The transformation to SD-WAN starts now

LIFE IS FOR SHARING.

Point of View

The last hurdles for SD-WAN have been cleared

SD-WAN is the shape of things to come for Wide Area Networks (WANs) say companies, analysts and telecommunications providers alike. The new network concept often makes traditional WAN concepts look distinctly old where agility, cloud connectivity, security or transparency are concerned. Yet SD-WAN transformation has so far lagged way behind analysts' forecasts. The proportion of WANs that have migrated to SD-WAN is well below the 30 percent that was anticipated for 2019. CIOs have observed the technology and launched pilot projects, only to renew their WAN contracts. They have postponed the changeover to SD-WAN. But why? Where are the hurdles that have so far eluded the analysts? And how can they be cleared?

This positioning paper describes why SD-WAN has lagged behind expectations and why the technology is now ready for use by medium-sized and large corporations.

Our understanding of SD-WAN

Two virtualization technologies – software-defined networking (SDN) and network function virtualization (NFV) – are the basis of Software-Defined Wide Area Networks (SD-WANs). They enable network control to be centralized and network functions such as firewalls and WAN acceleration to run virtualized on standard hardware, thereby creating an overlay over the existing transport network underlay.

One advantage is that in hybrid networks with MPLS and Internet access data traffic can be distributed dynamically to the two connection types depending on the application and the data load. At the same time CIOs can control and monitor the WAN centrally. Public clouds are simply and securely connected directly to the location via local Internet access points that can be configured centrally. And at times, CPE – is required for all network functions.

A solution for every challenge

These are the problems that have haunted SD-WAN technology

SD-WAN has been on the agenda of IT executives for years. The technology took shape in the early 2010s, triggering hype first in the United States and later in Europe. New providers were quick to emerge, established market participants changed their offering, and telecommunications service providers, including Deutsche Telekom, set up companies of their own. They were expecting a massive transformation to software-defined corporate networks. But the revolution failed to happen. Companies bided their time. Reasons for this reluctance differed from CIO to CIO. Here is an overview of them:

These solutions make SD-WAN ready to roll

In recent years Deutsche Telekom has invested massively in its SD-WAN portfolio and developed solutions for the challenges mentioned. As a result Telekom SD-WAN services are tailor-made for the requirements of medium-sized and large corporations. That applies to their technological maturity, their future safety, their operating models and additional services, and to their migration. Thanks to the following SD-WAN properties Deutsche Telekom paves the way for a secure corporate transformation:

01 **No solutions for large corporations**
What works in pilot projects does not necessarily function for thousands of locations. For example, not all technologies fulfill a large corporation's functionality, scalability and security requirements.

→ **Scalability**
Deutsche Telekom technology platforms are designed to fulfill the anticipated demand. For example, IntraSelect can, as a highly scalable platform, serve a large number of locations. Specific customer requirements are covered by means of solutions which incorporate SD-WAN technologies.

02 **Lack of clarity about operating quality**
Companies are accustomed to the highest levels of stability in their MPLS networks, but SD-WAN is a new network concept and many SD-WAN providers sell pure technology and do not offer a managed service. So CIOs wonder who in the future is going to ensure compliance with Service Level Agreements (SLAs).

→ **Reliable SLAs**
With Deutsche Telekom, companies can work on the assumption that appropriate technical and organizational measures will ensure SLA compliance. In addition, companies are given end-to-end SLAs for their entire network where Deutsche Telekom is operating both the SD-WAN overlay and different transport networks.

Further challenges

Further solutions

A solution for every challenge

03 **High level of market dynamics**

Today the SD-WAN market consists of many providers, but their number will decline in years to come. A corporate network, in contrast, must function year after year. A CIO needs to feel sure before the launch that the chosen provider will update the technology for years to come and not just suddenly vanish from the market.

Future-safe technologies

In the foreseeable future there will be no single, superior SD-WAN technology. That is why Deutsche Telekom collaborates with manufacturers whose products, support capabilities and financial stability are secure for the foreseeable future. Deutsche Telekom has performed comprehensive checks on its partners to assure both future viability and license and service agreements are geared to the requirements of large and midrange enterprises.

04 **Reservations about security and privacy**

The security of a WAN is business-critical. Via the company's network hackers might, for example, gain access to sensitive data or cripple servers and with them business operations. The company's compliance rules must also be observed. Can the different SD-WAN providers guarantee network security and privacy? And who is in charge of which components?

Design, operation and security "Made in Germany"

Deutsche Telekom fulfills the most exacting security and privacy requirements for SD-WAN. Security relevant components are managed by Deutsche Telekom and fulfill the requirements of security "Made in Germany". Furthermore, Deutsche Telekom only provides companies with services that have passed Deutsche Telekom's Privacy and Security Assessment (PSA) test. So the SD-WAN portfolio complies with the strict group-wide privacy and data security requirements, which are based on industry standards, legal provisions and manufacturers' recommendations.

05 **Controlling multiple network providers**

SD-WAN enables companies to use the transport network of providers other than that of the SD-WAN overlay provider. For a company that means additional input and expense because it must mediate between different service providers.

One-stop shop

Deutsche Telekom is able to offer companies both the SD-WAN overlay and the transport networks as an integrated service and also takes care of the orchestration of the two network levels. A central team and end-to-end ITIL processes ensure that network changes are implemented faster and faults are rectified faster.

A solution for every challenge

06 **High migration risk**

The technology was new, and next to nobody had any experience of migrating to SD-WAN. So how is a CIO to know whether the chosen provider can keep a large network operating with no outages during the transformation to SD-WAN?

Tried and tested migration model

Together with its technology partners, Deutsche Telekom has developed the S.A.F.E. method (see Fig. 1) on the basis of experience gained in SD-WAN migration. The most important success factor is that the method takes an integrated view of the network and its function within the company. That includes, in addition to the SD-WAN overlay, the transport networks, existing hardware, and supplementary services such as security. Deutsche Telekom also migrates the network segment by segment, ensuring that disruptions do not affect the entire network.

Smart S.A.F.E. migration
Best practice approach developed by Deutsche Telekom and technology provider teams:

Strategy – Work with Customer to understand key business drivers, Current design patterns, pain points and plan SD-WAN journey

Activate – Provision the SD-WAN overlay with enhanced analytics and insight capabilities onto existing underlay circuits – Layer Core DC's, then locations/sites/branches

Facilitate – Use the inbuilt advanced analytics and insight to review and recommend underlay optimisation with best fit access to drive cost efficiency

Employ – Deploy optimised underlay inline with business demands, maintaining evergreen approach by utilising SD-WAN overlay, Service Management insight and continuous innovation for evergreen approach

Our approach to SD-WAN

We aim to support every company with the appropriate SD-WAN. That is why our SD-WAN portfolio is designed both for customers who want to entrust their entire network to one supplier and also for companies that want, as a first step, either just an additional or a specific SD-WAN technology.

Smart SD-WAN
from Deutsche Telekom enables companies to use the SD-WAN technologies of Juniper, Silver Peak, VeloCloud (VMware), Meraki (Cisco), Aryaka and Fortinet as a managed overlay VPN service. For each partner technology there is a separate specialized team for all tasks – from design to operation. Smart SD-WAN solutions also deliver maximum flexibility regarding transport networks where companies can choose to use other providers' transport networks and benefit from the established service processes and SLAs provided by Deutsche Telekom. This approach with a multi-vendor ecosystem allows Deutsche Telekom to design, implement and manage SD-WAN solutions which perfectly fit to the specific business needs of every customer.

IntraSelect SD-WAN
is particularly suitable for companies that want their WAN to be provided as an all-inclusive service. It includes the SD-WAN overlay and MPLS and Internet access. As a managed service, it guarantees a uniform service level for both the SD-WAN overlay and the transport network which makes the network management easier for companies. The SD-WAN service builds on the established processes of the IntraSelect platform that already ensures the highly stable operation of more than 2,500 corporate networks at over 100,000 locations and we have added SD-WAN elements for service orchestration and central operation into the Open Telekom Cloud. IntraSelect SD-WAN provides customers with a network that is wholly operated by Deutsche Telekom – from the SD-WAN router via the transport network to operation of the SD-WAN management components.

This offer is especially interesting for MPLS customers as only one network terminating device per company location is required for SD-WAN and a hybrid MPLS and Internet network. That is because both platforms are based on Cisco technology, making SD-WAN migration much leaner and less expensive.

http://business.telekom.com

Customer examples

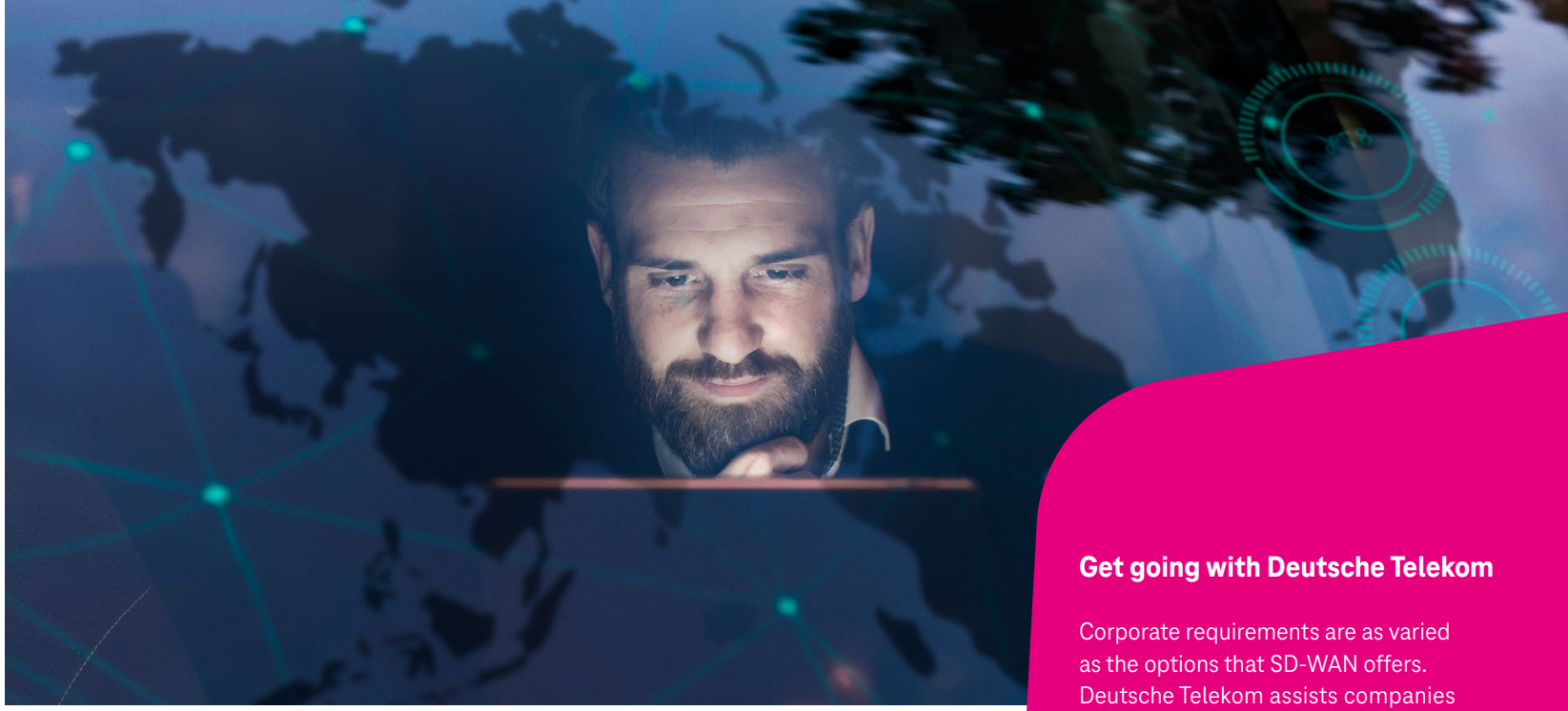
Fully managed SD-WAN with gigabit connections

Siemens
A large German industrial company with a payroll of several hundred thousand employees around the world and key engineering units, many service branches and private cloud platforms in Germany. The existing MPLS network is tailor-made for the company's requirements. For its digital transformation Siemens needs high and reliable bandwidths delivered at attractive prices with the ability to adapt its WAN quickly to new corporate structures.

The solution
Telekom won the contract to convert the Siemens network in Germany to SD-WAN. Telekom operates both the transport network and the SD-WAN thereby ensureing a smooth interplay between the two network levels. The migration was undertaken jointly with technology partner Cisco using the S.A.F.E. migration approach. The result was an attractively priced end-to-end managed corporate network that is designed for the highest bandwidths. Access bandwidth of up to 100 Gbit/s will make it the fastest SD-WAN in Germany so far.

In cooperation with:

SIEMENS



High-performance cloud utilization at remote locations

Prinzhorn
An Austrian cardboard packaging manufacturer which supplies online traders with boxes for shipping goods. Its paper mills are located all over Central and Eastern Europe close to forest and water sources but far away from data centers and gigabit connections. Yet the company wanted to digitize its works and, for example, to operate its Enterprise Resource Planning (ERP) systems centrally.

The solution
As on-site bandwidths were inadequate a pure cloud solution was out of the question, Deutsche Telekom delivered a solution that combined cloud, edge computing and SD-WAN services. Business applications and SD-WAN software both share the computing ressources at the network edge and in the private cloud. The Internet serves as underlay network, and interconnects cloud and sites. This design ensures high availability and low latency at the sites while keeping operational costs low. Furthermore the plants require just a single appliance for ERP, SD-WAN and more.

PRINZHORN GROUP | *We will.*

Get going with Deutsche Telekom

Corporate requirements are as varied as the options that SD-WAN offers. Deutsche Telekom assists companies with planning and implementation no matter which decision point they have reached.

- **SD-WAN consulting** helps enterprises to find the right SD-WAN solution to achieve their objectives in terms of security, the cloud, the Internet of Things and other digital use cases.
- **Proofs of concept** help corporations to put the technology of choice and the operating model to the test before the transformation.
- **MPLS migration** offers companies, either with and without an IntraSelect network, a new, lean operating model for their network by means of a tried and tested process.

Transition to SD-WAN now.
If you have any questions, get in touch with your local sales representative or send an e-mail to
business@telekom.com

Published by
Deutsche Telekom Global Business Solutions
Landgrabenweg 151
53227 Bonn
Germany