

white paper - white paper - white paper - white paper - white paper - white paper - white paper

**WAN optimization:**  
reduce operational costs and boost  
application performance



Business  
Services



# summary

- 3 executive summary
- 4 why consider WAN optimization?
- 8 factors impacting the WAN optimization decision process and strategy
- 13 Orange Business Services – Business Acceleration
- 23 Business Acceleration partners
- 24 case studies

# executive summary

Applications are the lifeblood of modern businesses and their performance has an immediate impact on business productivity. The centralization and consolidation of the business IT infrastructure has made the network increasingly important in application delivery. This focus on the network has turned the spotlight on WAN optimization as a mechanism to understand and control applications over the network and ultimately improve their performance.

Much of the impetus behind WAN optimization currently comes from the present economic crisis as companies look to improve the return on investment (ROI) and lower the total cost of ownership (TCO) of their IT and network investments. The push for WAN optimization can come both from the business unit using the application and the IT department responsible for its delivery, with drivers ranging from meeting business objectives, through network ROI, to IT governance.

Successful application performance improvement will require the participation of all three stakeholders in network application delivery: the business unit, the IT department and the network service provider. Enterprises will need to understand what business processes the application supports and what IT and network resources are needed to deliver the appropriate performance. Part of this exercise is application modeling and benchmarking to understand applications' current state and simulate their performance over the network.

However, WAN optimization is a complex undertaking and there are a variety of business, end-user and IT factors that need to be considered before embarking on a project. These include what service level agreements (SLAs) are necessary, how the end-users' perceptions of the application impact the project and what technology is being used in the current infrastructure.

Finally, this paper looks at the Orange Business Services consultative approach to WAN optimization, which is delivered via the Business Acceleration service. It incorporates three service models: integrator (offers customizable WAN optimization services on any network); network-centric (that delivers WAN optimization as part of the Orange IP VPN network); and managed IT services (focuses on improving application performance from the data center).

# why consider WAN optimization?

WAN optimization can bring about significant benefits to business operations as well as return on investment and total cost of ownership. Results such as these have been achieved by Orange customers:

- 66% savings on internal costs and improved application response time by 50% using application acceleration solutions
- reduced application deployment timeframes from nine months to three months with application pre-deployment analysis
- 80% more use of the IP VPN by shifting less critical application traffic to the Internet using application performance management
- 17% savings on network TCO using application acceleration solutions
- 99.9% application availability and reduced TCO of 27% through outsourcing of IT infrastructure management

WAN optimization is increasing in popularity as enterprises look to understand and control the performance of their applications over the network, and the push is coming from both the business units using the application and the IT department. The current financial turmoil is serving as a driver for WAN optimization because it helps companies achieve return on investment on their network and IT investments in under 12 months, along with lowering IT total cost of ownership by a percentage in the double digits.

## business drivers

Reflecting their new power in IT, business units are increasingly taking the lead in deploying WAN optimization. They want to ensure that their applications are performing satisfactorily to maximize user productivity and support their business processes. They could have a problem with an existing application or are planning to deploy a new application or release.

## meeting business objectives

The application may be crucial in helping the business achieve a specific objective, such as clearing a certain number of orders a day through an order management system or completing a number of mortgage inquiries in an hour. If the application doesn't have a quick enough response time, its employees won't be able to meet those targets.

Perhaps the business wants to ensure that customers can always access its key e-business application and complete their transactions within a reasonable amount of time. If a transaction takes too long, the user might abandon his shopping cart, losing money for the business and damaging its reputation. Or maybe it needs to be certain that the call center application puts customers in the correct queue when they call and transfers them quickly to the most appropriate agent. If the application doesn't work or is too slow, then money will be lost.

Business units are enthusiastic about WAN optimization because it enables them to have more input into what technology needs to be in place to meet their business targets. In effect WAN optimization allows it to align IT to its business objectives.

### IT drivers

In addition to supporting the business unit's desire for well-performing applications, the IT department itself has a number of reasons of its own for using WAN optimization. These include governance, compliance, cost control and reduction, disaster recovery, performance models and IT service management.

#### network return on investment

Another key IT driver is maximizing the return on investment (ROI) on the network. IT departments are looking for optimal application performance, maximum availability and the best possible response time, and all of this delivered with the least amount of infrastructure. As part of an IT consolidation process, companies should look to WAN optimization to ensure that they continue to get the performance that users expect from their IT infrastructure. If budgeted as part of a consolidation process, part of the savings this generates should be invested in ensuring application performance.

Historically IT departments looked towards bandwidth savings, and three years ago most initiatives were focused on compression. Now, companies need to use a combination of techniques along with compression to maximize the use of their network investments, including traffic shaping, caching and application protocol acceleration. There are a number of reasons for this, including:

- Not all applications benefit from simple compression. Voice and video over IP can't be compressed, and applications, such as the content management tool Documentum, are incompressible because of how they function.
- Application latency can't always be improved using standard network and IP protocols. For example, CIFS (common Internet files system), a protocol that enables communication between print and file services with a server system and MAPI (messaging application programmer interface), which is used for Microsoft-based email services, are not served well by network-based protocols since access to the applications by end users becomes delayed or worse, totally inaccessible, due to server overload.

## governance

Governance is a priority for most IT departments, and WAN optimization can play a crucial role in providing visibility into what applications are running over the network. WAN optimization can also help with compliance: every year businesses go through an audit and they need a solution that can give them real data on how applications are behaving and the contribution they are making to business productivity.

Rogue applications on the network can cause IT departments all manner of headaches, and WAN optimization can identify their presence. Typically rogue applications are deployed by regional IT organizations acting independently of the central IT department. These applications can degrade network performance for other applications because they have not been considered in the planning.

Some companies choose to deal with this problem by allowing regions to have their own applications but insist that they are incorporated into the network planning, whereas others will use WAN optimization to cut off the applications' access to the network. However the latter approach is fraught with danger, as it will annoy users and possibly block valid applications.

## service management

ITIL<sup>®</sup> service management is essential to establish the guidelines and language between all the different parts of the business and third parties. This will supply the framework for calculating key performance indicators (KPI) and the policies for implementing and maintaining them. It is also important to establish these models for compliance to regulations.

## disaster recovery

WAN optimization also needs to be an essential part of the IT department's disaster recovery strategy. Companies deploying a fully-redundant data center need to include it in their WAN optimization strategies. If the WAN optimization policy doesn't cover the redundant data center, then when there is any failover, the business will be back in the same situation they were in before the exercise and probably worse.

## ensuring performance

Ultimately, WAN optimization is about improving the performance of applications. Businesses invest in applications to support a specific business process and need to be confident that it meets their specific business requirements. Questions about the application that need to be answered include: who is using it, what business process does it support, what response time is needed to meet business targets and what sort of business reporting is required. Consultants are crucial in helping businesses answer those questions.

The IT department is responsible for delivering the required application performance, but its focus is on deploying the application, servers and dealing with any connectivity issues. They may not be able to ensure that the application will meet the specific business requirement. In fact, in some cases the business unit may have unrealistic expectations about response times, particularly for applications that have not been designed to run over a wide area network.

In any application performance improvement program, it is essential to realize that WAN optimization might not be the answer all the time. Sometimes it could simply be a matter of tweaking the infrastructure configuration or the application's coding, such as unnecessary client-server responses. WAN optimization is not something companies can just plug in and expect that it will improve their applications inherently and automatically without any baseline configuration. Making it work requires good business knowledge to understand how application performance impacts business productivity.

#### application profiling and performance modeling

Companies need to profile applications to understand whether they are likely to experience performance problems. This involves benchmarking the applications' current state and using modeling tools to simulate their performance over the network. Modeling tools take a snapshot of the existing infrastructure, users, bandwidth and applications and model the application performance throughout. They show IT departments what needs to be done to meet the required level of performance. For example, if a server is too far away from the client site, response time is likely to be too slow, so WAN optimization at the remote site may help with technologies such as compression, caching and application acceleration.

Modeling isn't just important when an application is deployed, it's also crucial to measure the impact of any changes, such as application upgrades or additional users. The model can be recalibrated with the new data and a new application trace made to determine the predicted performance. It is a continuous process with the application performance model recalibrated every time the environment changes.

Ensuring application performance requires close collaboration between service providers, business units and the IT department. There are both IT and business objectives for doing WAN optimization but, in the past, IT departments have had difficulty understanding the business's requirements. This is leading more business units to approach service providers directly for a WAN optimization solution and so take the lead in aligning IT with the business.

# factors impacting the WAN optimization decision process and strategy

WAN optimization is a complex undertaking, and there are a variety of business, end-user and IT factors that need to be considered before embarking on a project. These include what service level agreements are necessary, how the end-users' perception of the application impacts the project and what technology is being used in the current infrastructure.

## business requirements

As we have seen, business units are wielding a lot more power in IT choices, particularly when it comes to deploying key business-process-critical applications.

is the IT infrastructure ready to support a new go-to-market (GTM) service?

The key question for business units is whether the IT department is able to support the application they need to deploy. Because the business unit has an increasing say in how the application is run, it will often involve a third party consultant to help it understand what resources the application needs or how it will interact with the existing infrastructure. Consultants would then act as the interface between the business unit and the IT department to ensure that the new application strategy fits in with the overall governance and IT strategy.

how is application transaction response time related to business productivity?

Application response time is a key quantifier for business objectives. Typically, transaction response time is linked to business productivity, and it is essential to understand whether or not the response time is realistic based on how the application is being used and how it has been built. If response time is a requirement, then the WAN optimization strategy will need to include a transaction response time metric and SLA, which requires additional modeling and technology that can report these SLAs and metrics. In some cases, all the business will want to do is track how the response time is performing so that it can take any action if it falls out of the desired range.

what SLAs can be provided and supported for a given application?

It's crucial to understand how the business is using any SLAs. Are they providing users with internal SLAs on specific applications, for example, to ensure that the application response time is in line with business requirements?

Or are they perhaps using the SLAs to manage a contractual relationship with a service provider? Either case will require a specific approach to SLA reporting. In the former, simple reports are likely to be enough, while the latter will require more rigorous figures. Whatever the purpose of the SLAs, the metrics that matter have remained similar over the past few years:

- end-to-end application response time
- application transaction response time
- application availability

Other SLAs, such as mean opinion scores, are usually used for real-time application quality, such as voice over IP, and are not applicable for most transaction-based applications.

### end-user perception

Although largely subjective, end-user perception needs to be managed effectively to ensure that application improvements are felt by the user community at large – whether those are employees or customers. For example, an end user might log into an e-banking application; if they find it slow, they might first think it is the Internet connection and, if it isn't, they may realize that it is the application and log out. How do companies measure this end-user perception and turn it into something quantifiable?

is the end user already using a version of this application?

If users already use a version of the application, then it is possible to measure the “before” and “after” perception of performance. This is easier to do for an internal application used by employees than for an external service provided to customers. One approach is to link it to the number of help desk calls – if they go down after the WAN optimization exercise, then it could be considered a success.

is there a history of complaints about IT and network?

A surfeit of help desk calls is also a key indicator that something is wrong with the performance of the application. It is vital to analyze these and trace the problem down to a specific application or process, which can then be improved. Up-front work, such as benchmarking and application modeling, is key in this exercise.

is the perceived slow response actually slow?

Unfortunately, the subjective nature of end-user perception might mean that calls to the help desk may continue after the application performance has been improved simply because the users have an unrealistic expectation of response time. This requires user education to set expectations accurately. It also might

require the business to revisit its transaction time requirements, because in some cases, it is simply impossible to improve response time further because of how the application has been designed.

### current infrastructure

IT budget restrictions, especially during this economic downturn, and the increasing influence of green IT means that companies no longer want to continually upgrade their infrastructure. WAN optimization is essential in any business case for infrastructure refresh as it allows companies to maximize the use of these resources. There is a range of important infrastructure considerations that will influence how companies deploy WAN optimization.

### technology

Perhaps the most hotly-debated infrastructure topic for WAN optimization is the actual technology. Some companies are not tied to any particular technology and will work with a third party to determine a solution that works best for their needs. Others will have their own preferred vendors and their own internal IT teams to validate technology and will want their solution to incorporate this technology.

All WAN optimization technology typically contains these capabilities:

- caching
- compression
- traffic shaping
- acceleration or application protocol optimization
- application monitoring and reporting

Some vendors are strong with a few of these capabilities, so a company that is interested in better application visibility shouldn't really choose a solution that is focused on acceleration. However, consolidation is already underway in the market, and many vendors are buying competitors to add functionality to their product.

If companies choose to deploy acceleration themselves, they typically go for a "quick and dirty" approach of installing the box with advice from the vendor. This approach will typically focus on the strength of the vendor's product rather than looking at principles first and then deciding how application performance can be improved. If the quick and dirty approach fails to improve end-user perception or meet business requirements, for example, companies will often turn to a third-party consultant for advice.

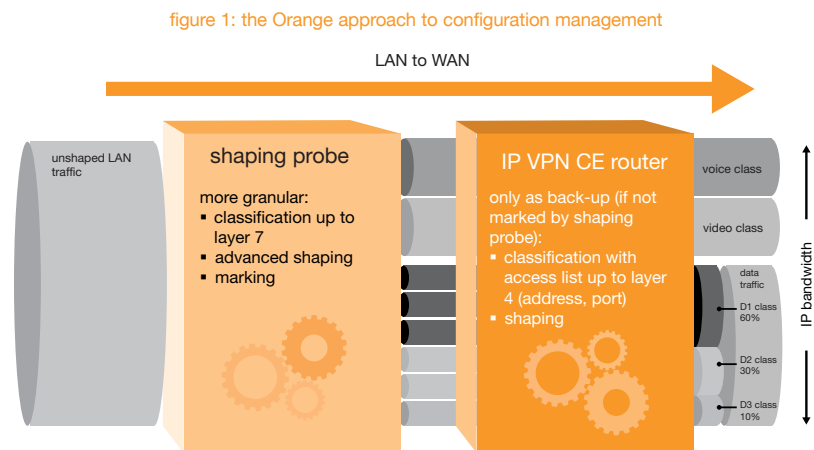
## interoperability

To get all the functionality required in a WAN optimization solution, it is not likely that one vendor can answer all requirements. Technologies will need to be integrated together and with their network solution. Additionally, a hybrid solution requires configuration mapping between the multiple technologies so that information, such as quality-of-service, class-of-service and network configurations, is consistent between them.

Unfortunately this is easier said than done, as interoperability between different vendors' platforms is limited. Using ITIL<sup>®</sup> best practice is vital, as it offers a framework for release management, configuration management and service level management, all of which are vital when mapping between multiple technologies.

Companies are rightly concerned that working at a configuration level might upset network performance. Orange has already helped companies that had blocked applications whose performance they were trying to improve. This could have been caused by a software interoperability or application configuration issue. So it is very important to have validated configuration releases that are interoperable between WAN optimization probes and MPLS routers.

Say, for example, the classification and shaping tasks are moved from the MPLS edge router to a shaping probe to enable more granular classification and shaping. Orange has defined an interoperable configuration that enables the probe to classify and mark traffic and where the shaping design is made to mimic queuing on a standard MPLS router.



### cost of ownership

Building a business case for WAN optimization needs to be done right at the beginning of the project and the return on investment metrics will also depend on whether the IT department, service provider or business unit is taking the lead. Given that WAN optimization is primarily to improve the performance of applications, ROI should be related back to the productivity improvements that it brings.

On the IT side, a common metric is reducing the number of trouble tickets generated. However, this doesn't always have a direct link to application performance. From the business side, an approach might be to look at the business numbers that the application influences, such as the number of orders placed, or even an increase in revenue. If WAN optimization can be proven to influence the latter, then the business case will be extremely easy to make.

### application SLAs and reporting

The final factor to consider is that of service level agreements and reporting. Companies, as a matter of course, expect service providers to offer an SLA with their managed services and are increasingly asking for application SLAs. These are typically response time and availability, and they can be provided across different parts of the infrastructure. The key ones are:

- application level
- network level
- data center level

To make matters more complex, different parts of the organization or different third parties will have control of different parts of the infrastructure. For example, the application managers will not be able to offer an SLA over the part of the application that runs over the network unless they have control of it. Typically the SLAs are offered only to the area of responsibility, which can create quite a headache for customers trying to make sense of who is responsible for any failure.

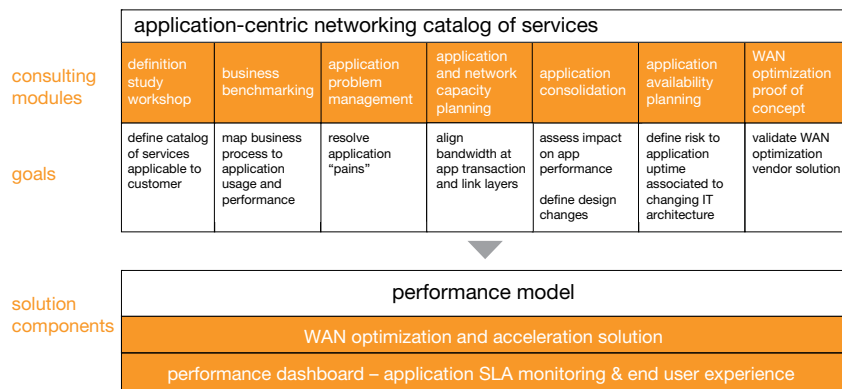
The choice of SLAs and reporting makes a big difference to which WAN optimization technology is required, so it is vital to establish what is needed right from the outset.

# Orange Business Services – Business Acceleration

## consultative approach

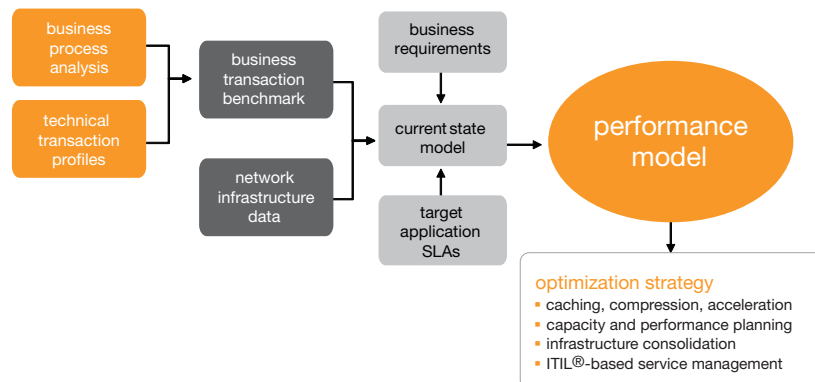
The Orange Business Services consultative approach for WAN optimization and ongoing life cycle management is called the application-centric networking (ACN) consultancy. The ACN consultancy service catalog and goals are depicted below.

figure 2: application-centric networking consultancy catalog of services



Application-centric networking consultancy takes a top-down approach, beginning with an analysis of the application and the critical business processes it supports. This allows Orange to discern what response time is required by the different application transactions and tasks to meet the business's targets.

figure 3: approach that determines how the business uses the application to predict end-user experience



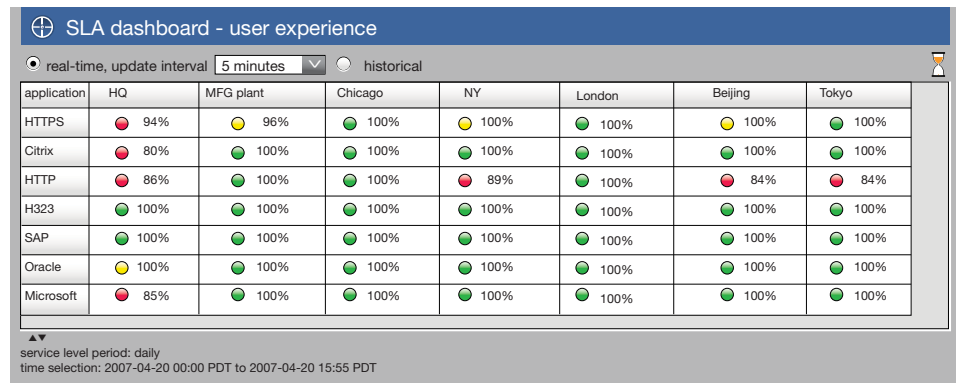
ACN consultancy helps businesses profile and model their applications and supporting infrastructure environments. It uses predictive analysis to validate a performance model, including risk assessments that the applications will require to perform to expectation. The ultimate output from ACN consultancy is an optimization strategy definition.

## ACN consultancy performance dashboard

The ACN consultancy performance dashboard monitors on-going application performance and end-user experience. The performance dashboard, coupled with the ACN consultancy service catalog, enables businesses to undertake proactive application analysis and realize benefits, including:

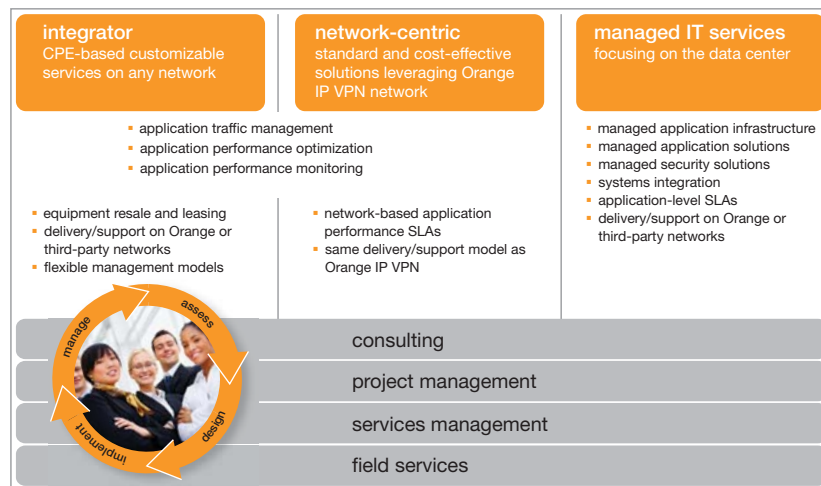
- set a network baseline to discover and classify applications
- monitor application transactions and set dynamic thresholds and alerts at the end-user or business-group levels
- monitor and report on application performance against a benchmark after being enhanced by WAN optimization and acceleration solutions
- enable effective and proactive application troubleshooting via continuous packet capture and drill-down root cause analysis that indicates whether the problem is at the application, network or server level

figure 4: application-centric networking consultancy performance dashboard



The Business Acceleration managed services portfolio provides a solution that includes visibility, monitoring and management of applications, their performance and the underlying infrastructure. It includes a set of service models and capabilities that are depicted in figure 5 and explained in detail thereafter. The objective of these service models is to offer flexibility for our customers with varying IT profiles and requirements.

figure 5: Orange service models



integrator: CPE-based services on any network

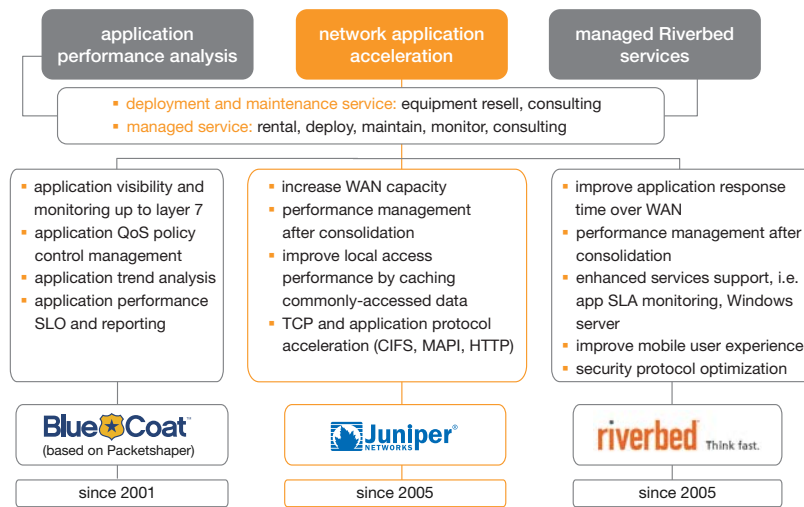
The integrator service model is targeted at customers who:

- require customized WAN optimization features and solutions
- have existing infrastructure they would like to re-use
- want to maintain certain key tasks in-house but out-task others
- have a complex, mixed IT environment with multiple platforms
- have customized service management requirements
- require flexible financial models that range from resale to leasing

To meet these requirements, Orange has packaged its integration services into three service offerings:

- **traffic baseline assessment:** a one-time consultancy-led engagement utilizing application impact analysis from ACN consultancy and WAN optimization vendors for discovery, problem resolution, proof of concept or capacity planning
- **recurring:** reactive application performance monitoring or a managed service, including consulting, hardware support and regular reports, tuning and recommendations
- **proactive:** proactive application performance monitoring or managed service, including application threshold alerts, hardware support, reporting, tuning and recommendations through consulting

figure 6: integrator service model



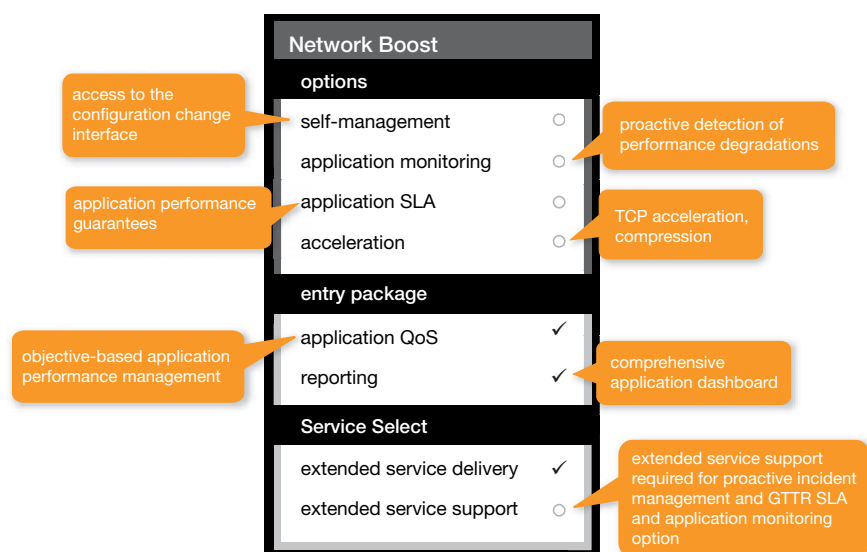
Complementary to the integrator service model is the aforementioned ACN consultancy performance dashboard based on OPNET's ACE Live technology, enabling on-going application SLA monitoring and end-user experience. The performance dashboard, coupled with the Orange consulting service catalog, provides proactive application impact analysis and business intelligence capabilities.

network-centric: leveraging the Orange IP VPN network

Customers looking at the network approach for WAN optimization are coming at the issue from a different angle. Although they are looking for application optimization, they don't want to have to deal with it as a separate service element. Instead they would prefer to consolidate the optimization technology under the main umbrella of their WAN contract with the same SLA and bill. These enterprises are focused on operational expenditure where equipment is rented rather than purchased from the provider.

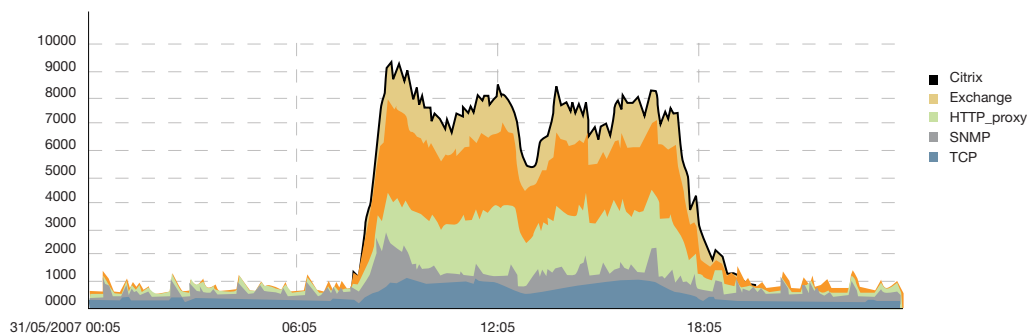
To this end Orange Business Services has developed the Network Boost service. It is fully integrated with the Orange IP VPN and reports, prioritizes, accelerates and optimizes enterprise applications. Network Boost guarantees uptime through stringent network-based application service level agreements and proactive performance monitoring. It is delivered and billed as part of the Orange IP VPN service with the same guaranteed quality of service (QoS) across the entire network. Unlike the consultancy approach, Network Boost is still largely procured by the IT department as they are responsible for the WAN contract.

figure 7: Network Boost service components



Network Boost allows enterprises to see which applications are being used in what locations and differentiate them accurately. Combined with IP VPN classes of service, Network Boost allows them to optimize their applications precisely. For example, it can tell Citrix display flows and print flows apart, so that they can be allocated with different priorities in the network. This avoids the common Citrix problem of large print jobs blocking the network.

figure 8: Network Boost allows enterprises to monitor their applications in real time



In addition to allocating prioritization, Network Boost offers an application acceleration option that includes compression and TCP acceleration. It is priced at a competitive flat fee per site, making it very affordable compared to other approaches to application acceleration.

To operate effectively, Network Boost requires an element of consultancy in the design phase, which is where the customer’s specific application policy is set. While it is possible to use the standard configuration of Network Boost with default rules, enterprises can gain much more by customizing the tool to suit their own business priorities. This includes mapping their business priorities to network resources and falls under the assessment module and design phase of Network Boost.

To ensure the performance of key applications, Network Boost includes:

- application quality-of-service (QoS) policy definition to accurately identify, prioritize and assign performance objectives to applications
- objective-based application QoS that dynamically adapts to traffic conditions to best match performance objectives
- application performance and volume dashboard providing the information for correct decision-making
- application acceleration to improve response times while respecting the application criticality per the QoS policy
- application SLA indicators describing with one value how performance objectives have been matched during the past period

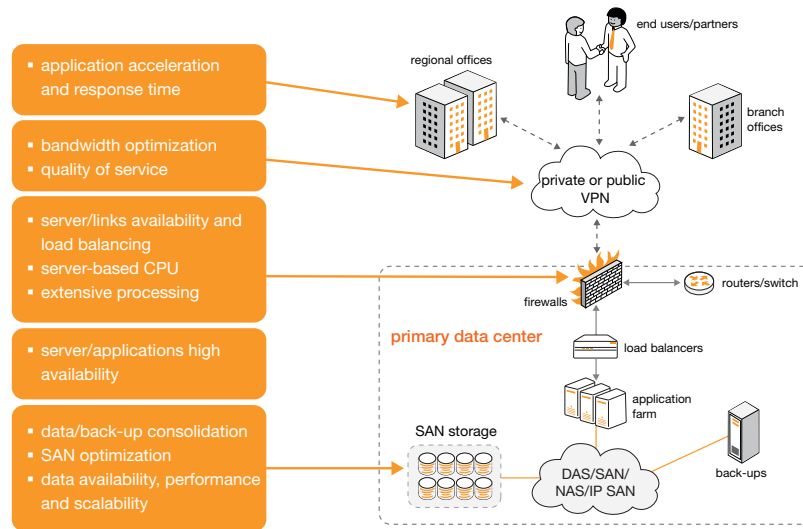
Additionally the network-centric model includes a managed Cisco WAAS service available on a case-by-case basis in 2009 to address application acceleration needs with IP VPN. This service includes:

- TCP optimization
- application specific acceleration (CIFS, SQL, etc.)
- reduced bandwidth consumption with compression and caching
- HTTPS optimization
- Windows on WAAS

managed IT services: focusing on the data center

Although this paper is concerned mainly with managing the WAN to minimize cost of ownership and ensure that applications perform as required, the overall cost and user experience depends not only on the WAN, but on the entire IT infrastructure delivering applications to the user. Clearly this includes the software, servers, storage, data centers and data center networks that generate and store the application content and traffic.

figure 9: optimizes all components – from end-user to data center components



Through transformational outsourcing, Orange Business Services can both consolidate the customer’s applications onto a more efficient, reliable, cost-effective IT infrastructure run in the Orange data centers and take over its management and transformation. Benefits of this approach include:

- reduction in the total cost of ownership of application infrastructure
- better alignment of IT expenditure to value or revenue
- improved alignment of IT to the business
- increased ability of IT to respond to rapidly changing requirements
- more freedom for the customer to focus on core business issues rather than IT and on IT innovation rather than maintenance of existing systems
- the management and provision of IT as a service to the business

Consolidation nearly always involves the migration of application platforms to a smaller number of data center sites and the introduction of thin-client technology in at least some areas of the operation. Both of these actions have a significant impact on the WAN. Consequently, optimizing the WAN is an integral part of any consolidation project. Indeed, the two activities are complementary, and IT consolidation and out-tasking enables Orange Business Services to:

- reduce the incidence of rogue applications managed at local sites
- reduce application load on the WAN by deploying appropriate technologies in the data center, providing HTML compression, etc. and possibly by helping the customer migrate to application packages that are designed to work better over a WAN

- provide complementary SLAs for the availability and performance of applications within the data center
- extend ITIL<sup>®</sup>-based service management to the data center, which increases coverage of the overall service

The engagement process is very similar to that described above. The first step is always to understand the business objectives of the customer. The second is generally to determine what applications the customer uses, how these are used, and the infrastructure that supports them. It is both natural and efficient to include both the data center and WAN environments in this process.

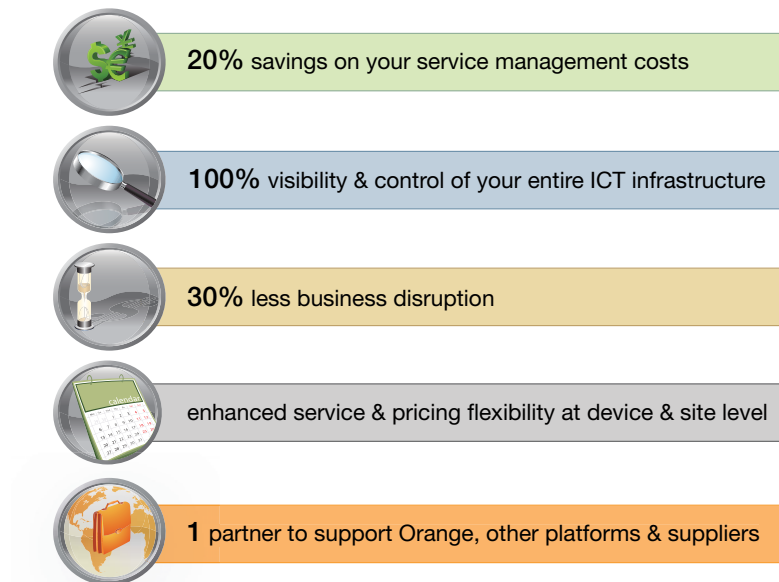
### ITIL<sup>®</sup> service management

Service management is an essential part of Business Acceleration. The Orange offer, called Service Select, is based on ITIL<sup>®</sup> best practices.

#### Service Select

Service Select is the Orange IT service management offering, which brings together experts certified in service management best practices and available around the globe, processes aligned to ITIL<sup>®</sup> recommendations with market leading ISO certifications, as well as state-of-the-art monitoring, management and reporting tools.

figure 10: Service Select benefits

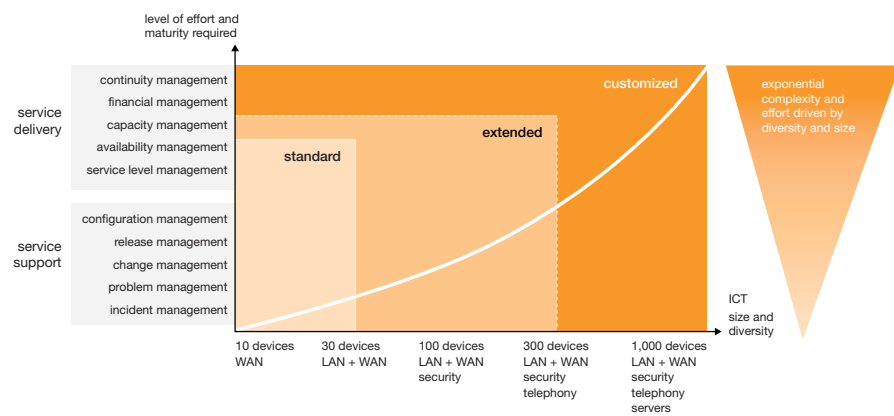


Aligned with the ITIL® service management categories of service delivery and service support, customers can choose from three types of service management to create a unique solution based on their business objectives:

- **standard:** reactive support designed to work alongside the businesses' own qualified internal resources
- **extended:** ideal for businesses working in dynamic environments that need day-to-day, proactive support
- **customized:** tailored services required for complex projects or environments that require constant, expert management

Service Select includes both service support and service delivery mapped to the business's needs. The following figure describes the above service levels in terms of the ITIL® categories.

figure 11: Service Select service functions in terms of the ITIL® libraries



Customized Service Select meets the diverse and dynamic needs of many multinational enterprises. This level of service provides optional service levels for:

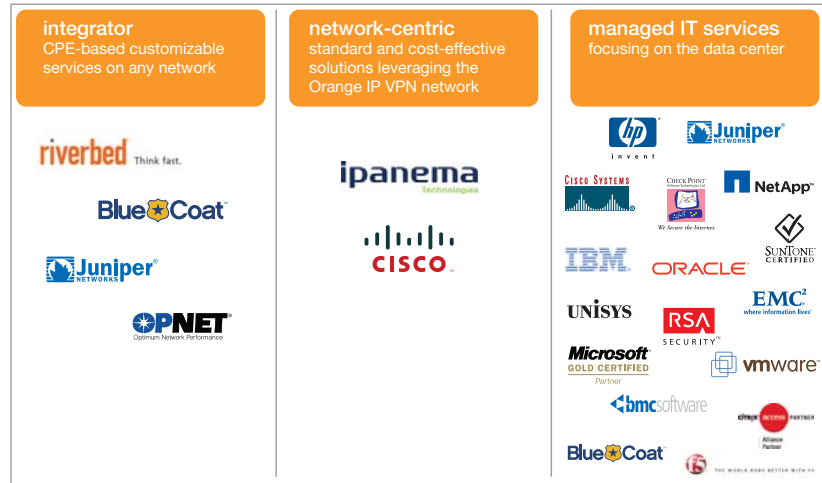
- management (from fully to customer managed, as well as out-tasking of certain functions) at each site
- types of devices managed
- features and deliverables for each managed device

The customized level of Service Select specifically meets the needs of customers with complex environments and has given our customers the flexibility to define:

- what business services and applications they can support
- what service levels they need for each of them
- how to optimize application performance
- how much visibility and control they need for the service they're getting
- how they wish to be supported
- which activities are performed by their IT departments and which are performed by third parties
- the team they need to support them

# Business Acceleration partners

figure 12: Business Acceleration partners by service model



# case studies

## Denso Thermal Systems

Denso is headquartered in Turin, Italy with over 3,000 employees in eight countries worldwide and a turnover of €1 billion per year. Denso designs, develops, manufactures and sells air-conditioning systems, engine-cooling systems, heat exchangers, radiators and compressors for cars, commercial and industrial vehicles, tractors, earth moving machinery and buses. In addition, it designs and assembles integrated cockpit and front-end modules for cars.

### issues and challenges

- improve application performance on the network
- prioritize applications by business need
- build an Orange IP VPN in 14 key sites in eight countries
- avoid network upgrade costs

### Orange solution

- application performance analysis, part of Business Acceleration
- undertake an analysis to isolate network traffic problems
- use a combination of bandwidth allocation, shaping and compression
- install packet shapers in Italy, Portugal, Brazil and Argentina

### results and benefits

- improved traffic management
- applications prioritized in line with business needs
- enhanced global communication and collaboration
- service extensions: Internet access, VoIP and IP telephony

“We see Orange Business Services as more than a network services provider, but also as a trusted business communications advisor. At first, we thought that we would need to upgrade sites in order to improve application performance; however, our Orange Business Services team consulted with us and explained that traffic can be optimized through the innovative Business Acceleration offering, giving us optimized application performance without the added cost of actually upgrading sites.”

*Mr. Silvio Bonetto, Information Technology, DENSO Thermal Systems*

## Lenovo

Lenovo is one of the world's leading personal computer manufacturers with consolidated sales of US\$16.4 billion in 2007/08 and it has been the number one PC vendor in China for 11 consecutive years. It has 23,000 employees worldwide, and its sales team operates in 13 countries and territories from 21 sites. Lenovo uses a policy called worldsourcing to harness resources, opportunities and ideas from anywhere in the world. This strategy delivers outstanding innovation and real value to customers worldwide.

### issues and challenges

- slow application performance reducing business productivity
- need to support key business initiatives: application roll-out and webification; data center and server consolidation; disaster recovery and back-up; regulatory compliance
- need insight into distributed network and applications
- reduce IT costs

### Orange solution

- Business Acceleration
  - consulting
  - WAN optimization services
  - network device management
  - monitoring and reporting services
  - ITIL<sup>®</sup> service management
- China service desk (7x24x365) with Mandarin and English support
- best-in-class solution and technical support to maximize performance of global MPLS-based VPN

### results and benefits

- enables performance SLA guarantees to end users
- increased total WAN capacity and visibility three-fold at no extra cost
- increased network manageability, application performance and employee productivity by 50+%
- initially connects sales teams in 13 countries, 21 sites

- prioritized application delivery
- reduced IT costs

“Business Acceleration from Orange Business Services helps bring focus, control and greater speed to our applications. Its vendor-agnostic approach offers us flexible and custom-built solutions that meet our performance needs. The combination of services and technology from Orange Business Services helps to enable our global sales team to focus on our customers’ needs by launching services faster and more efficiently.”

*Ms. Lynn Lin, Executive Director, Global Infrastructure Service, Lenovo*

for more information, visit  
[www.orange-business.com](http://www.orange-business.com)

## regional offices

### Americas

Atlanta  
600 Galleria Parkway  
Atlanta, GA 30339  
USA  
Tel.: +1 866 849 4185

Washington, D.C.  
13775 McLearen Road  
Herndon, VA 20171  
USA  
Tel.: +1 866 849 4185

### Europe

Paris  
190, avenue de France  
75653 Paris Cedex 13  
France  
Tel.: +33 1 46 46 90 00

Slough  
Betjeman Place  
217 Bath Road  
Slough, SL1 4AA  
United Kingdom  
Tel.: +44 (0)20 8321 4000

### Asia Pacific

Singapore  
Block 750 Oasis  
Chai Chee Road #04-02  
Technopark @ Chai Chee  
Singapore 469000  
Tel.: +65 6 517 1000



Business  
Services

