

# Transforming Private Lines for Business Growth

Enterprise network executives share their experiences,  
pain points, and priorities



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# Summary

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The digital economy and enterprise business-critical communications and operations need to be underpinned by always-on, high-performance, secure, ultra-fast networks.

Large organizations need private networks with committed bandwidth, high network availability and reliability, and guaranteed low latency for business-critical applications.

Across all verticals, enterprises are becoming more applications driven. They rely on their networks to support those applications, content data, and business transactions.

Network and IT teams are under pressure to manage a growing mix of on-premises applications and to secure access to applications in a mix of private and public clouds. Ease of management, automation, real-time analytics, and end-user experience are driving the need for greater self-service control of performance and visibility for key performance indicators (KPIs) and service level agreements (SLAs).

Omdia interviewed network executives from global enterprises in several industries, cloud hyperscalers, and internet companies. The companies surveyed ranged in size from 25 employees to more than 10,000 employees across Western Europe and Russia, the Middle East and Africa, Asia Pacific, and Latin America. Omdia analysts conducted in-depth interviews with network and IT executives in healthcare, transport, financial services, and manufacturing sectors. These network decision makers shared their private-line requirements, experiences, and concerns.

The purpose of this white paper is to reveal key business drivers, applications, and use cases for private lines across organizations and vertical industries. It identifies future network technology and services capabilities needed to support business goals.

## Key findings

- Enterprises are reevaluating their networks to meet heightened performance expectations. There is increased vigilance on security and data privacy. Dedicated secure network connectivity is critical to link data centers, private and public cloud, and key enterprise sites. Optical private lines (OPLs) are in demand for secure network connectivity between these critical sites.
- Bandwidth needs are increasing for enterprises across all sectors as are stricter demands on network performance and availability. Ninety-five percent of enterprises will increase bandwidth within the next two years, and 63% expect to more than double network bandwidth.
- Enterprises have diverse bandwidth requirements for private lines at 50Mbps, 100Mbps, 1Gbps, 10GE, and 100GE speeds. Three-quarters of enterprises want private lines with fully guaranteed bandwidth at these speeds with flexible bandwidth granularity. Private optical networks are in demand for higher bandwidth from 1Gbps to over 10Gbps or higher, and 100Gbps OPLs are most in demand by the largest cloud and software companies.
- More than 90% of organizations surveyed plan to replace legacy TDM leased lines in the next two years. When enterprises need high performance, guaranteed bandwidth, high availability and security, optical and Ethernet private lines are among the top choices.
- Across all verticals, the leading use cases and applications driving demand for OPLs include
  - Connecting critical large sites and data centers with high-speed and secure dedicated private optical networks

- Cloud connect private network connection to public clouds: organizations require secure, private, and direct connections to cloud destinations including Amazon Web Services (AWS), Microsoft Azure, Google, Office 365, and Salesforce
- Data center/cloud interconnect: a reliable and secure way to connect data centers and private/hybrid clouds
- Data centers/data replication for disaster recovery, real-time business continuity and disaster recovery, synchronous data replication, and cloud backup
- Storage area networking
- Big data/large file transfers
- Guaranteed-low-latency applications (e.g., financial trading networks, videoconferencing, VoIP, e-learning, database, and enterprise resource planning (ERP) applications)
- The vast majority (99%) of enterprises that do not currently use OPLs would consider deploying them in the future, but there are some barriers to overcome. More than half require optical bandwidth in smaller increments together with a wider choice of pricing and SLA options. These features would open up the opportunity to sell value-based optical networks to a wider set of enterprises.

# Enterprise network transformation and key business drivers

For enterprises, the network is a fundamental platform for business success. But the nature of networks and IT operations is shifting. Digital transformation is driving data center and business expansion. New applications are being added to the network, including more videoconferencing. This is reflected in the top five business priorities for global enterprises (Table 1).

In order to be successful, IT and network systems must be solid and resilient but also agile and flexible enough to cope with new digital demands and a faster pace of business change.

With the move to cloud-centric applications, enterprise networks must ensure applications are delivered with a consistently high level of performance and security end to end. Cloud adoption challenges enterprises to reevaluate the best approach for their networking needs.

Many turn to high-performance secure private networks and hybrid private and public clouds to transform IT infrastructure. As new enterprise applications and services move to the cloud, customers are more sensitive to latency, data security, control, compliance, and confidentiality of sensitive business data.

**Table 1: Primary drivers of network spending, 2018–20**

Organizations' network services spending	Responses
Increased public-cloud adoption	42%
Expansion into new cities/countries	28%
Adding enterprise applications to the network	27%
Increased videoconferencing usage	26%
Adoption of big data/analytics	23%
Data center consolidation	21%
Building new data centers (new sites)	19%
Digital initiatives	14%

Source: Omdia

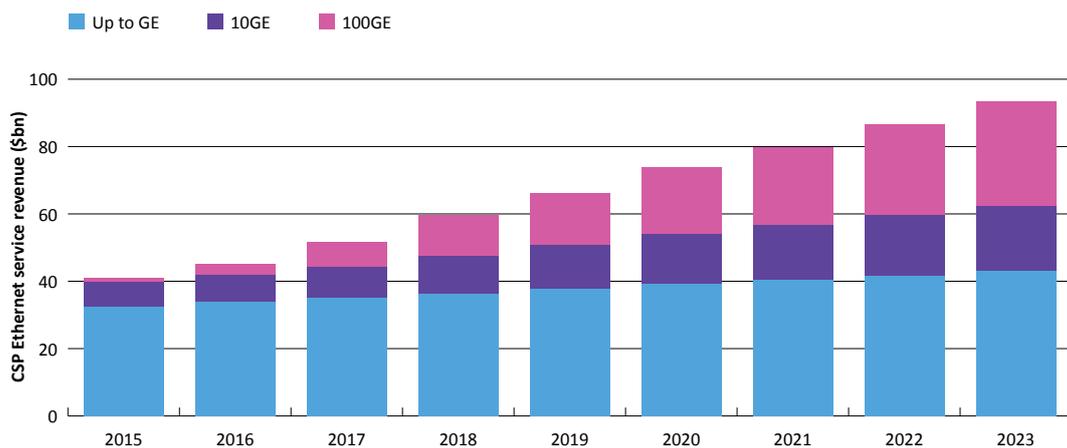
Enterprises that need highly resilient networks are transitioning to dedicated private-line services to connect their critical large sites and data centers. These private-line services deliver zero packet loss and high security with predictable and stable latency, ensuring high security and network performance.

Large enterprises cannot abandon their data centers, but they are shifting rapidly to hybrid-cloud strategies to take advantage of cloud economics. Governments are evaluating similar IT modernization. These large organization initiatives have a common thread: moving from an onsite focus to a hybrid premises and cloud environment requires a high-performance and highly secure network.

An Omdia global survey of enterprises found that more than 90% of organizations plan to replace legacy TDM leased lines in the next two years. As the need to connect to public and private clouds grows, demand for private optical and Ethernet lines is also growing to minimize latency and improve performance. Bandwidth needs are increasing for enterprises across all sectors: 95% of enterprises expect to increase bandwidth in the next two years, and 63% say they will more than double bandwidth.

Cloud adoption and IT asset rationalization are driving network services growth as large enterprises transition to higher network speeds. This is also reflected in service provider projections for bandwidth demands for Ethernet lines (Figure 1). Organizations that depend on network resilience and deterministic performance are transitioning from best-effort, oversubscribed services with network contention to premium private-line services. Private-line services deliver zero packet loss and high security with guaranteed latency. These services ensure the best possible and most secure enterprise network performance.

Figure 1: CSP Ethernet service revenue forecast

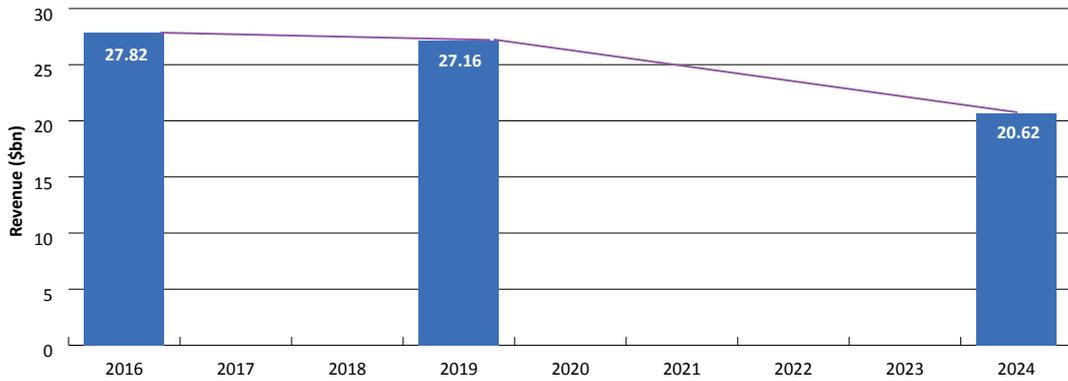


Source: Omdia, *Premium OTN, the Next-Generation Private Line, a Revenue Opportunity*

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Omdia estimates that MPLS VPN revenue has peaked and begun to drop. The global enterprise MPLS IP VPN market is expected to lose up to a quarter of its revenue over the next five years (Figure 2). This is driven by many factors including the move to the cloud, which is pushing enterprises to shift from MPLS to hybrid networks using dedicated internet access and broadband services for small sites and private-line connectivity to data centers.

Figure 2: Global enterprise MPLS VPN revenue, 2016–24

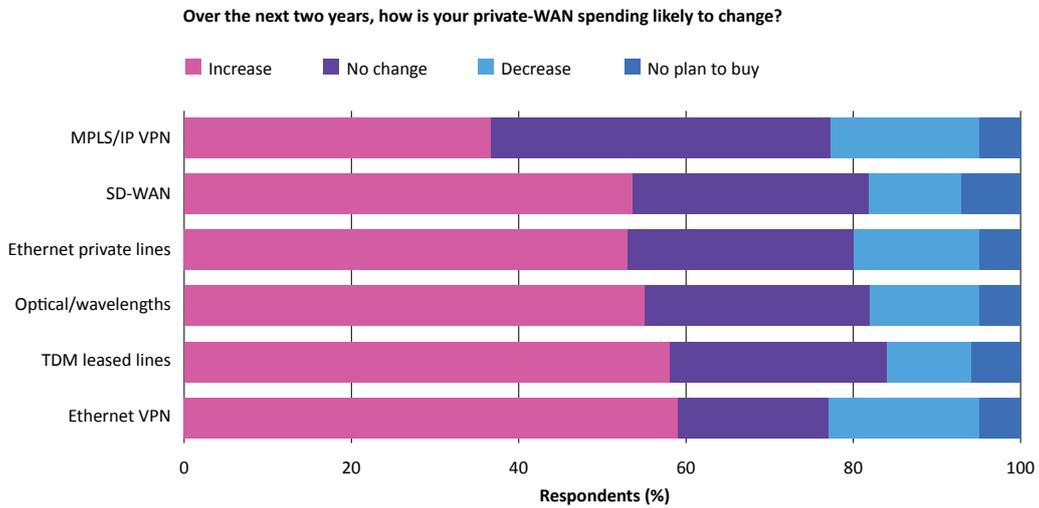


Source: Omdia

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Optical and Ethernet will see large increases in terms of private-line network spending. Twenty-three percent of organizations will either decrease their MPLS budget or have no plans to buy MPLS in the next two years (Figure 3).

Figure 3: Enterprise network purchasing plans



Note: n=175

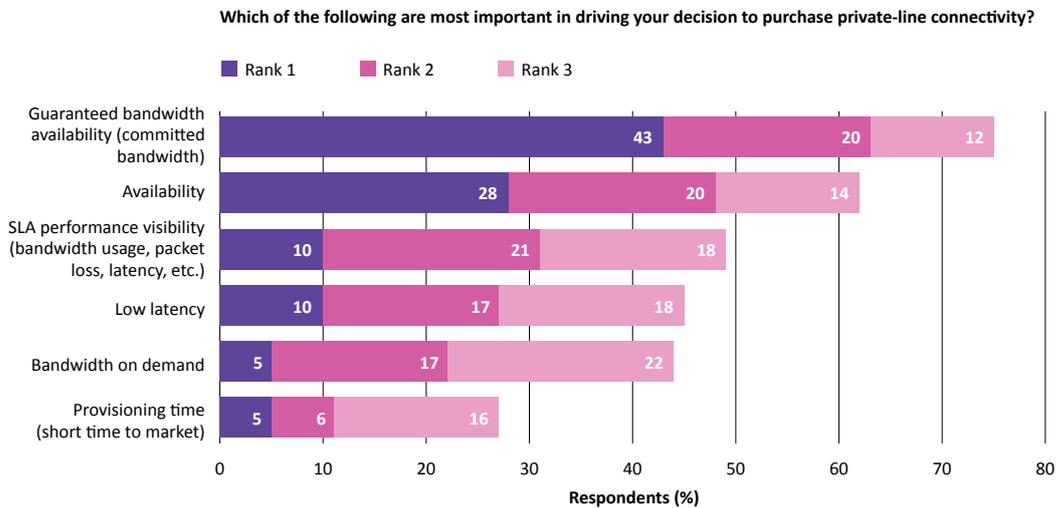
Source: Omdia private-line enterprise survey, February 2020

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Omdia has identified five key enterprise purchase criteria for private lines:

- **High availability and bandwidth.** In the digital economy, downtime is lost revenue. Therefore, availability is a top priority for enterprises (Figure 4). Government and financial services companies demand the highest-availability network performance. These sectors will pay a premium for high-quality service with guarantees on availability, failover protection, and low-latency financial trading networks.
- **Security.** Clients concerned about protecting their data want private-line networks because they are inherently secure. End-to-end private lines ensure physical isolation of dedicated resources with no comingled traffic.
- **SLA performance and real-time visibility.** Enterprises expect to be able to monitor network performance in terms of availability, bandwidth usage, latency, and other metrics in real time. Service providers need to offer a one-stop, self-serve portal where customers can access SLAs, receive quotes, place orders, adjust bandwidth, monitor real-time KPIs, and see billing and maintenance schedules.
- **Low latency.** Latency is a leading differentiator in high-bandwidth services. Customers have heightened latency requirements, and discerning customers want to know not just averaged latency but deterministic latency performance for both primary and failover routes.
- **Bandwidth flexibility.** Long-term traffic planning can be complex. This challenge is amplified in the cloud era, when enterprises may have unpredictable bandwidth needs. Enterprises benefit from partners that offer burstable or adjustable bandwidth, making their services more flexible.

Figure 4: Leading enterprise criteria for private lines



Note: n=175

Source: Omdia private-line enterprise survey, February 2020

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# Cloud connectivity drives demand for optical private lines

Private-line networks enable enterprises to run critical business applications securely, protect confidential data, and meet regulatory and compliance requirements.

Many enterprises use wide-area network (WAN) services from network providers to connect their headquarters, data centers, offices, factories, warehouses, and branch sites. WAN services can be costly and slow to provision, and they lack the scalability and bandwidth required to support new enterprise applications.

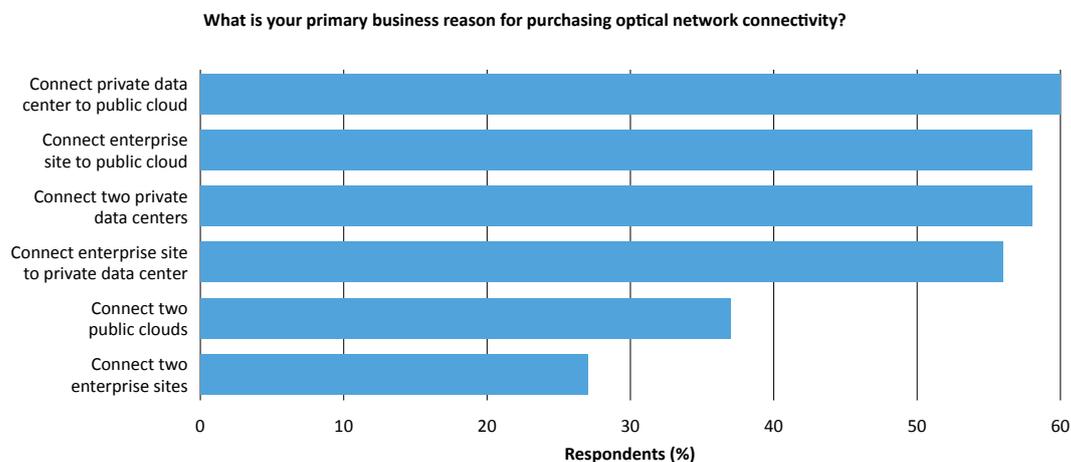
Enterprises are re-architecting their existing WANs with high-performance network backbones between their enterprise sites, cloud locations, and data center sites.

Enterprises increasingly use optical lines to build private-line networks for very-high-speed secure transport between major sites and data centers to create private clouds and for secure connections to public clouds.

In a multicloud situation, where an enterprise might use multiple public-cloud services, managing secure connectivity and assuring high performance is a priority. Hybrid cloud presents a similar challenge: enterprises need to manage computing, applications, services, and connectivity securely across a mix of on-premises infrastructure, private-cloud services, and public cloud.

Cloud connect and data center interconnect (DCI) are leading enterprise use cases for OPLs, linking data centers for critical applications such as business continuity, disaster recovery, and remote computing. Omdia finds that nearly 60% of optical network buyers use OPLs, either to connect their private and public data centers or to connect their major locations to public clouds and private data centers (Figure 5).

**Figure 5: Primary reasons why organizations purchase OPLs**



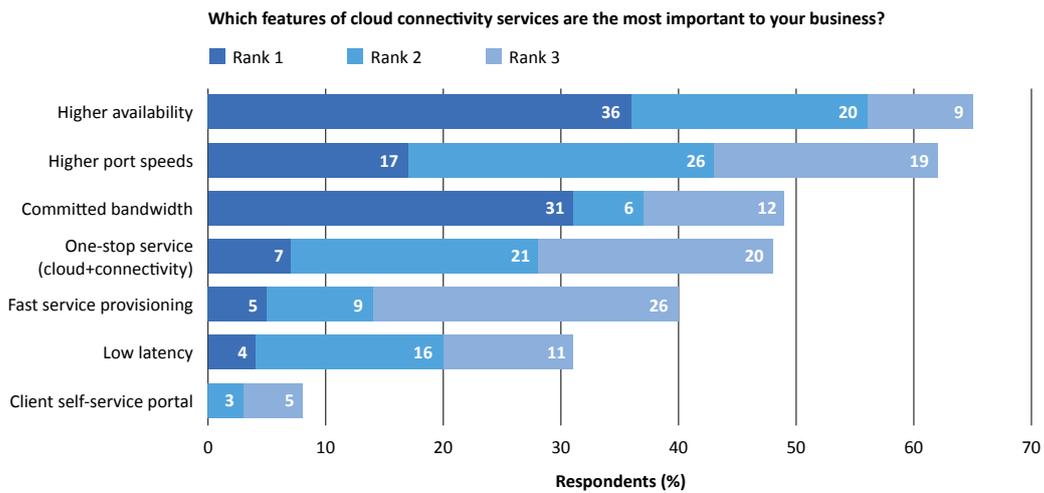
Note: multiple response question; n=62

Source: Omdia private-line enterprise survey, February 2020

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The most important features for cloud connectivity are higher availability, high bandwidth/port speeds, and committed bandwidth (Figure 6). OPLs and Layer 1 connectivity are in demand for data center connectivity, because they support high bandwidth, dedicated connectivity for guaranteed bandwidth, and higher-availability SLAs.

Figure 6: Most important cloud connectivity features for enterprises



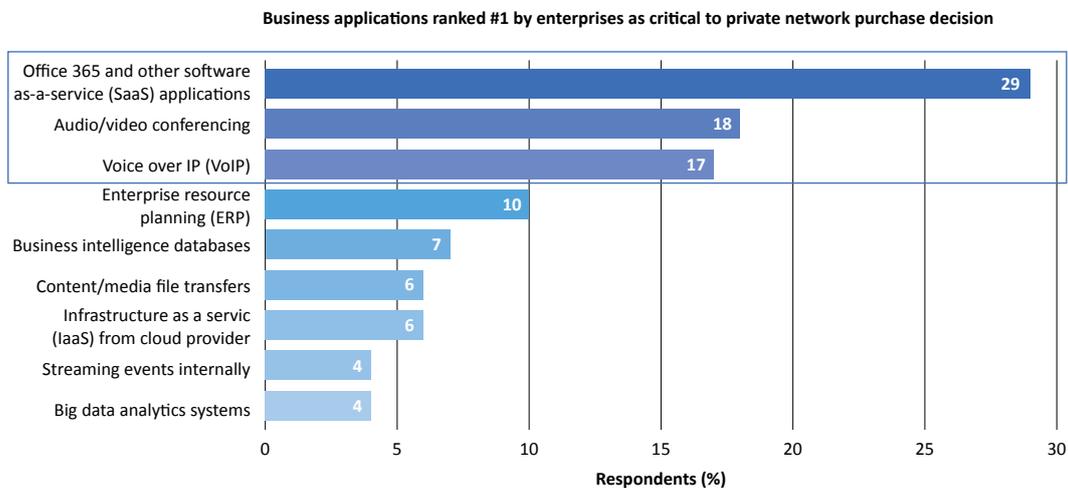
Note: n=175

Source: Omdia private-line enterprise survey, February 2020

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Organizations use private-line services to meet low-latency guarantees for critical business applications. There are two general categories where low-latency traffic is critical. One is for applications that fail to deliver desired results if they are too slow such as financial trading or ERP and manufacturing systems. The other category is the user experience for web-based and software-as-a-service (SaaS) cloud applications. This category includes business productivity, videoconferencing, and VoIP, all of which underpin daily business operations (Figure 7).

Figure 7: Critical business applications driving private-line purchase decision



Note: n=175

Source: Omdia private-line enterprise survey, February 2020

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# Market demand for optical private lines in enterprise verticals

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Financial services companies in banking, investment, and insurance; manufacturers; and over-the-top (OTT) and cloud providers are among the leading adopters of optical private-line services (Figure 8).

Government organizations and the financial sector have high expectations for network availability and require the high levels of security provided by dedicated private lines.

Financial trading has an additional stringent low-latency requirement: for high-frequency trading, milliseconds—even microseconds—make a difference. Given the choice between lower-cost shared network resources and premium dedicated resources, the financial industry tends to choose premium services. The financial services industry easily justifies services that are high bandwidth and low latency, which keep traffic on-net from end to end.

Network and IT executives in manufacturing are concerned about network availability and productivity: the private network is the backbone of their industrial processes and supply chains. Company-wide access to all relevant data is essential, around the clock and in real time, or this can impact production schedules or cause problems in the supply chain. Low latency is important for a diverse set of R&D, production, supply chain, and financial applications so they perform well for end users across their operations.

“**We have more than 500 sites globally (a mix of R&D, production, and corporate sites), and our network is the foundation of our digital operations. Availability is our highest priority. We need network reliability and resiliency and committed bandwidth. We are looking next at premium SLAs where we can quickly increase bandwidth, for example, to support new production lines. We gain extra bandwidth for, say, one month, and then we can bring it back down when we no longer need it.**

*Head of data center and network infrastructure, global chemicals manufacturer*

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OTT, internet, and cloud providers are buying high-bandwidth private lines (10Gbps and 100Gbps) to transport network traffic on the optical layer with no contention, jitter, or packet loss. The increased use of cloud services, such as videoconferencing, is also driving demand for 100Gbps private lines so the cloud providers can handle capacity and improve service quality and performance.

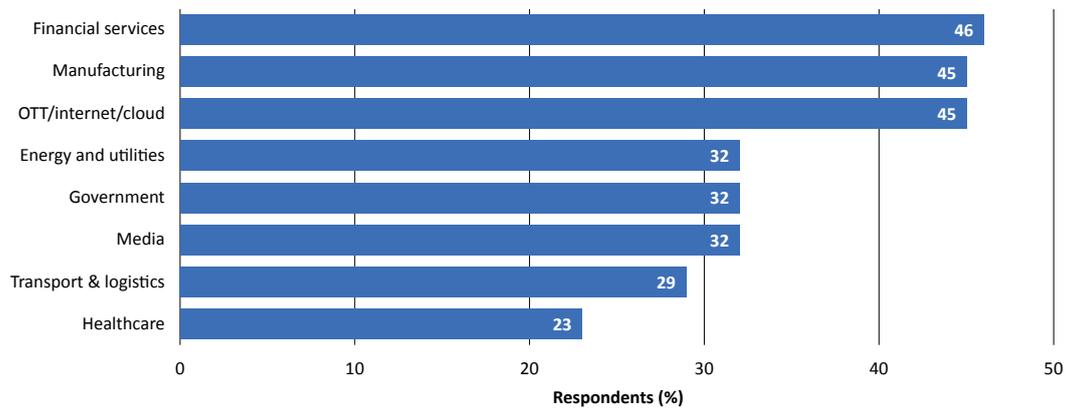
Healthcare providers deploy OPLs to assure network availability and performance because they frequently transfer large 2D and 3D image files and need fast and secure access to electronic patient records. Healthcare providers also have strict regulatory restrictions on medical data and private patient records: this data must be carried over secure private networks. OPLs connect key sites to data centers where hospital IT systems and digital records are located, and low-latency connectivity is important so hospitals and clinics have fast access to medical records.

Transport and logistics companies need speed and low-latency private lines to ensure fast application response times: real-time tracking of logistics systems and vehicles is “business critical” and needs to be highly responsive with peak performance at all times. Latency delays in the network would impact the performance of real-time traffic and potentially cause delivery delays.

Energy and utilities companies operate mission-critical businesses, such as delivering a power grid, and require high availability and secure OPLs. Securing critical infrastructures and related communications is of utmost importance in this sector.

Media companies have growing bandwidth demands for OPLs, primarily for digital media content distribution, sending and receiving large digital files, and for streaming live video services in real time.

**Figure 8: Optical private-line deployment by vertical sector**



Note: n=175

Source: Omdia private-line enterprise survey, February 2020

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For the optical transport layer, threat-prevention initiatives center on using dedicated rather than shared resources and optical layer encryption. Other advantages include

- Improved latency performance
- Zero packet loss
- Lower cost per bit for high-capacity services

Leading enterprise use cases for private optical lines (Table 2) include

- **Private optical network:** high-speed, secure transport between major sites and data centers; this network forms the foundation of a private or hybrid cloud using private optical or Ethernet lines
- **Real-time business continuity and disaster recovery,** synchronous data replication, and cloud backup
- **Data center interconnect:** a reliable and secure way to connect data centers in private/hybrid clouds
- **Cloud connect:** private and secure connectivity to public cloud service providers; an enterprise may aggregate its traffic into an optical private-line service, which is then connected to the cloud

**Table 2: Industry vertical applications and private-line requirements**

Industry	Key applications	Private-line requirements
Financial services	Low-latency financial trading	1. Low latency
	Financial data privacy GDPR compliance	2. High availability/reliability
	Ultra-high-performance downloads	3. High security
	Database access	4. High performance
OTT/cloud	Cloud/data center interconnection	1. Ultra-high bandwidth connections
	Content distribution networks	2. Low latency
	Low-latency online services	3. Fast provisioning
	E-commerce	1. High security
Government	Mission-critical applications related to the national economy, citizens, and information sharing.	2. High reliability/availability
Manufacturing	ERP, inventory, and supply chain logistics	1. High performance: uptime, provisioning speed for new sites/locations
	Factory automation	2. Flexibility for bandwidth on demand
	Web applications for customers	
Healthcare	Large 2D and 3D image files transfer	1. Low latency
	Sensor data	2. High bandwidth
	Electronic records storage and exchange	3. High availability
		4. Reliability and security
All enterprises	Business productivity apps: Office 365, Google suite	1. High performance
	Unified communications, video, collaboration	2. High availability to cloud and data center applications
	Enterprise applications: ERP, CRM, ITSM	3. Low latency on SaaS and video and audio conferencing

Source: Omdia

## Use Case 1: A leading global financial services company

### Guaranteed low-latency point-to-point OPLs for financial trading

The organization is a leading global financial services company with offices in 70 countries and data centers in Singapore, Tokyo, New York, and London.

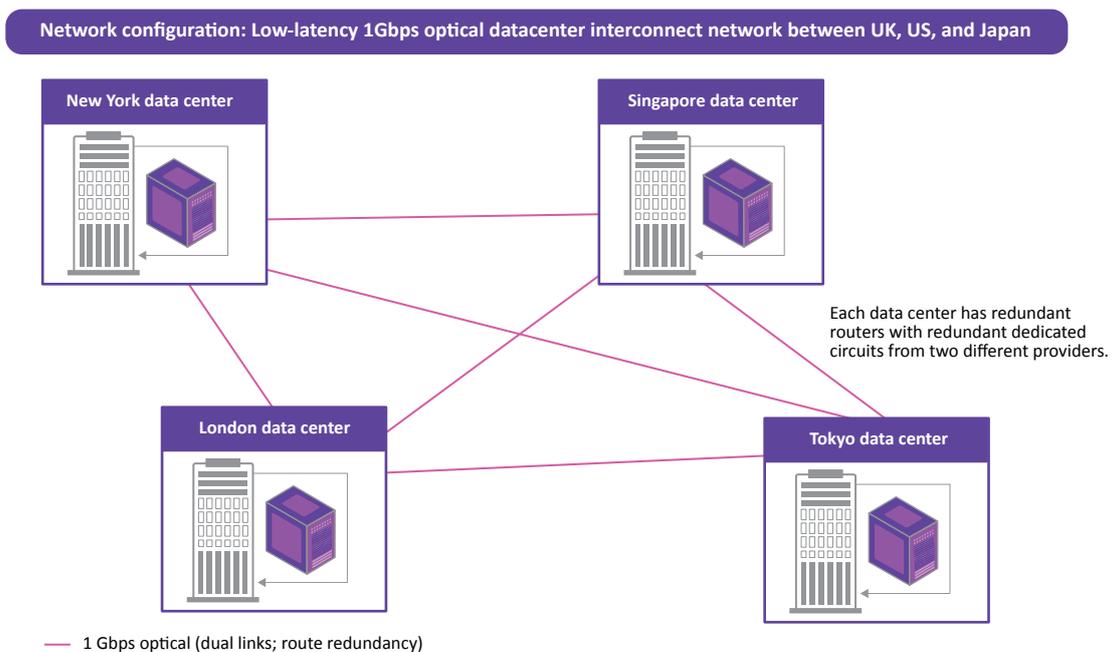
#### Critical business application

- Foreign exchange (forex) trading and credit bonds
- High-frequency trading
- Trading currency (more than 5,000 currency pairs) every millisecond and bonds every five seconds

#### High-frequency financial trading use case

- The liquidity trading business requires low-latency connectivity between data centers in Singapore, New York, and London.
- A 1Gbps optical network provides a fast, low-latency trading network between data centers in London, New York, Japan, and Singapore.
- The company operates a high-speed currency exchange based on algorithm trading, where every millisecond counts.

Figure 9: Network diagram, global financial services company



Source: Omdia

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### Why optical private line?

- The financial services company pays a premium for a guaranteed low-latency optical network, which yields a competitive edge in foreign currency trading: if the company is faster than its competition, it can increase the profitability of trades.
- The company operates in high-frequency algorithmic trading (HFT), where currency trades occur at millisecond speeds. Network latency must be minimized. The company studies each of its partner network providers to quantify which offers the lowest latency. Every additional millisecond can result in millions of dollars a year in lost opportunity, for example, as large currency positions shift slightly during slight delays in trading.

### Benefits of solution

- Optical point-to-point dedicated circuits at 1Gbps
- Guaranteed low-latency performance between global data centers
- Secure private network, fully dedicated, nonshared service
- Predictable network performance
- Protection switching and diverse routing
- Proactive SLA management and KPI monitoring

“

**It is critical that our low-latency financial trading network outperforms competitors during peak periods of intense activity. When peaks in traffic or microbursts occur for a very short time (microseconds), transactions can be lost or require retransmission, which has significant negative impact on the company's financial performance.**

*VP of network and security trading infrastructure, forex trading*

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## Use Case 2: Transport provider, public sector in Asia Pacific

### Private optical lines connecting key sites to private data center

The organization is a leading transport and roads government agency with 40,000 employees and more than 300 sites.

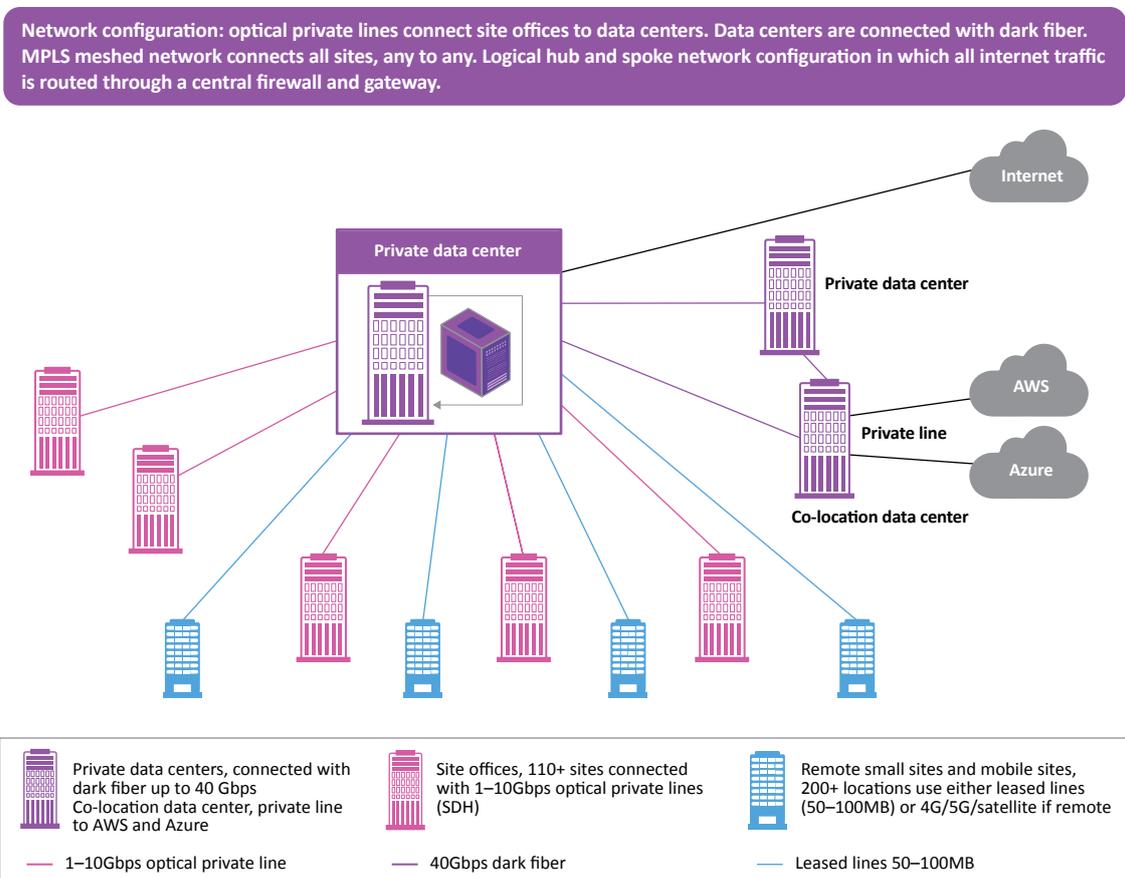
#### Critical business applications

- Finance
- HR project management
- SAP databases and applications for driver’s licenses and vehicle registration, vehicle safety testing, traffic control, tolls, road and train planning, speed cameras, maritime and waterways management
- Cloud apps include Office 365 and infrastructure as a service (IaaS) from AWS and Azure.

#### Site connectivity to data center applications use case

- More than 110 site offices with 100–200 users are connected to the data center (databases and registries) with 1–10Gbps OPLs.

Figure 10: Network diagram, Asia Pacific transport provider



### Why optical private line?

The transport provider chose OPLs to connect site offices and data centers for a better customer experience. It needs to process core services, for example, driver's licenses and vehicle registrations, at speed and with low latency in order to provide a high-quality customer experience. Fast database application response times on the network are important so customers do not have to wait too long for services such as license renewal.

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**We want customers to be satisfied when they come to us for a new driver's license or to register a vehicle, and we need fast and reliable application response time to our databases and registries with low latency in order to process customer transactions quickly and provide a high-quality customer experience.**

*Director of IT and network infrastructure, transport/public sector*

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The organization is also responsible for traffic management and traffic light signals; these applications are real time and business critical and need to be highly responsive with peak performance, and fast low-latency secure optical connectivity is a must. Latency delays in the network would impact the performance of real-time traffic and cause road traffic delays and signaling issues that could potentially impact road safety.

Central databases carry personal transport information for every person in the state, so a private network to ensure data privacy is critical. Finally, it has two highly specialized labs that perform car safety investigations and test new cars as they come on the market. Each test involves transmitting high-definition 4K and 8K video files. The transport provider tests all cars that come on the market in New South Wales and gives each a 1–5 safety rating. Each test involves high-definition video and testing, where microsecond transmission times matter in terms of getting precise readings.

### Benefits of solution

- Optical point-to-point circuits between site offices and private data centers at 1–10Gbps
- Secure private lines, fully dedicated, nonshared service
- Reliable and predictable network performance
- Protection switching and diverse routing
- Low-latency performance

## Use Case 3: Healthcare provider in Europe

### Private-line disaster recovery / data center backup solution

The organization is a leading healthcare provider with more than 20 hospitals and outpatient clinics, 16 medical centers, 17,000 employees, and overseas locations in three countries.

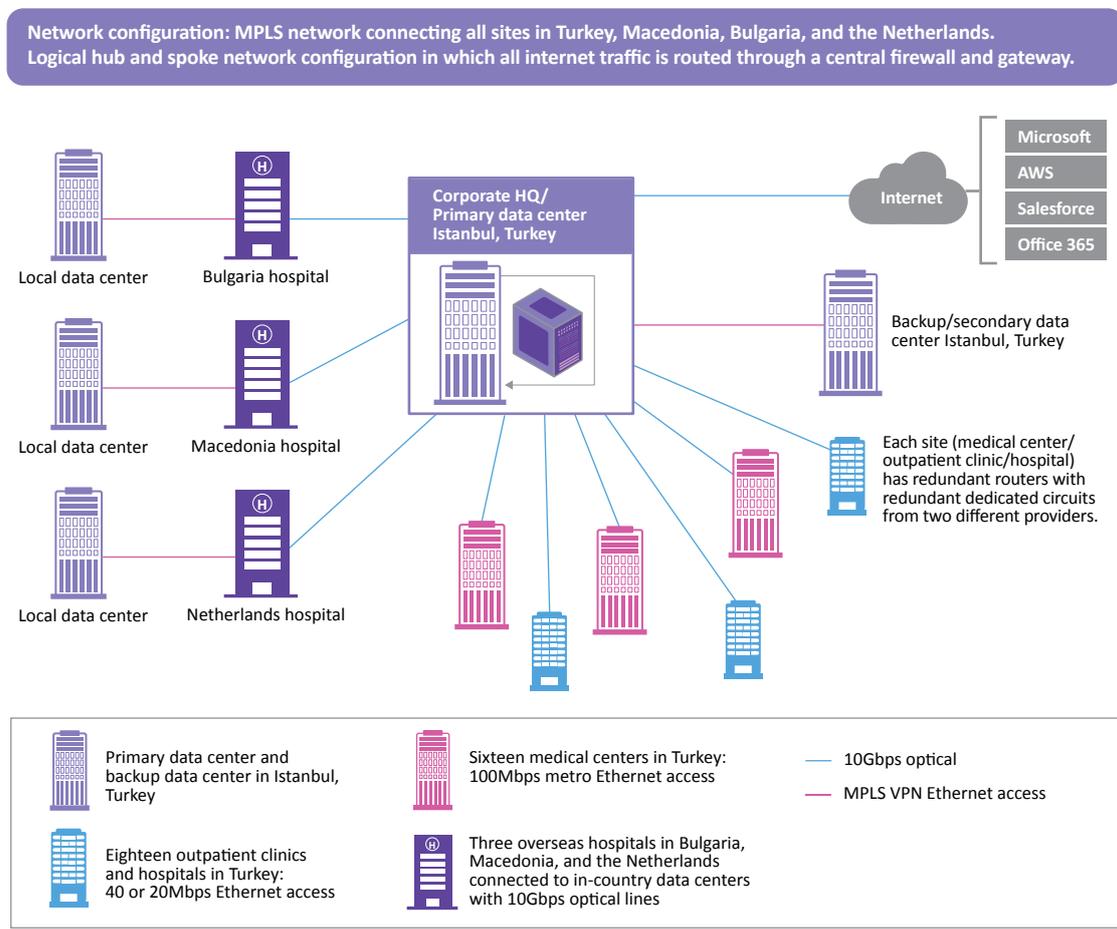
#### Critical business applications

- Storage, databases (Oracle), ERP, and Oracle Data Integrator
- Hospital information system (EMR/EMI software/patient records)
- Medical IT (RIS and PACs: X-ray, MRI)

#### Business continuity use case

- Disaster recovery, business continuity/data center data replication solution (HQ to data center). A 10Gbps optical network connects the headquarters data center with a secondary data center. Each overseas hospital maintains its own in-country data center, connected to its associated hospital site with 10Gbps optical lines.

Figure 11: Network diagram, European healthcare provider



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### Why optical private line?

The healthcare provider uses OPL because it is a fully dedicated, uncontended, nonshared service for disaster recovery business continuity/data center data replication solution. The provider uses the network for data mirroring and replication of application servers, database records transfer, and to carry other critical data. Most of the provider's IT systems and data are centrally stored, and it cannot afford downtime of critical applications related to medical systems and data/records.

The healthcare provider has strict regulatory restrictions on medical data and private patient records. This data must be carried over secure private networks. For GDPR reasons, patient data must stay within each country.

### Benefits of solution

- Optical point-to-point circuits at 10Gbps for data center backup and connection of each overseas hospital to a local data center
- Secure private network, fully dedicated, nonshared service
- Predictable network performance
- Protection switching and diverse routing
- Low-latency performance

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**Low latency is more important than speed for us. The reason is our hospital information system and digital records are centrally located. Since these applications are web-based software, low latency is important so staff at our hospitals and regional clinics have fast and secure access to hospital medical records.**

*VP IT and network infrastructure, leading healthcare provider*

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# Conclusion

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## Premium private lines are in demand and present a significant market opportunity

The vast majority (99%) of enterprises that do not currently use OPLs would consider optical networks but require a more flexible service wrap for private-line services.

Over half (55%) of enterprises plan to increase their spending on OPLs in the next two years. OPLs together with Ethernet VPN will see the largest increase in network spending.

Agile, automated optical networks and private-line services deliver better network service levels. Better SLAs are a powerful service differentiation. That differentiation means better service performance and affects related factors such as time to market and time to repair.

Delivering high-performance optical networks with differentiated SLAs is an area of opportunity for network service providers.

Performance SLAs can be improved with differentiated performance guarantees. Nearly three-quarters (73%) of enterprises rank differentiated/higher link availability for OPLs as important. Enterprises have different availability requirements and different budgets, depending on their use cases. Enterprises are buying OPLs in order to ensure performance of their cloud applications. Finally, there is demand for real-time performance visibility and SLAs including flexible bandwidth and differentiated, guaranteed levels of latency. Growing enterprise bandwidth and performance connectivity demands drive this need.

Foundational lower layers of the network support higher levels of business-critical application performance across all enterprises, especially governments, finance, large enterprises, and OTT and cloud service providers. The robustness of private-line services depends on redundant physical fiber and equipment and fast time-to-repair capability. The latest automatically switched optical network (ASON) technology creates optical meshes that help private-line services recover even if they experience multiple fiber cuts. Active fiber quality-monitoring and fault-prediction solutions help detect and remedy service problems before an outage occurs. With these solutions, operators can commit confidently up to 99.999% service uptime.

## Key recommendations

- Service providers should offer new premium performance SLAs for private-line services such as high availability guarantees, differentiated latency options, and precise SLA monitoring and reporting through self-serve customer portals. More flexible private-line bandwidth in smaller increments and at different price points would also provide value to enterprise customers.
- Enterprises across all sectors are interested in minimizing business risk through higher network availability, committed bandwidth, guarantees for low-latency SLAs, and built-in network security. Service providers need to consider the next generation of OPLs for enterprises to deliver a premium user experience for business-critical cloud applications, backed by competitive performance SLAs.
- Service providers can offer a wider range of pricing options and smaller bandwidth increments for OPLs as a way to differentiate their enterprise network services portfolio. This would make OPLs more attractive to a broader set of organizations to connect their sites, cloud locations, and data centers.

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- For the replacement of TDM private lines, service providers can offer a phased migration to private optical lines without requiring an initial replacement of enterprise CPE. Synchronous digital hierarchy (SDH) and optical transport network (OTN) can be used to build a network in a convergent way to quickly allow enterprises to migrate from TDM to high-quality OPLs over time.
  - OTN technology provides a premium user experience and competitive performance service levels for demanding and discerning customers. OTN has a similar design philosophy to SDH, but OTN is also designed for speeds of 1Gbps and above. Future wavelength-division multiplexing WDM/OTN technologies support sub-500Mbps private-line services at a competitive cost per bit. These platforms can offer a strong combination of dedicated private lines with high-performance guarantees. This would also allow service providers to offer optical private-line services, while being cost-effective for a wide range of enterprises.

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# Appendix

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## Methodology

Omdia interviewed network executives from global enterprises across several industries as well as cloud hyperscalers and Internet companies. Omdia surveyed 175 companies ranging in size from 25–10,000 employees across Western Europe and Russia, the Middle East and Africa, Asia Pacific, and Latin America. Omdia analysts conducted in-depth interviews with network and IT executives in healthcare, transport, financial services, and manufacturing sectors. These network decision makers shared their private-line requirements, experiences, and concerns.

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We create business advantage for our customers by providing actionable insight to support business planning, product development, and go-to-market initiatives.

Our unique combination of authoritative data, market analysis, and vertical industry expertise is designed to empower decision-making, helping our clients profit from new technologies and capitalize on evolving business models.

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help your company identify future trends and opportunities.

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