

An ICONic Network



THE PHILIPPINES' GLOBE TELECOM TURNS TO TELLABS TO ROLL OUT INNOVATIVE DATA SERVICES, INCLUDING VPLS AND IP-VPN.

By Joan Engebretson

Around the middle of this decade, Globe Business was one of several service providers offering corporate data services in competition with the incumbent carrier in the Philippines. Today Globe Business has made significant inroads in the corporate data market that helped maintain the strong foothold of its parent company, Globe Telecom, as the second best communications service provider in the Philippine market.

"We want to be known as the best provider in our chosen markets and the preferred business enabler in the country," said Jesus Romero, head of enterprise segments. Romero and his team are responsible for the 1,000 largest clients of Globe Telecom, including wholesale customers. His team is also responsible for product management of core data products. Romero attributes the company's strong gains in the corporate data market in large part to the advanced network infrastructure that the company initially deployed in 2006.

As a market challenger, it is critical for Globe Business to offer cutting-edge services that leapfrog the competition while maintaining a high service engagement to retain hard-won customers and seeking continuous network efficiencies to maintain a competitive cost structure. Although these might seem to be conflicting goals, Globe Business was able to achieve all of them by deploying an MPLS-enabled IP core network based on the Tellabs® 8800 Multiservice Router (MSR) Series.

THE BLUE SKY PROJECT

Globe's new network architecture was the result of an initiative originally known as "Blue Sky," which Globe Business undertook in the mid-2000s.

"As the term implies, Blue Sky is like a dream," Romero explained. "We came up with what we thought would be the ideal network."

At the time, Romero recalled, "we were in our second network incarnation. We started with a TDM network that had some Frame Relay capability. Then we went for

an ATM network that could do Frame Relay, DSLAM and MPLS."

The second-generation network, however, had scalability limitations, was difficult to deploy and could not easily support the wide range of services Globe Business wanted to offer.

"Blue Sky was a conscious decision to become a serious player in the data market, and there were several issues we had to address to leapfrog the competition," Romero said.

Those issues included making sure the network was ready for advanced services while supporting customers' legacy connectivity based on ATM, Frame Relay and E1 services.

"Our first goal was to address customer demand, both future and current," Romero said. "Normally those goals are mutually exclusive."

By taking a multiservice approach, however, the Globe Business planners believed they could address customers' current and future needs.

"We felt MPLS was something we could leverage to drive growth and leadership," Romero said.

Although the company already offered an MPLS service based on ATM, it did not scale well and was not differentiated from competitors' offerings. Globe Business also hoped to expand its growing base of enterprise customers by offering IP-VPN services and enhancing its Ethernet service portfolio.

"We couldn't sell Ethernet private lines forever," Romero said. "We wanted to make the core capable of transporting Ethernet traffic and supporting VPLS or VLAN service."

Globe Business' planners also wanted to provide as much flexibility as possible in supporting multiple service types over a single network.

"In our old network, we had to buy specific cards for specific services," Romero said. "When we moved a customer from leased line to Frame Relay service, we left one card idle."

Deploying the Tellabs 8800 MSR series enabled Globe Business to leverage its legacy ATM/Frame Relay revenue while offering new Ethernet and IP services on one platform. In addition, Globe Business leveraged the Tellabs 8800 MSR series' any-service-on-any-port flexibility to provision service at the

port level, thereby avoiding stranded, purpose-built modules.

Another important goal was to provide a higher level of service from provisioning to operations, maintenance and repair. To achieve that, Globe Business planners wanted flow-through provisioning, as well as end-to-end management, from one customer premises to the other.

End-to-end management also had the potential to help achieve the planning team's third key goal.

"We wanted to reduce the cost of serving the customer: both the CapEx cost per connected customer and the OpEx cost per live customer," Romero said.

The network that Romero and his team envisioned eventually became known as "ICON," which stands for "IP Converged Optical Network." As the planners defined that network, Romero said, they made a conscious decision not to look at any vendor brochures.

But when the time came to locate equipment for the network, planners were surprised to find one vendor whose solution fits: Tellabs.

Previously Tellabs had supplied Globe Business with about 30 units of the Tellabs® 6310 Edge Node, which supports Ethernet over SDH.

"At that time, they were looking for an SDH system that was hardened and tropicalized," said Dion Asencio, a Tellabs account representative who works closely with Globe.

Globe Business decision-makers were pleased with the performance of that

equipment and with the relationship the company had established with Tellabs. The ICON project expanded that relationship substantially.

400% MORE BANDWIDTH

Today the ICON network has 420 points of presence (POPs), covering an extensive area of the Philippines. That network includes nearly 30 Tellabs 8800 MSR series routers, and more than 500 Tellabs® 8100 Managed Access System nodes. In just three years, the number of circuits supported increased from 2,000 to 10,000 and bandwidth increased between 300% and 400%.

Yet Globe Business didn't need to add any additional operations personnel to support the vastly expanded network because it's managed end-to-end through a single integrated interface. That cut the cost per circuit by about 30%.

Part of this improvement is a result of faster provisioning, now that technicians no longer need to use multiple systems to set up a connection for a customer. The time to upgrade customers was reduced by 50%, Globe said.

"Now they not only see everything on one screen, but it is very well correlated," Romero said. "If there is a certain customer issue, you can easily determine if it is in the last mile or backbone. Our ability to manage a larger subscriber base with the same amount of people is a testament to the efficiencies we've managed to get."

Many problems that previously would have required a truck roll can now be

SDH network. The new IP/MPLS core runs directly over SDH.

The NMS also improved asset monitoring. It is now virtually impossible to lose track of customer modems, no matter how many times they are transferred from one customer to another, because the asset number is encoded in the NMS prior to activation.

The Tellabs 8800 MSR series solution also achieved the Globe Business planning team's goal of supporting any service on any port, which helped eliminate stranded resources, such as service-specific line cards that become idle when a customer changes services.

After taking all of these factors into consideration, Romero estimated that Globe Business reduced its total cost of ownership by 35%, a figure that includes both CapEx and OpEx. Based on those savings, he estimated that Globe Business was able to generate a return on its initial ICON investment in just 18 months.

That network also supports a range of advanced services. In 2007, for example, Globe Business was one of the first providers to offer VPLS, a carrier-class service that provides point-to-multipoint Ethernet connectivity, enabling customers to transparently extend their IT networks across a wide area. Two years after Globe Business deployed the service, some of its competitors still have not introduced VPLS.

Differentiated services with strong value to customers such as VPLS have helped Globe Business deliver strong growth in data services. Globe wireline data revenues increased 20% between year-end 2007 and year-end 2008. The first half of 2009 was even stronger, increasing 25% over the same period a year earlier.

"VPLS got us into a lot of customers who did not previously use our services," Romero said. "When you compare the performance of VPLS to traditional Layer 2 Ethernet services or switched VLANs, there is a world of difference."

The appeal of VPLS to customers, he said, is that it runs over MPLS, which customers like and are starting to embrace. And because VPLS is protocol-agnostic, he said customers have found that certain VoIP-based applications, such as those for call centers, work better than they would using alternative service offerings.

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diagnosed from the network management system. Globe estimates that truck rolls have been reduced 60% to 70%.

"Today, with a single view, we can pinpoint the problem within 30 minutes and can immediately deploy resources to fix the problem," said Peter Tan, head of the network operation division for Globe.

The new network is also easier to manage because it has only two layers, instead of three. The second-generation network had an IP core on top of an ATM core, which was overlaid onto an



Mandaluyong City, photo courtesy of P1999/Creative Commons
Romero photo by Christopher Lane/Getty Images

“It gives customers confidence that we are innovative and cutting edge, especially considering that some of the large global carriers are just introducing the service now,” Romero said.

THE SATOP SOLUTION

After deploying the initial ICON network, Romero and his team realized that they could achieve further network efficiencies by moving TDM traffic onto the MPLS core, as well.

“Customers continue to buy leased lines,” Romero said.

Even if they are not using TDM end-to-end, customers continue to rely heavily on E1 circuits to provide local access into ATM, Frame Relay or Internet networks. As a result, he said, “we haven’t seen any slackening of that demand, and therefore it became imperative to support that demand in the most cost-efficient way.”

The solution, in 2008, was to deploy SAToP: a protocol that works over the MPLS network to enable the network to deliver T1 or E1 circuits over an Ethernet infrastructure. By using SAToP, supported by the Tellabs 8800 MSR series, Romero’s team determined that leased line services could be supported over the same core network as the more advanced data services.

By consolidating services onto a single backbone, Globe Business was able to enhance network efficiency, eliminate ATM switches and eliminate the need to use a separate management system for TDM traffic. There was another less obvious benefit, as well.

Now that leased line customers are connected to the same core infrastructure as MPLS customers, Romero said, Globe planners can easily migrate customers from legacy to next-generation services if and when they become ready. As a result, Globe Business becomes more entrenched with customers because competitor’s advanced services would require more deployment time and effort.

THE MSPP PLATFORM

VPLS, IP VPNs and SAToP are not the only enhancements that Globe Business has made to the ICON network. In 2008, the company began deploying a Tellabs multiservice provisioning platform, including the Tellabs® 6325 Edge Node and the Tellabs® 6345 Switch Node, with

the goal of enhancing the company’s SDH leased line and Ethernet service offerings. Ethernet offerings include VLAN, as well as VPLS services, which are delivered over SDH with MPLS capability.

“This allows more flexibility in terms of how the company can create circuits,” Asencio said. “The network is seamless end-to-end, from the low-speed to high-speed circuits, which minimizes the cost of delivering service in comparison with using multiple vendors.”

Today Globe Business has installed nearly 200 Tellabs 6325 Edge Nodes and six Tellabs 6345 Switch Nodes, with more being installed in the near future. SDH traffic runs on the Tellabs® 6300 Managed Transport System end-to-end, while Ethernet traffic feeds into the MPLS core. In either case, Globe Business has gained a more flexible system with improved management capability.

“As customers become more sophisticated, it isn’t enough to say we will deliver service within a specific amount of time,” Romero said. “They actually want end-to-end alarm management and applications to let them know if the network is up or down. As they move to high-speed services, they also want to be sure they can expand them dynamically.”

He cited the example of a customer that needed three or four times more bandwidth than it originally ordered. To make that upgrade with the Tellabs system, technicians change just a few interfaces rather than replacing the whole system.

Romero also likes the granularity of the Tellabs equipment. To support a customer connection, the company’s previous supplier required a minimum of 45 Mbps in the backbone. With the Tellabs equipment, the amount of bandwidth dedicated in the backbone more directly matches the bandwidth provided to the customer.

Tellabs also supports a wider range of customer interface speeds. “If you need 10 Mbps, I give you 10,” Romero said. “If you need 20, it’s exactly 20.”

That flexibility is particularly important with Ethernet, Romero said, because

when salespeople sell Ethernet, they are selling scalability.

MOVING FORWARD

In the future, Globe Business plans to expand the MPLS approach to include several other international POPs.

“We’re also pushing hard on Ethernet because that’s one area where we are the leader, and we want to widen that gap,” Romero said. For example, the company is looking at new technologies such as ROADM, which he believes could dramatically lower the cost per subscriber.

The company also is considering developing a wavelength-based private line service. “We have customers that are looking for facilities they can use to put up their own backbone,” Romero said.

One thing Romero does not expect to see is in what he considers one of Globe Business greatest differentiators: its technical expertise.

“We’ve always said equipment can be bought by anyone,” he said. “The difference is the people who make it work. We think we have a good mix of the right equipment and the right people that result in having one of the highest performing networks.” ■

Tellabs® 8840
Multiservice Router



ATM: Asynchronous Transfer Mode
CapEx: Capital Expenses **DSL:** Digital Subscriber Line Access Multiplexer **IP:** Internet Protocol **MPLS:** Multiprotocol Label Switching **OpEx:** Operating Expenses **POP:** Point of Presence **ROADM:** Reconfigurable Optical Add-Drop Multiplexer **SAToP:** Structure-Agnostic TDM over Packet **SDH:** Synchronous Digital Hierarchy **TDM:** Time Division Multiplexing **VLAN:** Virtual Local Area Network **VoIP:** Voice Over Internet Protocol **VPLS:** Virtual Private LAN Service **VPN:** Virtual Private Network

➔ Globe’s Carrier Ethernet services are the first in the Philippine market to achieve the Metro Ethernet Forum’s MEF 9 certification.

For more details, see page 5.