EVERY UNIQUE NETWORK TRANSFORMATION JOURNEY STARTS WITH THESE THREE STEPS

How examples of best practice can help you on the journey to network transformation and ensure every step is a success.

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THE CHALLENGES OF ON-PREMISE AND LEGACY IT

Your network is your business backbone. In a world where data is your most valuable asset. Where we are all always connected and where markets can change in seconds, connectivity is power. And to master that power, your business needs to engage with customers, enable remote working for its employees, connect new sites quickly, ensure uptime and protect user data.

That's easier said than done. Most businesses have been investing in IT over the years, and their on-premise resources are now largely unsuited to the speed and requirements of today's bandwidth-hungry and low-latency applications. The chances are that your organisation's network is a complex tangle of legacy systems, interoperability disconnects and tools you no longer need.

But if you don't keep pace with the technology and fall at the first hurdle of network transformation, you could find your business unable to compete in modern markets. So what is the right strategy to transform your network and build the backbone your business needs?

WHY THIS WHITEPAPER?

In this whitepaper, we'll look at how you can prepare your business for successful network transformation and the three steps to take in moving from on-premise, legacy IT towards a fully hybrid and agile infrastructure. We'll show you how to work with prospective vendors to develop a strategy, assess the solutions and achieve your network ambitions and business objectives.

Get the transformation right and you can harness technologies like cloud to deliver experiences that meet consumer and employee expectations. Make sure your network ensures security and minimal disruption, while enabling intelligent and optimised operation in the future.

INSIGHT FROM THE FIELD TO BENCHMARK YOUR BUSINESS

For business success, lessons learnt in the field are much more valuable than theoretical observations. At Tata Communications, we have witnessed the network transformation of a number of global-leading enterprises, gaining a unique insight into some key parts of the journey.

Although there is no single, one-size-fits-all solution, there are certain common elements in each successful network transformation. We have teased out three key steps that your business should follow to maximise your chances of success: defining your objectives, knowing your traffic flows and evaluating the potential solutions.

STEP 01 - DEFINE YOUR TRANSFORMATION OBJECTIVES

The first step is to define the objectives of your transformation. It's important to have a clear grasp of your business goals so that you can shape your transformation to align with them. With a clear strategy in place, you can ensure you don't undergo transformation simply for the sake of it, but rather to further your enterprise's endeavours.

Let's take a look at what that might mean in four different business scenarios:

Post Covid-19 - In the working from home era, you need an IT network that can provide users with secure access to applications from anywhere. In an environment that demands rapid prototyping, you consequently need a network that can spin up virtual testing environments extremely quickly.

Manufacturing - If you are in the manufacturing sector with a number of plants across different locations, you want to be sure you have fail-safe connectivity with your remote branches. That means your ideal network must have a global reach and simplify any complexity of having to deal with multiple providers.

Cloud - Let's say your company's main goal for the year is cloud adoption. You want to move more and more applications to the cloud in order to make the business more agile and flexible. The IT objective must then involve providing a certain bandwidth per user across the business to improve and optimise the user experience.

Mergers and acquisitions - If you're supporting new business models through expansion and acquisition, you will be moving into new geographical sites and utilising partner networks. That means implementing an IT strategy to support expansion, with the ability to implement new sites at speed.

YOUR VENDOR CHECKLIST

- Are they in Gartner's Magic Quadrant?
- Do they have the footprint to supply and support the services you need in all your locations?
- Do they offer multiple SDWAN products so they can provide an unbiased recommendation based on your business needs?
- Can they deliver end-to-end services, including the underlay?
- Do they have previous experience handling similar deployments of a similar scale?

FOCUS ON THE OUTCOMES

Clearly demonstrating how IT improvements will benefit your business objectives is a crucial part of setting out the business case and obtaining approval for the project. Make sure to clearly show how your network transformation will offer value and achieve ROI.

By focusing on outcomes rather than features, you avoid limiting your options in terms of vendors or technologies. The key point becomes the measurable aspects of what your chosen solution can really deliver, rather than any marketing hype or promises from vendors.

SHORTLIST THE POTENTIAL VENDORS

There is a multitude of vendors out there, all making different promises and using their own jargon. You want to cut to the chase and select the vendor that meets your specific needs. By staying focused on your objectives, you can avoid getting tied up in the technological claims. So draw up a shortlist of the most promising vendors, using the key criteria shown below.

KEY POINTS TO CONSIDER

- Once you have used your business goals to identify your objectives, start by **shortlisting vendors** based on their presence in Gartner's Magic Quadrant.
- Then look at **vendors whose footprint matches your presence**, as you need to know that the vendor can not only supply to your locations, but also support wherever you are present.
- **Look for independent recommendations**. If you're talking to a Managed Service Provider or an SI, they will probably carry two or more SDWAN products, so they should be able to advise on which best suits your needs.

  It pays to be cautious – if you talk to a provider directly, they will probably recommend their own product without looking at your specific requirements.
- Look at **vendors who can deliver end-to-end services, including the underlay**.

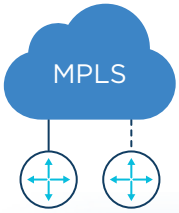
  Remember, SDWAN is not a silver bullet. It works on top of the underlay connections, so if you are looking for **an end-to-end SLA** then you need someone who can supply you with underlay services across your entire footprint.
- Shortlist someone who has **experience with similar deployments**.

AGREE ON THE TOP-LEVEL APPROACH

Network transformation requires a different way of thinking from other IT improvements. Simply swapping out old equipment for SDWAN-enabled devices won't lead to a cohesive system built for modern workloads. Any plan for transformation to an SDWAN-transformed network with integrated internet has to be much more complex.

Ideally, you can integrate your third-party internet circuit into the SDWAN environment, connecting it into the SDWAN overlay as a secondary or tertiary circuit. The benefit is you get visibility of all traffic, whether it's going to headquarters, branching out to another cloud service provider or it's purely browsing traffic. Whatever the traffic, you're able to see and measure it, so that your metrics and reporting are accurate and complete.

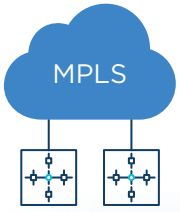
Whatever you decide, talk through your approach with potential vendors to ensure that SDWAN is fully utilised by considering internet breakout and cloud application visibility.



Legacy

- Application visibility
- Application steering
- Bandwidth x 2

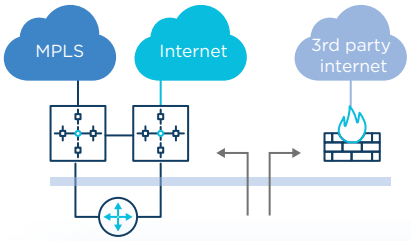
- Cost high
- Internet breakout - legacy / another team - limited visibility
- All traffics is treated equal - you are buying the same transport for all apps



SDWAN enabled

- Application visibility
- Application steering
- Bandwidth x 2

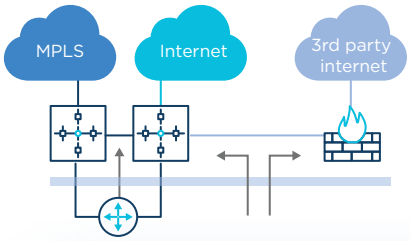
- Cost high
- Internet breakout - legacy / another team - limited visibility
- All traffics is treated equal - you are buying the same transport for all apps



SDWAN transformed (Hybrid WAN)

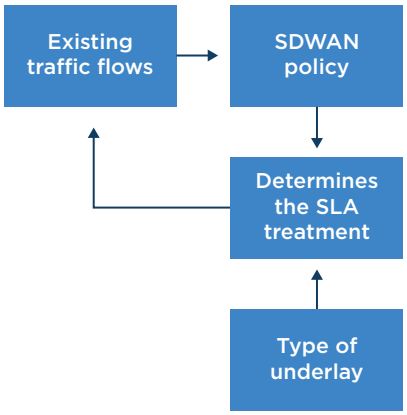
- Application visibility
- Application steering
- Bandwidth x 'X'
- Internet breakout part of SDWAN policy
- Differentiated traffic treatment allows for growth
- Cost optimised

- User insights



SDWAN with integrated internet strategy

- Application visibility
- Application steering
- Bandwidth x 'X'
- Internet breakout part of SDWAN policy
- Differentiated traffic treatment allows for growth
- Cost optimised
- User level insights



STEP 02 - KNOW YOUR TRAFFIC FLOWS

Once you have defined your objectives and strategy, you need to understand your traffic flows and how they affect your network requirements. What traffic is critical, what less so? What traffic needs more compliance? What connectivity should you use for your different apps? What are the latency requirements?

Traditional WANs don't give you the capability to manage networks at a granular level, but with SDWAN you can manage your entire network to the smallest scale. By gathering your data correctly, you can ensure you gain maximum benefit of the SDWAN capabilities. Netflow, WAN optimisation devices and SDWAN pilots can help you gather data to build a clearer picture of what your SDWAN policy should contain.

If you don't have access to traffic flow information, for instance if you don't have netflow visibility or SDWAN optimisation devices to measure traffic, then an SDWAN pilot is often the best choice. You can then deploy SDWAN devices in your network without disruption to gather data, rather than trying to cut the size of your traffic to match what a vendor can offer.

KEY POINTS TO CONSIDER

Once you have access to traffic flow information, identify the top five applications run on your network, at the very minimum, as well as the SLAs that support them. This will enable you to determine the type of underlay you require to support applications that may have latency or bandwidth that some underlays cannot guarantee. Intelligent SDWAN systems can route traffic according to their requirements, but of course without the base infrastructure in place, an SDWAN can only do so much.

We have seen a number of vendors in the market underplay just how crucial the choice of underlay can be. For instance, some vendors say that their SDWAN solution can simply run over two broadband connections without MPLS or a dedicated internet line. While it's true that many SDWAN solutions can be run this way, this type of connection just isn't resilient enough for applications that require a certain level of performance. No matter how the SDWAN routes the traffic, broadband connections may not be able to match the performance that an MPLS connection could provide.

Technology-supported features	MPLS	IZO™ Internet WAN	Broadband internet	Dedicated internet
Guaranteed performance and E2E SLAs	Yes	Yes	No	No
Uncontended last mile	Yes	Yes	No	Yes
Traffic prioritisation jitter SLAs	Yes	No	No	No
Local internet breakout	No	Yes	Yes	Yes

SIZE YOUR UNDERLAY

By categorising your traffic into levels of importance, you can then see what your network should prioritise. At this point, the advice and guidance of a managed service provider or system integrator can be invaluable.

Generally, traffic is divided into three separate tiers:

Critical traffic should be given priority treatment and protection, with SLAs that are guaranteed even when primary links fail.

Semi-critical traffic is also protected but doesn't benefit from the same SLAs when primary links fail.

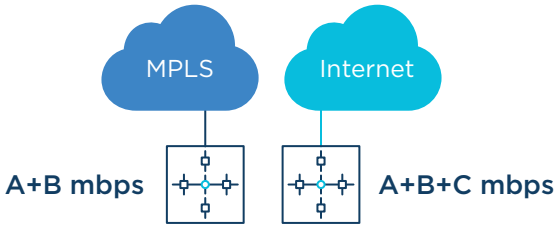
Non-critical traffic isn't protected. By identifying your traffic that belongs in this category, you could drive significant cost savings by cutting back on expensive connections.

SDWAN sites talk to the cloud gateway on an SDWAN overlay and the gateway then talks to the non-SDWAN sites, **creating a complete chain of connection**

ASSESS HOW SDWAN TRAFFIC FLOWS TO NON-SDWAN SERVICES

This is a key step in the journey, and a managed service provider can really prove their worth at this stage. When you have implemented SDWAN across the network for a few sites, providers will have set up cloud gateways to enable transformation. SDWAN sites talk to the cloud gateway on an SDWAN overlay and the gateway then talks to the non-SDWAN sites, creating a complete chain of connection.

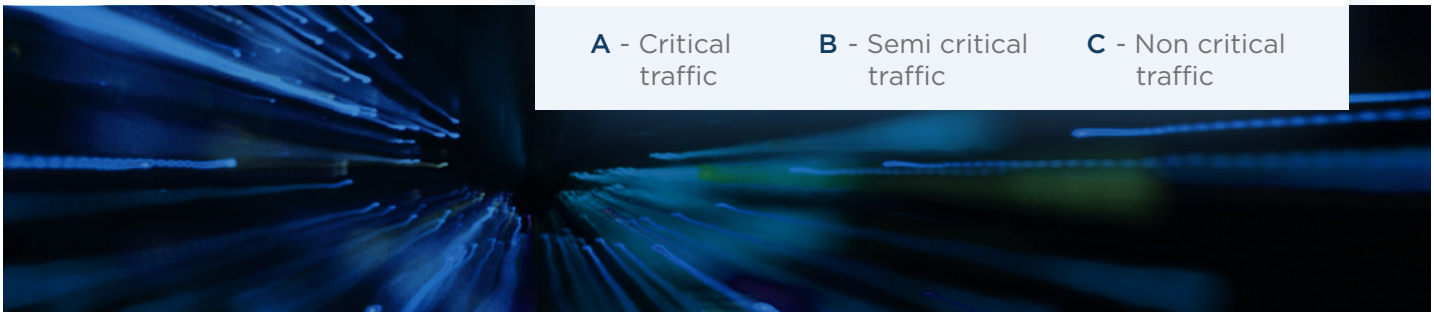
Going directly to an OEM won't give you this level of flexibility, as they typically do not provide cloud. That means the compatibility for SDWAN to non-SDWAN traffic flows becomes your responsibility, and you have to designate one site accordingly.

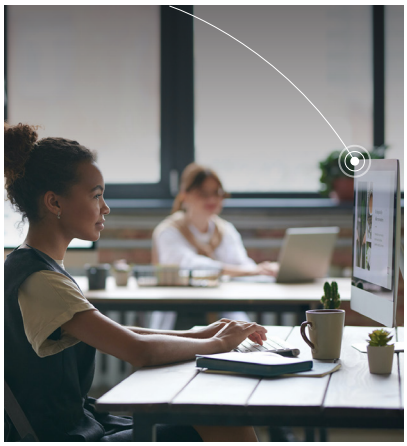


A - Critical traffic

B - Semi critical traffic

C - Non critical traffic





STEP 03 - **EVALUATE SOLUTIONS**

There are a number of ways to evaluate the available SDWAN and network solutions and these differ from vendor to vendor. Demos and virtual proof of concept (POC) environments make it relatively easy to see a solution's features and compare them with other products. Virtual POC environments also enable you to test features yourself, rather than just seeing them being demonstrated. At the early stages of the discovery and evaluation phase, this should help you narrow down your choices from your prospective shortlist.

		Demo	Virtual POC	Physical or on-prem POC	Pilot
Discovery and feature evaluation phase	Demonstrate SDWAN features	✓	✓		
	Test SDWAN features		✓		
	Compare SDWAN features between vendors		✓		
	Test in client premise			✓	✓
Trial the solution	Test SDWAN over existing network			✓ Limited	✓
	Test production traffic			✓	✓
	Total service management				✓

NARROW DOWN YOUR CHOICES

Once you are seriously considering a solution, on-premise testing becomes important as you need to check it is compatible with your existing infrastructure as well as your business needs. That's when a pilot becomes the essential final part of the process, enabling you to experience and assess the total service management capabilities as well as the service provider delivering the solution.

During a pilot, as well as the day-to-day management and traffic evaluations, you'll also be able to assess program management, installations, migrations and low-level design. That's why we recommend moving directly from a demo or virtual POC to a pilot, putting you in the perfect place to harness a wealth of data and make an informed decision.

IN CONCLUSION

The journey to network transformation can seem daunting, but any enterprise starting out on the process is at a real advantage. As so many other businesses have already undertaken the journey, you can learn from their experiences and ensure you follow best practice when you come to make the move.

The three steps for planning network transformation are based on Tata Communications' years of experience working at close hand with enterprises who have already transformed. By following the lessons learnt from your peers and benchmarking your position and your progress against them, you can make sure that you never put a foot wrong on this essential and inspiring journey.

As you move from step to step, it's vital that you accurately articulate your requirements, classify traffic and understand what your business needs. Outside assistance can be invaluable. Look for candidates who can offer you multiple SDWAN offerings as they are best placed to offer truly impartial advice. By gathering the recommendations from the right service providers, you can make informed decisions that will maximise your return on investment.

As you move from step to step, it's vital that you accurately articulate your **requirements, classify traffic and understand what your business needs**

ABOUT TATA COMMUNICATIONS' SDWAN SERVICES

Tata Communications' SDWAN portfolio can transform your network with internet fit for business which provides reliable connectivity infrastructure. You benefit from predictable internet that delivers critical applications seamlessly, along with support for Bring-Your-Own-Network (BYON) requirements, over both MPLS and internet. Solutions include improved application visibility and analytics, dynamic and intelligent load sharing, security and encryption, and device consolidation, all leveraging SDN, NFV and SDWAN technologies.

We can help you at every stage of your transformation journey:

Independent recommendation - As we carry more than two SDWAN products, we can match your requirements to product features and then deliver a bespoke recommendation.

End-to-end managed service - We deliver SDWAN, MPLS, DIA and broadband services to over 190 countries. Our IZO™ internet WAN service is an internet-based WAN with the quality of MPLS. Thanks to our unique arrangements with ISPs around the world, we can deliver packet loss latency and loss guarantees on internet-based transport, so you can use it for side-to-side traffic as well as local internet breakouts.

Solution trials - We offer virtual and physical POCs and pilot trials. We can also deliver on-premise dedicated controllers.

Self-service portal and co-management - You can take more control of your network with our self-service portal and our solutions also enable co-management.

Support for third party networks - You can make changes to your policies and define new application signatures through our API gateway to our SDWAN platform, reliably and securely.

THE TATA COMMUNICATIONS ADVANTAGE

As the leading digital infrastructure services provider with a truly global footprint, we have the experience – and the experts – to deliver future-proof network solutions.

Reduced complexity

In a hybrid world, we can simplify your cloud security strategy with a comprehensive managed security service that extends your control right across cloud environments.

Greater visibility

With enhanced visibility you can regain control of your cloud environments, your data, and your reputation

Enterprise-wide compliance

We implement consistent security across your whole enterprise and identify any gaps in policy enforcement to keep you compliant

For more information, visit us at **www.tatacommunications.com/tbc**