CLOUD AT THE CENTER FOR A BETTER USER EXPERIENCE

SD-WAN – an enabler for Enterprises

TELE2 FÖRETAG

Cloud technologies are increasingly among the top investments of companies of all sizes. According to a recent study by IDG Communications (2020), 92% of organizations today have some element of their IT environment in the cloud, a figure that is only expected to grow as businesses experience how cloud technologies help reduce costs, increase efficiency, and prepare for unexpected events. Yet as the benefits become ever-more real, so are the demands placed on organizations' networks.

Demand for access to an organization's applications is growing exponentially. More people, more devices, and increasingly more media-rich applications are all vying for access – a development driven by cloud technologies. And it is the company WANs (Wide Area Networks), which are not usually optimized for such accelerated traffic, that are feeling the impact. As a result, it is becoming increasingly complex – and costly – to provide a good user experience. And all this is happening against the backdrop of rising digital threats.

Today's digitalization era is altering network architecture. Networks need to be both robust and able to respond rapidly to change. Gartner, the tech, business and IT management research and advisory experts, holds up Software Defined WAN (SD-WAN) as the key technology in transforming networks from 'fragile' to 'agile'.

NEW DEMANDS ON NETWORK INFRASTRUCTURE

An increasingly mobile workforce and the rising remote-working trend places yet more demand on network infrastructure and security. Add to that the ever-growing volume of data produced globally (30% YoY) and the rapid development of cloud-based services, and organizations are finding themselves under intense pressure to find new solutions capable of adapting to continually evolving needs.

One notable change is the shift away from reliance on a sole connection to individual office locations, which is due to the potential financial losses caused by a single problem. As insurance, organizations tend to build redundancy into their networks – a 'sleeping' resource which, when utilized, can relieve network pressure and play an important role in application dynamics and cost optimization.

Another vital consideration is predictability and performance. Existing both in the cloud and an organization's data center, predictably and performance of applications are essential factors in delivering user experience. To allow for real application optimization, networks need to support the organization with an understanding of the necessary traffic flows. Simply transporting traffic from A to B is no longer sufficient.

LEVERAGING A CLOUD STRATEGY

As needs quickly change and organizations demand fast access to new applications, many adopt a 'cloud-first strategy', producing both applications and infrastructure primarily in the cloud. This can lead to cost savings, both in infrastructure and operating costs.

For these organizations, the networks' traffic is gradually shifted from being primarily intended for communication between local offices with servers in own data centers to moving to the cloud. The resources in the WAN are then loaded in an unfavorable way if traffic to the internet has to pass a central point, which in turn can lead to bottlenecks and increased costs.

LETTING THE SOFTWARE DEFINE

Clouds. Mobile. Digital business models. Large data transfers. The demands on a business network have, historically, been complex. As we saw above, organizations have had a tendency to focus on high stability, performance, and reliability when networking their devices and locations. But as network loads move beyond the office, new bottlenecks arise within the infrastructure. With rigid design this can lead to a less optimal user experience and longer lead times - and rectifying these comes at a cost.

This is where SD-WAN technology becomes an essential building block for comprehensive, secure digitalization. Instead of a traditional rigid network system with a centralized core infrastructure and manually configured devices, SD-WAN separates and simplifies the control plane from the data plane. Multiple connections are now possible, including MPLS (Multiprotocol Label Switching), broadband, and LTE.

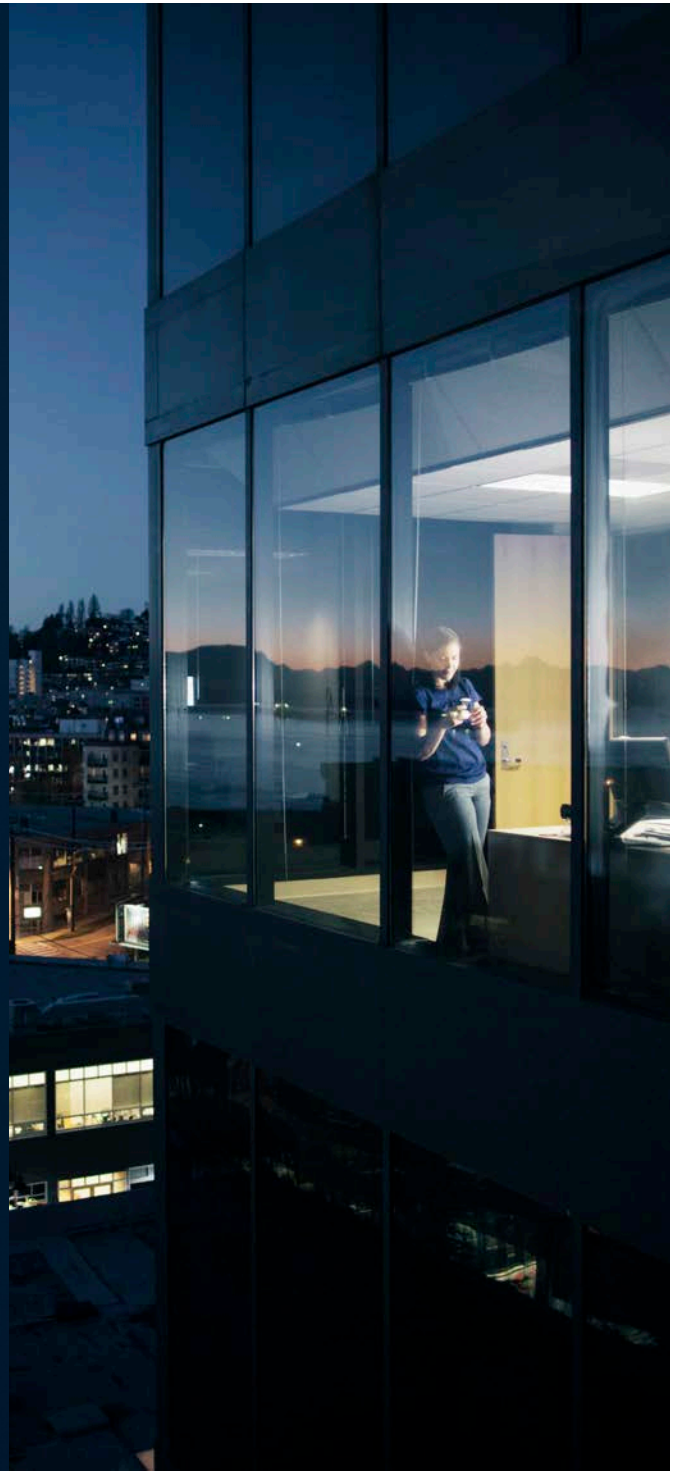
ENSURING SECURITY THROUGHOUT THE NETWORK

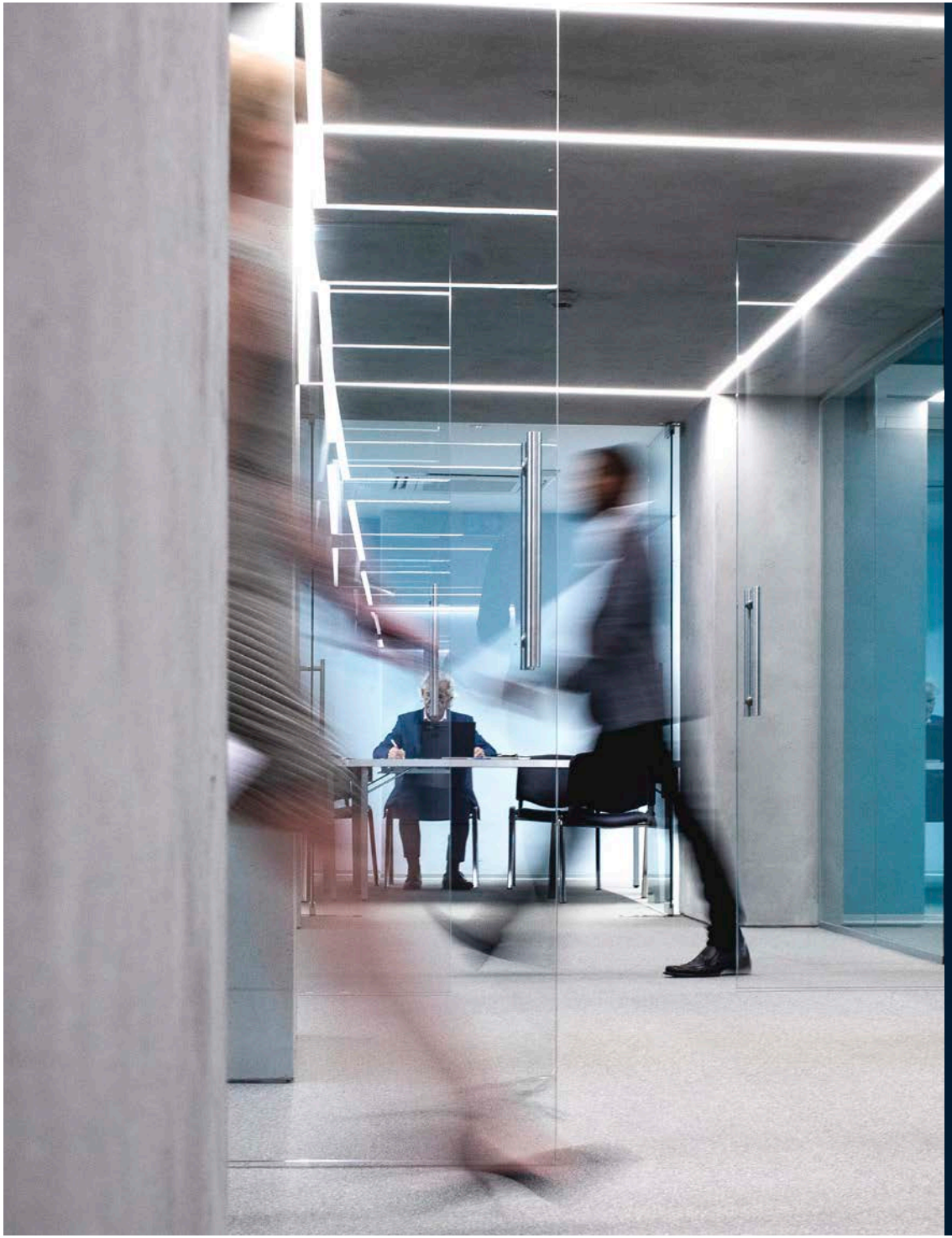
Security is a critical part of today's network infrastructure. With Network Administrators and Security Managers under heavy pressure to defend their network against attacks and intrusions, companies are increasingly making networking and security decisions at the same time – and often with the same vendor.

Networks distributing access to the Internet directly from local workplaces also require the distribution of reliable protection against vulnerabilities. An extended firewall functionality, or a Next Generation Firewall (NGFW) improves the possibility to defend against risks and ensures an organization's policies are maintained across the network.

A firewall is a network security device that filters incoming and outgoing network traffic based upon Internet Protocol (IP) ports and IP addresses. By intelligently inspecting the payload of some packets, new connection requests can be associated with existing legitimate connections. A Next Generation Firewall adds additional features such as application control, Integrated Intrusion Prevention (IPS), Advanced malware prevention, and often more advanced threat prevention capabilities, such as sandboxing (a security mechanism for separating running programs).

Next generation firewalls can be found deployed on-premises at the edge of enterprise and branch offices, with cloud security to leverage evolving security threats.





AN ALWAYS CONNECTED NETWORK

Many organizations wish to control their business-critical applications and security, yet new technology is an investment that comes with many associated costs and demands on resources.

Previously, networks with private fiber connections have created secure environments where capacity and redundancy can be balanced to the organization's needs and associated levels of service. But private networks, generally considered static, come with high costs and long delivery lead times. In many cases, a basic broadband or mobile broadband-based infrastructure can function well. For organizations with higher requirements, these accesses can be combined with more connection to deliver better quality.

NETWORK MANAGEMENT SETUPS

Organizations with ambitions of building a robust yet flexible network that is optimized for smarter resource utilization and better user experience, select SD-WAN and use multiple accesses.

With site variations in both access availability and quality, the most cost-efficient redundancy can be to use a completely separate network, such as a mobile network. Factoring in mobile access from the get-go is not only cost-effective but offers the organization the benefit of quick set-up at each establishment. For supplementation, a fixed fiber connection can be added, allowing for a fast, cost-effective, and optimally functioning network.

Choosing a provider with developed processes and expertise within Managed Services is essential. However, managing SD-WAN may involve processes that are best suited to management by either party. Flexibility, skills, and resource availability will determine which solution is optimal for each organization. Full management may suit organizations with limited resources, while those with in-house skills may prefer to retain aspects of control, such as application and security policies, while the network provider takes responsibility for basic configuration, delivery, operation, and maintenance.

SUMMARY

Organizations with a cloud-first strategy or who have their IT environment in the cloud to some extent have a lot to gain by choosing SD-WAN:

- **Increased cost-efficiency**
  IT infrastructure is costly and is becoming an increasingly significant part of an organization's budget. Through the cloud, central infrastructure can be reduced and thus contribute to cost savings. In addition, SD-WAN can help by using the access infrastructure that is best suited to each local property. Mobile broadband is a good option as either support for fiber or as a single access.

- **Faster deliveries**
  The challenges private WAN networks bring often include delivery times. Through SD-WAN, more networks can be used. With an en hanced version of SD-WAN, the organization gets the opportunity for mobile access or their own broadband for fast deliveries.

- **Security at the core**
  Security is an important area for SD-WAN and solutions that don't include it from the start can bring unpleasant surprises. Being able to handle encryption of traffic, having the opportunity to protect the organization against harmful traffic as close to the source as possible, and prioriti zing down traffic that is not critical to the business should be at the core of the SD-WAN solution

- **Improved user experience**
  By using the Internet as the primary platform and at the same time being able to see and adapt how applications perform in the network, the experience is significantly improved.
  For users, delays can be reduced, and for service staff system support can provide information and answers as to whether it is working properly.

  Through SD-WAN, the possibilities of the cloud can be leveraged at the center of the network – for a better user experience.


To learn more about how SD-WAN can transform
your networking solution, please get in touch.
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