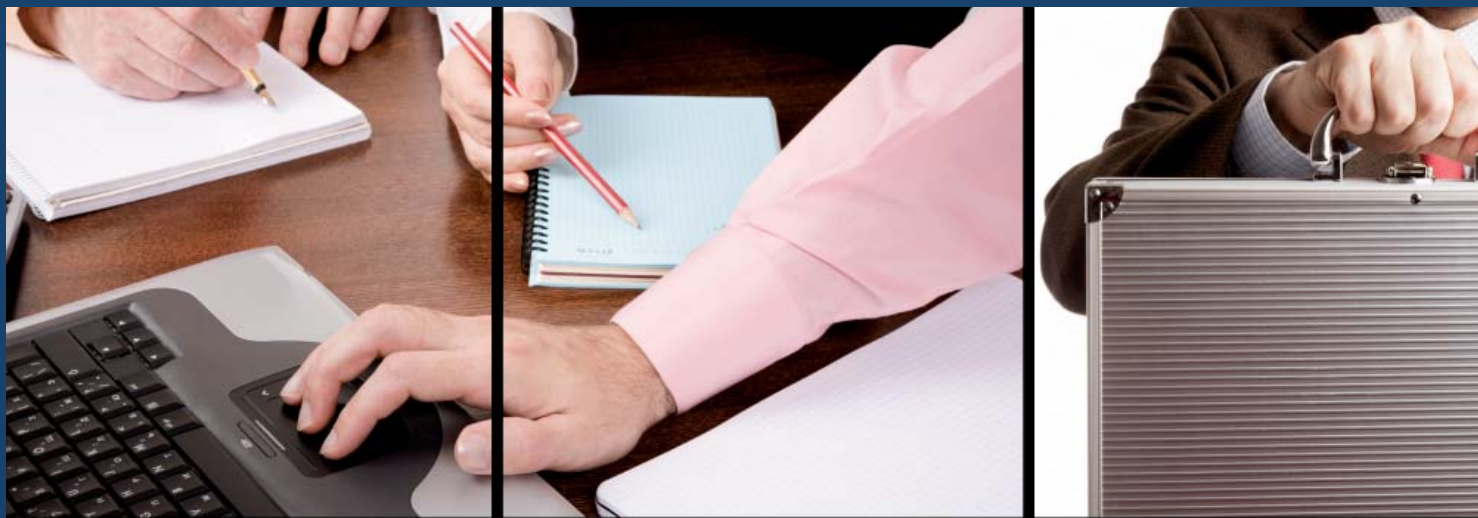


SINGTEL CUSTOMER SUCCESS STORY



CREATING THE CUSTOMER VALUE PROPOSITION FOR MPLS-BASED IP VPN SOLUTIONS

BMW GROUP'S SUCCESSFUL MIGRATION TO IP VPN



BMW Group's Experience with SingTel IP VPN

As one of the world's leading manufacturer of premium automobiles, BMW Group (BMW) has found its competitive niche in the automobile industry by offering unique automobile products/services that provide dynamic performance combined with peerless design and exclusive quality. To ensure its success in the highly competitive automobile market, BMW requires a seamlessly integrated network infrastructure to support its global business, connect offices worldwide and provide an avenue through which BMW's factories, dealers and suppliers can communicate. Having previously used SingTel's services, BMW is familiar to SingTel's capabilities and what the Service Provider can offer. When there was a decision to upgrade its network infrastructure for Asia-Pacific, SingTel's Multi Protocol Label Switching (MPLS) based IP VPN offering would be a natural choice.

Why an MPLS-based IP VPN?

With an increase in business complexity, the need for staying connected has become the basic requirement for survival and continued success of businesses. Simultaneously, Service Providers' focus in providing managed services and flexible mobility solutions has opened a plethora of technology choices for businesses to choose from. The technology which is chosen by businesses should not only fulfill all the requisite technical and functional requirements, but also be efficient in terms of cost, resource usage, scalability and maintainability.

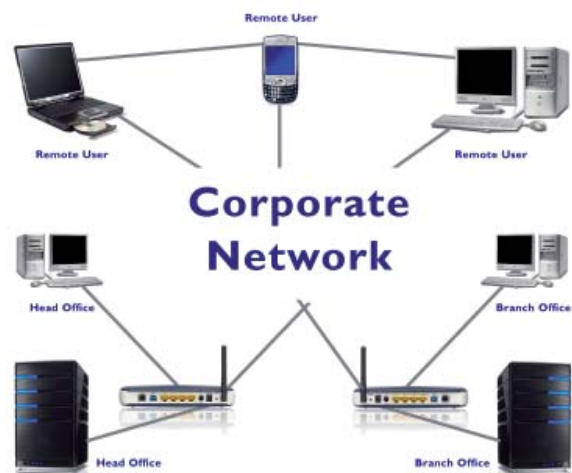


Figure 1: IP VPN Architecture

In terms of Wide Area Network (WAN) services, IP VPN is the ideal candidate, scoring on all fronts. IP VPN, in simple terms, is the provisioning of a Virtual Private Network (VPN) - a private communication network that uses a shared network as a backbone. It runs over a shared Internet Protocol (IP) network. As the industry fore-running technology, IP VPN is taking the mantle from Frame-Relay and ATM as the most preferred technology for VPNs.

Some of the advantages of MPLS-based IP VPNs are:

Table 1: Advantages of MPLS-based IP VPNs	
Reduced Network Costs	Since the backbone used by an IP VPN is an IP-based network, the costs of dedicated point-to-point peering are eliminated. There is little to no investment needed for additional VPN equipment at the customer premises for encryption and tunneling. IP VPN solutions are expected to reduce network charges by around 50% as compared to traditional VPN technologies like Frame Relay. The bigger the VPN, the bigger the savings for customers.
Secure & Reliable	MPLS (Multi Protocol Label Switching) supports IP-based networks with features like data and route separation, as well as, packet filtering besides network concealment mechanisms which ensures that the data and the network is as secure as traditional VPN. Also, MPLS provides Quality of Service (QoS) and traffic engineering support which helps in increasing the reliability of the network. In the case of managed networks, Service Providers also offer Class of Service (CoS) options based on the customer’s requirement. This further ensures that network resources are optimized for the business.
Enable Network Convergence	By implementing IP VPN, the network is built for future deployment of collaborative communication services. Due to the use of IP as the underlying protocol, diverse services like voice (VoIP), video and data can be converged on a single network – reducing additional costs, improving productivity and optimizing network resources. This also helps in integrating new IP-based services like Unified Communications, Multicast Videos, and Extranet into an existing IP VPN, deriving greater value from the network infrastructure.
Increased Speed of Deployment	The service deployment is faster as compared to other VPN technologies such as ATM networks. The time consumed in setting up a proprietary physical network can be saved by using the existing managed infrastructure of the Service Provider.
Scalable	The network is easily scalable as there is no need for site-to-site peering. As the demand for connectivity grows, adding a new site to the network is easily achieved with minimal network costs because of any-to-any connectivity achieved by IP VPNs.
Increased Reach of Network	As the network backbone is an IP network, connectivity can be provided to geographically dispersed users. Instead of using the insecure public Internet for their networking needs, mobile workers can log on to their company’s secure IP VPN through remote access.

These are just some of the advantages that IP VPNs offer over traditional incumbent VPN technologies such as Frame Relay. Companies who acknowledge such advantages are able to wield them into benefits for their organizations.

The key driver behind the shift to an MPLS-based IP VPN differs from company to company. In the case of Multi-National Corporations (MNC) like BMW, the need was born from the quest to provide a world-class communications infrastructure to meet its global business needs across diverse networks in different geographical regions. To better understand this, Frost & Sullivan spoke to Mr. Hanspeter Hagg, BMW Group’s Project Manager of Network Service and IT-Security, and found out that IP VPN features are very desirable to ensure a fast, efficient and lower operational cost of BMW’s network in Asia-Pacific. Also, features like bandwidth on demand, end-to-end connectivity, flexibility, and significant cost savings due to the removal of the hub and spoke network architecture are valuable add-ons to the enterprise network.

Elements of the Right Service Provider

The key decision factors for BMW in choosing the right IP VPN Service Provider were:

Table 2: Decision Factors for Choosing the Right IP VPN Service Provider

Cost Savings	A value-for-money solution without compromising the quality and reliability of the network operations.
Service Quality	A Service Provider who was able to provide fast response time and high customer service standards.
Migration Capabilities	The Service Provider should have the proven ability to migrate from the existing network smoothly and efficiently.
Knowledge and Relationships in the Regional Markets	A Service Provider which has the knowledge of local market and strong relationships with the local Service Providers would be the most ideal for its migrated network.

The importance of these decision factors was highly recognized; the success of the network rested on the success of each of these decision parameters.

The Competitive Bid for BMW's Asia-Pacific Network

During the evaluation and selection process for BMW's Asia-Pacific IP VPN Service Provider, a number of bids were received from top Service Providers around the world. This resulted in a fiercely competitive evaluation process. SingTel's intimate understanding of BMW's requirements, proven migration ability, state-of-the-art IP VPN solution and service commitment eventually convinced BMW of SingTel's superiority over its competitors.

A key factor that helped SingTel stand out was the Service Provider's proven track record to smoothly migrate existing networks from legacy technologies such as ATM to MPLS-based IP VPN. SingTel was able to gain BMW's trust that the Service Provider would be able to deliver according to their stringent expectations and timelines to provide a seamless and minimal-hassle implementation of their Asia-Pacific network – even while operating in emerging diverse Asian markets which cut across various barriers such as language and cultural differences.

On the technological front, other than standard IP VPN product/service offerings such as LAN optimization technologies, SingTel was the only Service Provider with the ability to roll-out Cisco GET VPN solutions for BMW. This would be important to BMW as Cisco GET VPN offers additional encryption precautions to ensure security of the information flowing through its networks to certain locations. During the bidding process, the robustness of SingTel's terrestrial and submarine cable infrastructure in Asia-Pacific came out as a strong point, and this is evident from SingTel's coverage and restoration capability during the regional network outage caused by an earthquake off the coast of Taiwan in December 2006.

SingTel's strengths and capabilities in providing IP VPN solutions are evident. According to its customers, SingTel's superior customer service, commitment to quality and implementation capabilities, as well as SingTel's intimate familiarity with local Service Providers in the various countries in the region is a real bonus for its customers.

To cite an example, SingTel's well-established and close partnership with China's incumbent Service Provider enabled BMW's China network to be successfully migrated within a short span of one month, just in time before the 2008 Beijing Olympics. No other provider would have been able to achieve that.

Last but not least is SingTel's commitment to its customers. SingTel cherishes the relationship with BMW, and this is evident in the dedication and service accorded to the world-leading automobile manufacturer. During the migration of BMW's ATM network to IP VPN, SingTel was steadfast in its communication with BMW and more than once stepped beyond their call of duty, even after the implementation of the IP VPN solution.

BMW's Unique Global Network Sourcing Strategy

BMW Group, being a provider of unique automobile solutions, similarly uses a unique strategy when sourcing for solutions for its global communications network. Instead of one global network Service Provider, multiple Service Providers are used to support its enterprise network. For example, BMW's networks in Europe are provided and managed by more than one Service Provider, while the network in Asia-Pacific is managed by SingTel.

Some of the advantages of this strategy are as follows:

Table 3: Reasons for Multiple Service Providers

Customized Solutions	Engaging multiple Service Providers allow customized solutions for a company's different business units/ departments in various parts of the world.
Greater Competition and Higher Quality	Multiple Service Providers encourages greater competition amongst the Service Providers to provide the best services, and at the same time allows companies to select Service Providers who are best positioned to provide the highest quality network services in their respective regions.
Lower Costs	Another important reason is the cost savings due to local Service Providers' strong familiarity in the region, and well established partner relationships with other domestic telecommunications providers. This puts the Service Provider in a favorable position when it comes to price negotiation on behalf of their customers, which ultimately translates to cost savings for the customers in the long run.

It is recognised among telecommunications industry analysts and players that there are not many Service Providers in the world who would be able to compete against SingTel in the quality and systematic coverage of all the countries in Asia-Pacific. Neither is there a Service Provider who has been proven to provide global coverage with expertise and competence. Hence, using a single Service Provider may not generate the expected synergistic benefits as opposed to the engagement of multiple Service Providers such as in the case of BMW.

Even though managing multiple Service Providers involves maintaining more than one contractual agreement, increase in the cost of management and number of employees to maintain the various Service Provider relationships; organizations who employ this strategy can testify that the benefits of engaging multiple Service Providers for its enterprise global network easily outweigh the costs involved in managing them.

SingTel’s Differentiation Vis-à-vis Competitors

To get a first hand understanding of how SingTel fared in the delivery of IP VPN services vis-à-vis other Service Providers, Frost & Sullivan rated SingTel’s capabilities using the following Differentiation Scorecard, taking into consideration feedback from SingTel’s customers. From the end result, it is easy to see that SingTel performed better than its competitors on most attributes.

Table 4: Differentiation Scorecard

	Level of Importance	SingTel	Competitor SP
Brand & Track Record	Low	●	●
Cost Savings / Value for Money	High	●	●
Strong partner relationships with local SPs in APAC	Medium	●	●
Reliability of Solution	Medium	●	●
Service Quality & Responsiveness	High	●	●
Migration Capabilities (Speed & Quality)	High	●	●
Technology Knowledge	Medium	●	●
Familiarity with APAC	Medium	●	●
Presence & Coverage in key APAC Business Cities	Medium	●	●

● : Exceed Industry Standards
 ● : Industry Standards
 ● : Below Industry Standards

SingTel is the Preferred Service Provider in Asia-Pacific

SingTel is the preferred partner for any organisations’ networking needs in Asia-Pacific. This is not only because of SingTel’s superior MPLS-based IP VPN solution or its expertise in migrating networks to IP VPN technology, but also because of SingTel’s thorough understanding of its customer’s business needs and dedication to service. This has given customers the assurance that SingTel is able to deliver on their required networking needs, allowing customers to focus on their core business.

In summary, BMW’s network in the APAC region has been successfully improved in co-operation with SingTel by migrating from an old-fashioned ATM to a state-of-the-art MPLS network. This transition phase, as expected, was extraordinarily efficient and smooth.

Ever since the first implementation of BMW’s IP VPN network, SingTel has gone on to successfully implement networks for BMW in diverse parts of the world including South Africa and remote areas of China. With such positive experiences, it is not surprising that SingTel is viewed as the leading Service Provider in Asia-Pacific.



SingTel is Asia's leading communications group with operations and investments around the world. With significant operations in Singapore and Australia (through wholly owned subsidiary SingTel Optus), the Group provides a comprehensive portfolio of services that include voice and data services over fixed, wireless and Internet platforms for both the corporate and consumer markets. SingTel's network includes 37 offices in 19 countries and territories throughout Asia Pacific, Europe and the United States. For more information, please go to www.singtel.com and www.optus.com.au.

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100 Beach Road #29-01/11, Shaw Tower Singapore 189702
Tel 65 6890 0999 Fax 65 6890 0988 www.frost.com

