



Product Assessment

# Tata Communications WAN Ethernet

Ethernet Services - Asia in Telecom Services - Asia

July 20, 2009



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## Contents

- Summary
- Strengths and Weaknesses
- Point and Counterpoint
- Buying/Selecting Criteria
- Product Metrics

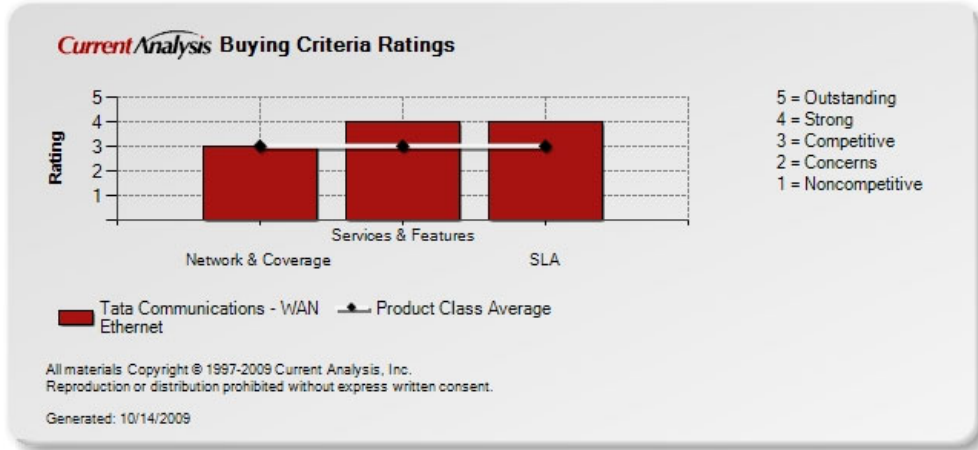
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# Tata Communications WAN Ethernet

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Date Updated:  
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Product Class:  
**Ethernet Services  
- Asia in Telecom  
Services - Asia**

## Summary

### Buying Criteria



### Current Perspective: **Threatening**

Tata Communications' WAN Ethernet portfolio is threatening to competitors, because its range gives a variety of options to meet different customer requirements. Tata Communications provides many features via three different Ethernet platforms, namely Dedicated Ethernet which provides dedicated bandwidth and managed CPE option; Priority Ethernet which features four classes of service; and Priority Stretch which offers flexible bandwidth with usage-based billing. Unlike some carriers that offer E-LAN using virtual circuits, Tata Communications' Dedicated Ethernet provides E-LAN with dedicated bandwidth. The carrier has an extensive Ethernet footprint in India (120 cities) and its global WAN Ethernet coverage has been expanded over the last six months to include over 20 countries in Asia, Europe and North America as well as South Africa and the UAE. In Asia-Pacific, service availability includes markets such as Australia, Hong Kong, India, Japan, Malaysia, the Philippines, Singapore, Sri Lanka and Thailand. The addition of 17 more Ethernet PoPs in 12 countries (including Australia, Korea and Taiwan) by year-end 2009 will further strengthen the company's competitiveness.

With ownership of capacity on multiple submarine cable systems globally, Tata Communications is able to offer different traffic routes and competitive pricing. For instance, the TGN-Intra Asia launched in February 2009 enables more rapid service provisioning, route diversity and lower latency between Japan and Singapore. The company has invested in other new submarine cable systems including TGN Eurasia, I-ME-WE, WACS and SEACOM which will provide similar benefits between Asia and Europe. Tata Communications' Dedicated Ethernet services are MEF 9 and 14 certified, have been enhanced to support 10 Gbps and to provide online monitoring (for customers choosing

**Product:****Tata  
Communications  
WAN Ethernet**Ethernet Services - Asia  
in Telecom Services - Asia

the managed option) for better network visibility and management.

Tata Communications is emerging as a strong contender for selling services to multinational enterprises. However, global carriers such as AT&T, Orange Business Services and Verizon Business have a stronger branding and a larger MNC customer base. These global carriers have many customers on legacy ATM and frame relay services that they can migrate to Ethernet. While Tata Communications has significantly enhanced its coverage in the Asia-Pacific region, it needs to deploy Ethernet PoPs in major cities in countries such as China, Korea and Taiwan to support customers in these markets. Tata Communications has not established E-NNIs since it prefers to do so when the MEF E-NNI specifications have been finalized. It is therefore crucial for the carrier to have PoPs in key cities in each country to bring Ethernet services closer to customers. While customers are using fully managed Dedicated Ethernet services can now view network performance via a Web portal, they are not able to use the same portal to place order, obtain price quotes, view their bills and perform trouble ticketing. Finally, the Priority Stretch is attractive for customers that face seasonal changes on bandwidth requirements, but the service is on a best-effort basis, which may give customers the impression that the service is not as reliable as other Ethernet services available in the market.

**Strengths and Weaknesses****Strengths**

- Tata Communications offers a portfolio of Ethernet services that fit all three Metro Ethernet Forum (MEF) Service definitions (E-Line, EVPL and E-LAN). Tata Communications is able to meet different customer requirements with its Ethernet portfolio e.g., shared or dedicated bandwidth, and different configurations (point-to-point, point-to-multipoint and multipoint-to-multipoint). With the addition of Priority Stretch, the carrier provides customers an attractive option for customers that do not require a fixed, high bandwidth connection and they are charged based on their actual usage.
- Tata Communications' WAN Ethernet services are available on a global scale covering over 20 countries in Asia, Europe and North America, as well as South Africa and the UAE. In Asia-Pacific, the company's Ethernet services are currently available in Australia, India, Hong Kong, Japan, Malaysia, the Philippines, Singapore and Thailand. In Sri Lanka and Taiwan, Tata Communications also has the facilities to provide Priority Ethernet.
- Being an incumbent operator in India, Tata Communications offers extensive reach in India covering 120 cities including many Tier 2 and 3 cities. The company offers Ethernet MANs in eight Tier 1 cities in India and it is able to offer strong SLAs (e.g., high availability and low jitter). Tata Communications is well-placed to target MNCs with operations in multiple sites in India as well as India-based enterprises expanding their operations abroad.
- Tata Communications offers comprehensive SLAs which cover parameters such as availability, latency, jitter and packet delivery. Tata Communications' Dedicated Ethernet supports CPE-to-CPE SLAs and its Priority Ethernet supports four classes of service allowing customers to ensure crucial applications traffic are transmitted with minimal delay.
- Tata Communications' Dedicated Ethernet has been MEF 9 and MEF 14 certified, giving customers the assurance that these services conform to international QoS standards. The

**Product:**

**Tata  
Communications  
WAN Ethernet**

Ethernet Services - Asia  
in Telecom Services - Asia

company was awarded the MEF certifications ahead of most competitors in Asia and it is currently testing the Priority Ethernet service for the service to be MEF certified.

**Weaknesses**

- While Tata Communications’ Ethernet services are available in many places in India, it takes time for the carrier to expand its Ethernet footprint across the rest of Asia-Pacific, particularly since it offers services via three different platforms. At the point of writing, Tata Communications has ten Ethernet-enabled nodes in Asia (outside India) but it has not deployed nodes in markets such as China, Indonesia and Korea. In addition, its Priority Stretch service is only available in Hong Kong, Singapore and Sydney within the Asia-Pacific region.
- Tata Communications is targeting large MNCs for its WAN Ethernet services and it is competing against many international carriers. Global carriers such as AT&T, Orange Business Services and Verizon Business have a larger MNC customer base, stronger branding and better in-country support in Europe, North America as well as Asia Pacific.
- Tata Communications has introduced a Web portal to provide near real-time performance reporting. However, this portal is currently available to Dedicated Ethernet customers that opt for CPE-to-CPE monitoring. The carrier also does not provide online tools for obtaining price quotes, ordering additional circuits or increasing bandwidth for temporary needs.
- Some competitors have established E-NNIs to expand their coverage. Tata Communications prefers to establish E-NNIs after the MEF E-NNI standards have been developed. However, the MEF standards will take some time to be finalized and put into practice.

**Point and Counterpoint**

**Point:** Competitors will point out that Tata Communications’ Ethernet services are not available in some countries (e.g., South Korea, Indonesia and New Zealand) in the Asia-Pacific region. The company has not established E-NNIs to extend its reach and it does not offer details on the number of third party partners it has, and SLA consistency will begin to be compromised in off-net locations.

**Counterpoint:** Tata Communications’ Ethernet services are available in key business centers in the region including Australia, Hong Kong, India, Japan, Malaysia, the Philippines, Singapore, Taiwan and Thailand. The company has plans to grow its footprint aggressively in the near to medium term. Tata Communications also has partnerships with many domestic service providers in Asia-Pacific and it is able to extend its services off-net if requested. As for E-NNIs, the carrier can point out that it is more cost-effective to establish such agreements with partners when the MEF standards have been finalized.

**Point:** Competitors such as AT&T, BT, Orange Business Services and Verizon Business will highlight that they offer better in-country support across the region than Tata Communications, particularly in China which is a key market in the region for many MNCs.



**Product:**

**Tata  
Communications  
WAN Ethernet**

Ethernet Services - Asia  
in Telecom Services - Asia

**Counterpoint:** Tata Communications' has a solid local presence in India and it has strengthened its capabilities in other Asia-Pacific markets especially in Australia, Hong Kong, Japan and Singapore. In China, Tata Communications established an NNI agreement with China Entercom Communications (CEC) in February 2008 and it has announced plans to acquire a 50% equity interest in CEC, subject to approvals from the Chinese governmental and regulatory bodies. Having a stake in CEC will greatly enhance Tata Communications' ability to serve customers in China.

**Point:** Competitors will underscore that Tata Communications' Priority Stretch is low cost solution but without CoS and offered on a best-effort basis. Moreover, the service is not widely available across the Asia-Pacific region; currently in three cities Hong Kong, Singapore and Sydney.

**Counterpoint:** Tata Communications can point out that Priority Stretch is suitable for niche segments (e.g., ISPs and research and education) and the service is also available in many North American and European cities. Tata Communications is offering a wider range of options – including Dedicated Ethernet and Priority Ethernet platforms – to address the needs of different customers.

**■ Buying/Selecting Criteria**

**Network Architecture and Coverage: Competitive**

- Tata Communications offers three options for Layer 2 Ethernet services – Dedicated Ethernet (Ethernet-over-SDH), Priority Ethernet (Ethernet-over-MPLS) and Priority Stretch (usage-based, best-effort service). These three platforms offer different features and performance to meet different customer requirements.
- Tata Communications' Dedicated Ethernet and Priority Ethernet services are available in Australia, India, Hong Kong, Japan, Malaysia, the Philippines, Singapore and Thailand. New PoPs that will be added by year-end 2009 include Melbourne and Seoul. Priority Ethernet is also available in Sri Lanka and Taiwan.
- Tata Communications offers National Dedicated and Priority Ethernet in India. The company has extensive coverage within India and it can deliver on-net Ethernet services to 120 cities including many Tier 2 and 3 cities. The company operates has Ethernet MAN in eight Tier 1 Indian cities.
- Outside Asia, Tata Communications' Dedicated and Priority Ethernet services are also available in South Africa (Johannesburg), UAE (Dubai), Europe (Amsterdam, London, Frankfurt and Paris) and in North America (19 cities). Priority Ethernet and Priority Stretch are also available in various cities in Asia, Europe and North America. Tata Communications plans to add 17 Ethernet PoPs in 12 countries by year-end 2009.
- Current Ethernet port speeds are 100 Mbps and 1 Gbps for Priority Ethernet and Priority Stretch, and up to 10 Gbps for Dedicated Ethernet. Priority Ethernet and Dedicated Ethernet only support fixed bandwidth, but Priority Stretch supports bandwidth burst (up to port speed).

**Product:****Tata  
Communications  
WAN Ethernet**

Ethernet Services - Asia  
in Telecom Services - Asia

**SLA Guarantees and Performance Parameters: Strong**

- Tata Communications offers reactive SLAs for its WAN Ethernet services (both Dedicated and Priority) on a PoP-to-PoP basis. In addition, the company offers the CPE-to-CPE option for customers that opt for managed Dedicated Ethernet services.
- Service uptime for CPE-to-CPE Dedicated Ethernet service is 99.9% for protected circuits, 99.7% for hybrid circuits and 99.5% for unprotected circuits. For Priority Ethernet, network availability is 100% for key international sites, 99.9% for other international sites, 99.995% for Tier 1 Indian cities, 99.9% for Tier 2 Indian cities and 99.5% for Tier 3 Indian cities.
- For Dedicated Ethernet, Tata Communications ensures that jitter is less than 5ms and packet loss is less than 0.03%. For Priority Ethernet, the company ensures that jitter is less than 5ms for key international sites, 15ms for other international sites, 5ms for Tier 1 Indian cities, 10ms for Tier 2 Indian cities and 15ms for Tier 3 Indian cities.
- Tata Communications can offer international bandwidth on various submarine cables and latency for Dedicated Ethernet is determined based on the actual path selected by customers. For Priority Ethernet, latency is also based on geographical region and the class of service. Tata Communications provides MTTR of 4 hours only for services in India and for Priority Ethernet service outside of India,
- The provisioning time for Ethernet services is 30 days when the service is on-net (e.g., in India). Online provisioning option is current not available. The company has introduced a Web portal for customers that are on managed Dedicated Ethernet service with CPE-to-CPE SLAs. A separate Web portal is also available for Priority Ethernet and Priority Stretch users.

**Types of Services and Value-added Features: Strong**

- Tata Communications offers a range of Ethernet options. Dedicated Ethernet offers customers dedicated bandwidth and it supports point-to-point, point-to-multipoint and multipoint-to-multipoint configurations. Customers can also choose between the unmanaged or the fully managed option.
- Tata Communications' Priority Ethernet supports point-to-point and point-to-multipoint configurations. Priority Ethernet provides shared bandwidth and customers can select from one or multiple (up to four) classes of service, with inter-class bursting.
- Tata Communications' recently added Priority Stretch service is a cost-effective solution that allows customers to pay for the actual bandwidth used. This is a best-effort service with no committed bandwidth and customers can view service utilization via a Web portal.
- Tata Communications also provides Ethernet access to its MPLS-based IP VPN services in countries where it has MPLS nodes or extend access through local partners. The company is also able to support dedicated Internet access and VoIP but these are not part of the standard Layer 2 WAN Ethernet offering.
- Tata Communications has achieved MEF 9 and 14 certifications for its global Dedicated Ethernet services. Within India, the national dedicated Ethernet service is MEF 9 certified. The company is also pursuing MEF certification for its Priority Ethernet services and it expects to complete the certification process in 2009.

Product Metrics

**Product: Tata Communications WAN Ethernet**

Network & Coverage	
<b>Architecture</b>	Dedicated Ethernet: Ethernet-over-SDH; Priority Ethernet: Ethernet-over-MPLS
<b>Topology</b>	Dedicated Ethernet: Point-to-point, point-to-multipoint and multipoint-to-multipoint; Priority Ethernet: Point-to-point and point-to-multipoint
<b>Equipment Vendors</b>	Cisco, Turin, Tejas, MRV and Accedian
<b>Local Access Options</b>	Fibre
<b>Port Speeds</b>	Dedicated Ethernet 100/1000Mbps - 10 Gig-E 9,200 Mbps Priority Ethernet 100/1000Mbps
<b>Bandwidth Increments</b>	Dedicated Ethernet: 2 - 100 Mbps in 2-Mbps increments/50 - 1Gbps in 50-Mbps increments; Priority Ethernet: 64 kbps/128 kbps/512 kbps/1-100 Mbps in 1-Mbps increments/105-145 in 5-Mbps increments
<b>Fixed/Burstable Bandwidth</b>	Burstable is available via our Priority Stretch Service. It is only available on Priority Stretch.
<b>Bandwidth On-Demand</b>	Priority Stretch - A usage based best-effort service where the customer can use bandwidth up to the port speed
<b>On-net Coverage (Asia-Pacific)</b>	Dedicated & Priority Ethernet: Australia (Sydney, Melbourne), India (120 cities), Hong Kong, Japan (Tokyo), Malaysia (Kuala Lumpur), Philippines (Manila), Singapore and Thailand (Bangkok). Priority Ethernet only: Sri Lanka (Colombo), Japan (Osaka) and Taiwan (Taipei)
<b>Off-net Coverage (Asia-Pacific)</b>	Partnerships in the Philippines, Thailand and Malaysia. This trend will continue. In addition, off-net local loops can be arranged.
<b>Coverage (Outside Asia-Pacific)</b>	Dedicated & Priority Ethernet: Europe - Amsterdam, London, Frankfurt, Paris; N. America - Ashburn, Atlanta, Chicago, Dallas, Denver, Lake Cowichan, Los Angeles, Miami, Montreal, Newark, New York, Palo Alto, Pennant Point San Jose, Santa Clara, Seattle, Tronto, Vancouver, Weir; South Africa; and UAE (Dubai) Priority Ethernet only: same as above plus Brussels, Madrid, Moscow, Somerset, Stockolm, Warsaw and Zurich"
<b>Ethernet-enabled PoPs (Asia-Pacific)</b>	18 PoPs in Asia including 8 in India
<b>Ethernet MANs (Asia-Pacific)</b>	Metro networks in eight cities in India
<b>Off-net Ethernet MANs (Asia-Pacific)</b>	No
Services & Features	
<b>Applications</b>	Layer 2 Ethernet
<b>Dedicated Internet Access</b>	Yes, but under a different product group.
<b>Voice over Ethernet</b>	VoIP is handled under a different product group.
<b>Ethernet Access for Layer 3 VPN</b>	Yes, but handled under a different product group
<b>E-Line Services</b>	Dedicated Ethernet: Everywhere on its network
<b>EVPL Supported</b>	Priority Ethernet: Same as E-Line plus Sri Lanka (Colombo), Philippines (Manila)
<b>E-LAN Services</b>	Dedicated Ethernet: Everywhere on its network
<b>V-LAN Supported</b>	Priority Ethernet: Same as E-Line plus Sri Lanka (Colombo), Philippines (Manila)
<b>VPLS/VPWS Supported</b>	No
<b>DWDM Wavelength</b>	10 Gig-E - Available
<b>Managed Option</b>	Tata offers the Enterprise SLA Option, which provides: 1) customer premises-to-customer premises monitoring; 2) customer premises-to-customer premises SLA. This is available globally.
<b>CoS</b>	Yes, for Priority Ethernet - four classes of service

Continued

**Product Metrics** *(Continued)*

**Product: Tata Communications WAN Ethernet** *(Continued)*

<b>MEF Certification 9 &amp; 14</b>	MEF 9 & 14 for Global Dedicated Ethernet, MEF 9 for National Dedicated Ethernet (in India); going for MEF certification on Priority in 2009
<b>Pricing</b>	MRC and NRC based on routes and endpoints
<b>Service Level Agreements (SLAs)</b>	
<b>Network Availability</b>	Dedicated Ethernet: Uptime: 99.9% protected circuit; 99.7% hybrid circuit; and 99.5% unprotected circuit Priority Ethernet: 100% for key international sites; 99.9% for other international sites; 99.5% (Tier 3 PoPs), 99.9% (Tier 2), 99.995% (Tier 1 ) for India
<b>PoP-to-PoP or CPE-to-CPE</b>	“Dedicated Ethernet: PoP to PoP; using the Enterprise SLA Option: Customer premise to customer premise. Priority Ethernet: PoP-to-PoP”
<b>Proactive/Reactive</b>	Reactive
<b>Outage Compensation</b>	Yes, depends on the outage cause.
<b>Packet Loss</b>	Dedicated Ethernet: 0.03% Priority Ethernet: 0.05% for COS1; 0.5% for COS2; 1% for COS3 and Best effort for COS4
<b>Latency</b>	Dedicated Ethernet: Calculated based on actual path purchased Priority Ethernet: Based on geographic region and COS
<b>Jitter</b>	Dedicated Ethernet: Not to exceed 5 ms. Priority Ethernet: India Tier 1 PoPs: 5 ms; Tier 2 PoPs: 10 ms; Tier 3 PoPs 1 5ms. Key international sites: 5 ms; other international sites: 15 ms
<b>MTTR</b>	4 hours in India. Outside India MTTR is not available but for Priority Ethernet Service it is 4 hours.
<b>Provisioning Time</b>	On-net: 30 days
<b>Online Provisioning</b>	No
<b>Online Monitoring</b>	Yes, Ethernet customer web portal is now available to the customers to monitor online performance.
<b>Monthly Reporting</b>	Customers can generate reports through the web portal. This option is available for customers who opt for Dedicated point to multipoint and Dedicated multipoint services apart from the ones who opted for Enterprise SLA option. Additionally, we have a separate web portals for Priority Ethernet service and priority stretch.