The One Network

Telin Singapore 4th Advisory Council Roundtable 1H2018
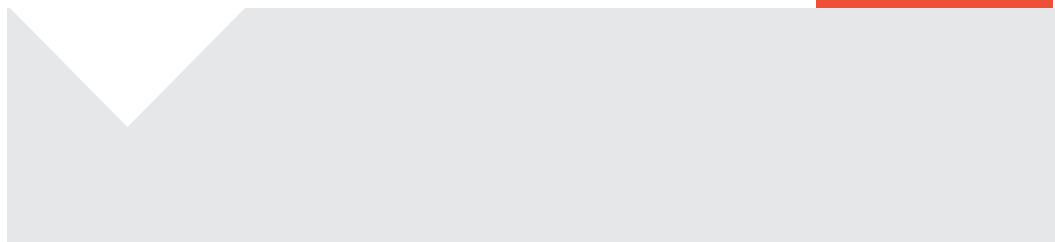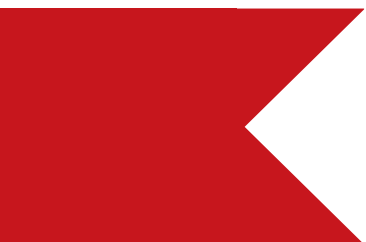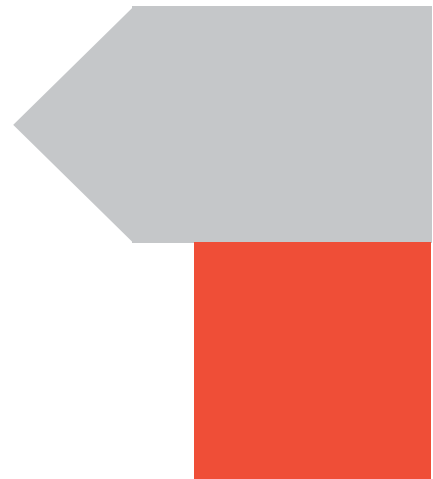
Introduction

CIOs and IT managers know that network connectivity is the linchpin to the seamless delivery of services to both corporate users and external customers. Without the network, online services cannot be accessed, mobile apps will not function properly and work processes in the corporate office will grind to a halt.

This time, council members of the Telin Singapore Advisory Council (TSAC) met to offer their insights on network requirements, perceptions around local and international connectivity, and as well as network-centric features that enterprises can benefit from. These insights and feedback obtained from the roundtable will be used by Telin Singapore to better understand perceptions concerning network connectivity, appraise new features and to facilitate the planning of its product roadmap.

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Council Members

Victor John Carey is the director and owner of AT Advanced Technologies in Singapore. With 30 years of experience of which the majority are in Southeast Asia, Victor is an Uptime Institute (UTI) accredited tier designer with expertise in data centres, microelectronics facilities and buildings with stringent noise control requirements. His company offers design, integrated systems testing and UTI accreditation support for high tech buildings including data centres, and was also engaged in the commissioning management and support for the UTI accreditation of Telin-3 in 2016.

Akito Kurokawa is the APAC network strategy manager at Netflix, a global, leading Internet television company, specialising in partner engagement, quality of experience, interconnections and network architecture. He has extensive experience in the Asia Pacific working on various network roles for almost two decades including stints at global OTT providers, a global data centre provider, and a global internet service provider.

John Lee is the co-founder and COO of Vodien Internet Solutions, and is responsible for all aspects of operations, sales and customer care. He works closely with the product and technical divisions of Vodien, and helps to guide the company's sales strategies, focusing on promotional campaigns that drive the company's growth. As part of the overall drive to increase customer satisfaction, John

ensures only the highest levels of service and support to all customers.

Lim Boon Chuan is the managing director of Webzilla Singapore, an enterprise hosting company with a presence in North America, Europe and Southeast Asia. Boon Chuan was the founder of 8 to Infinity prior to its acquisition by XBT Holding, which owns Webzilla. Boon Chuan is just as passionate about web hosting services today, and he delights in providing customers with what they need to succeed.

Terence Lim the director and co-founder of RED Technologies, and has more than 20 years' experience in the IT and Telecom industry where he is involved in the design, build and maintenance of infrastructure. RED Technologies specialises in fibre network build and maintenance, data centre remote hands support, IT project management and its associated service support and has a presence in Singapore, Hong Kong and Malaysia.

Victor Yuk is the CEO of Wizlearn Technologies, a leading e-learning solutions company in Singapore. Victor started work at Wizlearn Technologies as a system administrator, and subsequently became the vice president of operations where he led a team of 25 solution architects, system and software engineers. Victor initiated several major e-learning projects which led to an increased adoption of such systems in schools, corporate companies and government agencies.

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The pressure of price

Plugging the cost of IT

Unsurprisingly, cost was a consideration that cropped up more than once during the meeting. Victor John Carey observed that he has seen the topic of cost of crop up, even in well-heeled organizations such as financial institutions. He attributed it to internal pressures to bring down the cost of IT, compelling organizations to examine the cost of individual components more carefully than before.

"After spending so much on IT such as colocation and IT equipment, they are focused now on trying to reduce overall costs. The banks have massive spend on IT, [everyone] is trying to reduce it. I've seen them trying to reduce it, including trying to reduce the requirements," said John Carey. "I see them trying to get a better deal off their colocation providers, particularly in terms of their leases. Previously, they didn't interrogate [providers] as much."

From his perspective at the helm of an online educational provider that relies heavily on technology to deliver course content and training materials, Victor Yuk agreed with John Carey's assessment: "I feel the same way regarding the cost of IT. I suppose customers in general will expect the cost to go down rather than increase."

Retaining a value proposition

Terence Lim pointed to an increase in organizations looking to deploy their own metropolitan area networks (MAN) in Singapore as opposed to paying telecommunication providers to provide connectivity.

"We see an increasing trend where some of our customers are exploring to own their [networking] infrastructure. They are exploring the leasing of dark fibre and hooking their own wavelength-division multiplexing (WDM) equipment at different locations," he said.

Could this stem from a desire to lower costs, much like how assembling one's own PC offered substantial savings at one point in time? Advisory council members disagreed, noting that the substantial capital outlay for WDM equipment and related expenses is unlikely to be palatable to most organizations. Moreover, Lim Boon Chuan felt that there is room for specialists such as network providers to deliver a value proposition that will appeal to organizations.

"Once upon a time, we built our own servers because it can be cheaper. These days, we buy from trusted brands such as Dell and Super Micro, because their servers are affordable, and they are specialists in servers. We have peace of mind when we buy from them, rather than building it ourselves," said Lim.

The inaccuracy of pricing

Pricing is often skewed by perception, argues John Lee. To illustrate his point, Lee noted that the Internet access at his Singapore office delivered excellent and trouble-free performance while being reasonably priced. Yet spending the same budget at a branch office in the region resulted in a lower quality Internet connection.

"You get 10Mbps, dynamic IP address, non-dedicated connectivity with no guarantees of availability. It keeps going down," he said, noting that the team was eventually forced to use a leased line at 10 times the cost.

"It's all about perception: If you had started off at another location, you will probably come with a certain mindset with regards to the cost of good connectivity," said Lee.

"Foreign organizations will likely be taken aback by the sheer breadth of connectivity options that they can get for the same price in Singapore. But as budget has already been allocated, they will typically just be spent," he said, suggesting that a generous budget could be a reason why some organizations decide to deploy their own networks.

The sophisticated customer

Evaluating the technical requirements

Organizations are getting more sophisticated when it comes to their network requirements, and the questions posed by their engineers are tougher and more thorough, says Terence Lim.

"[We do] physical networks, and customers are no longer asking simple questions like: 'Do you provide redundancy?' and accepting our answers at face value. They are going down the path of probing technical questions in terms of the network redundancy, its resilience, and how the network is being maintained," explained Terence Lim.

"In the past, they would come in and ask about whether there is redundancy between two nodes. As long as we can tell them that it is redundant, they will accept and we will move ahead. These days, they have internal teams consisting of fibre and network experts who will interrogate us for specific information and actual physical routes, in detail."

"The project will not proceed until the customer is satisfied that genuine redundancy exists, drilling down into whether there are any cross paths in the route and whether the physical circuits are sub-leased from external parties – all this to achieve a high level of network assurance," said Terence Lim.

The appeal of dark fibre

Part of the appeal of dark fibre can be traced back to the liberalized telecommunications market in Singapore, says Terence Lim. Moreover, organizations are attracted to the control they gain from running their own communications infrastructure, and the lure of significantly faster performance.

"We assume that the enterprise would use the typical two megabits or 10 megabits pipe, so we get surprised when they start talking in terms of 1Gbps, 10Gbps or even 100Gbps. In some cases, the requirements are planned for specific financial trading requirements and other latency-sensitive workloads – and they are willing to invest into it," he said.

"It can be quite competitive compared to some of the leased circles operated by [the telecommunication firms] here. While we didn't get to see what they were paying previously, they often say that it's a 'no brainer' to go down the DWM route after we show them our solution with the cost."

Request for dark fibre isn't limited to banks or financial institutions either, says Terence Lim, who said his team worked on one such request from an automobile manufacturer: "Customers are getting more educated and becoming more advanced. And they are exploring [solutions] that don't necessarily conform to the norm."

The indifferent customer

Not all customers are as detailed or exacting in their demands though, says Lim. Pointing to some financial customers, he said: "It's quite different for us. Our customers will not go into the details as long as it satisfies their requirements. We provide the server systems and the bandwidth directly to them."

Lee also noted that his customers typically leave the task of obtaining connectivity to him: "To be honest, our clients are not particularly concerned about the details of the network and are happy just to be connected to the internet."

Yuk offered his perspective as a customer, noting that his organization typically leaves the intricacies of the network to the service provider. He conceded that there were issues with stale cached content stale some years ago, which culminated in a decision to peer directly with the Singapore Internet Exchange (SGIX). This resolved the problem, and saw an improvement in loading speed for his customers, he adds.

Education the key

From his perspective as an experienced network engineer with almost two decades of expertise, Akito Kurokawa felt that the different connectivity options are still relevant. Not everyone has the kind of scale to justify deploying their own dark fibre, or even peering directly to an Internet exchange, he says.

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"I think there is a declining price curve for [the cost of] bandwidth that's so significant that a lot of people need to ask if peering is effective for them. You need to have a certain amount of scale to benefit, and managing and operating equipment for peering costs money, too. I'm not sure if a lot of people that uses exchange services and peering have done that calculation," he said.

Even for large enterprises that require low-latency connectivity between their facilities, Kurokawa notes that there are services such as virtual circuits that offer flexible connectivity between data centres.

"I think it is important to know what that Internet connectivity is for. Sometimes people want technology for the sake of technology. Providers that sell these services have to educate their customers to make sure that they are doing what is best for them, rather than catching up on the next trend," said Kurokawa.

The current reality

The lure of the hybrid cloud

What does the future of computing look like, given that public cloud providers have carved out large swathes of the pie within a few short years? Lee thinks the future will consist of hybrid cloud deployments, which is a blend of public cloud and private cloud deployments. "There are people who are doing a lot of

hybrid and I think hybrid is going to be there to stay," he said.

"I think it is often a matter of cost and the ability to immediately deploy the infrastructure that gives the public cloud its appeal. While generally more expensive, you can save a lot of capital expenditure and time. But as you go longer, say one or two years, you start to realize that this cost can be saved," Lee explained.

"There's where you go into hybrid, where you build your own [on-premises] deployment. Enough capacity to meet your day-to-day requirements. And then it becomes your infrastructure for staging and whatever new requirement that crop up. This model actually balances cost effectiveness and on-demand scalability," he said.

Lee is confident that the hybrid cloud will be the status quo for some time: "People are still buying dedicated servers from us, they're still deploying their own infrastructure. They prefer someone to manage everything for them."

Private connectivity

It is perhaps due to the growth in the hybrid cloud that enterprises are seeking private connectivity to the top public cloud platforms and cloud services. Despite the excellent networks in Singapore, Terence Lim's firm sees such requests from his clients.

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"It's not my call whether [private connectivity] is necessary because it's more of my clients' corporate direction. I think it's more of providing a good user experience for their internal users. And hence the request gets passed down: 'We want an ExpressRoute to Office365; can we connect with some ExpressRoute providers?'"

"[These enterprises] could be from the U.S. or Europe or elsewhere. When they come to Singapore, they often have a project team to assist with setting everything up. The tendency is to go with the corporate norms. They will be like: 'These are my requirements, please localize them'."

"Moving away from corporate norms will mean going against the [grain]. They are not going to forego a certain checkbox in Singapore simply because you tell them the network in Singapore is very stable," said Terence Lim.

Connectivity in ASEAN

When it comes to connectivity in ASEAN (Association of Southeast Asian Nations), Kurokawa pointed to the many archipelagos and non-connected areas in the region. The challenges of getting higher bitrate services that people are increasingly demanding are not insubstantial, he said.

"It's a challenge for someone like us trying to deliver 4K video to certain regions in The Philippines with many islands and heavy usage of mobile broadband. In comparison, it is much easier in Singapore with its small physical land mass and excellent connectivity," he said.

And the problem won't be solved overnight, given the many regulatory and physical hurdles prevent people from building certain subsea and network routes in the region. On that front, Kurokawa noted that faster fibre connectivity between Singapore and Indonesia can allow organizations to spread their data centre deployments between the two countries for redundancy and can be an opportunity that Telin Singapore can leverage.

Bringing the network into the future

The rise of SDN

An up-and-coming technology is Software Defined Networking (SDN), a networking approach that leverages open protocols to offer centralized control and on-the-fly configuration over the entire network. Typically managed from a central web portal, it can offer colocation customers the ability to quickly adjust their bandwidth requirements up or down as required.

Terence Lim thinks that it will be compelling to enterprises, though both he and Lee expressed reservations that a cohesive inter-data centre offering could be successfully implemented. "I think enterprises will welcome it. From an end-

user perspective, I think it is a good choice," he said.

But will the availability of a compelling SDN service culminate in a rush to switch vendors? Lee was candid and noted that it depends very much on the overall cost, which will include migration costs. He said: "I don't think a lot of organizations will just jump ship like that. They will probably find ways to get connected to the location offering SDN services and pay for the local loop."

The edge data centre

One often-mentioned trend about colocation is around the edge data centre - the goal of locating content – or compute, as close as possible to users. Yuk shared his organization's unorthodox approach when it shipped a literal "edge data centre" to a customer in a neighbouring country.

This was done to circumvent poor connectivity at the location, while still delivering quality educational content by packaging it into a server solution that can be shipped overseas. Basic connectivity was all it took to activate the licenses and for periodic maintenance, he says.

"It used to be that we must fly people down to set it up, but with remote access, it is now more convenient for us to deploy our [edge] solution in other geographical locations," said Yuk, who also noted that some customers request for his company's solution to be installed in their own facility or on a public cloud platform.

"Once the size gets to a certain point, then we will set up our own data centre."

DDoS Protection

A network-centric feature used by more than one advisory council member is distributed denial-of-service (DDoS) protection. Designed to protect websites and web services in the face of malicious attempts to bring them down, John Lee spoke of outsized DDoS attacks that his organization grapples with from time to time.

Lee says that he will be happy for DDoS protection, even if it is for the short haul, as this will give him the breathing space to identify the target within his network. This is necessary to enact the necessary measures so that the rest of his customers are not unfairly penalized, he explained.

"I'm also buying DDoS protection directly for all my customers. We really don't want them to purchase it separately, as it creates more problems for us in terms of managing multiple service providers. If it's one service that Telin Singapore can provide, then it would be great," said Yuk.

The convenience of a 'one stop shop'

One suggestion mooted by advisory council members was the concept of Telin Singapore becoming a one-stop provider. Terence Lim noted that it would be great if the many services offered by Telin Singapore such as data centre colocation, network services, dark fibre and other soon-to-be-unveiled capabilities could be

sold in a way that doesn't entail talking to multiple parties.

Rather than holding lengthy meetings or repeating the same conversation with multiple product representatives, another suggestion was to get the requirements and pricing sorted out through a single portal.

"I'm sure somebody could develop a web-based solution. The only problem is that the competitor will know your price; you just need to ensure that it is not available to everyone," noted John Carey.

Conclusion: Cater for hybrid, sophisticated customers

There was no question in the mind of advisory council members that the hybrid cloud is here to stay for the foreseeable future. This can only result in increased demand for connectivity between the corporate office, the public cloud, and colocation locations. In addition, capabilities such as SDN and DDoS protection for greater flexibility in adjusting bandwidth requirements and defending against malicious network-based attacks will be very much welcomed.

Finally, customers are growing more sophisticated, and are no longer content with pre-packaged solutions. The expertise and ability of a provider to educate them on the best deployments is one way to win them over, while a 'one stop shop' approach can be equally

enticing in today's manpower-strapped IT teams. Ultimately, a new way of buying data centre and networking services may ultimately be needed.

About Telin Singapore

Telin Singapore, a subsidiary of PT Telkom Group, is the data centre provider of choice through best-in-class, integrated solutions. Telin Singapore currently manages flexible, modular and scalable data centre facilities in Singapore that are enhanced by proprietary-owned, seamless submarine cables connectivity from Indonesia and Singapore to the rest of the world. Telin Singapore's Tier III & Tier IV certified data centre facilities embrace the company's commitment to deliver world-class ICT solutions that are scalable and flexible to fit any customer's needs.

For more information, please visit www.telin.sg.