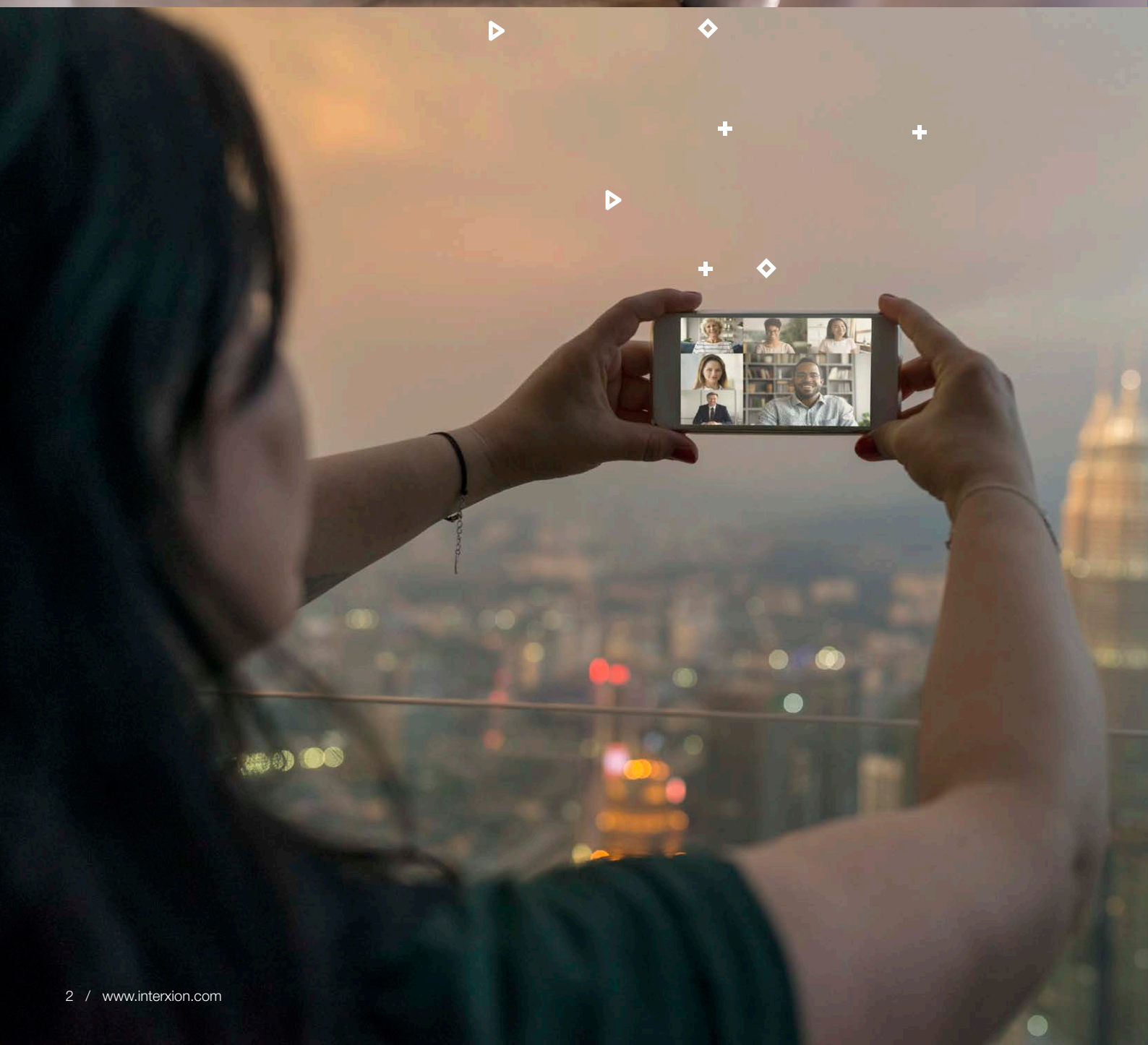
interxion
A DIGITAL REALTY COMPANY

Whitepaper

Building a network hub for a time of change

The importance of integrating the cloud, core and edge

Author: Jelle Frank van der Zwet



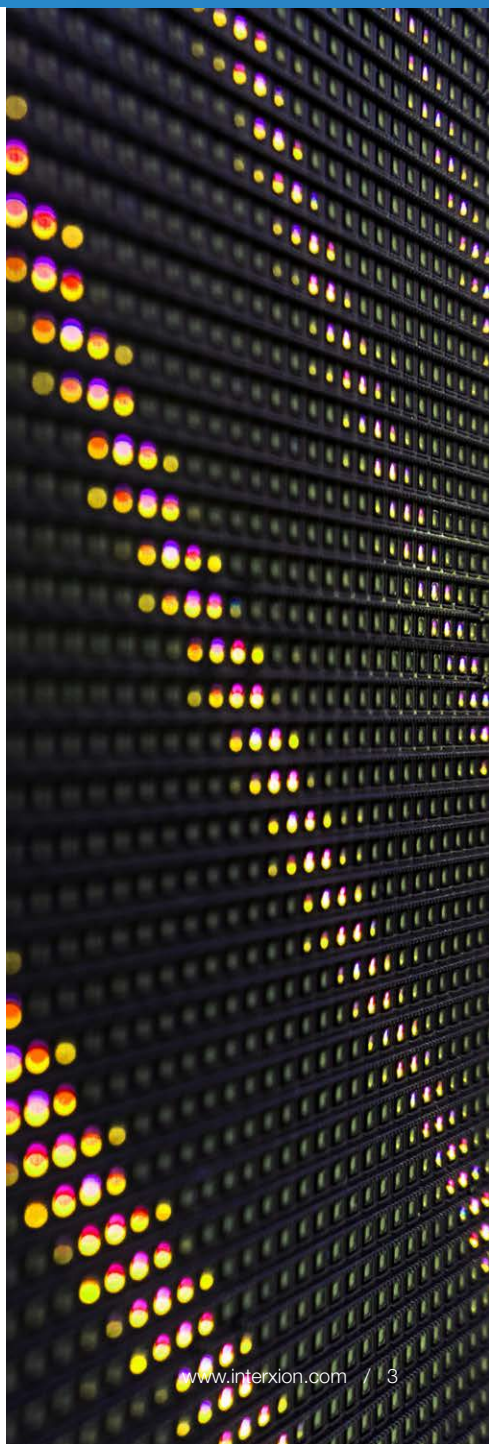
INTRODUCTION

According to Gartner, *"cloud computing is firmly established as the new normal for enterprise IT."*[1] With widespread global remote working taking place in an effort to curb the spread of COVID-19, not only is it normal, it's now essential.

Forced to adapt quickly to the rapidly changing needs of an unexpectedly distributed workforce, enterprises are transforming their traditional systems and processes, with many accelerating any transformation initiatives already being undertaken. As they do so, their technology leaders will be increasingly looking to the cloud for the greater flexibility and scalability they need to keep business running smoothly.

But the growing popularity of multi-cloud and hybrid environments means that its complexity – especially of cloud networking and security – can prove challenging for many enterprises, particularly as they scramble to get their cloud implementation up and running quickly.

This guide looks at the common challenges faced by enterprises as they move through the waves of transformation and cloud adoption. It will introduce the concept of the networking edge as a means of addressing these challenges and how, by creating a 'networking hub' with Interxion's services that enable businesses to re-architect their networks to optimise their hybrid and multi-cloud connectivity. This helps to improve traffic handling, increase throughput, reduce latency, and provide greater security, which is needed in the current climate and beyond.



[1] Meghan Rimol, 4 Trends Impacting Cloud Adoption in 2020, Gartner, January 2020

THE THREE WAVES OF TRANSFORMATION

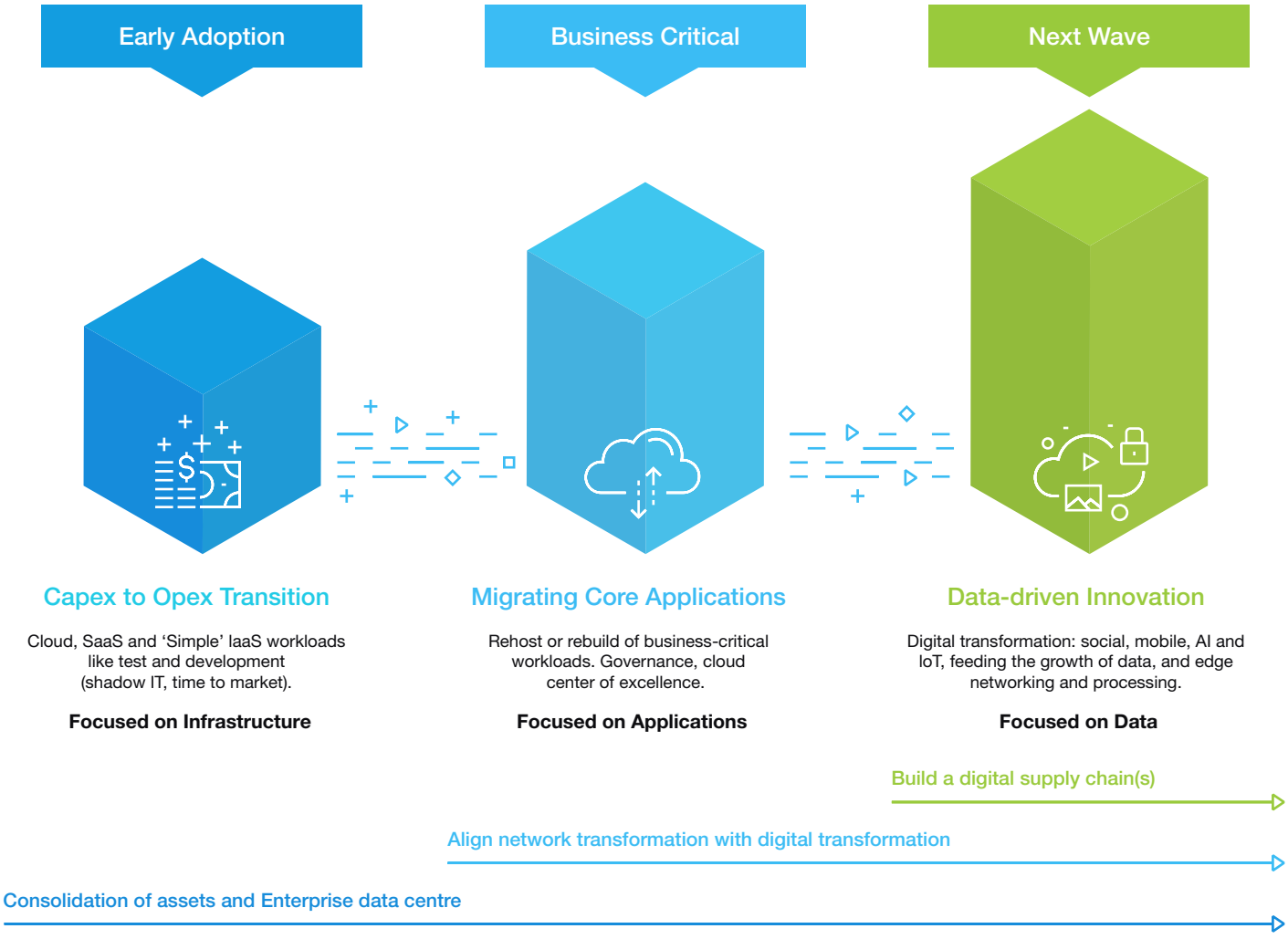
For many enterprises, their digital transformation – and journey to the cloud – will take place in three waves.

During the first of these, organisations have made their first forays into cloud adoption, using SaaS solutions and IaaS workloads in a bid to shift their infrastructure spend from Capex to Opex.

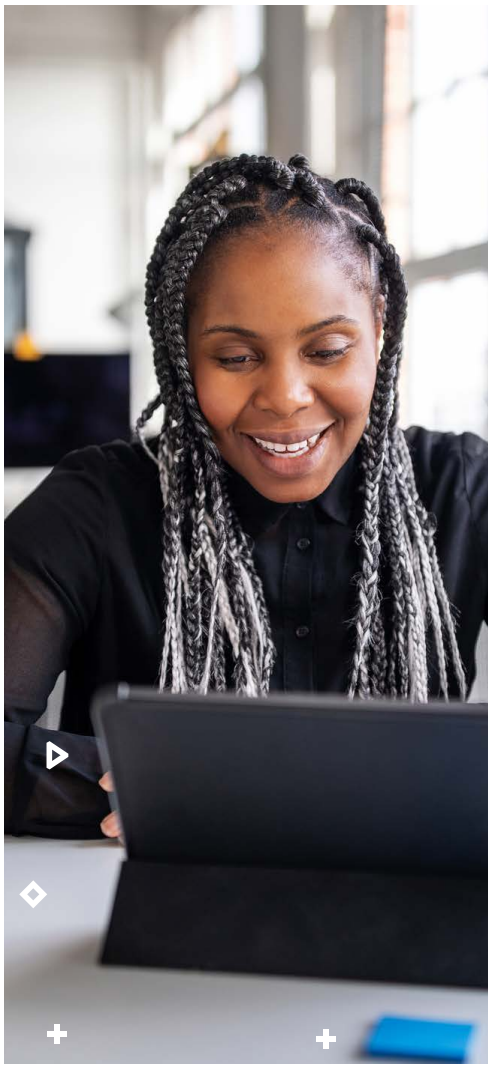
With most organisations today in the process of migrating their core applications to the cloud, the majority are currently in the second wave, which is where key issues emerge. Moving applications to the cloud, for example, puts a heavy burden on an organisation's network. What's more, it means enterprise data centres can be left partially redundant – a situation that's far from cost-effective.

The next wave of transformation is concerned with data – perhaps unsurprising given the growing volumes of data being generated across the globe. As with applications, though, moving data to the cloud can be hard on an organisation's network. There are cost implications, too, as taking data from the cloud can be expensive. For these reasons, as well as a need for greater speed, lower latency, and increased bandwidth, enterprises need to reconsider where best to collect, move, process, and store their data.

Waves of Enterprise Transformation



CHALLENGING TIMES



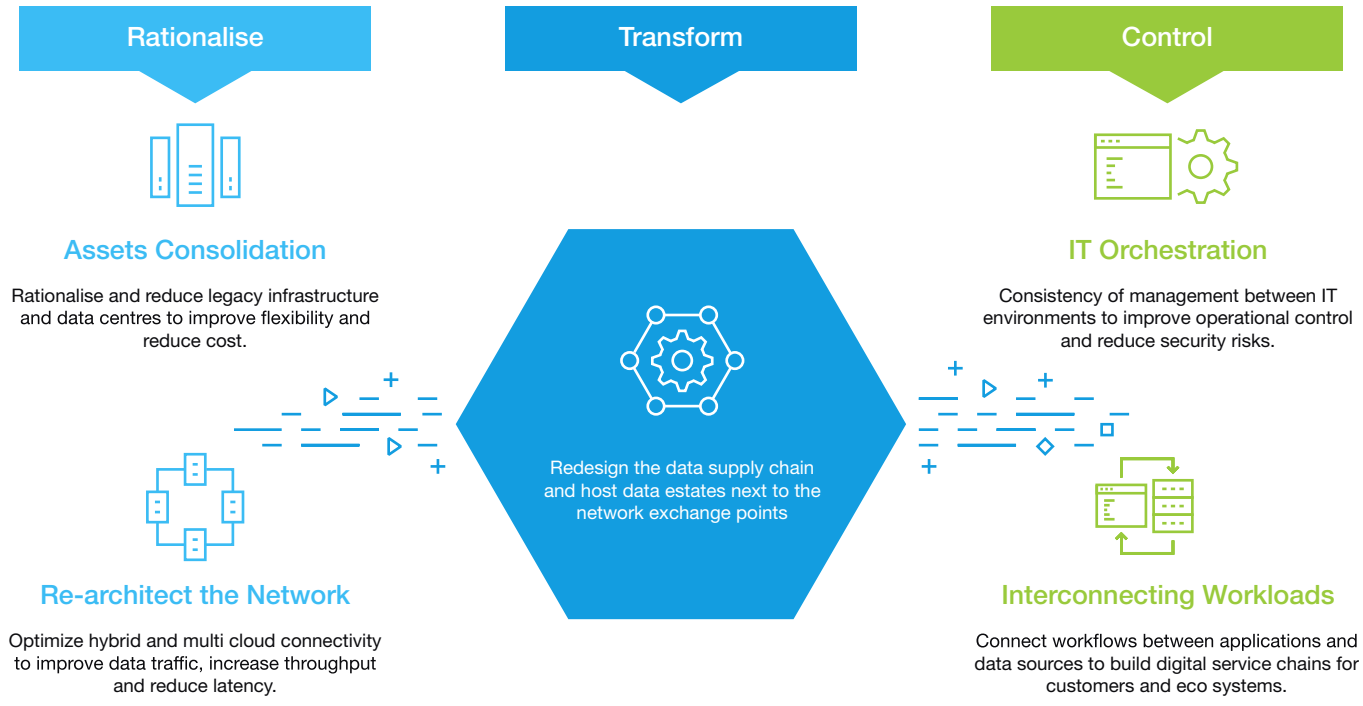
The increasing complexity of the cloud can often prove to be an obstacle to fully unlocking its benefits. The migration of business-critical applications can lead to problems that require enterprises to re-architect their network. In doing so, it's likely they'll encounter several challenges – cost and network impact among them – as they work their way through the waves.

Many enterprises today are embracing a hybrid IT strategy, adopting public clouds while retaining private clouds that may or may not be hosted on-premises. Where servers and storage once resided centrally in the enterprise data centre, those resources are now distributed outward towards the cloud. As workloads migrate to new platforms, proprietary applications might move to the public cloud and legacy applications remain on-premises, resulting in a fragmented infrastructure.

As cloud complexity increases, many enterprises have made incremental and non-strategic investments in their networks. These investments have often resulted in complex and inefficient infrastructures, characterised by high fixed costs, limited scalability, and an inability to effectively support IP-based business applications. For example, MPLS used in conjunction with SD-WAN has long been the popular architecture of choice – particularly in the enterprise – but even this approach has its issues. MPLS lines are expensive when dealing with high volumes of data transfer, and SD-WAN often sends more traffic over the internet to reduce the strain on MPLS, compounding the lack of network control, latency, and lost packet issues.

Scaling the required network resources can prove challenging too and attempting to do so can lead to valuable focus being diverted away from managing an enterprise's core business. As enterprises make their way ever closer to the third wave of transformation, and the additional demands this places on their networks, greater support is needed in re-architecting those networks to make them future-proof for managing the rising volume of data and interconnecting workloads.

How to Future-proof Your Network Hub



INTERXION AT THE EDGE

One way of illustrating the challenges enterprises face in managing this growth in data is to consider that a container ship will spend, on average, around 23.5 hours in port[2] before its next voyage. During this time, all the data generated during its previous voyage will need to be processed. However, the growing volume and variety of data means that not only will more computing power be required on the ship itself, but taking that data off the ship to be analysed on-shore will take increasingly longer, to the point that it's no longer possible within the time available.

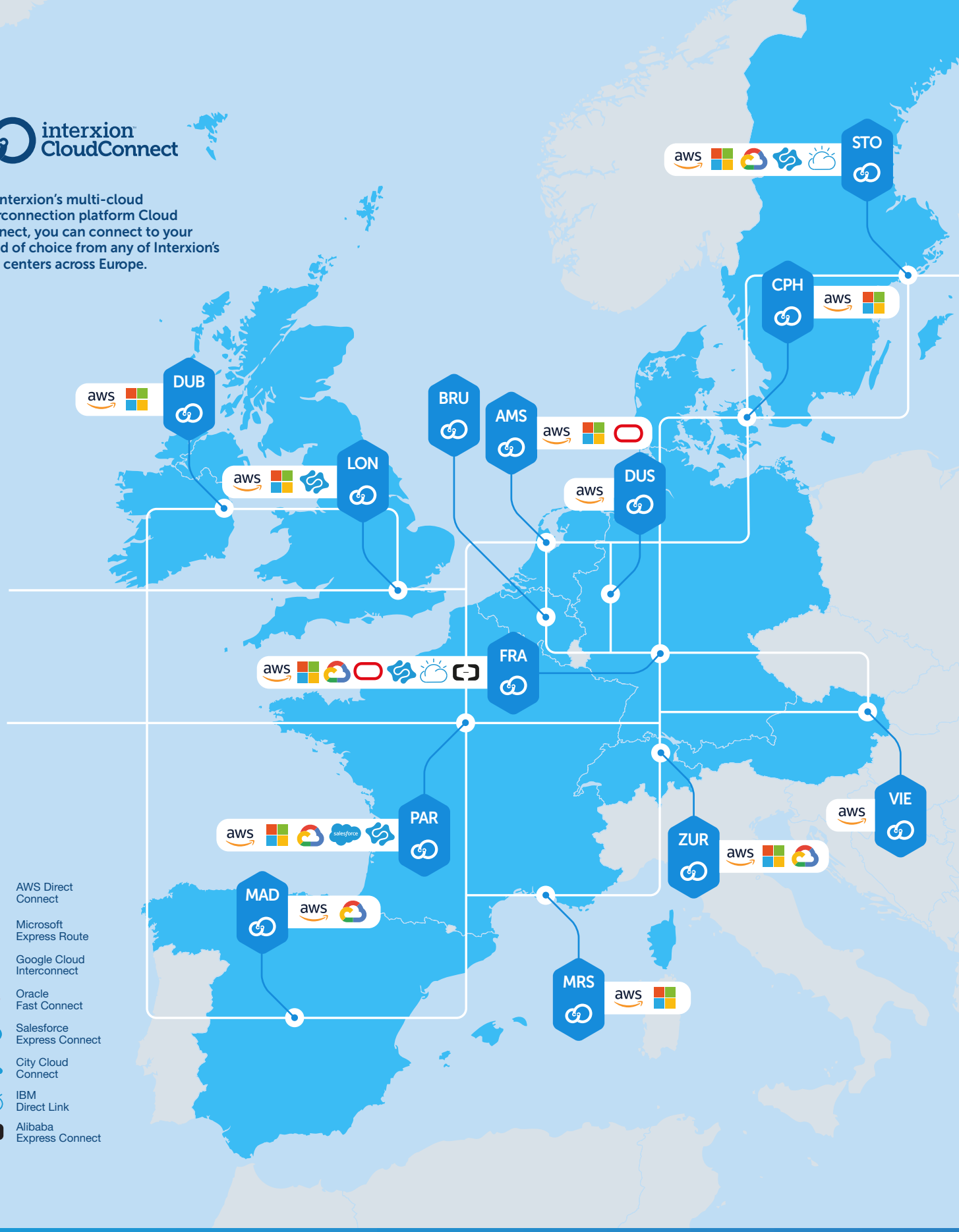
Imagine a data centre on the dockside, located right at the edge, where the network and the cloud are closest. Colocating their network hub at the edge enables an enterprise (like for example a large logistics company that manages container ships) to build connections in a multi-tenant data centre instead of over the internet. That way Enterprises can either connect to the cloud remotely through direct connections, or they can host their workloads in a data centre in which the cloud provider has a network node.

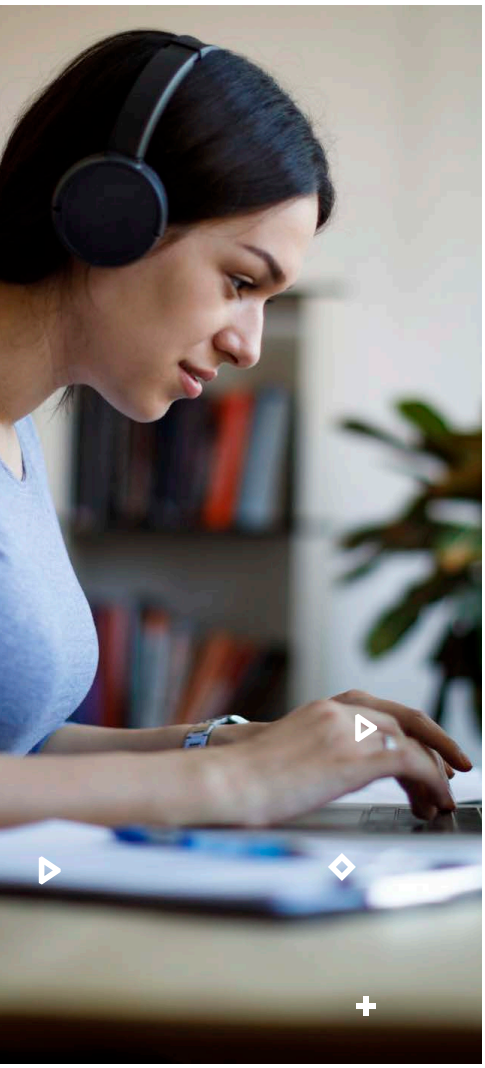
Over the years, we have successfully connected hundreds of organisations to the cloud, enabling them to accelerate their digital transformation and lower their connectivity costs. And with most hyperscale cloud providers, carriers, connectivity providers, and internet exchanges already interconnected at Interxion, we are able to work with the best providers to deliver the best service possible – when enterprises need it most.

[2] Review of Maritime Transport 2019, United Nations Conference on Trade and Development

interxion CloudConnect

Via Interxion's multi-cloud interconnection platform Cloud Connect, you can connect to your cloud of choice from any of Interxion's data centers across Europe.



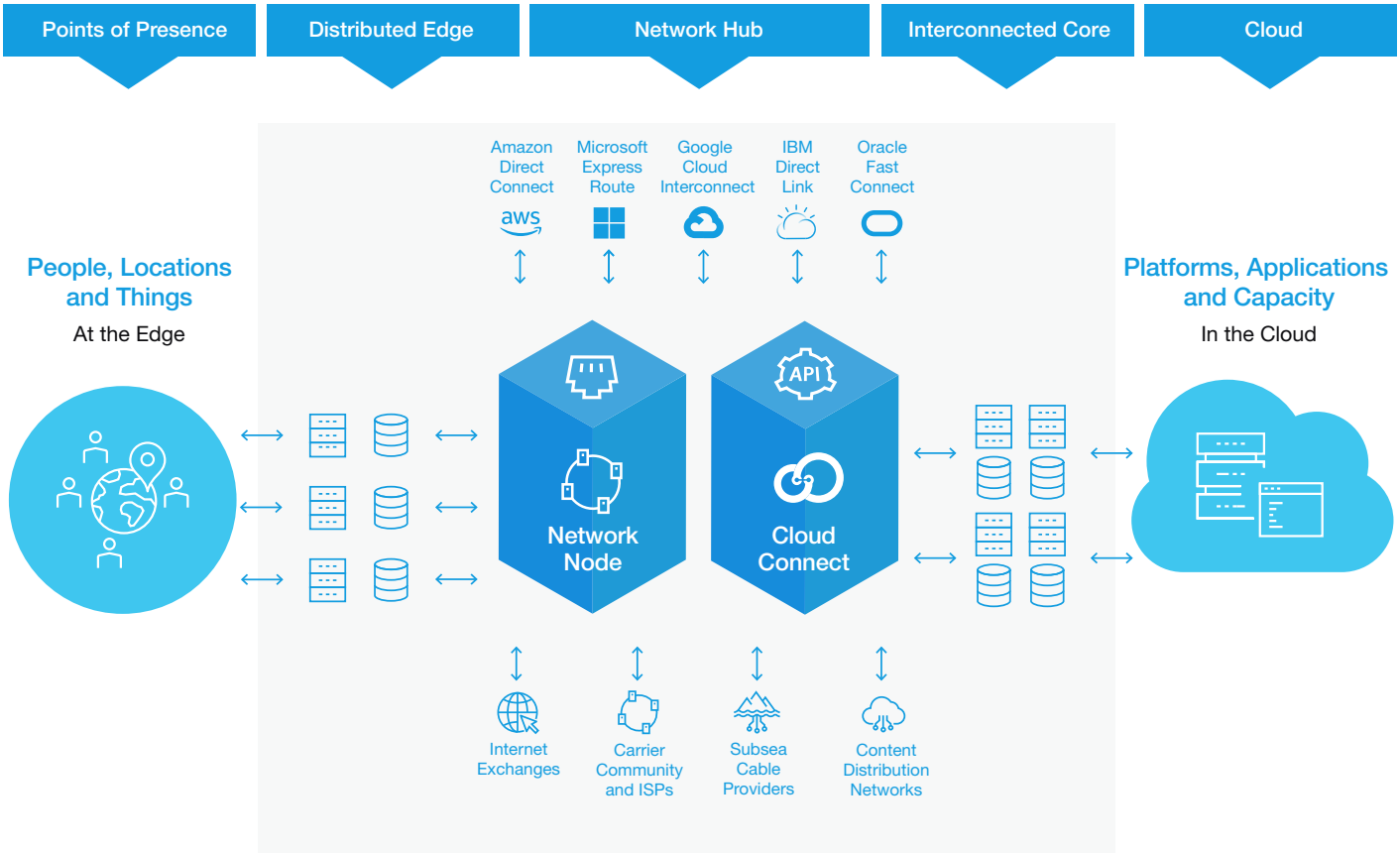


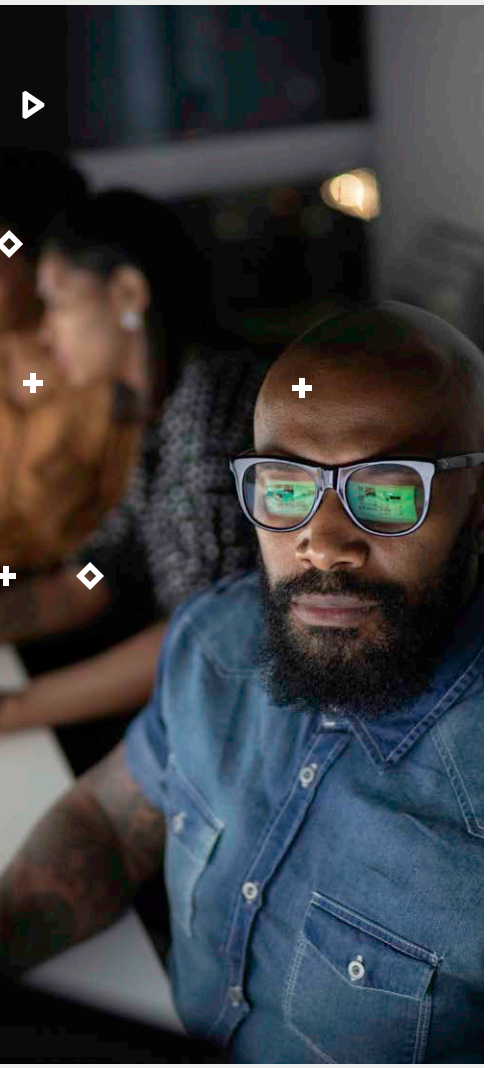
CONNECT TO THE CLOUDS

A network hub enables enterprises to simplify their infrastructure and is key to meeting the growing network and data demands faced by businesses today.

At its core is a network node, providing the fast, consistent, secure, and reliable network performance enterprises need to run their business-critical applications and data flow. This network is supported on one side by a raft of internet exchanges, carriers and ISPs, content distribution networks, and subsea cables which, together, provide a high level of connectivity. On the other side, a multi-tenant cloud platform offers high-speed, low-latency access to a community of hosting and hyperscale cloud providers.

Re-architect the network to integrate cloud, core and edge.





Interxion's multi-cloud interconnection platform provides a private fast lane into the cloud, enabling enterprises to scale connectivity quickly without the need for additional physical connections or provisioning time. With Interxion data centres spread across Europe, positioned where edge networks and the clouds are closest, enterprises can connect to their cloud of choice, offering the low latency and predictable, high-bandwidth connectivity needed to address the following three multi-cloud scenarios.

1. **Cloud access:** Secure, high-performance, low-latency connectivity (typically at layer 2) from a single physical interconnection point, or network hub, to two or more different cloud providers enables enterprises to transfer workloads and data between on-premise and multiple cloud providers from an Interxion data centre or WAN.
2. **Cloud to cloud connectivity:** Network connectivity (layer 3) between two or more different cloud providers and/or multiple regions of cloud providers.
3. **Hybrid cloud, connecting private and public clouds:** Connectivity between private infrastructure, public cloud, and a service provider's private cloud resource enables enterprises to build a hybrid cloud, connecting everything with an interconnected mesh of data centres and clouds.

As outlined above, Interxion has been connecting enterprises to a wide range of hyperscale cloud providers, carriers, connectivity providers, and internet exchanges for many years. Our heritage and experience, combined with the locations of our data centres, means enterprises will, by deploying a Network Hub at Interxion, enjoy a host of additional benefits including:

- **Network simplification:** Centrally positioned to connect with carriers, ISP, internet exchanges and public clouds.
- **Private access to public clouds:** Colocate in close proximity to all major cloud platforms and enable secure and low latency network access with availability up to 99.999%.
- **Cloud migration:** Flexibility and choice to decide whether to rehost, refactor, rebuild, or replace.
- **End-user experience:** Placing core applications next to cloud access points, traffic is directly transferred into the cloud, guaranteeing performance during peak traffic and improved predictability compared to internet connections.
- **Simplified management and control:** Easy self-service ordering through our unified customer portal, plus API for integration with your existing network controls.
- **Award-winning colocation:** Highly secure and operating to standards meeting ISO 27001, ISO 22301, PCI and SOC 2.
- **Connected community:** Widest choice of 700+ connectivity providers (including 250+ ISPs), 21 internet exchanges, all top CDN providers and 500+ service providers, including the hyperscale clouds, system integrators, financial services, IT security, and digital media.

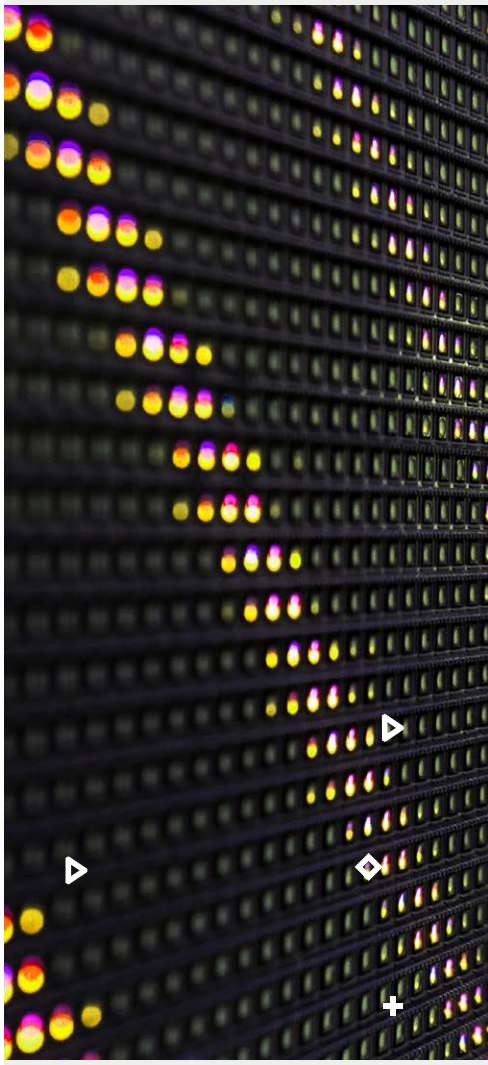
CONCLUSION

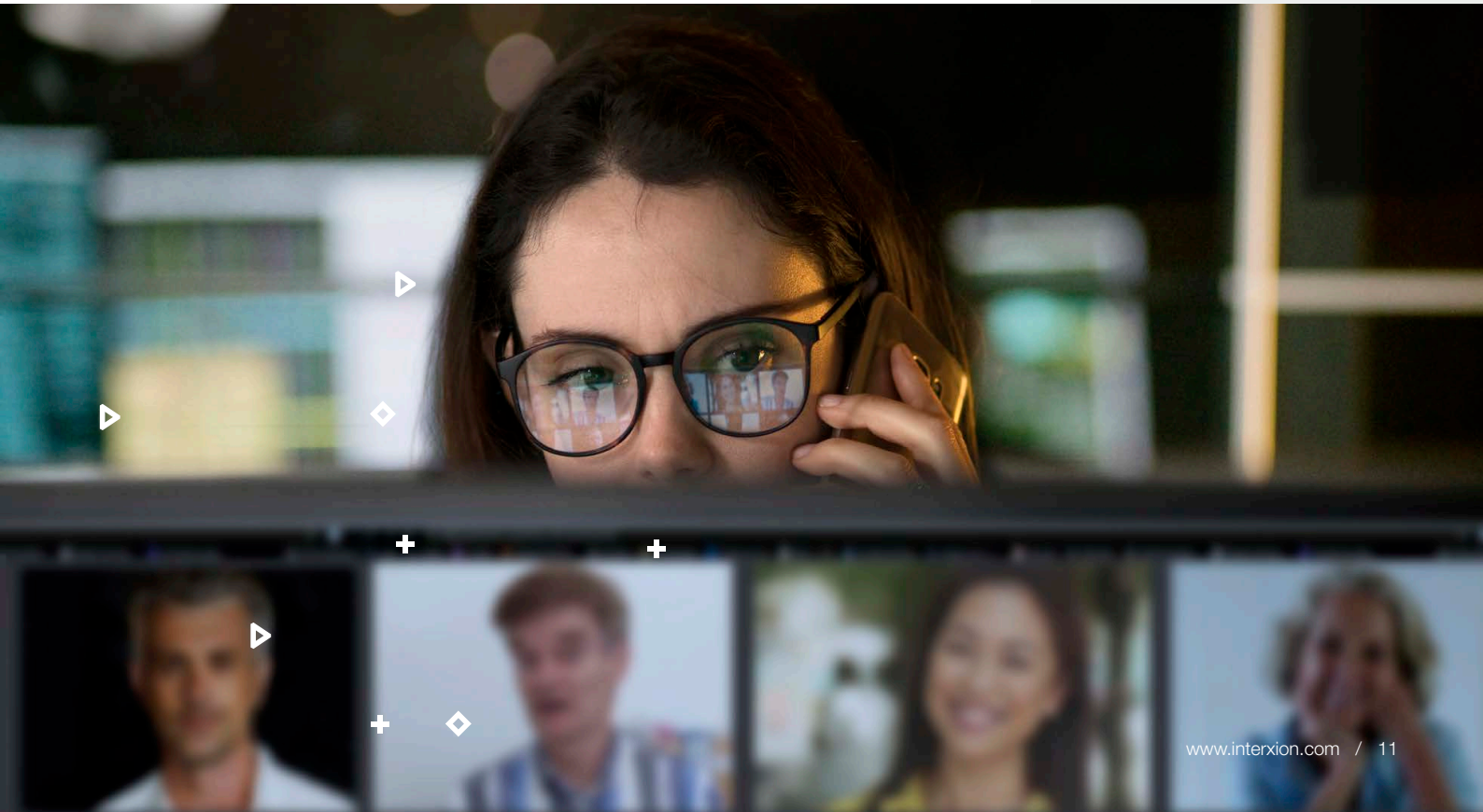
We are living in strange times. The 'new normal' has seen a radical change in the way businesses are operating. As enterprises around the world move their business-critical workloads to the cloud, and with the volume and variety of data continuing to grow, traditional enterprise network architecture is becoming increasingly unsustainable. This leaves enterprises with an expensive and inefficient mix of connectivity and cloud connections.

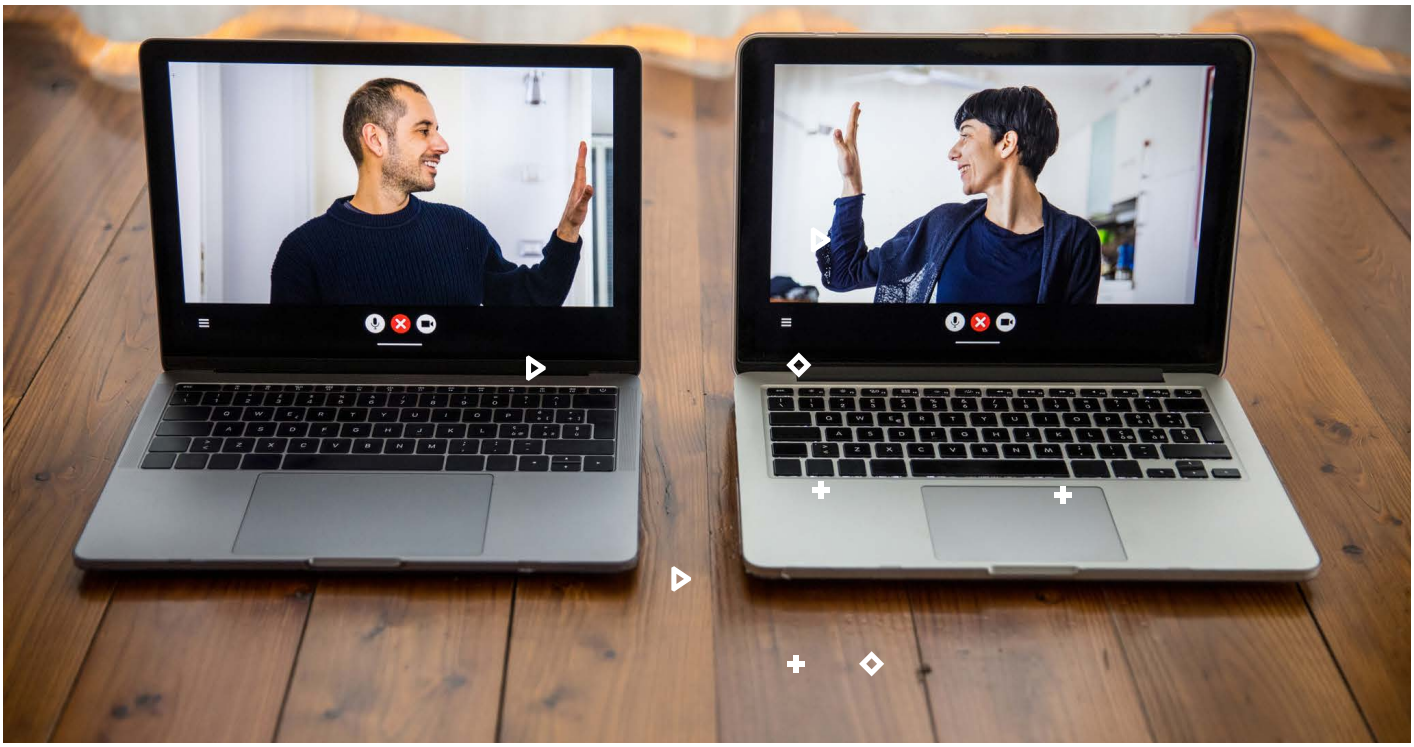
While internet connectivity was once renowned as the best available networking option, today the standard has been set far higher. Direct connectivity to the cloud through colocation is an approach that mitigates the pain points of internet connectivity.

By taking that connectivity to the edge, Interxion enables enterprises to re-architect their networks, using network hubs to interconnect and manage dispersed workloads across multiple clouds, data centres and networks. It provides organisations with the speed, scalability, and security they need to be a market leader and continue delivering 'business as usual'.

With the help of experts like Interxion, colocation delivers near-instant access to an already established community of partners, suppliers, and customers, who all benefit from best-in-class reliability as a result. No one yet knows when things will return to some version of 'normal'. But whatever business looks like in the future, Interxion will continue to help enterprises ensure the necessary infrastructure and that data is closer to the customers who need it most.







About Interxion

Interxion, a Digital Realty company, is a leading provider of carrier- and cloud-neutral colocation data centre services in Europe, serving a wide range of customers through more than 50 data centres in 11 European countries. Interxion's uniformly designed, energy-efficient data centres offer customers extensive security and uptime for their mission-critical applications.

With over 700 connectivity providers, 21 European Internet exchanges, and most leading cloud and digital media platforms across its footprint, Interxion has created connectivity, cloud, content and finance hubs that foster growing customer communities of interest.

For more information, please visit **www.interxion.com**.

www.interxion.com

International Headquarters
Main: + 44 207 375 7070
Email: hq.info@interxion.com

European Customer Service Centre (ECSC)
Toll free Europe: + 800 00 999 222 / Toll free US: 185 55 999 222
Email: customer.services@interxion.com

Cofounder: Uptime Institute EMEA chapter. **Founding member:** European Data Centre Association. **Patron:** European Internet Exchange Association. **Member:** The Green Grid, with role on Advisory Council and Technical Committee. **Contributor:** EC Joint Research Centre on Sustainability. **Member:** EuroCloud.

Interxion is compliant with the internationally recognised ISO/IEC 27001 certification for Information Security Management and ISO 22301 for Business Continuity Management across all our European operations.