just a few of the ways network observability can benefit the aspiring techco:

Observability Can Be Monetized

Observability opens up a wide range of possibilities for expanding, enriching, or adding service offerings. For example, organizations can provide observability services to their enterprise customers, offering views of network, cloud, and application performance. This visibility is increasingly essential for enterprises that are adopting hybrid cloud, software-defined wide area networks (SD-WAN), and private IT approaches. This enables the creation of new business-to-business offerings that generate recurring revenue streams. It also provides a way for telcos to be embedded deeper in customers' operations, strengthening customer retention, loyalty, and sales.

Observability Fuels the Establishment of Tiered Services

Telcos can offer differentiated connectivity, backed not just by SLAs for uptime, but by a range of experience metrics, such as voice quality, application response, and full-chain latency. With these capabilities, telcos can move from flat-rate pricing to value-based monetization.

Observability Enables the Monetization of Data and Insights

Aggregated and anonymized observability data can enable data-driven revenue models. This data can yield industry benchmarks and customer analytics. Telcos can also have observability platforms expose open APIs so they can feed intelligence to ecosystem partners and customers. This enables DevOps teams, systems integrators, and vertical solution providers to build on top of the telco infrastructure, fueling co-innovation and platform monetization.

Observability Promotes Improved Internal Efficiency

Network observability fuels proactive incident resolution, predictive analytics, and reduced SLA penalties, which all contribute to lower costs and higher margins. This frees up capital for innovation and growth.

SOLUTION: NETWORK OBSERVABILITY BY BROADCOM

For all the above reasons, observability is not just about monitoring. It's a potential revenue enabler and competitive differentiator and a critical pillar in the telco-to-techco journey.

Network Observability by Broadcom delivers the essential capabilities that fuel the telco-to-techco transformation. With the solution, your teams can gain true observability, bringing together data from different tools and layering intelligence on top of it.

The solution enables you to establish unified visibility across hybrid environments, including public and private clouds, virtual private clouds, internally and externally managed networks, third-party providers, and SD-WAN environments. Network Observability by Broadcom features these offerings:

- **AppNeta**. AppNeta brings the end-user perspective to application and network performance monitoring. The product offers both active and passive monitoring capabilities, capturing real-time network data through continuous active testing, including across internally managed and externally managed, third-party networks.
- **DX NetOps**. DX NetOps provides comprehensive, end-to-end network visibility, including across traditional, software-defined, and cloud architectures.

Network Observability by Broadcom delivers the following key advantages:

End-to-End Visibility Across Domains

Network Observability by Broadcom unifies visibility across the entire ecosystem—eliminating blind spots. The solution provides complete visibility of connectivity paths, from user devices and apps to the telco's environments and services. The solution provides coverage that spans domains, including multi-vendor, multi-cloud environments, public cloud, software-defined data centers (SDDC), SD-WAN, and more.

Network Observability by Broadcom delivers centralized, aggregated data, even for resources outside of the internal team's purview. Your teams can track entire end-to-end delivery paths, from internally managed environments to cloud provider environments and back.

Service-Level, User-Experience Metrics

DX NetOps delivers multi-tenancy support and full-service visibility, tracking everything from network KPIs and device health to routing anomalies and user-level experience metrics.

This is where the real value lies. It's not just about whether a connection is up; it's about how well it performs. The product can gauge things like app response times, DNS lookup delays, path latency, voice call quality, and true end-user experience.

This level of granularity enables real-time SLA tracking, which powers the delivery of tiered service offerings and differentiated, value-based pricing. You can define gold, silver, and bronze service tiers that directly link to measurable KPIs. This way, you're not selling bandwidth anymore, you're selling performance outcomes.

Selling performance outcomes sets the stage for value-based pricing. You can confidently tell a customer, "We guarantee Salesforce connectivity response within two seconds." Alternatively, you can commit to ensuring a customer's VoIP mean opinion score will always stay above 4.0. These kinds of guarantees can be a powerful differentiator.

Insight-Driven Monetization

With the solution's rich, multi-domain data collection across cloud, hybrid, software-defined, and physical networks, telcos can start to monetize insights. By aggregating data like app usage patterns, latency maps, and infrastructure health, telcos can create a powerful asset.

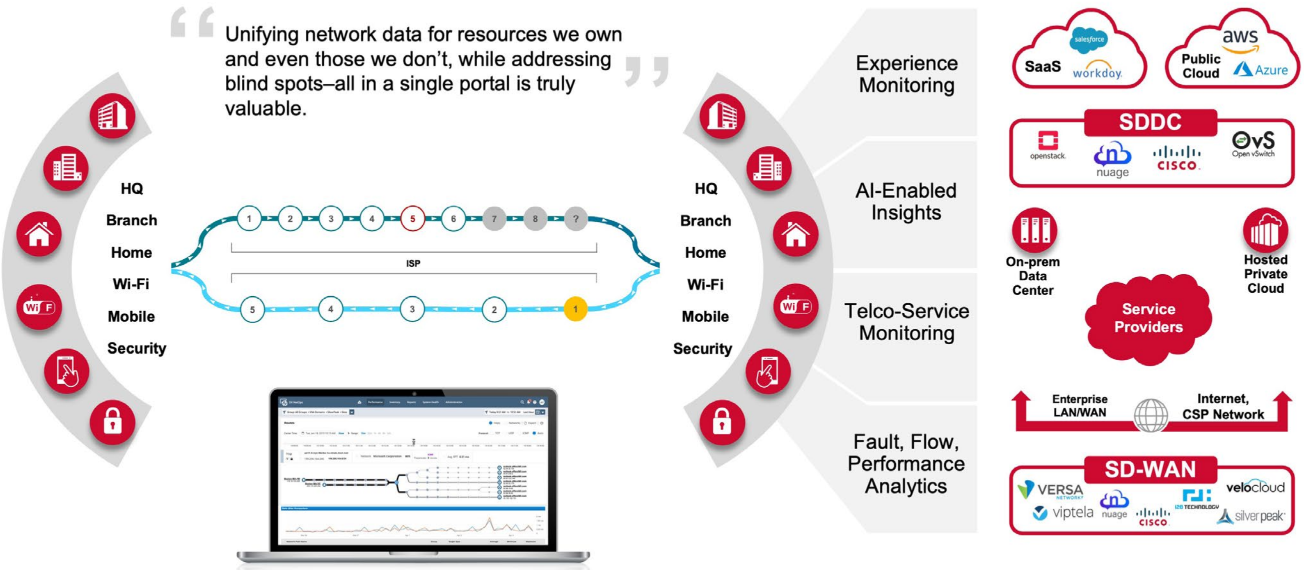

Figure B. Network Observability by Broadcom helps fuel the telco-to-techco transformation.

Telcos can expose this data to other systems and third parties. You can build consumption-based revenue models, enabling partners, ISVs, and developers to tap into your observability fabric and charge for it.

The observability platform becomes a monetized layer in the ecosystem, fueling innovation. Partners can embed performance SLAs directly into their offerings. Observability can trigger automation based on real-time telemetry. In this way, observability becomes the foundation of next-generation solutions, not just internal diagnostics.

Internal Wins: Operational Efficiency

For techcos, complexity is the enemy of transformation and performance. With Network Observability by Broadcom, your teams can weed out complexity, speeding transformation and boosting performance.

Harnessing AI and machine learning, the solution delivers deep intelligence and actionable insights. The solution provides precise insights into the root cause of issues and remediation steps. It helps teams fix outages before they happen, improving incident response and reducing SLA penalties. The solution also unifies data from multi-vendor network domains, which means fewer tools, fewer silos, and a leaner, more agile operations team.

CONCLUSION

To meet their growth objectives, telcos need to transform. Instead of being commodity providers of connectivity, they need to deliver differentiated, secure, data-driven, and tech-enabled services. To make this transition happen, network observability is a must.

Network Observability by Broadcom offers end-to-end visibility, enabling you to optimize performance, reduce risk, and boost business outcomes. With all the solution's advanced capabilities, observability moves beyond just a back-office function. The solution represents a strategic business enabler that helps your organization grow revenue, delight customers, and operate with confidence.

For more information, please visit our Network Observability by Broadcom page.

ABOUT THE AUTHOR

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Arnold Hoogerwerf has over three decades of experience in IT and two decades in telco strategy, working with innovation, CIO, and CTO departments. Arnold's career is characterized by a sustained commitment to creativity and data-driven execution. Currently, his expertise is channeled into crafting solution strategies and go-to-market propositions that empower organizations to navigate complex technological landscapes in the digital continuum.

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