2007-2008 MPLS Total Customer Experience (TCE)

By Steven Taylor with Peter Brockmann

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Executive Summary

This **2007-2008 MPLS Total Customer Experience State-of-the-Market Report** presents the views and practical experiences of over 150 enterprise users involved in decisions about enterprise WAN services. This report reviews the importance of and satisfaction with over forty attributes organized around five key service areas:

- Current MPLS VPN experience;
- Buying and evaluation process;
- Delivery and installation process;
- Support process; and
- Billing process.

The opportunities for improving the experience are presented in a unique format comparing the importance and the degree of satisfaction. Recommendations for users and service providers are presented.

Key Findings

- MPLS-based VPN services have been deployed in 61% of respondent networks; most being in production as compared to being in test environments.
- Internet-based VPN services have been deployed in 59% of respondent networks.
- Users are satisfied with service reliability, pricing and timeliness in resolving issues.
- There is room for improvement in meeting commitments for installation times; better technical training for contact center personnel; proactive communications about network congestion, outages and errors; improving billing accuracy; and simplifying the bill.

KUBERNAN STATE-OF-THE-MARKET REPORT

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Introduction

Historically, the enterprise WAN marketplace is a slow-moving space where newtechnologies remain "new" for a long, long time. This seems to have been especially true since the so-called telecom bust of 2000 where the voice of competitive service providers has consolidated into ever-larger companies removing much of the competitive energy in the marketplace.

Some might argue that because of the capital risks, service providers need to take care in choosing and deploying infrastructures to make sure that there is real customer demand for the service. They need to study and decide how to price and market the service fit within a larger portfolio of offerings, to enable the long haul technologies that need to be in place, to configure the service, and to deploy the management systems and order workflows to deliver the service as requested at minimum cost and in a standardized way. And all of this need be accomplished before the enterprise can place their first order for the service.

Others suggest that enterprise customers' WAN risk-aversion is also an issue. The practical availability, performance, and reliability concerns slow down the technology maturation and service deployment process because of the requirement that there be no impact on the business that the WAN supports.

Regardless of the mechanics affecting service lifecycles in general, the MPLS VPN service has become well-entrenched in most enterprise WANs as shown in **Figure 1** where

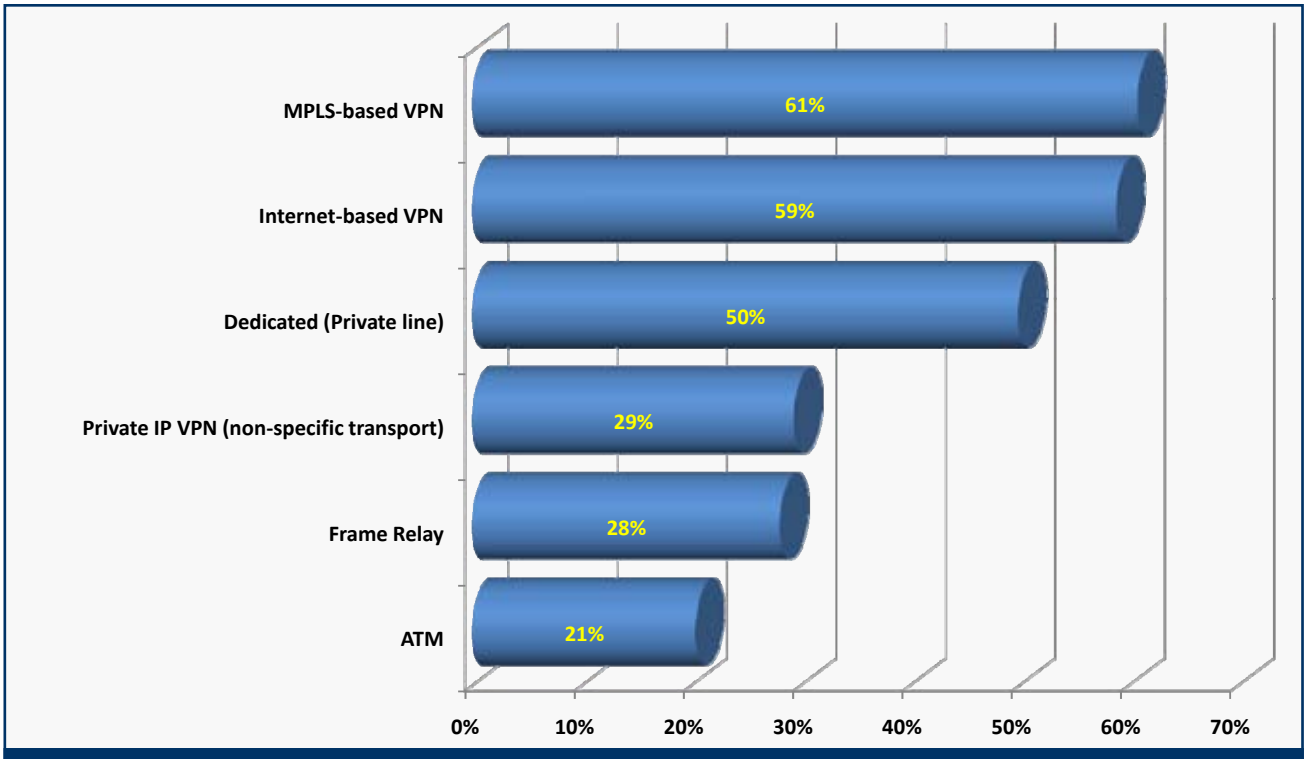

Figure 1 – Range of WAN Services in use, 2007. MPLS VPNs are in service in most enterprise WANs.

MPLS is the most popular of six WAN services surveyed. The transition to MPLS is well underway since two times more respondents use MPLS VPN than the venerable frame relay and three times more respondents use MPLS VPN than ATM services. This gap is expected to continue to widen since ATM and Frame Relay services are in the final stages of their service lifecycles as many carriers continue to upgrade customers to MPLS throughout 2008 and 2009.

MPLS Expected To Be Deployed in 93% of WANs by Year End 2008

The significant market adoption of MPLS service does not preclude users from using the typical research method for the service, namely study, test and deploy. In late 2007, 58% of respondents contemplating MPLS have their VPN service in production, a further 15% are in advanced stages of service research by trialing one or more service providers and the remaining 27% are studying the service's applicability to their business requirements. It is also noteworthy that only 7% of users are not planning to deploy MPLS before the end of 2008 (Figure A1).

The appendix includes the distribution of roles in the enterprise WAN purchasing process and confirms the perspectives of survey participants (Figure A4). The sizable proportion of survey respondents responsible for WAN services decisions suggests that the findings are authoritative perspectives on the importance and satisfaction with service attributes. Kubernan asked respondents to identify their **primary** role in the decision process and for this report the respondents are the WAN decision centers of their companies - 81% of respondents were recommenders, specifiers or members of the WAN design team, while an additional 14% were purchase approvers.

The Generalized Satisfaction-Importance Matrix

One of the weaknesses of many research reports is that they show the importance of things or the various levels of user satisfaction with other things independently. These dimensions are important to help determine satisfaction or importance, but unless they are considered simultaneously readers may be misled into investing in improving factors of low importance, or aligning their marketing efforts around the most important factors where users are already very satisfied.

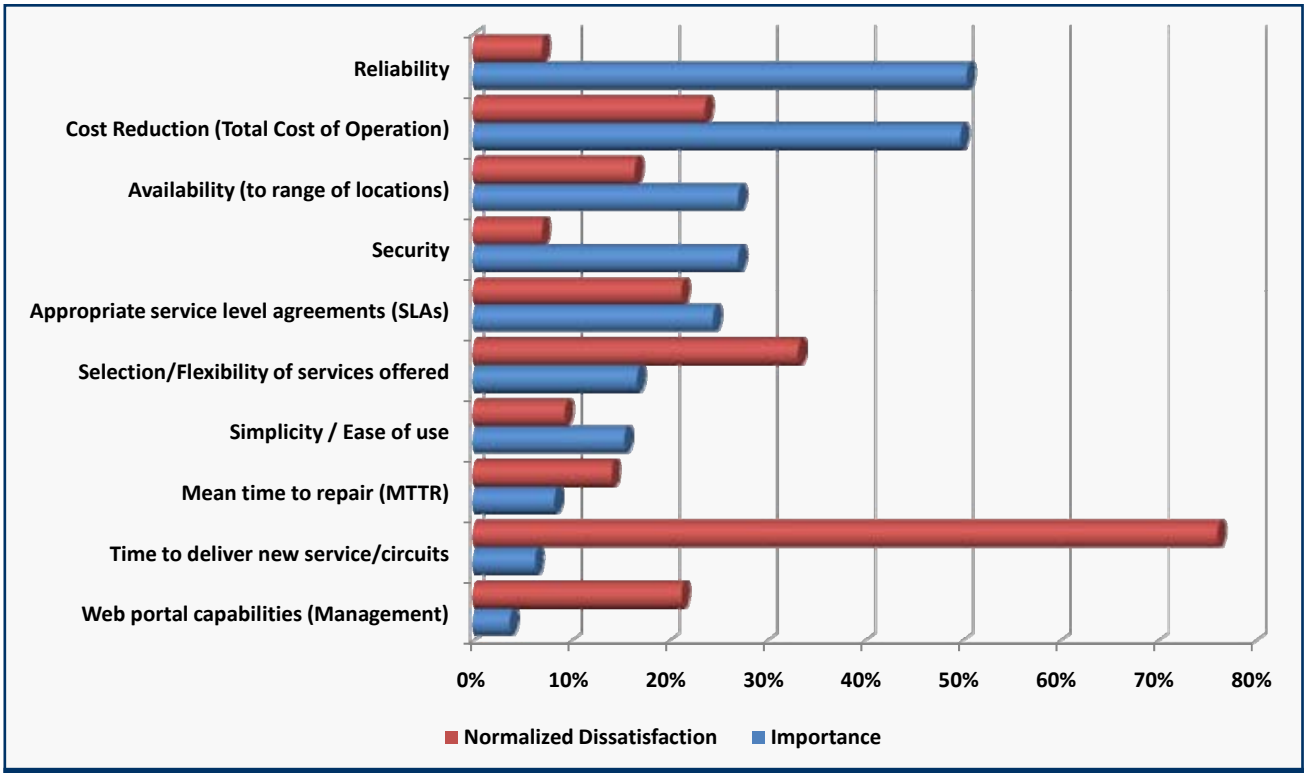

Figure 2 – Simultaneous presentation of importance and dissatisfaction of specific features of the MPLS customer experiences.

To illustrate this challenge, **Figure 2** shows the comparison of importance and dissatisfaction in the classic bar chart. Note that high dissatisfaction and high importance are the most important opportunities for improvement.

In this report, respondents were asked to rate the importance of certain service features or process features and then to also rate their dissatisfaction with their service provider(s) on that dimension. Based on these findings, the average satisfaction[1] of features were assigned to the vertical component of the four section matrix of **Figure 3**, while the average importance of those features were assigned to the horizontal axis.

Features in the lower right quarter are the most important for users and service providers because it represents those features that are very important and where current users are dissatisfied. This quarter, rightfully named "Urgent Action Needed" specifies for service providers where improvements can drive market share. The "red zone" identifies the features that users should expect to differentiate service provider offerings.

[1] *For the purposes of this report, "high dissatisfaction" is equated with "low satisfaction."*

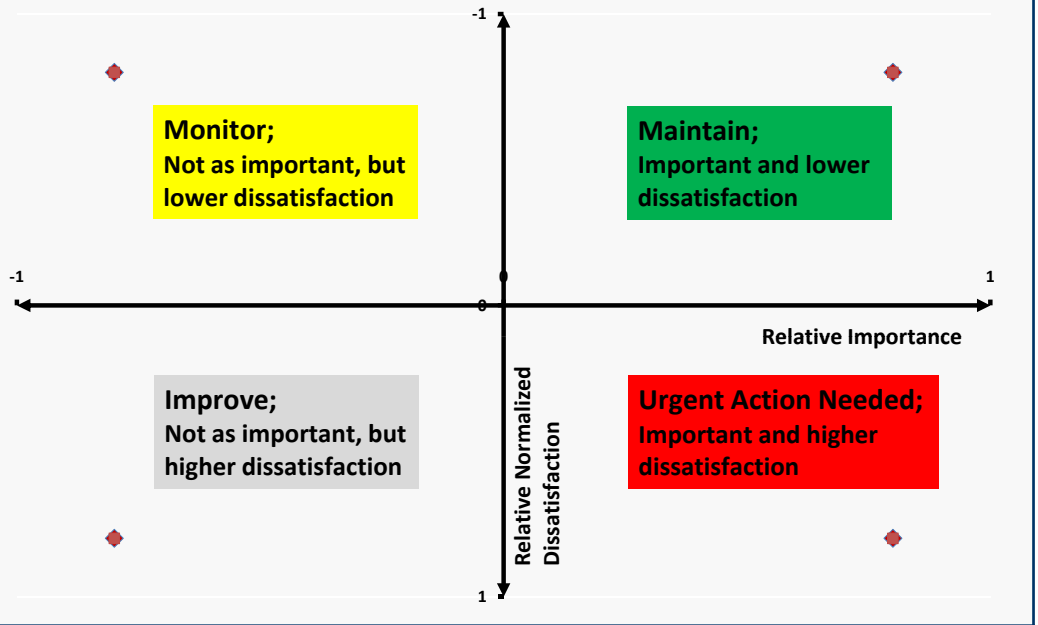

Figure 3 – The four quarters of the importance/satisfaction matrix. The top right quarter shows features of high importance and high satisfaction. The top left quarter shows features of low importance and high satisfaction. The bottom left quarter shows features of low importance and low satisfaction. The bottom right quarter shows features of high importance and low satisfaction, which is where the most impactful opportunities for service improvement can be found.

Current MPLS Experience

With respect to their current experience with MPLS services, respondents reported high satisfaction for four important features (**Figure 4**). Specifically MPLS security, reliability, availability of service in remote locations and appropriate service level agreements were all rated as very important and relatively highly satisfied.

In terms of features in the "red zone" where high importance and dissatisfaction coincide, the Total Cost of Operation was the only nominally dissatisfying important feature. Dissatisfaction around TCO can occur when users implement a change of service for reasons beyond their business control such as the migration from frame relay to MPLS service due to the impending end-of-life for frame relay and ATM services. These changes may involve costs for new equipment or higher prices for the more valuable services than what had been provided in the past. Dissatisfaction around TCO would also occur when users discover a disappointing gap between expected benefits and benefits delivered.

The most dissatisfying feature of the current MPLS service is the time to deliver new services or circuits. The complexity and cost of scheduling, engineering, coordinating and delivering high-speed services through the access component of WANs have always been a

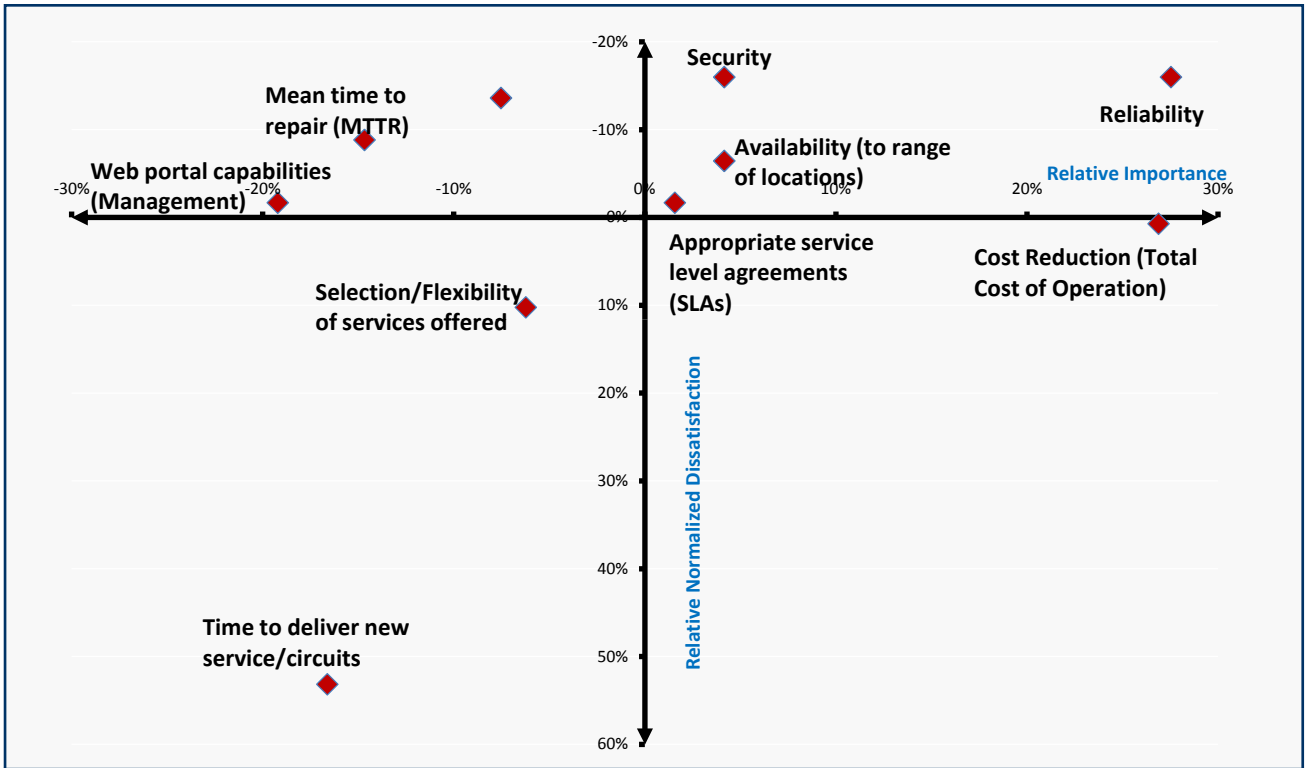

Figure 4 – The four quarters of the current MPLS VPN Experience, showing the relative importance and relative satisfaction on ten attributes.

major issue in building a WAN. Over the past 20 years, this complexity was assured through the separation of the US phone companies into separate companies each regulated along local versus long distance operations. But, with the recent re-integration of the industry's major players, it would seem to be a more readily solvable problem, due to the removal of the barriers separating access from the WAN.

It is recommended that service providers share estimates of total cost of operations beyond the basic service pricing. Enterprise users should consider engaging managed service providers skilled in project management of large WANs where per-site pricing of all dimensions of the site can be presented and budgeted for.

Web portals through which users can monitor the WAN and, in some cases, act in a self-service mode to configure or adjust their service have been marketed by a number of service providers as an important advantage. However, users rated it particularly low in importance. This may be because the early adopters of MPLS service (those already using the service) have scope, skill and sophistication that see little need for a "simpler" service. These sophisticated "early majority" customers might find the web portal inferior to their monitoring expectations, while the web portal may instead appeal to the mainstream and less sophisticated WAN user, new to the service and the market.

Buying and Evaluation Process

As shown in **Figure 5**, respondents were satisfied with two of the three most important features - the reputations of service providers and with the pricing of the service. The most dissatisfying of the important aspects, which placed the feature in the "red zone" of the buying and vendor evaluation process was the company's ability to deliver on commitments.

As we review each of the service features, it becomes clear that this is a common theme across all of the service dimensions studied in this report: service providers don't consistently deliver what they say they will when they say they can. This underperformance is a serious weakness in their business models and value propositions and need to be addressed. Users would be well advised to ask for management statistics from the service provider on how they compare their commitments to actual deliveries, in much the same way airlines track on-time departures, and service providers would be well-served to confront this issue with continuous improvement initiatives.

Also, the sales team's ability to provide informed options was considered quite dissatisfying but less important in the decision process since the RFP/RFI and technical knowledge of the sales team were rated at a higher level of satisfaction, and importance.

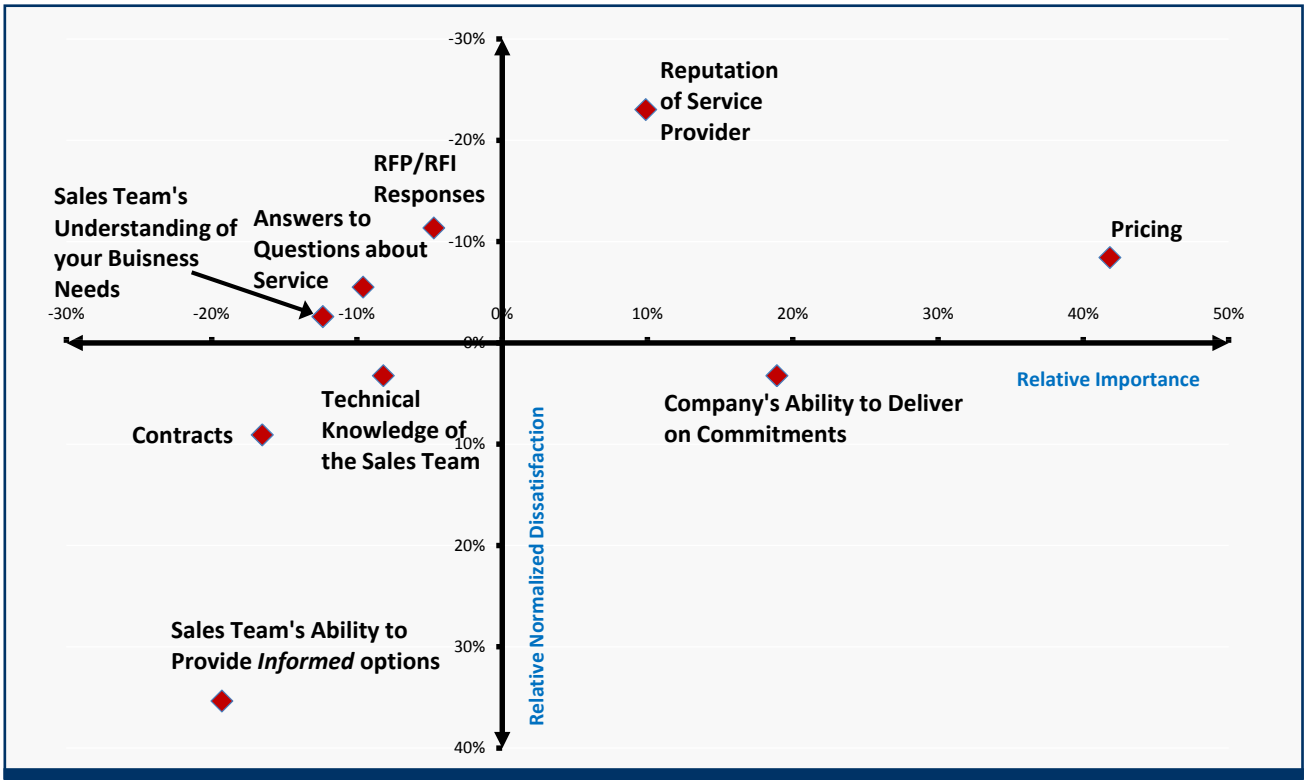

Figure 5 – The four quarters of the service buying and evaluation processes, showing the relative importance and relative satisfaction on nine common process attributes.

At one time MPLS may have been considered a sophisticated and expensive service, requiring careful customer education from knowledgeable sales staff. Yet, the low importance score of the "sales team's understanding of your business needs" suggests that customers have increased their understanding of and competency with the service and view the service more as a utility. Consequently, they don't value the importance of a "solution sales" approach by the service provider.

We are witnessing a shift in the market dynamic of MPLS service. As the service matures, competition will intensify since users are able to purchase faster through ready access to service, technology and choices. Service providers have to adjust their selling and marketing systems to account for this utility-type market dynamic.

Delivery and Installation Process

Providing a single point of contact and communicating with the client during circuit installation were rated with high satisfaction but, the single point of contact was only of average importance.

In reviewing the "red zone" at the lower right quarter of **Figure 6**, however, two notable features are shown. The ability to coordinate circuit installation is a dissatisfying and impor-

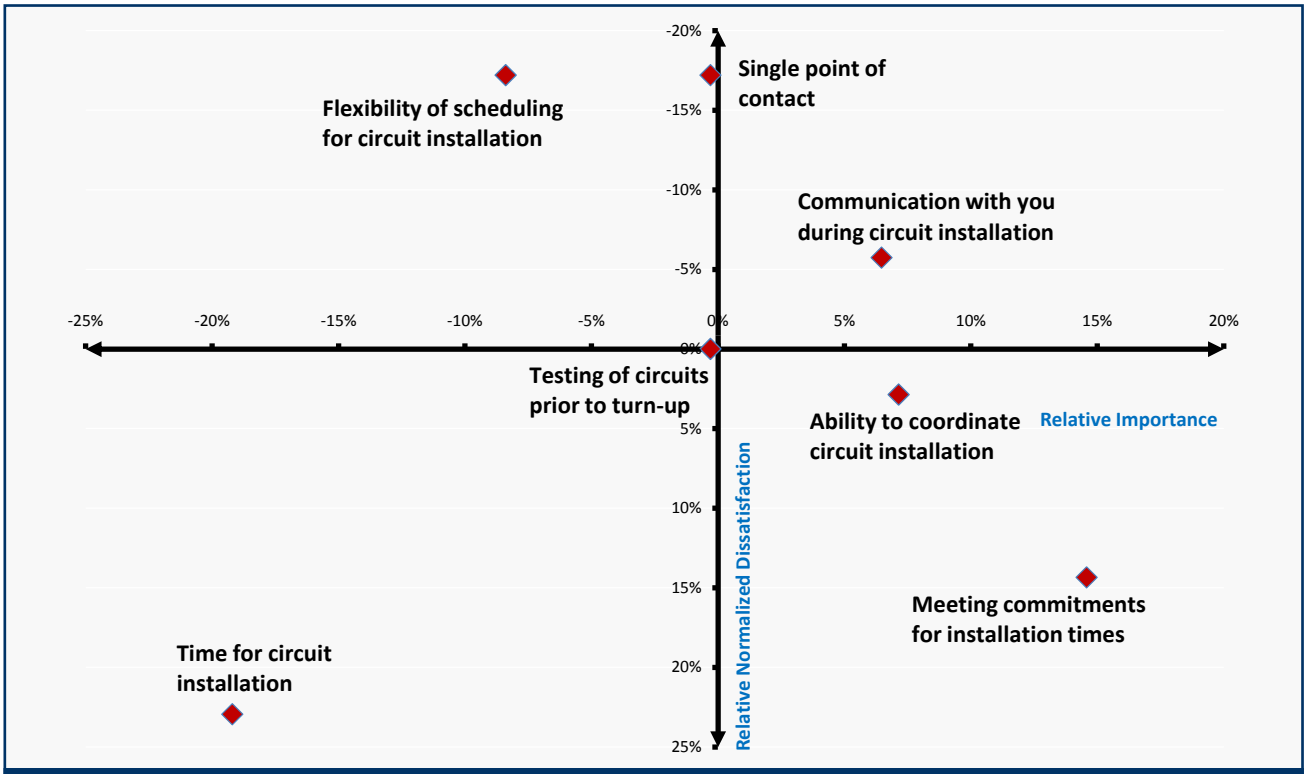

Figure 6 – The four quarters of the deliver and installation process, showing the relative importance and relative satisfaction on six attributes.

tant aspect of service provider performance and meeting commitments for installation times is both important and in need of urgent action, since not meeting installation times is a major problem for enterprise users.

It is the cascading impacts of a missed installation that drives this dissatisfaction. There are many other aspects of the installation that revolve around the committed time, such as arranging for secure access to the facility at the demarcation point, coordinating equipment installation, testing, configuring and adjusting the monitoring services. How and when the billing process begins can also affect enterprise users' perceptions of the delivery and installation process. Enterprises need to engage with service providers, offering frequent project plan updates so that they know their role in the complete installation "choreography" of events.

Providing greater flexibility in scheduling and more time for circuit installation were not recognized as important. Even the idea of creating a wider window when the technician appears with the circuit is not important. Delivering the service as specified – the on-time delivery – is the standard that enterprise users expect and service providers typically don't satisfy.

To reduce the frustration with non-performance, service providers should provide installation "hotlines" separate from their NOC because of the demanding and unique problems associated with the installation process. Staff on the hotline should also have tools and knowledge that makes them a particularly rich resource for addressing problems in this stage of the service process. A few useful tools might be to have direct mobile telephony connectivity to the traveling technician, being able to use GPS to determine exactly where the technician is, being able to instant message or SMS the technician or escalate to the installation crew chief. Measuring the speed and effectiveness of recovery from service failures is important for addressing this opportunity.

Support Process

Customer support processes involve proactive monitoring, tools for observing the service provider, alerts and alarms as well as procedures for troubleshooting including dispatching personnel to quickly resolve the network problem. Respondents were satisfied with the timeliness of response, geographic coverage and the ability to talk with a person when respondents call the service provider Network Operations Center. Only timeliness in resolving issues – assumed to be primarily performance issues and outages - was considered particularly important.

Consistent with the earlier discussion on this item, web portals to monitor traffic or provide self-service tools to modify the network were considered third-least and least important of the seven features considered and were relatively low in satisfaction as well.

As shown in **Figure 7**, respondents would rather have the service provider contact them in times of network stress. The lower right quarter or red zone defines the "Urgent Action Needed" and showcases respondent dissatisfaction with the low frequency and low quality of proactive communications regarding network congestion, outages and errors.

Service providers need to enhance their strategy for proactive communications about network congestion, outages and errors. Users should ask about their service provider's policies and practices for proactive communications, and hold them accountable for proactive notifications.

Users recognized that although they are satisfied with the availability of service provider staff to answer the phone, that person frequently lacked the technical knowledge and information about the particular customer problem to be completely helpful. Users provided a low satisfaction score on the technical knowledge of the person answering the phone.

Billing Process

Significantly, in this review of the billing process, the accuracy and complexity of service provider billing were the most and second-most significant areas of dissatisfaction. Respon-

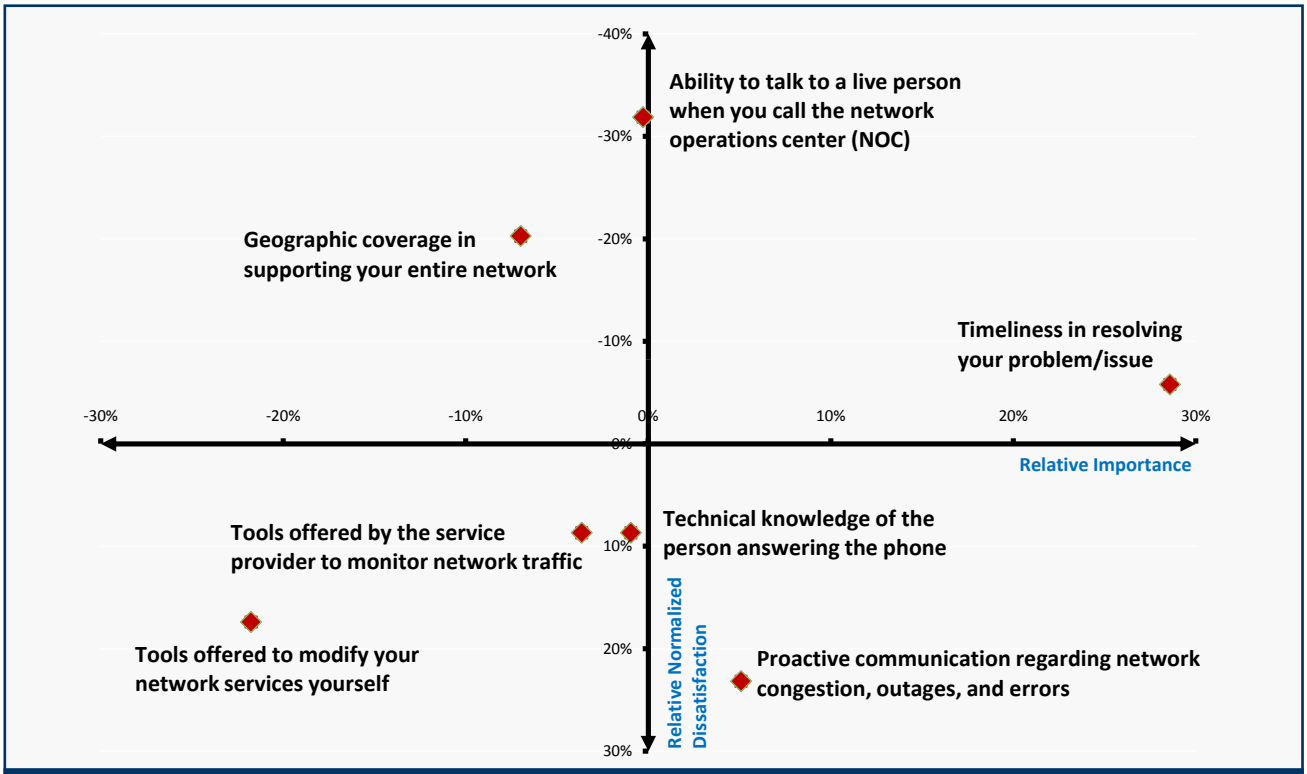

Figure 7 – The four quarters of the support service, showing the relative importance and relative satisfaction on seven attributes.

dents also rated, as shown in **Figure 8** that these are also the two most important features. Payment options and bill timeliness are well received, but of low importance. Interestingly, there were no factors that were high in importance and satisfaction.

The low accuracy of billing and the large financial stakes involved has given rise to the development in the US of the Telecom Expense Management service category. Large enterprises hire third party specialists that gather and process service provider billing records and automatically dispute discrepancies and mistakes, significantly reducing over-payments, penalties and late fees. Enterprises ought to consider engaging a TEM consultant or service provider to address these expensive issues.

Clearly, service providers need to simplify and integrate their billing processes, allowing enterprises to oversee their complete spending and control of communications services more accurately. Service providers should form cross-functional quality improvement teams to measure, study, and recommend improvements that lead to higher billing accuracy. These are automated processes and, since respondents rated this problem area so very important (because it costs so much money) and are so very dissatisfied, it deserves serious, systematic and long-term analysis and continuous improvement.

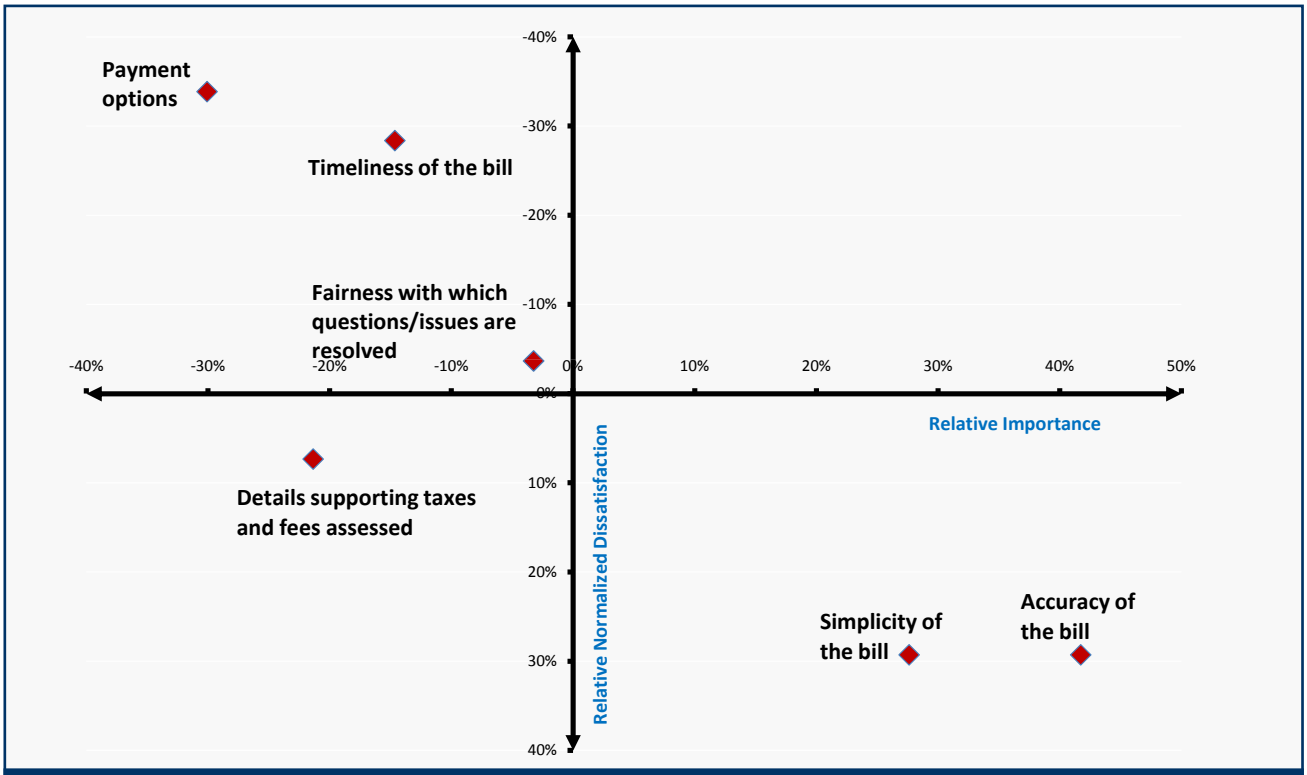

Figure 8 – The four quarters of the billing process, showing the relative importance and relative satisfaction on six attributes.

The Overall Experience

The moment of truth in the services business occurs whenever the customer has the opportunity to influence another person or organization. The simple act of recommending or not recommending the service to their friends and colleagues was the heart of the question shown in **Figure 9**. Despite the opportunities for improvement and high levels of dissatisfaction around important features of the MPLS experience as discussed in this report, users are quite willing to recommend their current MPLS service providers: 88% would recommend their service provider while only 2% were extremely unlike to do so.

This is consistent with the expectation that 50% more users will migrate some or all of their firms' WAN services to include MPLS VPN service during 2008.

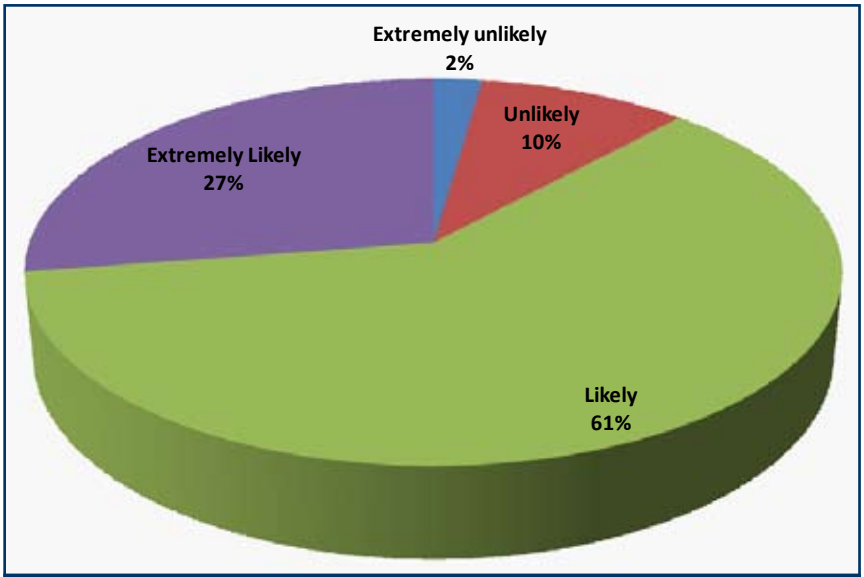

Figure 9 – Respondent likeliness of recommending their MPLS service provider.

Conclusion

As shown in **Table 1**, there are seven opportunities for improvement in MPLS service provider performance on features that respondents find important. Enterprises should review this result in light of their contemplated service purchasing plans and ask for evidence that the service provider is addressing these service opportunities. Service providers should focus on improving performance in features rated important by respondents.

This table and the logic at the heart of the "red zone – Urgent Action Needed" forms a blueprint for prioritizing areas for service provider improvement because these features are important and have dissatisfying performance levels.

Urgent Action Needed	Service Dimension	Recommendation for Service Providers	Recommendations for Users
Total Cost of Operation	Current Experience	Develop estimates of total cost of operations, beyond price.	Consider hiring managed service provider skilled in project management of large WANs.
Company's ability to deliver on commitments	Buying and Evaluation	Measure and report commitment accuracy – as the airlines report "on time departures."	Ask for statistics on commitment delivery. Ask for evidence of processes to improve this.
Ability to coordinate circuit installation	Delivery and Installation	Provide installation "hotline" to separate out the unique demands of installation problems from ongoing service issues. Equip staff with tools to know and act with wide installation-type scope.	Provide frequently updated project plans to service providers so they know their role and dependencies in the process.
Meeting commitments for installation times	Delivery and Installation	Measure and report commitment accuracy – as the airlines report "on time departures."	Use performance statistics to anticipate service provider underperformance and build into project plan.
Low frequency and quality of proactive communications about outages, congestion and errors	Support	Deploy a strategy for proactive communications to customers of service defects, congestion and errors.	Ask to see service provider policies on proactive communications. Ask reference customers about their experience with proactive communications from the service provider.
Accuracy of bill	Billing	Create a cross-functional team to measure, study and remove defects in the billing process.	Engage a Telecom Expense Management consultant or service provider.
Simplicity of bill	Billing	Reduce the complexity of bills. Initiate a study of how users use the bill so that complexity reductions do not create a more dysfunctional bill.	Engage a Telecom Expense Management consultant or service provider. Look for training on the bill details.

Table 1 – Comparing "Urgent Action Needed" attributes with recommendations for service providers and for users.

About the Authors

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Steven Taylor is a co-founder of Kubernan and Editor/Publisher of Webtorials. An independent consultant, author, and teacher since 1984, Mr. Taylor is one of the industry's most published authors and lecturers on high-bandwidth networking topics

Delivering a Superior Networking Experience

by Tony Hurtado
Vice President - Global Marketing

From the Sponsor

MASERGY

How much is your wide-area network (WAN) costing your company? Consider not only the monthly invoice, but also the opportunity costs of dealing with your WAN provider. You might not have quantified the costs of this experience explicitly, but you certainly see it every day: clients complaining about critical applications running too slow; people traveling in from remote locations for meetings because they cannot communicate effectively; IT staffs deploying stand-alone voice and video networks to get these services to work properly. In short, if your networking experience involves compromising your company's application performance to fit your provider's capabilities, your carrier is exacting an unacceptable price.

MASERGY is a global network service provider specializing in delivering a superior wide-area network experience. Focused exclusively on the enterprise market, we deliver advanced VPN and network management services to thousands of customer locations around the world. We deploy our services across our own proven IP MPLS network, offering both Layer 2 and Layer 3 Ethernet VPNs for seamless service delivery to any business location. We can design the perfect WAN solution, streamline the service order process, coordinate all (global) circuit installations, and monitor the service through the life of the agreement.

The MASERGY global IP MPLS network circumnavigates the globe, providing access to our network from any continent. Partnering with more than 60 facilities-based providers on six continents for local access, we can deliver seamless global service to all of your business locations. Since we operate our own pure IP MPLS network—with no legacy technology to integrate—our services are backed by the industry's most stringent global service level agreement (SLA).

MASERGY pioneered global Ethernet for enterprises by offering virtual private LAN service (VPLS) beginning in 2003. Today dozens of companies run their international VPLS services across our network. We also offer Private IP and Public IP services, all available with an Ethernet handoff to any of your business locations via our Intelligent Transport service. Our customers are able to run any combination of VPLS, Private IP and Public IP on the same circuit for unparalleled global service flexibility.

MASERGY also leads the industry in advanced service portal capabilities, including embedded network services and powerful Web-based tools for unsurpassed customer-controlled networking. Our Service Control Center, a standard feature with every MASERGY

circuit, provides an intuitive tool to modify your network services automatically for immediate service performance. Network Analyst, our embedded network management service, provides a comprehensive view of your global WAN performance, enabling granular mapping and evaluation of traffic by application, IP address, port, protocol or QoS plane. There is no hardware or software to deploy, and no testing or service integration; we simply activate the service, letting you immediately begin viewing your network traffic.

These award-winning services are backed by a global company committed to delivering the industry's strongest enterprise networking experience. We understand that enterprise networking is a non-stop activity requiring constant attention, and when necessary, an immediate service response. Calls into our 24-hour support centers are answered by trained service technicians who can immediately begin work on your issue. A team of network engineers also is available anytime, day or night, to address any WAN issue. At MASERGY, we understand that network issues require prompt attention that cannot be delayed until "the next business day."

MASERGY's unique service model, coupled with a portfolio of award-winning network services and backed by our dedicated team of support professionals, provide the perfect complement to any corporate IT staff. In short, we serve as the ongoing, behind-the-scenes caretaker of the enterprise WAN. Our non-stop attention to your network provides a cost-effective way to meet the requirements of even the most demanding applications.

Key to playing this valuable role for the enterprise is our focus on all five components of the enterprise networking experience: ***solutions, collaboration, delivery, support*** and ***billing***. Examples of the attention we provide to each of these areas include:

SOLUTIONS

- Proven, award-winning IP MPLS network services
- Seamless global offering via Ethernet VPNs
- Real-time control and embedded network management via an advanced Web portal

COLLABORATION

- Complementary network design services
- Extensive list of service partners for local access
- Risk-free service trials

DELIVERY

- Single point-of-contact for complete network installation
- Managed service installation at all national and international business locations
- Customer-selected service activation schedule

SUPPORT

- Proactive service alerts for all customers
- Live support for ALL service calls with trained engineers always available
- Web portal for information, status and service changes

BILLING

- Simple, easy-to-follow invoices for all (global) business locations
- Flexible collection system for customized billing
- Quick answer to billing questions

Customer Experience Metrics

It is one thing to talk about the networking experience, but quite another to delivery a superior experience every day. That is why MASERSGY created a survey tool to measure our performance in each of the five categories of the customer experience. The survey tool examines several aspects within each of the five key areas of the customer experience. Those results are then summed to calculate the metrics for each individual category.

Figure 1 below shows how the company performed relative to the industry average. The industry average was calculated using the results from the Kubernan 2007-2008 MPLS Total Customer Experience Survey. The MASERGY results shown here were calculated based on our own cus-

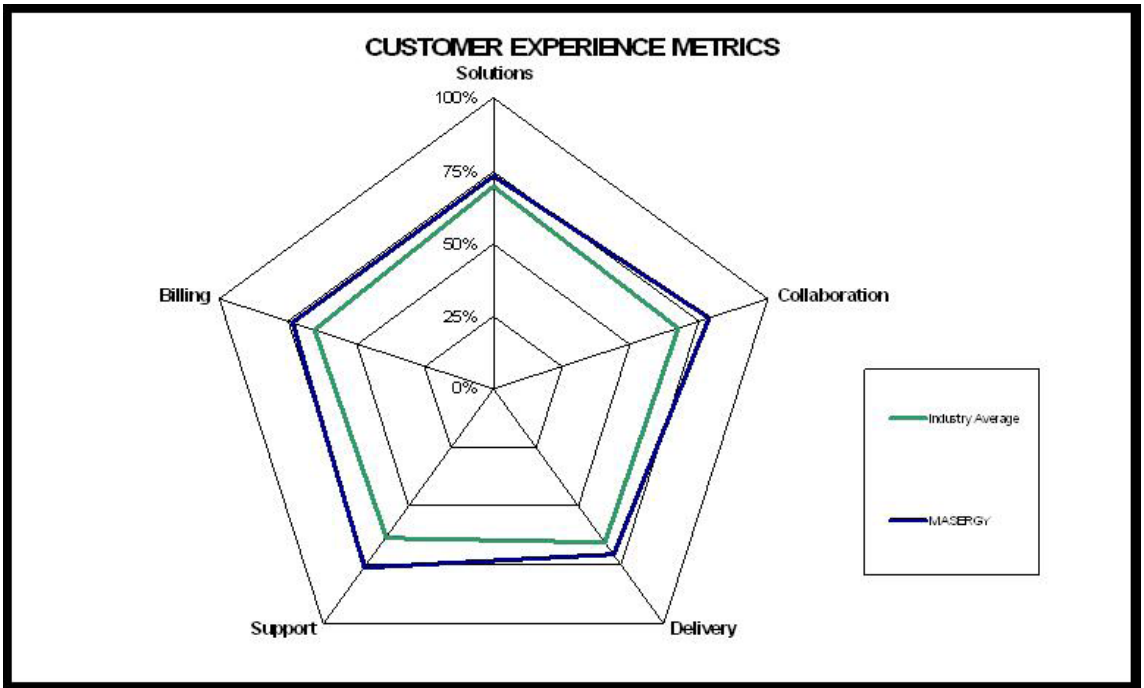

Figure 1: MASERGY conducted detailed comparisons in each of the five network experience categories to identify specific areas for improvement.

tomer survey results. (A rating below 25% is extremely dissatisfied; between 25% and 50% is dissatisfied; between 50% and 75% is satisfied; and above 75% is extremely satisfied.)

Customer Experience (CE) Index

These metric ratings can be summed to calculate an overall customer experience index score for enterprise networking. A score of 250 indicates that the provider's customers are neither satisfied nor dissatisfied with their overall experience. **Figure 2** below shows the results of the CE Index calculation for the industry average and for MASERGY.

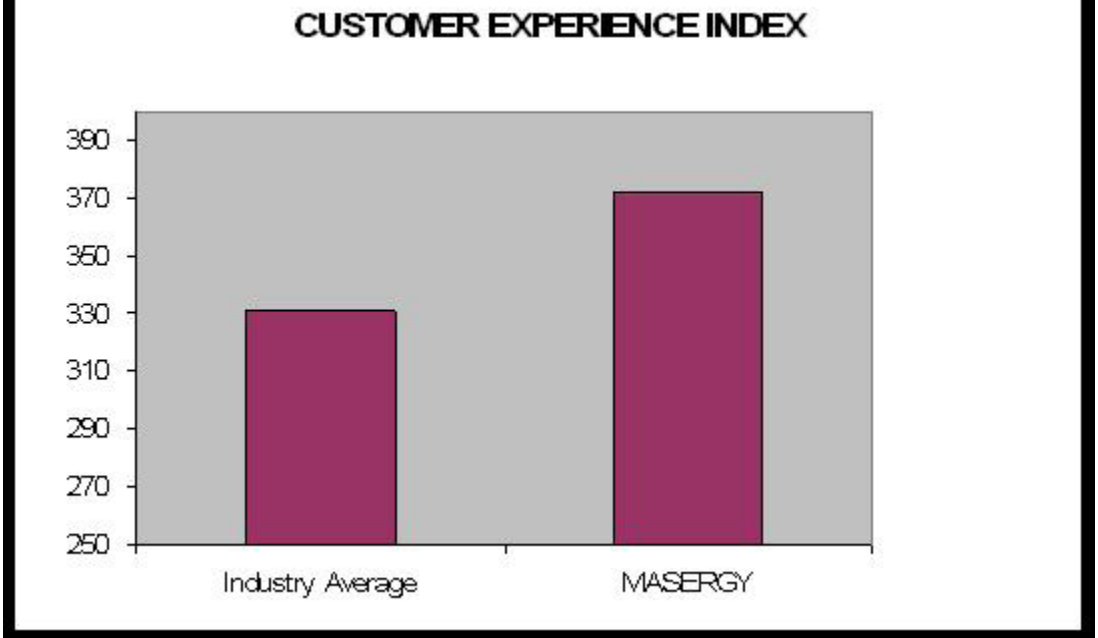

Figure 2: MASERGY scores higher on the CE Index than the industry average, indicating consistent delivery of a strong customer experience.

Customer Referrals

A strong network experience results in high levels of customer loyalty and advocacy; with very satisfied customers indicating that they are extremely willing to recommend their provider to industry peers. Highly satisfied customers not only purchase additional services, they also become key allies in helping the service provider acquire new customers. The result is a partnership where the provider takes responsibility for the customer's network, and the enterprise agrees to share its enthusiasm for its service with that provider's prospective customers. **Figure 3** shows the relative "intensity" of customer advocacy for both MASERGY and the industry, using the weighted average of willingness to recommend.

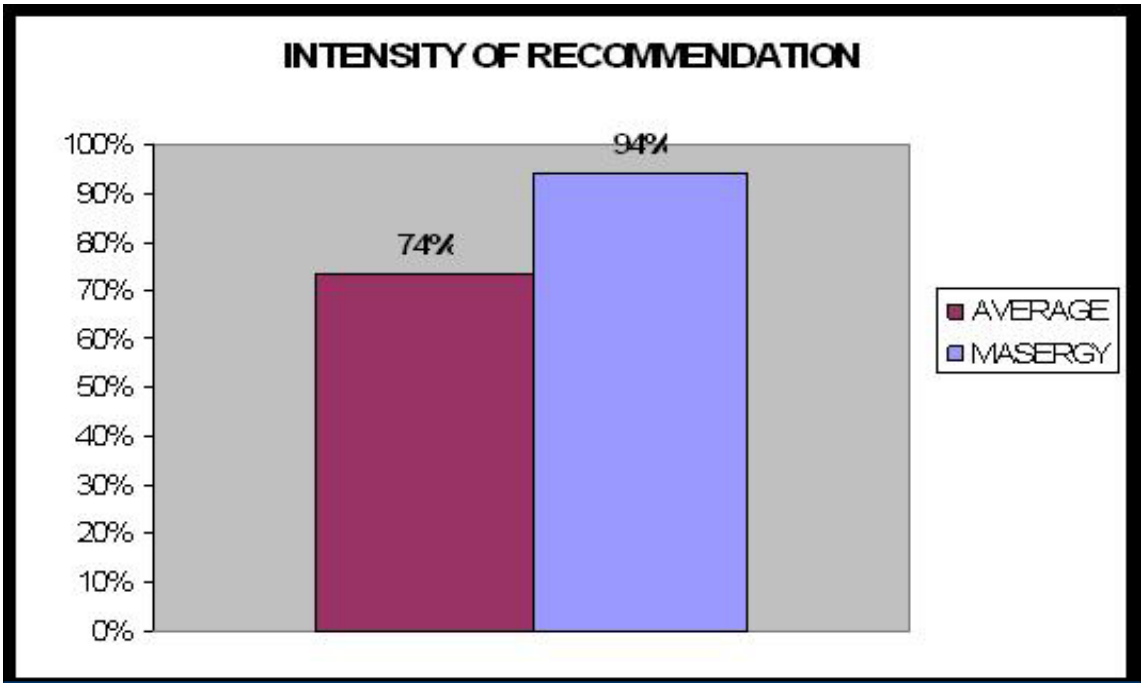

Figure 3: MASERGY's customers demonstrate a more intense willingness to recommend than the average recommendation intensity level for the service provider industry.

Conclusion

When selecting a MPLS service provider, consider the full costs of your networking experience. A superior experience requires a comprehensive approach to identifying, measuring, assessing and improving your WAN service. Network service providers who take on the challenge of excelling in the customer experience can reduce your total cost of service while building a true network partnership. MASERGY is committed to meeting that challenge for our customers every day.

For more information on how you can get a superior enterprise networking experience, or for a copy of our white paper on Measuring the Networking Experience, contact us at +1 866 MASERGY or visit our website at www.masergy.com

Appendix

Methodology and Demographics

The Webtorials subscriber base was asked to participate in an online survey about their MPLS Total Customer Experience (TCE). The data was collected in the fall of 2007.

Whenever appropriate, questions were in a multiple-choice format and included a "Don't Know," "Not Applicable" or "Other (please specify)" option. Also, whenever possible, the order of the multiple choice answers was randomized so as not to bias the survey respondent by the order in which the options were presented.

The following figures provide further demographic details.

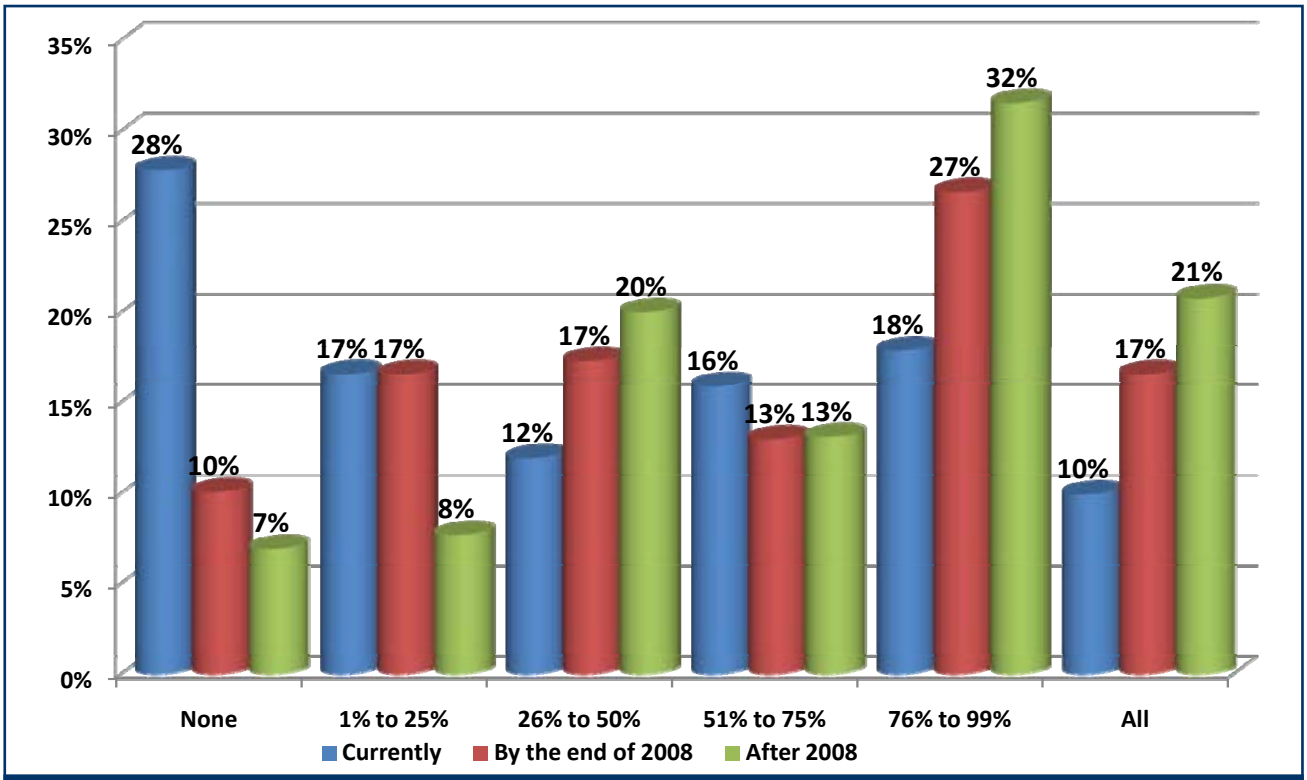

Figure A1: What percentage of your WAN traffic do you have or anticipate to have on an MPLS-based VPN?

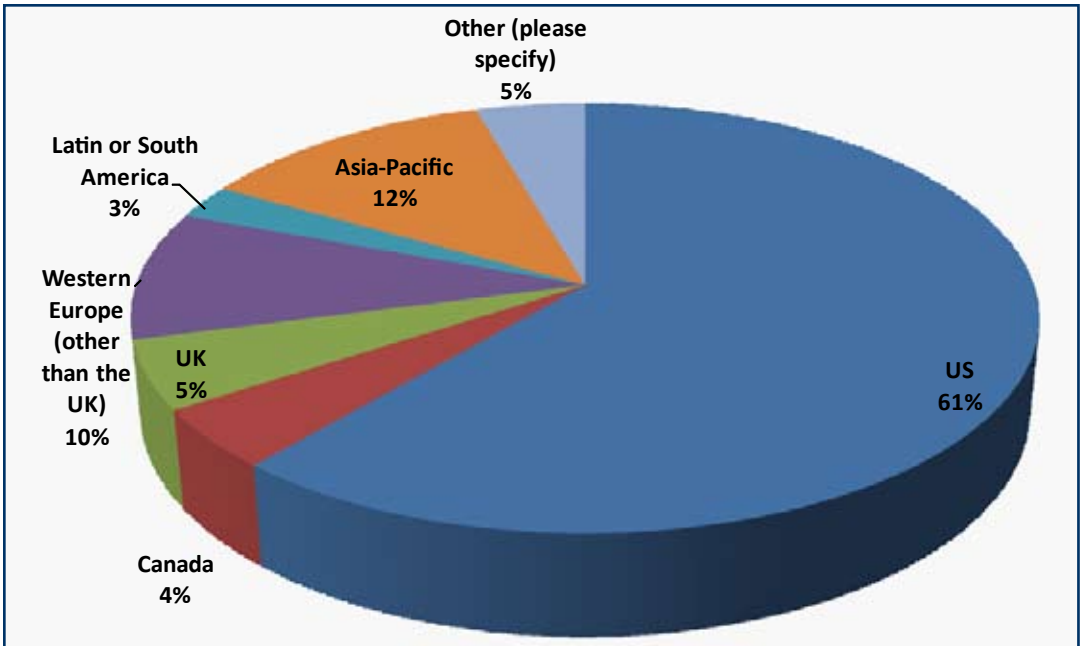

Figure A2: Where is your company headquartered?

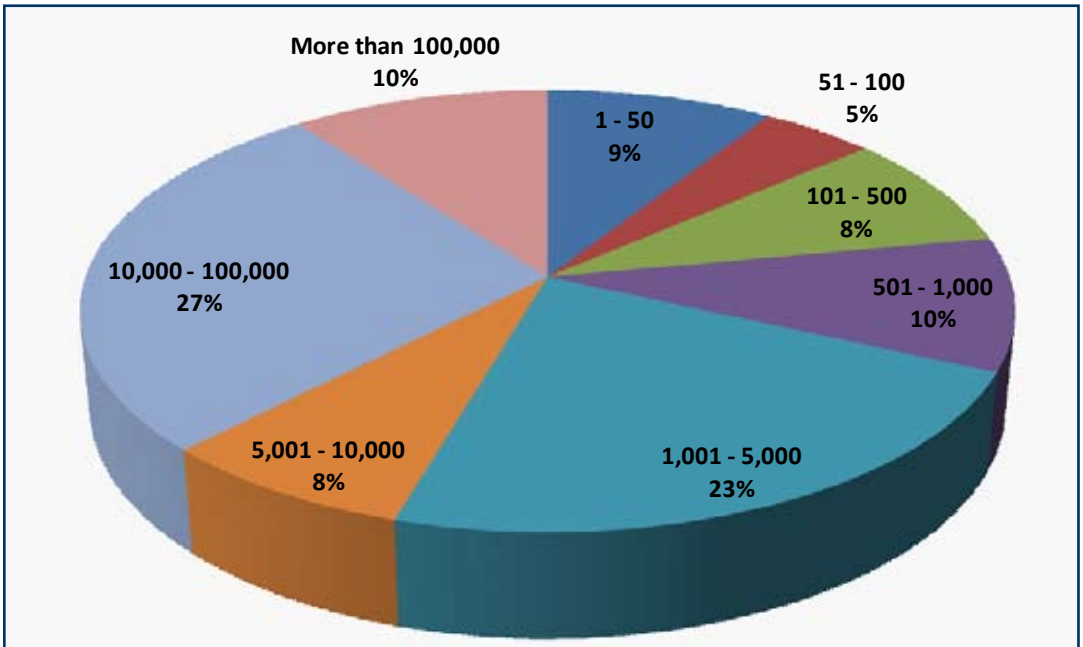

Figure A3: How many employees are there in your organization?

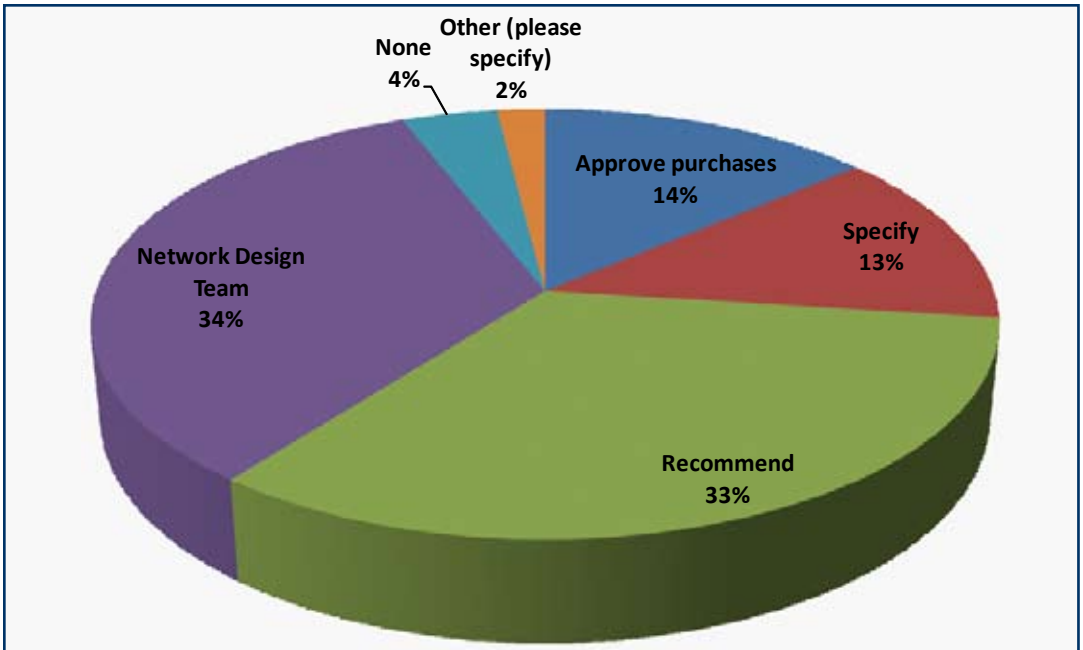

Figure A4: Which of the following *best* describes your *primary* purchasing authority for networking equipment and/or services?

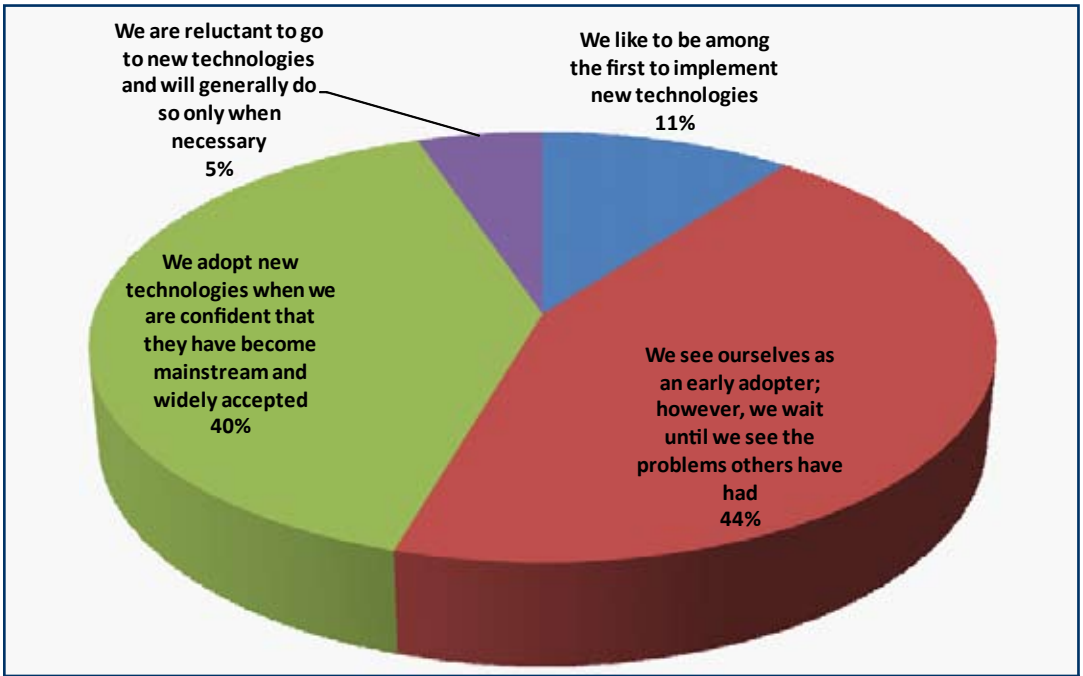

Figure A5: How would you rate your company relative to how rapidly it adopts new technology?