Ovum

SDN to SD-WAN: First Steps into the Future Network

A start with agile networking

In partnership with

Virgin media BUSINESS

CONTENTS

Executive summary 3

In brief 3

Key findings 3

Enterprises are challenged by inflexible connectivity 3

Enterprises demand connectivity choices 5

SD-WAN: a big story with more to come 6

What will SD-WAN offer? 7

Why choose a service-provider-managed SD-WAN? 7

Conclusion: Managed service providers are enablers of digital transformation 8

Appendix 9

Methodology 9

ABOUT THE AUTHOR

David Molony

With 38 years' industry experience, David heads up Ovum's Advanced Digital Services practice, which tracks the evolution of the applications-centric service provider out of IT services, SI, telco and applications vendors, and analyses the implications for the digital enterprise.

He specialises in analysis into global services contracts, enterprise managed services, and global telecoms and IT service providers.

David also provides research into managed and professional services, as well as large enterprise and MNC users, their sourcing requirements, and service provider relationships.

© Copyright Ovum 2019. All rights reserved.

The contents of this product are protected by international copyright laws, database rights and other intellectual property rights. The owner of these rights is Informa Telecoms and Media Limited, our affiliates or other third party licensors. All product and company names and logos contained within or appearing on this product are the trademarks, service marks or trading names of their respective owners, including Informa Telecoms and Media Limited. This product may not be copied, reproduced, distributed or transmitted in any form or by any means without the prior permission of Informa Telecoms and Media Limited. Whilst reasonable efforts have been made to ensure that the information and content of this product was correct as at the date of first publication, neither Informa Telecoms and Media Limited nor any person engaged or employed by Informa Telecoms and Media Limited accepts any liability for any errors, omissions or other inaccuracies. Readers should independently verify any facts and figures as no liability can be accepted in this regard - readers assume full responsibility and risk accordingly for their use of such information and content. Any views and/or opinions expressed in this product by individual authors or contributors are their personal views and/or opinions and do not necessarily reflect the views and/or opinions of Informa Telecoms and Media Limited.

© 2019 Informa PLC. All rights reserved.

Executive summary

In brief

This white paper is about the use of network connectivity among UK companies and public sector organisations. It highlights what they expect from the next wave of network technologies, and what they are looking for when choosing service provider partners. It gives key findings from an Ovum survey of 250 midsized to large businesses, local public-sector organisations, and some MNCs in the UK. It shows that UK mid-market enterprises are ready to adopt next-generation network technologies like SD-WAN, provided they are complementary to their existing mixed connectivity estate and improve the fit of their ICT with their business plan.

- Business and public-sector organisations are challenged by the inflexibility of their own networks and want network providers to become managed service providers, supplying and integrating a range of connectivity, workspace, and professional consulting and support services.
- Network connectivity in the UK is provided by a wide range of local access and national network operators, systems integrators, and fixed/mobile resellers. Users want their service provider to supply all types of network connectivity, as a platform for managed services.
- SD-WAN is the first in a wave of software-defined networking services that will give IT heads more visibility and control of the growing range of connectivity options they have in their estates, from fixed networks to Wi-Fi.
- Next-generation network technologies like SD-WAN will help organisations improve not only operational efficiency, but their digital communication and engagement with their own employees and customers, provided they are deployed in the right combinations and are effectively managed.
- CIOs and telecoms managers are increasingly looking to managed service providers to help take advantage of these supercharged technologies, and to support their integration with existing networks.

Key findings

- Fixed WAN/LAN and internet access – e.g., MPLS or Ethernet-based networking – are the foundation for the corporate network, but a growing number of business and public-sector organisations are now also using dedicated cloud connect services for public cloud access, and managed Wi-Fi to enhance workspace communications, as users move toward more flexible networking.
- SD-WAN is a step up in enterprise networking that will allow managers to improve provisioning of network connections and extend new digital services based on integrated voice, video, and data services to employees and customers.
- Ease of doing business and good account management are the most important attributes in a connectivity supplier – more important even than commercial flexibility or outright technical superiority – if SLAs are met.
- Enterprises want a managed service provider that understands the need for a solution that supports business outcomes; helps design and build the best network for the business; helps plan network and applications expansion; provides a technology roadmap, especially in cloud services; manages partners in an end-to-end service; and even assists with the organisational transition to a digital business.

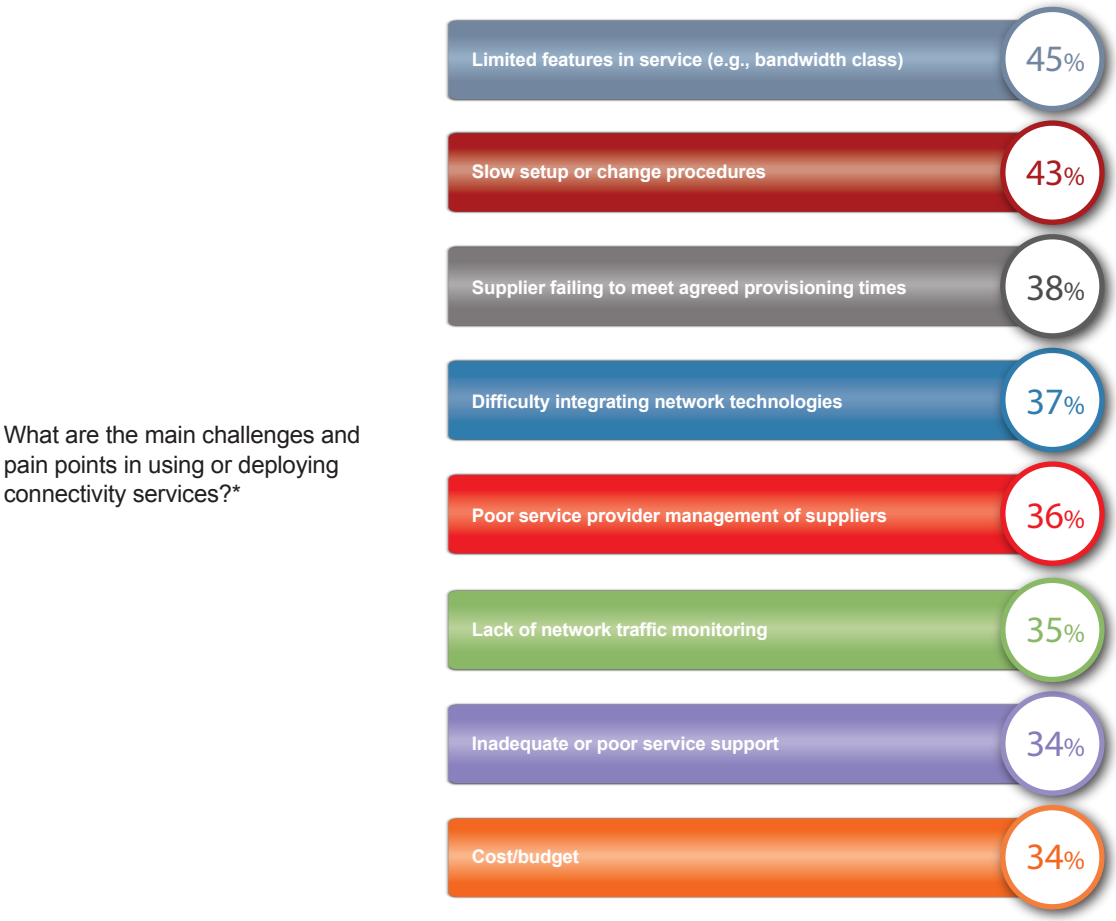
Enterprises are challenged by inflexible connectivity

Enterprise IT leaders face a new challenge: they cannot evolve their networks fast enough to keep up with the business targets driving their ICT investments. Whereas improving network performance was once seen as a way to reduce costs, now a flexible network is seen as a strategic enabler of the agile business.

© 2019 Informa PLC. All rights reserved.

Figure 1 shows the challenges and pain points that UK businesses and public-sector organisations face when deploying network connectivity. The priorities for a greater set of service features, such as bandwidth classes, as well as faster provisioning, illustrate the importance enterprises place on a responsive network to support the change of pace in their business. It is significant that cost is well down the list of concerns. IT leaders have been taking costs out of networks for many years, so while the need to continue to save costs remains important, it may not be grabbing their attention so much as in the past.

Figure 1: Challenges and pain points for connectivity service users



*Uses each respondent's top three answers
Source: Ovum UK Enterprise Survey

Globalisation affects businesses of all sizes, and the need to expand into new markets is driving many digital transformation initiatives. In the public sector, the need to improve customer service and to introduce new operational efficiencies is key. Organisations are changing rapidly, and whether this means focusing on digital sales and marketing, partnering in the platform economy, or transforming the customer experience, it brings a greater need for agility. They need to be able to adapt quickly to changing market demands.

UK enterprises are investing in a range of new technology to enable a more proactive approach to the market. IT departments are often faced with multiple high-priority IT projects at the same time – a sequential approach is often not possible because, when it comes to transformation, the business can't wait. Not only is there a strain on IT, but the whole organisation can feel the effect of the introduction of new technologies – from automated data centre to digitised contact centre to video-led unified communications – that can change the way people work together and interact with customers.

© 2019 Informa PLC. All rights reserved.

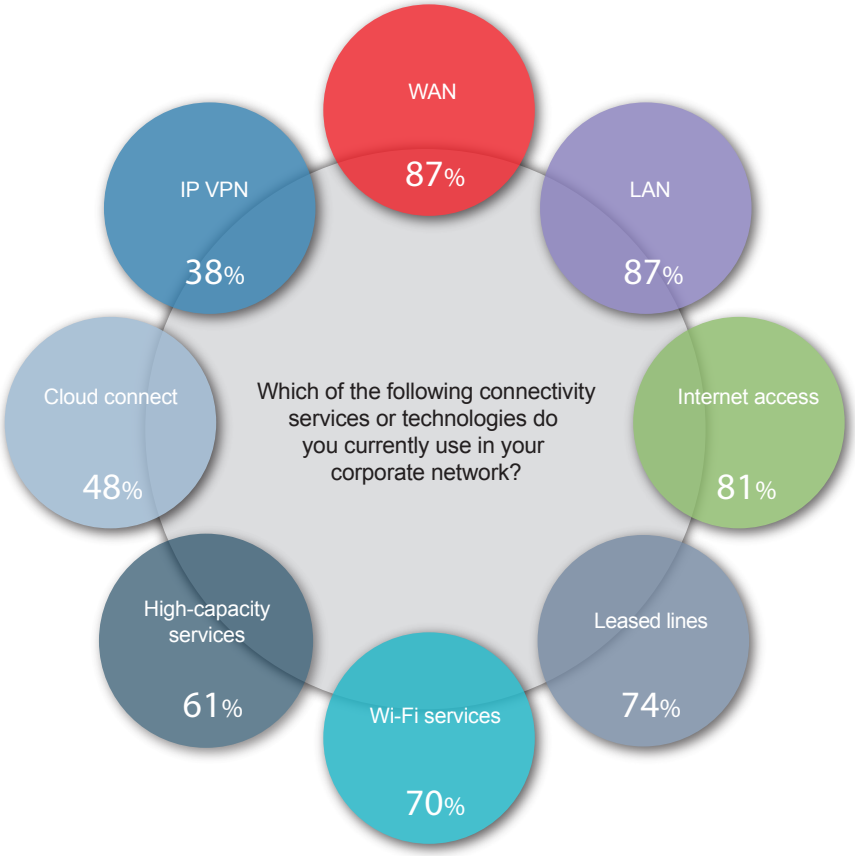
Enterprises looking to limit disruption see supplier partnerships as key, because they help them manage the process of change and ensure that adoption of new technologies is undertaken in as seamless a way as possible. Our IT leaders need the network to be ready for the next set of end-user services – the network needs to be agile, offering dynamic bandwidth and applications management features.

It is no coincidence that many mid-market enterprises in the UK are giving prime responsibility for their connectivity to IT and systems integrators like IBM, DXC, and Atos (see white paper *Managed and Professional Service Partnerships Will Drive Enterprise ICT Transformation*). From the enterprise point of view, a network services provider with the same integration and managed services capabilities as these SI partners would be in a good position to guide the enterprise ICT roadmap, since it owns and operates the network platform and all future connectivity. Software-defined networking and SD-WAN could be the next-gen technologies to give the network provider the more integrated and flexible networking offer that enterprises need.

Enterprises demand connectivity choices

Most midsized to large enterprises in the UK are still using a range and combination of wide-area and LAN connectivity options in their networks, with core connectivity provided across MPLS and Ethernet-based wide area networks (WANs). They will continue to need support from their network service provider(s) for these well into the future.

Figure 2: A mix of connectivity in the UK's corporate network



Source: Ovum UK Enterprise Survey

Figure 2 shows that just 38% of enterprises surveyed say they use IP VPNs in their networking setup. The figure varies between segments, but across the board, IP VPN is the least cited connectivity option and WAN and LAN the most cited. Other findings include:

© 2019 Informa PLC. All rights reserved.

- More than 80% of organisations have internet access (typically provided on local broadband or via IPsec tunnelling) as standard in their corporate networks, highlighting the importance of a hybrid public/private network approach.
- Big-data users seeking large IT virtual arrays and data analytics are most likely to use dedicated cloud connect – for example, in financial services, retail and healthcare.
- Leased lines are still widely used – especially in public-sector organisations, but also in transport and financial services.

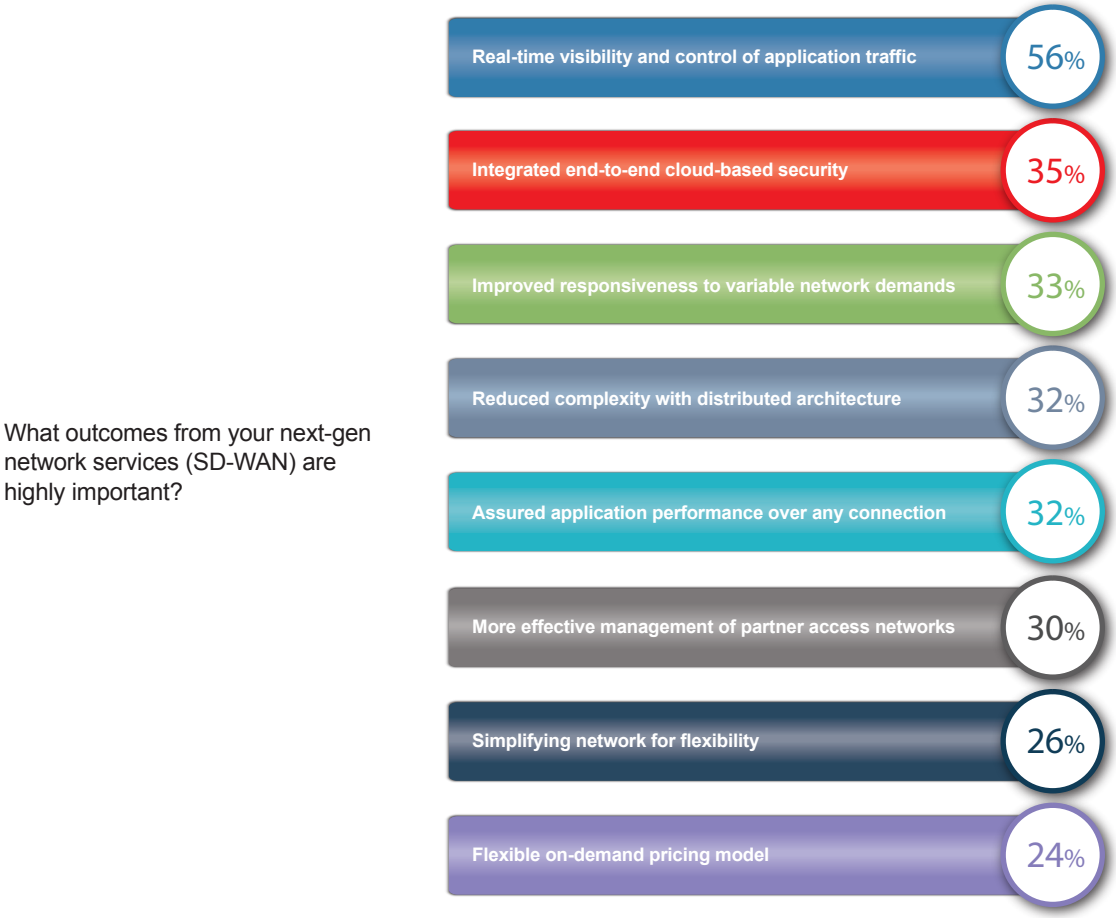
SD-WAN: a big story with more to come

Software-defined networking (SDN) is now extending into the enterprise network through SD-WAN, which promises a step up in enterprise networking. SD-WAN gives more visibility on network sites and applications traffic, and it gives the enterprise more control. It is particularly useful where the enterprise wants a hybrid network supporting both class-of-service-based MPLS and best-available internet, since it offers control of SLAs in both.

But SD-WAN brings its own issues, including the need for the enterprise to self-manage network services. And it potentially makes enterprise networking more complicated, because it does not replace other network elements, such as MPLS and Ethernet.

Figure 3 shows some findings from Ovum's global enterprise user survey. It shows what outcomes enterprises expect from SD-WAN, and what really stands out is the expectation of improved visibility and control of applications traffic. Enterprises want to improve the end-user experience of their network services, for employees and for their own customers.

Figure 3: Visibility and control tops next-gen network advantages



Source: Ovum Next-Gen Network Enterprise Survey

© 2019 Informa PLC. All rights reserved.

What will SD-WAN offer?

Enterprises must have operational confidence in choosing SD-WAN as the best solution for their requirements. For most, SD-WAN will be their first encounter with the next-generation network in the form of software-defined networking. To understand the benefits and rationale of SD-WAN, it is important to understand its relationship with SDN.

To our mind (though this is not everybody's view), SDN was built in the part of the network that sits in the data centre. Think about a complex hosted IT structure with layers of operations and operating systems, a multitude of vendor technologies with processes between them – SDN has helped virtualise and simplify and automate all of that.

In the enterprise, SDN meets different needs:

- For example, a large financial services company with a lot of data to capture, file, store, interrogate, and regulate is likely to need an SDN that is open and programmable to help it manage that important part of its business – this is essentially internal networking.
- Enterprises may be looking to link from their data centre to other data centres for private or public cloud services – across an external network – and to network out from the third-party data centre to their customers or back to their employees. This is when SD-WAN is important, because it is providing the first virtualised network function (VNF) in the form of WAN controls and management, like routing.

The SDN-driven next-gen network roadmap will bring more VNFs, such as unified threat management, WAN optimisation services, and applications acceleration services, and more interoperability of software-driven services. In the evolution to managed virtual or hybrid network services, enterprises will be able to flex or move security perimeters and to do IT differently, possibly in a hybrid cloud compute environment with a combination of start-up suppliers and heritage systems suppliers. And they will be able to network differently, with perhaps more content delivery, video, and social media transactions taking them directly to the end customer they mean to serve.

Why choose a service-provider-managed SD-WAN?

It is clear that enterprise IT heads face many challenges when evolving the network to keep pace with the needs of the business. Choosing the right partner to help them build and support a robust, responsive, and flexible network for the future will be critical to success.

We asked UK IT heads what they are looking for in a connectivity provider partner. Figure 4 shows that ease of doing business and good account management are the most critical qualities sought. These are both rated critical by more enterprises (over 50%) than other factors, including commercial flexibility (33%), single contracting (14%), and innovation (30%).

Service provider ratings against the required attributes are mainly very good, but there are some areas where improvement is needed. Significantly, these include both account management, where only 42% of enterprises rate their suppliers as excellent, and ease of doing business (33%), as well as meeting agreed SLAs (33%). These are the areas where enterprises would like their service provider partners to focus their improvement efforts.

Our UK enterprises have laid out their demands. They are not just looking at technical needs – they need to deliver performance to their business. They need to move from a fixed network to an agile network, and they need their partners to evolve from network supply to managed services.

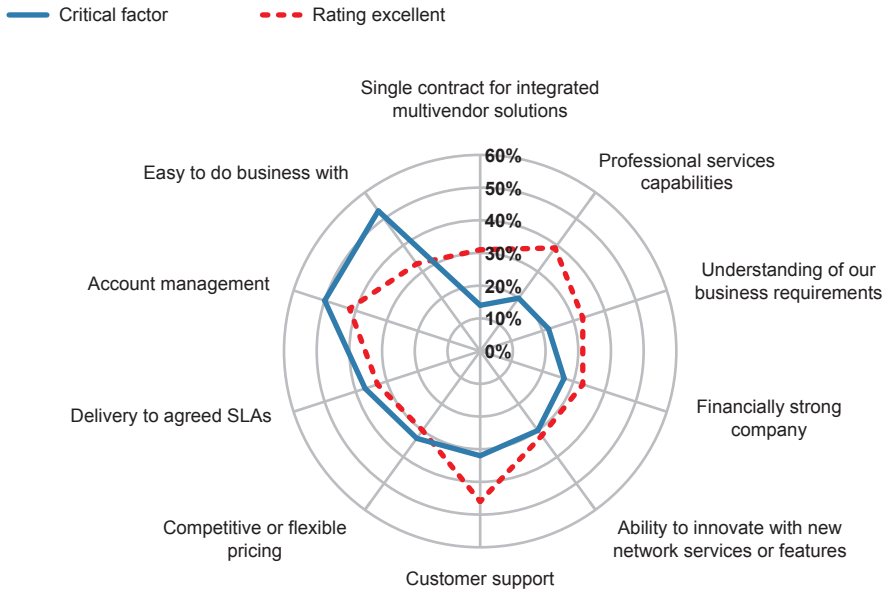
They need managed services support in many areas, including:

- Helping design and build the best network for the business, based on an understanding of the business outcomes sought

© 2019 Informa PLC. All rights reserved.

- Integrating multiple systems and services on the corporate network
- Planning their network and applications expansion
- Understanding future technology evolution
- Developing their cloud migration roadmap
- Managing technology and services partners.

Figure 4: How service providers rate against their customers' most critical evaluation factors



Source: Ovum UK Enterprise Survey

Conclusion: Managed service providers are enablers of digital transformation

- Nearly every organisation wants to move as much of its IT to the cloud as possible; it just can't happen fast enough. **And the reason is not that companies are not cloud-ready, it is that their networks won't let them.**
- The software-driven next-generation network will bring more virtualised network functions in security, network optimisation, and applications traffic and performance management. **Networks will become more productive and competitive, and more responsive to their end users.**
- All these features will add to the flexibility and agility of the network that hard-running users will need. **In the evolution to managed virtual or hybrid network services, users will be able to network differently, with more content delivery, video, and social media transactions.**
- Enterprises want new services from the next-generation network, especially those that help grow the business relationship with the customer. **Most of all, they want their network services partner to be easy to do business with.**
- **IT leaders increasingly want a managed services provider that understands the business outcomes they seek, and that use this understanding to help design and build the best network for the business, plan their migration of IT services to the cloud, help their adoption of workspace applications, and manage all the relationships in the supplier ecosystem.**

© 2019 Informa PLC. All rights reserved.

Appendix

Methodology

In 4Q17, Ovum surveyed enterprises in the UK to learn more about their current and future network connectivity and the challenges and opportunities they face. Ovum also sought to understand enterprise customers' perceptions regarding service providers and outcomes. How many service providers are needed to supply the range of corporate connectivity requirements? What type of provider is best placed to help with network connectivity?

Our survey was based on interviews with 250 businesses and public-sector organisations. Nearly half (48%) of the respondents were from the medium-to-large enterprise (MLE) segment of companies, with 250–999 employees; 42% were from the large national enterprise (LNE) segment of UK companies, with at least 1,000 employees; and 10% were multinational corporations based in the UK.

Half (50%) or our survey participants were IT managers, and 25% heads of department. The rest were directors (12%), functional leaders (11%), business unit managers, or C-suite executives.

Companies and organisations were representative of eight verticals or industries: retail, wholesale and accommodation, construction and real estate, financial services, media and communications, transport and logistics, energy and utilities, healthcare, and the public sector.

© 2019 Informa PLC. All rights reserved.

ABOUT OVUM

Ovum is a leading global technology research and advisory firm. Through its 180 analysts worldwide it offers expert analysis and strategic insight across the IT, telecoms, and media industries. Founded in 1985, Ovum has one of the most experienced analyst teams in the industry and is a respected source of guidance for technology business leaders, CIOs, vendors, service providers, and regulators looking for comprehensive, accurate, and insightful market data, research, and consulting. With 23 offices across six continents, Ovum offers a truly global perspective on technology and media markets and provides thousands of clients with insight including workflow tools, forecasts, surveys, market assessments, technology audits, and opinion. In 2012, Ovum was jointly named Global Analyst Firm of the Year by the IIAR.

For more details on Ovum and how we can help your company identify future trends and opportunities, please contact us at marketingdepartment@ovum.com or visit www.ovum.informa.com. To hear more from our analyst team join our Analyst Community group on LinkedIn www.linkedin.com/company/ovum and follow us on Twitter www.twitter.com/Ovum.

ABOUT VIRGIN MEDIA BUSINESS

We support over 70,000 organisations to meet new customer expectations and rise to challenging market conditions. We do this through our complete portfolio of Smart Solutions, which offers connectivity products, workspace applications and professional advisory services, to help organisations embrace new ways of working and collaboration.

Virgin Media is a part of Liberty Global, the world's largest international TV and broadband company, with operations in 11 European countries and connecting over 22 million customers. In addition, Liberty Global owns 50% of VodafoneZiggo, a joint venture in the Netherlands with customers subscribing to 10 million fixed-line and 5 million mobile services. Together, Virgin Media and Liberty invest in the infrastructure and digital platforms that empower our customers to make the most of the digital revolution.

Our dedicated, ultrafast network delivers the fastest widely available broadband speeds to homes and businesses. We're expanding this through Project Lightning – the single biggest private investment in UK internet infrastructure in over a decade – to bring our ultrafast broadband network to more homes and businesses around the UK and Ireland.

virginmediabusiness.co.uk