A network that supports my digital future

Your journey to digital transformation

Insight Guide

orange™ **Business Services**

A next generation hybrid network

The hybrid imperative in a time of change

In today's hyper-connected world, the days of a single, private Wide Area Network (WAN) and a limited number of Internet gateways are waning. Enterprises report that Internet traffic is doubling each year and now accounts for 40% to 80% of their total WAN traffic. But turning to the "best effort" public Internet is risky, creating new points of vulnerability that hackers can exploit. High levels of latency make key SaaS applications virtually unusable in remote branch office locations. A new approach is needed to enhance Internet performance and security.

Connectivity is essential to enable enterprises to successfully adopt new digital ways of working and interacting with customers. But without the right type of network, IT teams struggle to keep their data secure and deliver the fast and reliable cloud application experiences that their employees need to be productive and their customers expect.

"Network demand is escalating in the digital era," says Richard Rouse at Orange. "So, do you just buy extra bandwidth, or do you invest in a more intelligent solution — a next generation hybrid network? That's the critical question. With hybrid networks you can shift data flows between cost-effective enhanced Internet and high speed private MPLS network links, based on your business needs."

The key challenge for any enterprise is how traffic can be prioritized across private and public infrastructure in the cloud era, as well as tackling application performance and security threats more strategically to meet their business goals. The aim is, of course, to increase employee productivity, put the customer first and drive profitable growth.

In this insight guide we outline how a next generation hybrid network helps you balance your cost, security and cloud application performance goals to support new digital services.

Orange contributors:

- John Isch

- Wan Kwong Yeung

- Sam Nchinda

- Christian Pelle

- Richard Rouse

Routing decisions are made dynamically across private and public links depending on the importance of data flows to your business as well as security, latency, packet loss and network congestion considerations.

Stability
Reliable, fast and secure private MPLS connectivity to meet the needs of real-time applications (VoIP and video) and safeguard critical data

Agility
Cost-effective network extensions using enhanced Internet provide the reliability you need for access to public cloud-based applications

Visibility, security & control
End-to-end visibility and dynamic control over application performance and security with central network intelligence

Hybrid network-enabled digital transformation

Embarking on your hybrid journey

The need to access public cloud applications and make more bandwidth available at lower cost are often the initial drivers for hybrid network discussions. Taking the time to prepare for the seismic changes in network technologies, with the advent of Software Defined Networking (SDN) and Network Functions Virtualization (NFV), will also bring big benefits.

"Imagine your enterprise three to five years down the road. Work out how your business will be able to use technology more intelligently," says Christian Pelle. **"How will your products and services change as your industry adapts to the digital age? How will you interact with your customers in the future? How will they want to interact with you? What new challenges might geographic expansion bring? How will your people be able to use technology more intelligently?"**

As you embark on your hybrid journey, the following building blocks will be critical to enable your vision:

- **Connectivity:** combine different transport circuits and network access methods to meet your speed, security and geographic needs

- **Security:** apply real-time security controls to meet business and operational goals and respond to rapidly emerging threats

- **Application access:** enable employees to access the reliable and responsive cloud applications they need to be productive

- **Management:** monitor, prioritize and control applications and traffic flows across both public and private networks in a dynamic, automated way

Connectivity

How can enterprises meet digital demand without bandwidth requirements and costs spiraling out of control?

Combining different networks (MPLS and Internet) and access methods (Ethernet, leased lines, DSL, satellite and 3/4G mobile) provides the fastest route to cloud applications and data wherever the branch office, temporary site or virtual worker is located. It's a question of working out which types of traffic should go on each network to meet your business goals.

Private connectivity: Real-time voice and video is best transported on a private network to ensure the quality of the calls. Private connections into SaaS and IaaS providers give employees the end-to-end performance guarantees they need when working on business-critical tasks.

Enhanced Internet: In order to avoid service degradations, you can route important traffic via a public Internet overlay – providing a faster and more direct path from your branch offices to public cloud applications. SD-WAN offers another approach. Traffic is automatically routed over a choice of two or more Internet links – or a private link and Internet connection – depending on real-time network congestion and health levels.

Secure Internet: General browsing by your staff can be served by public Internet links, which are secured so they can't be used for malicious hacking, data theft, blackmail, fraud or espionage.

"Because the Internet is a highly variable, 'best effort' network that can experience dramatic swings in latency, throughput and packet loss, it's important that you take a different approach to 'business harden' Internet performance," says John Isch at Orange.

A hybrid network solution allows enterprises to dynamically segment application traffic onto different network links, depending on latency, bandwidth, geographic reach, security and per-bit cost.

75%
of organizations plan to use hybrid cloud as part of their business transformation strategy

Security

Enterprises need to control the relationships between end-users and the networks, applications and data they access. It's important to be able to implement and enforce a consistent, global security policy wherever the user is located, on any device and using any network. At the same time, flexibility is essential to comply with regional compliance regulations and standards.

Enterprises no longer have clearly defined network perimeters. Different models of Internet gateway offer different levels of security to match your data risk profile:

- **Dedicated gateways:** eliminate the risks associated with shared infrastructures

- **Local gateways:** cost effective and secure offloading of Internet traffic

- **Distributed in-cloud gateways:** apply security controls centrally to every device using a cloud-based security SaaS service without the expense and difficulty of keeping on-premise hardware up-to-date

Each model has benefits and challenges from a security perspective, but traditional security approaches will not work well in hybrid architectures. Enterprises need to adopt advanced security controls that include next-generation firewalls, cloud-based security, advanced threat protection and the correlation of security information on a global basis.
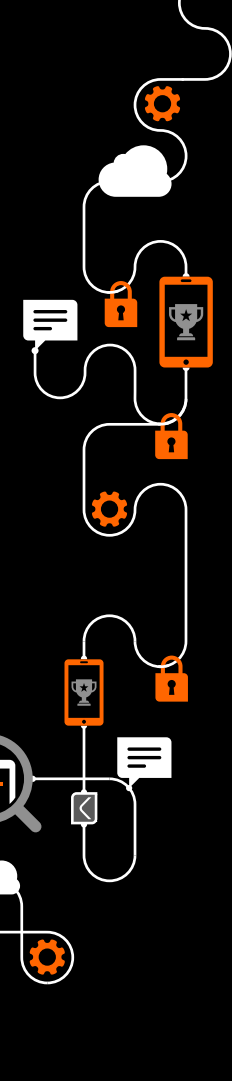
Application access

Even applications are hybrid today. Applications exist in multi-cloud environments, the datacenter, the branch and on devices with different instances, updates and versions – all at the same time. Hybrid networks must securely connect users to their applications, wherever they may reside, with acceptable performance levels to end-users while controlling costs.

"The adoption of business-critical cloud applications – like CRM, ERP and Business Intelligence – is accelerating," says Sam Nchinda at Orange. **"Today, branch office employees often experience performance problems using standard, 'best effort' Internet connections to access these SaaS applications, particularly at peak times. They have to wait for applications to open and save dashboards, data and documents, impacting productivity."**

Private connectivity: For the highest levels of performance, reliability and security when accessing cloud applications, use private connections and avoid exposing traffic to the Internet. This approach ensures Quality of Service (QoS) with end-to-end performance guarantees and security. For example, Orange offers high speed access to over 50 SaaS and IaaS solutions from all three hyperscale providers (Microsoft, Amazon and Google), Salesforce and leading vertical specialists. Private connectivity is also required to support latency-sensitive, site-to-site traffic – including unified communications.

Enhanced Internet connectivity: Traffic can be routed using a prioritized Internet overlay with advanced optimization technologies that delivers a faster and more reliable end-user application experience. This provides error correction and acceleration, and minimizes the number of network hops to improve traffic flows up to 10 times faster than the public Internet.

Management

The performance and reliability of an organization's network and their applications impacts all areas of their operations and can affect brand image and revenues.

Management tools enable enterprises to optimize their IT infrastructure and get maximum return from their applications. This is achieved via traffic acceleration and control solutions, as well as granular performance visibility.
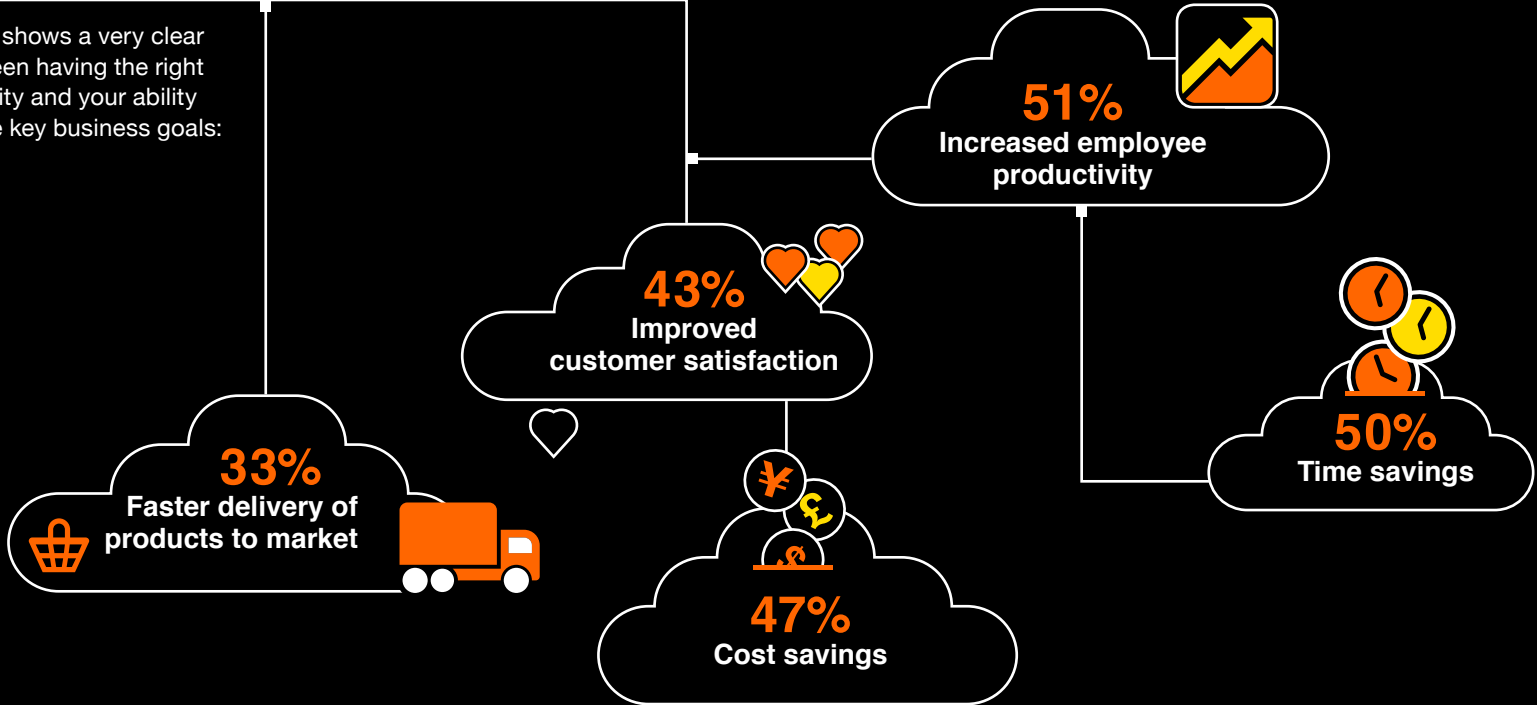
"A well-managed hybrid network delivers predictable user experiences across any kind of network," explains Wan Kwong Yeung at Orange. "It enables you to get more bandwidth for your money and at the same time keep pace with demand. Likewise, good performance metrics provide the means to calibrate bandwidth requirements and assess route options to ensure alignment with business requirements."

By combining user experience, application, infrastructure and network monitoring, you gain a holistic view of application performance. You need to be able to monitor, prioritize and control applications, traffic flows and QoS across a multi-path environment that includes both public and private networks using a self-service portal. A user-friendly dashboard provides alerts and warnings, commands for modifying network settings and troubleshooting issues. Dynamic WAN selection can enable the network to automatically adapt when congestion or other quality thresholds have been reached.

With the right management tools, you can ensure that you aren't over- or under-provisioning bandwidth and your hybrid network can dynamically adapt to changes in end-user behaviors and needs.

Hybrid benefits

Research shows a very clear link between having the right connectivity and your ability to achieve key business goals:

33%
Faster delivery of products to market

43%
Improved customer satisfaction

47%
Cost savings

51%
Increased employee productivity

50%
Time savings

Unmatched customer service

Orange Business Services has 21,000 employees dedicated to our enterprise customers. We deliver services to our customers in over 220 countries around the world. We provide local support to ensure that your network enables your digital business 24/7. This includes experts in five service centers working across borders, languages and diverse infrastructures as well as security specialists in eight cybersecurity centers who are constantly monitoring and mitigating threats.

Orange has received numerous awards, including:

wca
2015 Winner

WORLD COMMUNICATIONS AWARDS 2015

Users' choice award

The highest customer satisfaction index score in an analysis of enterprises around the world in relation to our solution portfolio, value for money and customer support.

Gartner
Leader, Global Network Service Providers 2016

GARTNER MAGIC QUANDRANT LEADER 2016

Global network services provider

Gartner states that Orange Business Services remains one of the world's leading global providers, with special strength in emerging markets and an emphasis on its people as a differentiator.

According to Gartner,
70% of IT professionals
say they can't easily diagnose outages, application issues, link failures and other network disruptions. Working with a managed service provider overcomes this challenge by providing end-to-end network, application and end-user performance guarantees.

Gartner, Enterprise Communications Services, Worldwide, 2015

Our vision

We have a clear vision of how a hybrid network can enable you to achieve digital transformation and fulfil your business objectives:

- The network is essential to help enterprises meet their digital business goals by enabling employee productivity and customer-centricity

- Enterprises only need one hybrid network to benefit from improved management, security and cost control at any location

- On-demand cloud applications and virtualized networking will increasingly enable IT to adapt quickly to change

Simple

Keep intelligence in the network for maximum visibility and control with one point of accountability

Agile

Path plurality to meet diverse business needs quickly and cost-effectively

Secure

Embedded security is an integral part of the infrastructure with the ability to apply consistent policies everywhere

Stable

Enjoy the same reliable performance in the cloud as you do with your in-house applications

Orange contributors

- **John Isch (US):** 25+ years' experience in ensuring Fortune 500 companies have a network that supports business growth

- **Sam Nchinda (Global):** helps enterprises increase employee productivity and interact with customers in new digital ways

- **Christian Pelle (Global):** an expert in using the network to enable high levels of security and cloud performance

- **Richard Rouse (Europe):** a specialist in digital transformation at leading global companies

- **Wan Kwong Yeung (APAC):** focusing on ensuring connectivity does not compromise cloud performance

Please visit us again to read part two of this insight guide and get practical tips on deploying a hybrid network.

If you'd like to talk to our thought leaders, please fill in our contact form here: **orange-business.com/en/connectivity-hybrid**