

Network Services: Focus on Business, not Bandwidth

A Tata Communications white paper



Executive Overview

Network service vendors have become very successful at marketing and selling products to companies worldwide, with tremendous competition in pricing and service offerings. However, few, if any, have approached customers with a top-down, business model approach to implementing networking services. Instead, the emphasis is primarily on bandwidth, management services, and technology. Meanwhile, businesses, while recognizing that the CAPEX and OPEX savings of network services are a reality, have become increasingly concerned that these systems are not flexible, agile, or business-driven enough to fully meet their enterprise networking requirements.

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Advantages of Taking an Enterprise-Centric Approach to Network Services

Therefore, a new model and best practices must be deployed that serves the needs of enterprise networking services. Among the key components that enterprises require from a telecommunications services vendor are the following:

- Predictable costs
- Unified network experience for applications
- Reliability and transparent technology improvements
- Flexibility and agility, including adding or removing services when needed
- Proactive performance management and network transparency
- Dynamic and adjustable bandwidth as required

According to the Gartner Group analyst firm, by moving to outsourced enterprise telecommunications providers, companies also have a unique opportunity, with the right partner, to bundle significant communications products together, gaining even greater cost-savings and economy of scale. For example, they can bundle network services, voice, video, and video conferencing, all with one vendor.

Network Services: Best Practices and Pitfalls

There is no question that enterprises that use network services save money—primarily on operational expenses. But they should take a step back and view their service engagements with an eye toward how the service will best suit its business strategies and outcomes, rather than viewing the service merely in terms of technology, connectivity, and bandwidth. Enterprises must carefully examine sustainable best practices that help their businesses succeed and avoid common pitfalls in purchasing network services.

Predictable cost

One of the chief reasons for businesses to move to a network service provider is a predictable cost structure for their IT budget. No longer are they deluged with stakeholder requests for upgrades, updates, or more bandwidth. Since most network infrastructure has moved off site, the enterprise then has a predictable handle on IT costs and can budget accordingly. Most vendors offer only tiered allocations of bandwidth, however, often forcing companies to buy more than they need as they must make their “best guess” at how much bandwidth they will require. Companies must also compare vendor services—from capabilities, reputation, quality, cost, and SLAs—before making a final determination. Customers should definitively quantify how far and deep the proposed network service reaches and what the costs are for remote and global service; many vendors charge extra for remote or international bandwidth allocations. Customers should also be aware of the length of their contracts with the vendor and any penalties incurred if the customer terminates the contract early.

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Unified network experience for applications

By unifying the underlying network, applications become more stable, reliable, and easier to maintain. Moreover, moves, changes or upgrades can be performed quickly to adapt to changing business requirements. It is easy and inexpensive to make the application accessible to remote offices through the cloud as well, reducing the costs of remote office IT equipment and maintenance. Customers should make certain they can receive the same unified level of service across regions—or even across the globe to ensure consistency, reliability, and productivity for its enterprise.

Introduction: Enterprise Network Service Challenges

Enterprises rely more than ever on solid, reliable network services to improve productivity, connect remote sites and offices, and serve their customers. These services must keep critical applications running at peak performance without continual reconfiguration, bandwidth and service contract upgrades. However, many are locked into tiered bandwidth purchases—forcing them to pay for more bandwidth than they actually use. Enterprises have expressed a number of other challenges when dealing with traditional network services and network service providers, including the following:

- Fixed and inflexible bandwidth that is not tied directly to application and user requirements
- Lack of control and oversight of network and application performance
- Costly moves, adds, and changes in the network topology as the enterprise responds to market demands
- Inconsistent SLAs and long-term contracts that lock their networks in place
- Lack of timely technology upgrades when needed

In essence, they are struggling to find network services that are agile enough to address rapidly changing market conditions and are responsive to any shifts in their business strategies without the cost and risk of over- or under-provisioning. If new opportunities arise, they must be quick to take advantage of them. Similarly, if a market becomes unprofitable, they should be able to quickly and cost-effectively decommission service to save money and resources, with no penalties on their network service contracts.



Reliable Network Infrastructure

First and foremost, network services products must have reliable, redundant infrastructures. Businesses cannot afford to commit significant corporate resources, customer satisfaction, or worker productivity to a network service provider that does not offer the best uptime, greatest bandwidth, and superior service level agreements. For this reason, most reputable network service providers offer multiple geographically dispersed failover sites, redundant network connections and network switching operations.

Technology upgrades and updates

Network service providers must handle technology upgrades—non-disruptively—insuring their customers are running on the best possible equipment and have the necessary underlying technology updates and upgrades needed for smooth application and user operations. Flexible bandwidth and user experience levels must be monitored and maintained at peak efficiency to guarantee productivity and customer satisfaction.

Network performance and transparency

Most network services vendors provide reports on a periodic basis. Few, if any, report on application performance, user experience levels, or provide real-time monitoring of network operations. As a result, enterprises must rely entirely on the service provider to pinpoint and resolve performance issues, often at a cost. Enterprise network services need real-time, granular transparency of their entire network to dynamically make changes where and when they are needed.

Redefining the Network Service Strategy

Network service providers have proliferated and attempted to differentiate themselves primarily on operating expenses and service levels to gain and retain customers. As mentioned, many offer bundled products and discounts on long-term contracts. Many tout one technology over another to differentiate their services. Others rely on big-name service providers, merely rebranding their service by putting their name on it, and offering their network service to their customers at a significant mark up. After the initial rush of companies to network services, two things have become clear:

- **Not all network service companies are equal**
- **The current network services business model itself falls short when applied to true enterprise business requirements**

Business outcome focus versus IT infrastructure focus

Companies that have incorporated network service products for all the right reasons stated above, have found the technology, after first impressions, to be somewhat lacking. First and foremost, all service providers lead with their IT capabilities and infrastructure, and as mentioned, proceed to make sales engagements that focus almost entirely on technical capabilities and pricing comparisons. There is no focus—none—on how the customer will use the technology,

“There is no focus—none—on how the customer will use the technology, or how it will affect its business outcomes”

or how it will affect its business outcomes. Many are left on their own to adapt applications to the new infrastructure, are required to adopt a one-size-fits-all bandwidth or SLAs, and vendors completely ignore differing levels of required network capacities, capabilities, and quality of service for regions and applications. This model, in effect, should be completely reversed: instead of focusing on negotiating blocks of services first, and forcing the enterprise to fit the deployment, the focus from the outset should be a business model analysis which leads to an enterprise network service that fits the company’s actual business operations.

Flexibility built in to address business needs today—and tomorrow

Companies must know with certainty how sustainable and flexible their infrastructure is for competing effectively today—and tomorrow. Flexible bandwidth, experience level agreements for applications based on performance, and the ability to predictably contain costs for expansion are all critical for global enterprises. Enterprises should not be forced into over-provisioning their services with tiered blocks of bandwidth. This wastes too much capital on unused services, even though they would be prepared for any spike in network activity. Ideally, they should have a platform that responds to their bandwidth requirements quickly and easily—provisioned for just the amount of data they use, and no more.

Other drawbacks to traditional network service models

Most network service vendors are bandwidth and asset driven—how much bandwidth can we allocate to the customer? How long of a contract can we sell? **While these should come into consideration in selecting an enterprise-level service model engagement, they should be the last considerations on the list when it comes to developing a true business-centric, enterprise-level service.** Traditional network service implementations focus on inflexible bandwidth sales, fixed contracts, and expensive SLAs in many cases, rather than look first at the company’s business, and tailor a solution that fits its business model.

Therefore, it is imperative that enterprises move away from technology-centric and one-size-fits all network service models to enterprise networking services partners that incorporate the following:

- Pricing based per site and per group, not one-size-fits all bandwidth allocation
- SLAs and user experience-level assurances that are business-driven, not contract and technology-driven
- Customizable and sustainable solutions to fit unique and diverse business environments
- Partnership approach throughout the engagement process, not just during sales
- Deployment of network best practices
- Best network service model for growth
- Structured approach to design and deployment

For traditional network vendors to survive, they must become more comprehensive in their initial customer engagements and move away from technology and bandwidth-centric solutions.

What Makes Tata Communications Enterprise Adaptive Network Service Different?

While Tata Communications Enterprise Adaptive Network Service offers all the cost, convenience, and other benefits of traditional network service models, we differ significantly in the depth and breadth of our approach to customer business needs. First and foremost, Tata Communications Enterprise Adaptive Network Service engages with each customer as a unique entity, and from the very first meeting, enters into a consultative and collaborative partnership with the customer to arrive at solutions that best fit their business model, outcomes, and strategies for the future.

Consultative and collaborative partnership with the customer to arrive at solutions that best fit their business model, outcomes, and strategies for the future

Deployment methodology

The process involves the following four major steps:

- Analysis
- Design
- Deploy
- Monitor

Analysis

Tata Communications installs a series of network bandwidth sensors at each of the major customer sites. Over a six to eight-week period, the sensor data is analyzed for bandwidth and performance requirements on the current network. As a result of sensor data, Tata Communications analyses each network node and WAN connection within the existing customer network, determining with great precision how much network traffic is generated

Tata Communications then analyzes the company's core business with stakeholder interviews and meetings to determine where its strengths, weaknesses, and future growth opportunities may lie, and how a new, more agile network can better enable any current and future business strategies. The analysis also takes into consideration the following:

- Individual application performance
- Group network and application usage
- Bandwidth fluctuations and QoS
- Prioritization of applications, groups, and business units

Design

Once the thorough, initial analysis has been performed, the Tata Communications group re-convenes with the customer to collaboratively design a network infrastructure that not only overcomes current problems but also addresses future requirements. The system is designed to be as open, sustainable, and flexible as possible, leaving the customer with an enterprise that can quickly address business challenges as they emerge. The customer no longer needs an IT group to manage regions, groups, or individual user network demands.

ELAs and SLAs

An integral and important component of the design of each Tata Communications Enterprise Adaptive Network Service is the ability for companies to realize a revolutionary new level of network performance called Experience Level Agreements (ELAs). Each customer and/or application is rated and scored by its performance, and Tata Communications delivers ELAs for minimum performance and reliability. This goes to the very heart of enterprise networking service—each member of the enterprise is performance-covered for greater productivity. In addition, Tata Communications also provides region-wide SLAs and application-wide SLAs linked to customer experiences.

Ability for companies to realize a revolutionary new level of network performance called Experience Level Agreements (ELAs)

Deploy

Next, the Tata Communications Enterprise Adaptive Network Service group plans the deployment of the new network—from premises equipment, last-mile hook-up, to global connectivity. After installation, each node and connection is tested. Applications are not-disruptively migrated. In consult with the customer, changes and fine-tuning of the network are conducted.

Monitor

Once the network is up and running, it is proactively monitored by Tata Communications systems and trained technicians 24x7x365. Phone, email, and Internet support is available around the clock. Real-time network port reporting and a monthly summary of network usage and SLA and ELA commitments are provided, and the customer can monitor performance of the entire network through a web-based monitoring console. Based on the usage statistics gathered by this reporting, services can be dynamically adjusted to meet both SLA and ELA requirements.

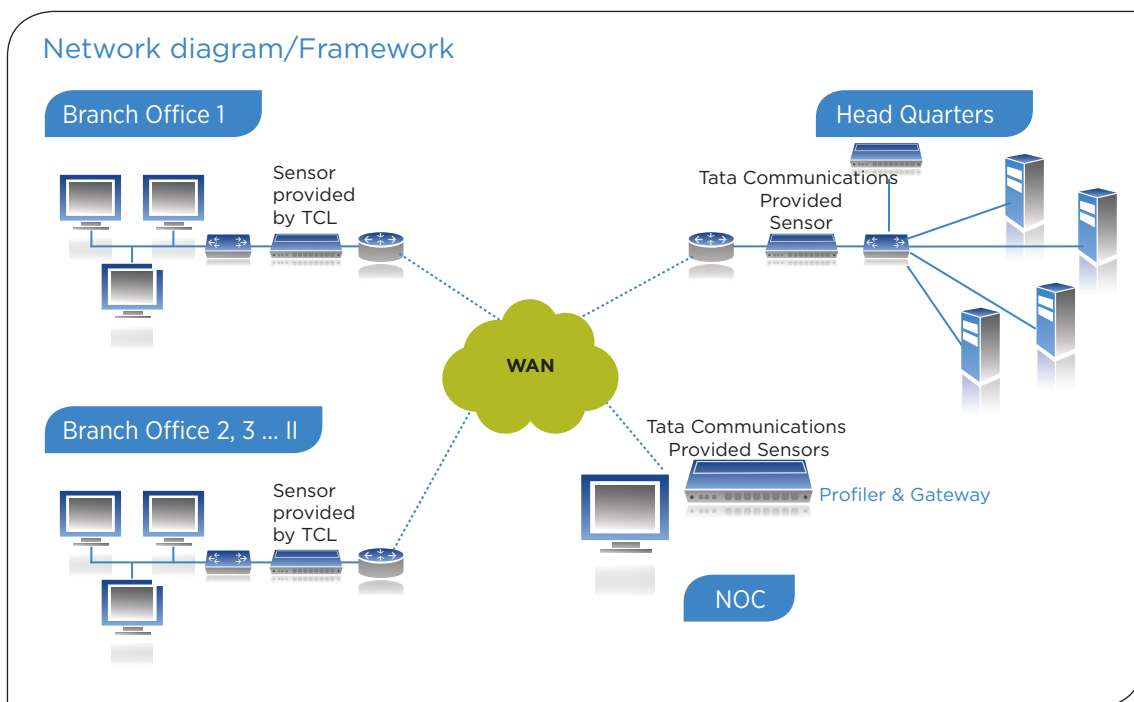


Figure 1. Tata Communications Enterprise Adaptive Network Service customer site analysis.

Per-user, per usage business model

Perhaps the most innovative aspect of the Tata Communications Enterprise Adaptive Network Service besides its consultative approach is its unique per-usage sizing and pricing. Customers pay only for the bandwidth and services they use, on a per-person basis. Initial thresholds for these requirements are determined during the initial analysis and design portions of our service deployment, insuring that from the start each individual, group and/or application is not over or under-provisioned, and is receiving exactly the type and class of service each requires. Periodic audits are used to help customers either throttle back services where they are not fully used, or increase service to individuals, business units, or groups that are consistently in need of greater service.

Network agility

Unlike many network service business models, the Tata Communications Enterprise Adaptive Network Service offers its customers complete flexibility, with no penalties or long-term commitments. Moves, adds, or changes are just a phone call away, making it easy to add an employee or even cost-effectively open an entirely new office. Customers can agree on limits to any changes, with clear and predictable pricing, avoiding budget over-runs. When resources are no longer needed, they can be just as quickly decommissioned at no cost within the agreed change limits. Enterprises are more agile and prepared to take advantage of opportunities in a fraction of the time as traditional network service provider products.

No CAPEX, Flexible Billing

Best of all, there are no capital expenditures. Network services equipment, monitoring, and reliability improvements are continual and add no cost to our customers' service. In addition, unlike traditional network service-based vendors, we provide on premises equipment and last-mile planning at no additional cost. It is all built into the per-user enterprise service price.

Billing can be comprehensive, broken down by region, or even by individual business units for charge-back requirements. All bills are clearly itemized and presented in your choice of a number of currency and payment options.



Tata Network Services History, Successes

Lastly, your networking service is only as good as the vendor that stands behind it. Tata Communications has been a leader in Ethernet and enterprise networking for years, winning world-wide awards and industry recognition. Among our major accomplishments and capabilities are:

- Own and operate over 20% of the world's Internet routes
- Route over 4,200 petabits of traffic per month on our Internet backbone
- Operate 42 data centers, worldwide, with 10,000 racks and one million square feet of IT space
- Own and maintain over 210,000km of fibre
- 400 Point of Presences (PoPs) around the globe

Tata Communications averages a 99.999% network uptime, with the only Tier 1 communications provider that owns a globe-circling infrastructure of sub-sea, fiber, and terrestrial lines. It was the first communications company to institute Provider Backbone Bridging for greater MAC addressing, MAC flooding prevention, and a more robust and reliable mesh network infrastructure from the local network to global routes.

Tata Communications is also a leader in emerging markets and under-served regions of the world, bringing service to Africa, the Middle East, Far and Near Eastern Markets, linking them to the major business markets that Tata Communications also serves.

Summary and Conclusion

The network service model was a pioneering effort to bring down costs, increase productivity, and introduce enterprises to the advantages of outsourcing its global networks. However, as companies grow and define new business models and strategies, they now realize that simple network services do not adequately address their business needs, and are costing them more CAPEX than necessary. Only a system that is designed from the top down to address business outcomes and strategies can successfully implement the maximum flexibility and performance they must rely on in quickly changing markets and new applications.

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About Tata Communications

Tata Communications is a leading global provider of a new world of communications. With a leadership position in emerging markets, Tata Communications leverages its advanced solutions capabilities and domain expertise across its global and pan-India network to deliver managed solutions to multi-national enterprises, service providers and Indian consumers.

The Tata Global Network includes one of the most advanced and largest submarine cable networks, a Tier-1 IP network, with connectivity to more than 200 countries and territories across 400 PoPs, and nearly 1 million square feet of data center and colocation space worldwide.

Tata Communications' depth and breadth of reach in emerging markets includes leadership in Indian enterprise data services, leadership in global international voice, and strategic investments in South Africa (Neotel), Sri Lanka (Tata Communications Lanka Limited) and Nepal (United Telecom Limited).

Tata Communications Limited is listed on the Bombay Stock Exchange and the National Stock Exchange of India and its ADRs are listed on the New York Stock Exchange (NYSE: TCL).

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