

SOURCING WAN SERVICES

CAPITALISING ON NEXT GENERATION NETWORK SOLUTIONS

AUTHOR



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Recent advancements in network and technology markets, alongside the drive to leverage Cloud solutions have fundamentally changed what and how WAN services need to be procured. This paper looks at how WAN procurement needs to adapt to fully capitalise on recent technology innovations.

TECHNOLOGY INNOVATION DRIVING MARKET CHANGE

In the last few years, substantial changes to the networking technology landscape have seen the need for Global Suppliers to modify and change their WAN service offers.

“Next Generation Networks” are coming into the forefront and factors influencing the emergence of these include:

Key External Industry Drivers:

- / **Mobility drivers** - Organisations are keen to capitalise on Digital innovations in the marketplace; extending mobility and reach to their end-users.



- / **Efficiency drivers** - Significantly increasing agility and reducing capital investments; adoption of Cloud services has been identified as a key capability enabler.
- / **Global reach** - Helped by significant capital investments and technology enhancements (e.g. 4G LTE) at more remote location, which in the past was only reachable via satellite.
- / **Market competition** - Greater deregulation in most geographies and the emergence of new suppliers (especially in the provision of Internet services) have increased options available and reduced WAN costs substantially.

Key Technology Drivers:

- / **Software Defined Networking (SDN)** - Application (and circuit/route) Aware Routing which leverages all connected circuits (including high-grade dedicated and lower-grade Internet links) to assure adequate performance for all applications.
- / **Network Function Virtualisation (NFV)** - Removes reliance on high-cost dedicated appliance-based hardware/platforms to deliver network functions via standard platforms.

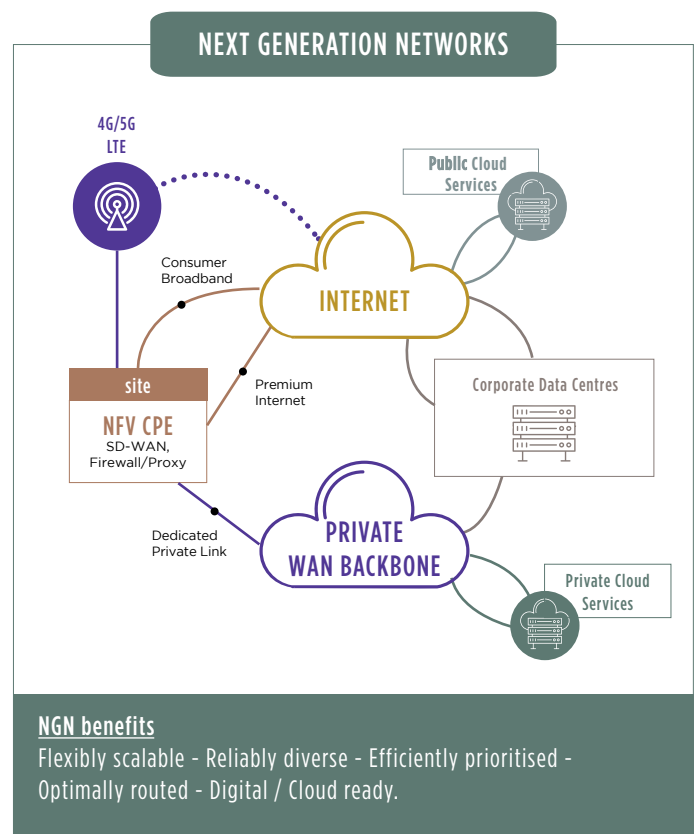
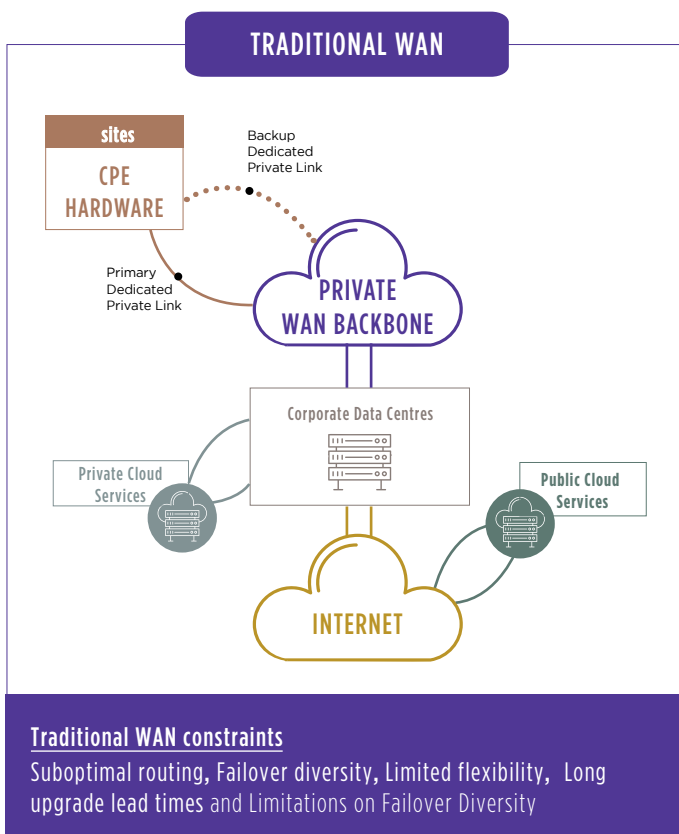
- / **Security** - Firewalls, IDS/IPS and other functions have matured and are now able to support local Internet breakout.
- / **Network Management Automation** - Able to respond to and overcome network and security incidents without human intervention.

Current WAN designs need to be revisited to leverage all benefits of Next Generation Networks, as illustrated below.

Traditional vs. Next Generation Network Technology based WAN services

NEXT GENERATION NETWORK TOPOLOGY

Adaptive, flexible, application focused delivery - a key enabler of Digital Transformation to exploit new technology capability (Cloud, Mobility, Unified Coms, Big Data, Blockchain etc.)



COST SAVING BENEFITS

New technologies are not only delivering better and more consistent performance, but also enabling organisations to achieve substantial savings on WAN costs (primarily achieved by offloading lower latency dependent traffic onto lower-cost Internet links) and a far greater level of agility and control.

GLOBAL PROVIDERS IN ADAPTING

Next Generation Networks (NGN) are causing significant disruption to the global telecommunications provider marketplace. Whilst NGN offers clients substantial benefits, global providers need to undergo significant changes and investment to enable NGN solutions to be leveraged.

Some suppliers are yet to offer mature solutions, while others are well advanced. Therefore, the suppliers with less mature solutions have extensive capital investment in legacy infrastructure and support systems (especially billing) that has not been fully realised.

Thus still have a vested interest in continuing to maximise their return on investment from legacy capabilities.

Global supplier's adoption of NGN has been variable, with some suppliers yet to offer mature solutions but some well advanced. It is thus essential clients drive the procurement agenda to secure the most effective offerings from the market.

In order to secure and achieve desired outcomes, it is essential that significant changes to the focus of procurement are undertaken to ensure that the right solutions are offered by suppliers.

There is no better time than now to take advantage of market trends to transform your networks to adapt to the demands of the Digital Revolution.



ACHIEVING THE DESIRED OUTCOMES

When procuring new WAN services, it's important to "ask the right questions" to elicit the outcomes you need to fully leverage Next Generation Network capabilities.

The following sections outline where procurement questioning should be focused to capitalise on the opportunities of NGN.

Technology

The appetite of suppliers to offer innovative technical solutions needs to be utilised effectively (to encourage them "to put their best foot forward"). This is best achieved by not being overly prescriptive on your requirements or reflecting on your current network environment.

During The RFI phase you should consider and question suppliers on:

- / Support of Digital Innovation and Cloud Service Adoption agenda.
- / Need for flexibility and adaptability of the solution.
- / Ability to leverage Internet circuits (supplier and non-supplier provided services).

During the RFP phase requirements should be detailed, but these should still enable the supplier to be innovative in their solution. Key lines of questioning should include:

- / **A technical solution that leverages all incoming links to transport data;** organising and selecting the most appropriate path for data based on specific application related performance requirements.
- / **Capability to modify capacity characteristics** (port speed, traffic prioritisation settings) on incoming links quickly (within hours rather

than days), preferably via an easy-to-use portal and with dynamic features such as burstable bandwidth.

- / **Solution supports the ability to connect and use multiple** (private & public/internet) **external links**, including services not directly provisioned by the supplier.
- / **Able to encrypt traffic over public (Internet) links** - to enable secure off-load of internal data (within constraints of regulation in each respective jurisdiction).

- / **Enable local Internet breakout** (with associated cyber-security assurances) to maximise performance to Internet provided services (including Public Cloud solutions).

- / **Development and application of process automation** to seamlessly respond and adapt the network to changes in traffic patterns, demand or circuit conditions (such as failures), to assure consistent end-to-end application performance.

Service Management

Whilst many of the characteristics for Service Management should be aligned to your current WAN service offering, NGN technology capabilities may change the level of control you wish to take over your network. Any such changes should be carefully considered as they will change expectations and controls you can enforce through Governance and Service Level Agreements.

The fundamental NGN features that can be leveraged that will influence the Service Management relationship you have with suppliers (and therefore need to be targeted in your tender activities) should include:

- / **Organisation and processes adapted** and improved for leveraging automation and self-healing capabilities of NGN solutions.

- / Responsibilities and processes aligned to inherent NGN abilities to modify network capacity and traffic orchestration rules dynamically (typically via client accessed easy-to-use interface).

- / Leveraging abilities to provision new services effectively and apply patch management transparently and efficiently (with minimal impact on service availability).

Commercial and Governance

Contractual commercial and governance frameworks for NGN delivered services need to reflect the greater agility that can be achieved and current fluidity in the marketplace. Key considerations that you should seek to feature within the commercial and governance framework include:

- / **Billing to support application of multiple changes to circuit port-changes** (internal organisational approval process also needs to support quick and transparent authorisation of charging changes).

- / **Provisioning** - needs to reflect that SDN/NFV devices (and connection of new circuits to the devices) should be able to be installed without an engineering visit, thus reducing install costs.

- / **Circuits** - You should have the option to connect non-prime-supplier provided circuits (dedicated/private and Internet) at any location to provide external connectivity (and for these to be integrated and supported by the prime-supplier at minimal cost).

- / **Local-loop contract-length terms should be carefully selected to reflect local market conditions** (short lease terms are recommended for low-performing Internet links and markets that are undergoing substantial changes in competition). Local-loop circuits should be Fibre Ethernet terminated and

should be as large as possible to support ability to alter port sizes flexibly.

- / **The supplier should be incentivised to achieve cost efficiencies** by directing traffic via the most appropriate and lower cost paths for each application, whilst assuring application performance criteria are met and are consistent.
- / **Solution independence** – Network Function Virtualisation platforms enable you to leverage virtualised processing platforms to execute software images of network applications (routing, SD-WAN, Optimisation, Firewall etc.). NFV generic appliances do not tie you to dedicated technical (software) solutions, which were delivered on dedicated appliances in the past. You should leverage this to not tie you down to specific software solutions (to enable you to change applications as products mature or to take advantage of supplier cost savings).

Service Levels and Reporting

NGN has the capability of delivering many benefits that will substantially improve service levels and the overall performance of the network, however it is essential it is fully understood and tendered effectively so that full benefits can be realised.

Depending on who controls orchestration and how circuits are delivered, the nature of and delivery targets for Service Levels should be vastly different to those for traditional WAN services. Similarly, the nature of reporting capabilities should be significantly improved.

To elicit the best offers from suppliers, it is essential that your RFI and RFP are aligned to the benefits that can be achieved with NGN solutions, including:

- / **Service Performance** – NGN reporting can provide detail on the performance of applications across the network. We suggest this is leveraged to drive SLAs on performance of key business and highly network dependent applications.
- / **Application Performance** – Comprehensive and transparent reporting allowing for deep inspection of data and traffic.
- / **Network/cost efficiency** – in contrast to ensuring consistent performance for applications, orchestration rules should make effective use of all available connection options and route more “tolerant” application data via lower quality, lower cost circuits; thereby minimising use of high-performing, high-cost circuits. It is recommended that measures and SLAs are in place that drive efficient use of incoming links.
- / **Incident and Problem Management** – with high-levels of automation and the ability of SD-WAN to use orchestration rules to “self-recover” from individual circuit failures, SLA targets should be significantly more stringent for an NGN solution. However, circuit outage recovery times will most likely need to be equivalent to existing service SLAs and may need to be extended for low-cost, low-quality Internet circuits that are 3rd party provided (not directly managed by the WAN provider).
- / **Service Provisioning and upgrades** – whilst physical circuit lead-times will typically be unaffected, overall implementation / integration lead-times should be shorter as there is a reduced need for on-site engineering visits. Equally, lead-times for delivery of circuit upgrades should be substantially reduced (typically from days to hours/minutes).

Transition and Transformation

Next Generation Network Transition and Transformation should be much easier and more seamless than with existing networks. To leverage effectively RFI and RFP questioning should align to the following:

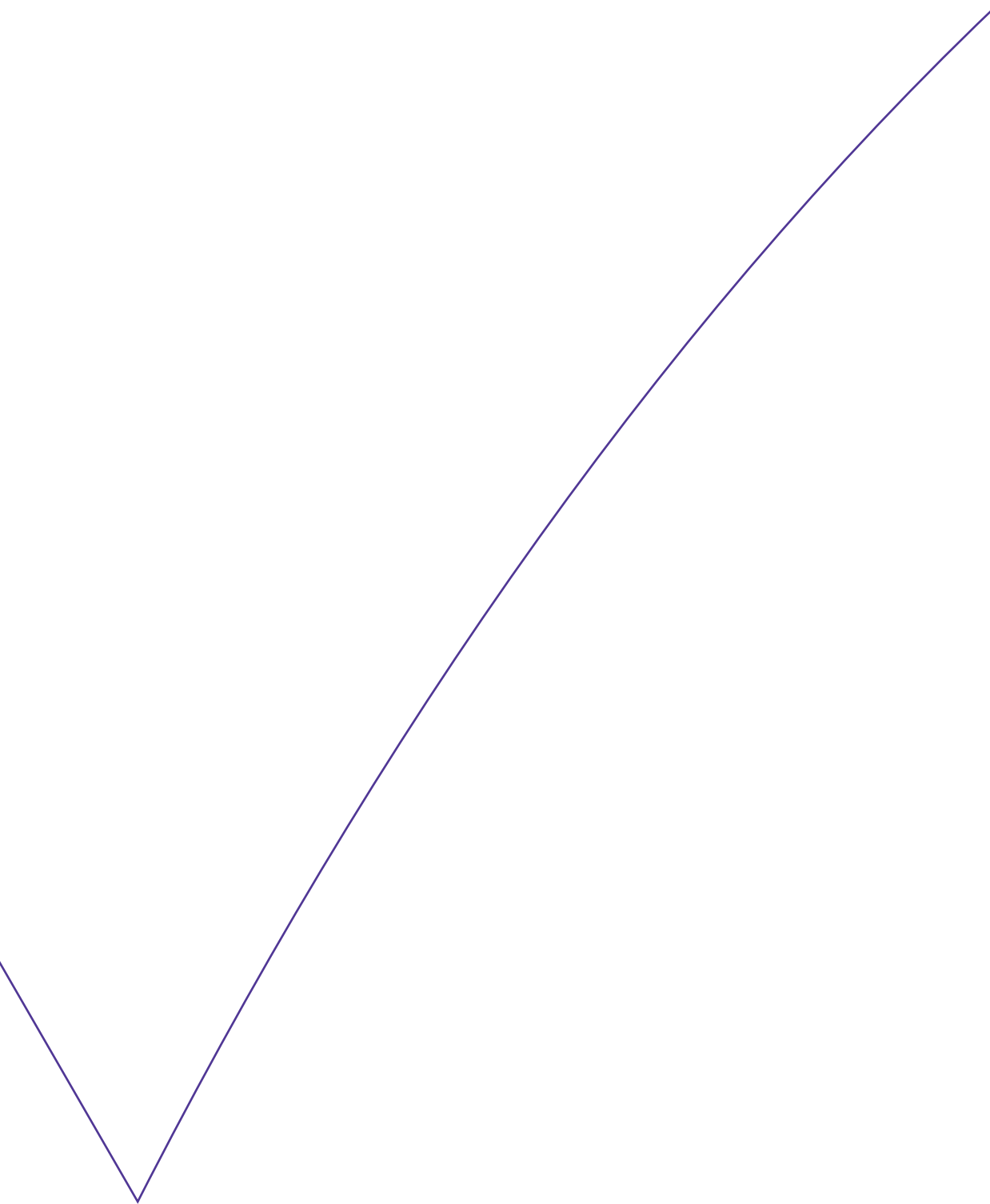
- / Light-touch or no-touch CPE installation.
- / Potential to integrate existing (old supplier router and links on CPE on as an interim step).
- / Ability to adopt new circuits seamlessly in a reasonable manner (so Internet links can provide an interim data-offload and local internet breakout connectivity, while you wait for dedicated and premium Internet links).

CONCLUSIONS

Next Generation Networks are mature and available now. They can substantially improve the performance, consistency and adaptability of WAN services to support adoption of Digital Innovation and Cloud services, whilst delivering substantial cost efficiencies. Indirect (non-tangible) benefits of greater agility achieved through delivery of NGN solutions (transforming your WAN into a business enabler, rather than inhibitor) will far outweigh direct savings that can be achieved by deploying NGN solutions.

Several global network providers are already adopting these technologies as part of their service offerings. Some may tend to promote traditional WAN solutions unless your procurement process drives them down the NGN adoption path.

The procurement process can be leveraged effectively to capitalise on the opportunities that NGN can achieve. However, to achieve desired outcomes it is essential that your procurement approach is robustly supported by knowledgeable experts who will drive suppliers to offer “best of breed” solutions aligned to the new technologies available.



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