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DISCUSSION SUMMARY

**PLACING A
SPOTLIGHT ON
TODAY'S
INFRASTRUCTURE**

This article was written by Roger Camrass, director of CIONET UK and a visiting professor of the University of Surrey, and is based on the conversations during a dinner in July on 'Infrastructure as a Service – Managing across multiple territories' sponsored by NTT Communications and NetApp.

Is this the right time to review your infrastructure?

New technologies and applications that affect core infrastructure are developing at an accelerating pace. The combination of software-defined networks (SD-WAN), multi-cloud services, collaborative tools, Internet of Things (IoT) and digital transformation present both challenges and opportunities for current infrastructures, many of which were designed a decade or more ago based on private network facilities.

According to the delegates many businesses recognise the shortcomings of existing arrangements but find it difficult to justify large capital (CAPEX) investments to undertake the necessary upgrades. Nor do they have the appropriate skills or tools to oversee such major programmes. The two big issues that were discussed over dinner were:

- How can businesses make the financial case for an infrastructure upgrade in both capital expenditure (CAPEX) and ongoing operating costs (OPEX)?
- Where might legacy systems and investments sit within the new era of digital infrastructures such as Cloud and SD-WAN?

Where does the infrastructure fit in the broader "digitisation" journey?

When organisations talk of 'Digitisation' they invariably mean changes to their business processes and application layer, launching new apps, self-service portals, AI-based Customer Service etc. However, the full potential of these initiatives will not be realised unless companies also look to update and transform their underpinning infrastructures. As much as Digitisation is about operational transformation or changing the customer experience, the underpinning infrastructure will need to be optimised to support greater spikes in traffic, more Public Cloud based applications

and increased levels of Security management. Successful Digitisation programmes run transformation and infrastructure design in cadence with each other, they are two halves of the whole.

What are the likely future requirements for modern infrastructures?

The CIO of a leading hotel group explained that his guests ranked broadband connectivity above the availability of hot water in their rooms! Customers as well as employees need to be connected 24/7 regardless of location or application. With over two billion connected people, infrastructure is now the lifeblood of commerce and day-to-day life around the Globe.

According to delegates from the financial services sector, requirements for infrastructure remain relatively stable within their corporate envelopes but are undergoing a revolution with respect to customer interactions. Mobile banking has placed a heavy burden on existing facilities, especially given the explosion of transaction data. Realtime insurance claims may require transfer of video information from crash sites to progress settlements. Other delegates such as trading companies described the need to turn-up and turn-down connectivity according to external activity.

One interesting application of IoT based infrastructure was the use of networks to monitor and control remote assets such as ovens within hotel kitchens. Such connectivity can identify and help solve outages well in advance of any disruption to customer service.

All agreed that the demand for improved connectivity can only increase in the era of digital transformation, with a growing percentage of manual tasks undergoing robotic automation, and the widespread adoption of machine to machine interactions – including buildings, vehicles and physical assets of all kinds.

How will technologies offer solutions to such new demands?

Multiprotocol Label Switching (MPLS) routing techniques have been deployed within private corporate networks for many decades. These respond well to stable and secure environments that have existed until recently in most sectors. However, advances in public internet services combined with software defined networking

(SD-WAN) offers today an attractive alternative to private MPLS facilities in the following respects:

- Designed to handle rapid changes in consumption patterns that respond well to today's streaming applications and high throughput of data
- Offer consumption-based tariffing with relatively low investment outlays: emphasizing the move from CAPEX to OPEX
- Respond well to the multi-cloud environment that typifies most organisations who are adopting Software as a Service such as Salesforce and Workday

It is reasonable to assume that as public cloud becomes the primary transport mechanism for the future, private infrastructures will diminish in scale and importance. However, the continuing requirement for service integration and security management could expand proportionately to deal with a multi-service, multi-vendor environment.

Business context will become more important

It became apparent from the various sector representatives around the table that business context will continue to drive infrastructural decisions. For those organisations who connect directly to the consumer such as healthcare, travel and entertainment, infrastructure will play a leading role in helping shape the customer experience – as witnessed by statements from the leading hotel group as well as the NHS.

Other organisations that are primarily business-to-business will continue to communicate in more stable patterns, especially where data exchanges dominate. However, the scale of such data transfers associated with ERP systems such as SAP could merit a review of traditional MPLS networks in favour of public cloud alternatives such as AWS and S4HANA.

In all cases office communications such as Office 365 will favour public cloud as demonstrated by the rapid adoption of Microsoft AZURE.

Making the business case for infrastructure renewal

The overwhelming conclusion of the table discussion was that infrastructure investment decisions cannot be taken in isolation to the business and external developments. Many historic decisions were based on the consolidation of fragmented assets into integrated private networks, producing a cost neutral or

favourable outcome. Many such networks were outsourced to Telcos or System Integrators who could offer genuine cost savings in return for long term contracts. With the advent of public cloud utilities and new mobile services such as 5G and low orbit satellite, the possibilities of migrating onto third party utilities such as AZURE and AWS appear to reduce or eliminate the need for costly private network facilities – either inhouse or provided externally. Emphasis has now turned to overlay components that will need to be preserved and strengthened such as:

- Service Integration that is necessary to monitor connection of corporate users to a growing multitude of SaaS services, and mobile service and public cloud providers
- Secure access in an increasingly open environment including identity management, multi factor authentication (MLA) and effective Cyber defence tools

Most infrastructure upgrades today are a result of business-led innovations such as improvements in customer experience (e.g. rapid insurance claims); new client services (e.g. digital agencies) or property management schemes (e.g. hotels). In all these cases the investment in an appropriate infrastructure becomes an integral component of the overall business case.

Removing legacy constraints

Organisations that adopt next generation infrastructure approaches are likely to scale down private MPLS networks in favour of public cloud-based utilities such as AWS and AZURE. This is unlikely to happen overnight. Instead most delegates see a gradual transition that is designed to incorporate a multitude of Software as a Service offerings that are gradually eating away at traditional ERP and other large transaction systems.

In many cases such organisations are revamping their entire enterprise architectures to reflect the new cloud environment. However, migration continues to be moderated by large legacy investments – often 50-60% of the total IT estate (as determined in a recent CIONET report). The intriguing question is how much corporate infrastructure will survive in the world of public cloud, and what will be its key characteristics?

What to consider as next steps?

Given the timescales and costs involved in a full-scale renewal of corporate

infrastructure – especially across geographic regions, executives need to consider the following factors:

- What will be the new applications and technologies that merit a renewal of existing facilities?
- How fast and how far should private networks be disbanded in favour of public cloud-based facilities?
- What will the residual inhouse network features look like such as security and service integration, and how might they best be implemented and managed?
- What could be the role of 'managed service' partners such as NTT Communications and NetApp in achieving a smooth transition into next generation infrastructures?



About CIONET

CIONET is the leading community of more than 10,000 digital leaders in 20+ countries across Europe, Asia, and the Americas. Through this global presence CIONET orchestrates peer-to-peer interactions focused on the most important business and technology issues of the day. CIONET members join over a thousand international and regional live and virtual events annually, ranging from roundtables, programs for peer-to-peer exchange of expertise, community networking events, to large international gatherings. Its members testify that CIONET is an impartial and value adding platform that helps them use the wisdom of the (IT) crowd, to acquire expertise, advance their professional development, analyse and solve IT issues, and accelerate beneficial outcomes within their organisation.

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