ENABLE YOUR NETWORK TRANSFORMATION WITH SECURE AND AGILE ARCHITECTURE
The Changing IT Landscape

Every business today is preparing for success in the digital world. The enterprise IT environment is becoming increasingly complex. The proliferation of consumer technology has enabled users to access information from anywhere, any time and on any device. This “democratisation of technology” means that IT organisations within an enterprise are no longer able to control how, where and which employees access information. Enterprises are continuing to invest in cloud computing and Software as a Service platforms and technologies to serve their end user demands, while IT managers are challenged to keep their data safe and secure while providing ease of access. We see that the digital transformation journey entails the following:

- Becoming more agile to meet customer expectations of rapid innovation and issue resolution
- Delivering consistent performance across the globe while expanding into new markets or while bringing new products to market
- Achieving ubiquitous access to applications and collaboration platforms among users, customers and partners to innovate and improve productivity
- Creating omni-channel communication platforms to enhance customer experience
- Minimising risk from external threats and risks associated with a rapidly changing technology landscape, online presence, disaster events

All of the above creates complexity and puts tremendous pressure on enterprise network infrastructure and requires businesses to rethink their core architecture. As businesses go down the path of digitisation, traditional networks prove to be prohibitively rigid and increasingly expensive to keep pace with new business demands. However, at the same time, the public internet, as an alternative choice, carries critical security, reliability and performance concerns. In addition, as workforce mobility grows, the adoption of connected devices and data-driven digital platforms increases, and the migration of application workloads to the cloud expands, demands on agile network and business risks will continue to amplify. In other words, the enterprise IT departments are being asked to keep things simple, stable and secure, while at the same time offering an open and accessible architecture, bring agility and value to the business and future proofing it all at the same time. This is not an easy task, especially during the unprecedented challenges faced with the Covid-19 pandemic, amplifying not only new use cases, e.g. BCP and work from home, but also creating incredible pressure to make the transformations at a much more accelerated pace.
When it comes to enterprise networking, the philosophy has always been to keep the internet separate from the self-contained and private ‘enterprise grade’ WAN. However, the internet has become an indispensable business tool, and dependence on applications and services in the public cloud has increased dramatically. Increasingly, enterprises are facing complaints that existing WANs suffer from comparatively poor user application performance, as well as slow response times and prolonged faults. As a result, enterprise network managers have been forced to patch together solutions using both the internet and private networking.

Global Internet – Ubiquitous or Notorious?

This patchwork of connectivity has built up over time, as managers have tried to cope with the highly dynamic application and user landscape of today, but traffic ends up being routed across the network through bottlenecks and gateways, on and off the internet in unpredictable ways. This is further compounded by the global inconsistencies in the performance of the internet, with complicated flavors of internet connectivity in different countries, unpredictable support and an insecure environment, mired in dense regulatory environments and local idiosyncrasies. The result: highly variable user experiences depending on the time of day, application type and user location.

A recent report from 451 research found that 53 percent of enterprises see modernising IT infrastructure for scale, speed, availability and efficiency as the most effective way to achieve business agility. However, one of the least agile components in today’s IT infrastructure is the underlying WAN, and enterprises are increasingly turning to modernising this layer to enable and accelerate the pace of their digital transformation. The right approach to building the next generation WAN is critical to their success. The clear solution is not to fight the cloud but embrace it, by properly integrating the internet into the network. This switch will not take place overnight, with billions of dollars already invested in traditional ethernet and MPLS networks, but this is the essential next step in the digital transformation of the enterprise network. In a survey last year, 92% of IT professionals say adopting cloud technologies is important to their organisation’s long-term business success, while only 43% think that only about half of their IT infrastructure will be in the cloud in the next three to five years. The majority also raised security as the biggest concern in a hybrid IT environment. To meet these public-private hybrid demands, the internet needs to be predictable, secure and flexible, while the overall hybrid networking solution must be globally consistent and agile.
An Agile Architecture

To achieve this, enterprises need a global network integration platform, which securely supports the access and distribution of data and content, and simply connects users (corporate/branch offices, mobile employees, customers, etc.) to services (corporate data centers, public clouds, IAAS/SAAS/PAAS, etc.). This network integration platform provides the agile architecture that enterprises need to meet the growing demands of digital transformation. Service providers like Tata Communications have been able to identify the problems that enterprises face and have built their services around the principle of a managed global network integrated platform which they offer for multiple enterprises like Visteon and Carlsberg.
Enterprises need an open and agnostic WAN architecture which allow them to use multiple access technologies, best-in-class suppliers (globally), business broadband sourced locally and distributed cloud connectivity closer to user base – what we refer to as the ‘underlay’. In addition, depending on the specific application stacks and their respective performance requirements (including real time applications, e.g. UCC and voice), the underlay may need to be custom designed and include a site-wise solution which may comprise MPLS, public internet or an internet WAN with predictability and performance guarantees that are fit for business, to be able to deliver consistent performance and user experience globally. The ability to create and manage a hybrid set up in this environment is the foundation of the global network integration platform, and a specialty that is best managed by experienced service providers like Tata Communications.

While the choice of network technologies and access methods allows customers to be flexible, nimble and cost effective, an intelligent, integrated SD-WAN solution, which we refer to as the ‘overlay’, allows the delivery of superior, consistent performance, as well as availability and control, completing the puzzle. It sits on top of a complex hybrid infrastructure to: (a) maximise the performance of the next generation hybrid WAN through application / business aware routing and load balancing across multiple connections, (b) provide security as an embedded feature and (c) offer centralised analytics to extend better visibility and control.

This foundation of the integrated, distribution and access layer management, with a managed underlay and overlay solution, which provides an integrated platform to serve the applications, is a lot more than just buying circuits or bandwidth. It is designed and developed to be agile and fit for purpose, to de-risk change and to provide an end to end managed solution that helps enterprises attain their business outcomes.
Global Integrated Network and Cloud Platform

Worth noting here is that the benefits from this platform start to diminish as it is disassembled into piece parts in terms of design, procurement or management. Service providers such as Tata Communications have built digital platforms that integrate the overlay functionality with the underlay network in a way that offers enterprises the best performance, cost, features and flexibility benefits. Given service providers manage multiple global private and public networks, cloud service provider networks as well as global enterprises, they have a unique advantage of providing fit for purpose networks with economies of scale. Enterprises can choose to leverage this platform on demand as needed at the city or country level and remain nimble as their network evolves organically or through mergers and acquisitions. This approach would help them reduce adoption risks, improve availability and performance and at the same time offer flexibility to suit the rapidly evolving enterprise landscape through an as-a-service model.

Organisations who prefer to use the DIY approach and split the underlay from the overlay, proceed with parallel procurement paths. Invariably, this approach requires a high level of in-house expertise, creates a heavy reliance on the vendors and suppliers across the globe with varying service levels and performance, and causes budget and timeline over-runs. There is a capability and skill gap that needs to be addressed to meet the requirements of the SD-WAN architecture. At the other end, certain enterprises are leaning toward a low-risk, managed approach and relying on the experience of the service providers to offer the global integrated network platform for an end to end solution.

In reality, there is no one-size-fits-all for network transformation. Networks today are 10 times more complex than they were 10 years back, and SD-WAN or not, there is no one “silver bullet” to make such complex environments succeed – each layer must be addressed in its own environment. SD-WAN is not going to create the underlay path that does not exist. There are a lot of inter-dependencies between the overlay and the underlay, and while the hype around SD-WAN tries to set it up as the panacea, it needs to be made clear that SD-WAN is only part of the solution, not “THE” solution. As ZK Research states in their white paper on Digital Transformation, “...shifting to an SD-WAN gives companies the necessary agility to adapt to market changes in real time, but the [underlay] should be built on a rock-solid core network”. Tata Communications, with seven years in a row in the Leader quadrant of global network services, provides just that.

No one-size-fits-all for network transformation
Even with SDWAN, not all solutions are created equal, and a choice for the specific use cases is important to have. The specific SDWAN solution, integrated into the broader agile architecture, should seamlessly extend to the remote workers, agents and work from home employees, especially during this pandemic of Covid-19. Service providers like Tata Communications create bespoke solutions in-house which include some unique VPN replacement and zero trust, application and connectivity performance improvement solutions. They create partnerships with leading v-proxy, cloud firewalls and vUTM platforms to offer an integrated end-to-end managed security suite on a global scale. This added agility can save enterprises from piecemeal procurement and ad hoc design challenges, and allow the experts to co-design, build and operate for maximum ROI benefit and an optimised TCO.

Each enterprise faces different circumstances, chooses the level of control they keep and uses their own decision criteria to meet their strategic business outcomes. The bespoke nature of this journey warrants partnerships with service providers that can be supportive, consultative and flexible enough to provide enterprise-specific solutions that facilitate their end goal of digital transformation. The right service providers, like Tata Communications, understand the complexities of managing global network infrastructure and are better positioned to deliver an integrated (underlay and overlay) solution. They will engage the enterprises in the co-creation of the next generation WAN. Projects are run with experienced staff and then managed globally for a lifecycle that is flexible, agile and future proofed. The service providers will continue to vet the solution on an ongoing basis while maintaining the global sourcing and support partnerships. Enterprises can focus on their core business while holding the service providers accountable for end-to-end management with integrated SLAs for both the overlay and underlay, providing a network infrastructure optimised for application performance and user experience while also incorporating cloud and edge-based security solutions globally with a ‘one throat to choke or one back to pat’ approach.

There is also merit in the integrated managed solution as the enterprises can easily leverage the service provider capabilities to enable other services and platforms such as a move to a cloud-based unified communications and collaboration platform. In short, for an enterprise, procuring a managed global integrated network platform from a service provider is like buying insurance for their business – they get world-class expertise and the best of breed technology and analytics, and a fit for purpose end to end solution, without having to try to build it in-house, commit major capital investments or risk technological obsolescence, all while keeping control and enjoying a predictability in both performance and spending.

We conclude with where we started – digital transformation. While it is amply clear in most cases what digital means to an enterprise, it is the transformation part which is the challenge. It is service providers such as Tata Communications who are doing their bit to stay abreast with the solutions and offering seamless ways for service integration and management for the enterprises to achieve their goals.