

The New Age MAN – The Marketplace Requirements

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Introduction

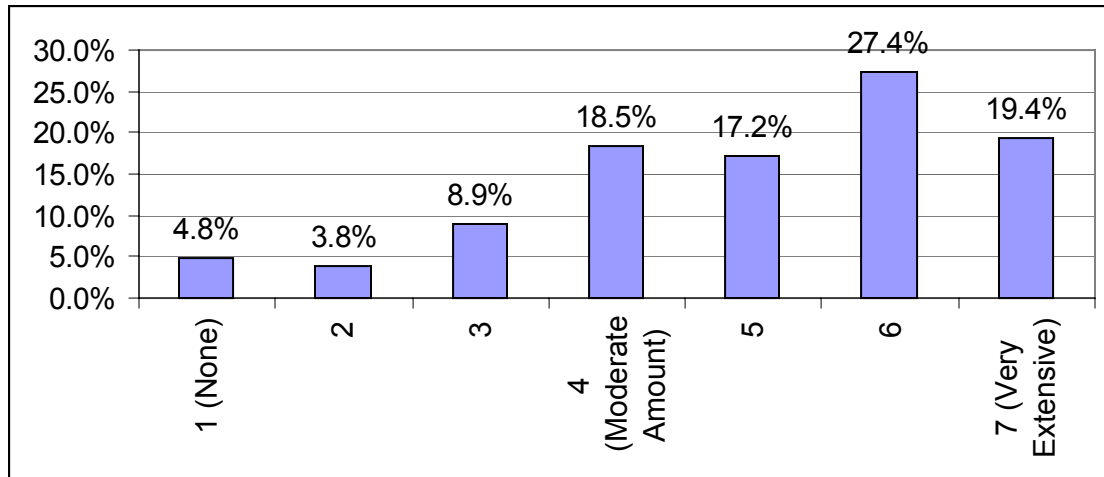
As mentioned in the first article of this two part series, the authors worked with a broad range of MAN service providers to perform a reality check on the current status of the often-hyped MAN services marketplace. Amongst our findings was that there are more differences amongst the approaches taken by the MAN service providers than there are similarities. The first article in this series covered some of these differences, including a high-level overview of the various services being offered by these service providers, and it also detailed the primary network architectures being deployed by these MAN service providers.

This article will focus on the market place demand and positioning of these services, as well as other key issues that determine if these services are indeed ready for production networks. These issues include the manageability of these new services, as well as whether or not you can expect to get meaningful Service Level Agreements (SLAs) on these services. This article will also provide some insight into whether or not these services provide a breakthrough in the pricing of MAN services.

Marketplace Demand and Positioning

Earlier this year, the authors surveyed just over 300 network professionals to understand their interest in deploying new aged MAN services. The survey respondents expressed a relatively strong interest in deploying MAN services running between one and ten Gigabit per second. We did not ask the survey respondents their interest in deploying MAN services running between 10 Mbps and 100 Mbps. However, we feel that their interest in these services would be even stronger. We make that statement in part because of the very strong interest that the survey respondents indicated they had in deploying high speed Internet access, and we defined high speed as being 10 Mbps or higher.

However, the strongest response came when we asked the survey respondents about their interest in deploying high-speed scalable bandwidth. We defined this to be deploying transmission services for which it is very easy to increase the bandwidth in megabit per second increments. As shown in figure 1, almost half of the survey base responded with a six or a seven, indicating a very extensive interest in this functionality.



Survey Respondent's Interest in Scalable Bandwidth
Figure 1

It should be noted that while providing scalable bandwidth is one of the often touted advantages of the new aged MAN services, this functionality can be provided by traditional services. In particular, there are service providers that currently deploy T3s to customer sites, but who only turn on the portion of the T3 for which the customer is willing to pay.

The reader needs to understand that the various MAN service providers are positioning their services quite differently to meet this demand for MAN services. In particular, as pointed out in the first of these two articles, some of the MAN service providers are offering an Ethernet only service. In contrast, other MAN service providers are offering services based on DWDM rings linking Optical Add Drop Multiplexors (OADMs). In this case, a single optical interface card on the OADM can provide native transport for a number of LAN or Storage Area Network (SAN) technologies that are clocked in the same speed range. Hence, many OADM implementations can transport a wide range of optical traffic types, including SONET/ATM, Ethernet, Fibre Channel, ESCON, FICON and other proprietary protocols used by remote storage services and remote CPU backup or clustering services.

Manageability

For years service providers have been trying to sell managed services. However, the majority of companies have resisted deploying these services, in part because in most cases if a company implements a managed service they give up most, if not all, visibility into how that service is performing. For many companies, that has been an unacceptable price to pay.

With new aged MAN services, service providers might finally be able to break through this resistance by providing companies a high degree of visibility into the status and performance of the service provided. In fact, most MAN service provider currently give

the customer read access to the service provider's trouble tracking system, as well as access to online reports that detail how well the service provider is meeting the Service Level Agreements (SLAs).

While being able to have read access to a service provider's trouble tracking system is certainly a good thing, we had hoped that it would also be possible for the user to directly enter trouble tickets into the service provider's trouble tracking system. While some MAN service providers did indicate that they currently provide this functionality, the majority that we talked to said that they did not. It is also the case that in only a minority of cases do MAN service providers currently allow their users to request bandwidth changes online.

In addition, there is some important management functionality that is missing from most, if not all, of the current generation of MAN services. This functionality includes:

- Automated alerts to customers of fault or performance issues
- Bandwidth self-provisioning
- Real time SLA status
- Customer access to Fault Management and Service Assurance tools
- Online access to billing information

There are also clear differences in terms of how the various MAN service providers implement security. In some cases, security is provided by VLAN tagging; i.e., 802.1Q. However, companies may have some concerns about that level of security, particular in those cases where several companies are sharing a L2/L3 switch in either a Multi-Tenant Unit or in a packet ring.

Multi-Protocol Label Switching (MPLS) is just beginning to be implemented by some MAN service providers. In addition to its use for traffic engineering, MPLS enabled MAN services offers a somewhat higher level of security. That follows because the Label Switch Routers only look at the labels, not at the MAC address.

Pricing

It is difficult to provide any hard and fast rules relative to how the service providers price their MAN services. That follows in part because service providers have considerable latitude as to the street prices that they actually offer to customers. In addition, because of the embryonic state of the MAN marketplace, some of the services are currently only priced on an Individual Case Basis (ICB). Given this lack of consistency relative to the pricing of MAN services, the following analysis of pricing is for illustration only. In order to properly evaluate the pricing of MAN services, the readers must work with their service providers.

As a high level rule of thumb, the reader should think of paying around \$2k/month for a 10 Mbps service, \$3K/month for a 100 Mbps service, and \$8K per month for a Gbps

service that either provides connectivity in a metropolitan area, or access to the Internet. This pricing is clearly notably better than the pricing of equivalent legacy services.

There are a number of factors that can affect this pricing. Some of these factors have little to do with the underlying technologies, and more to do with how the service provider is positioning their services, or the structure of the contract. As an example of the first factor, some MAN service providers offer services that are distance insensitive, while others have a distance sensitive component in their pricing.

Two aspects relative to the structure of the contract itself that impact pricing are the revenue commitment and the length of the contract. The conventional wisdom in our industry is that the larger the revenue commitment that a company makes with a service provider, the lower the prices that the company is charged by the service provider. While the authors agree that that is the general tendency, we are aware of many instances in which that is not the case.

Relative to the length of the contract, the reader should think about getting a reduction in the pricing of the MAN service somewhere in the range of 10 to 12 percent with every level of additional commitment that they make. By level of additional commitment is meant moving from a contract that is month to month, to one that is for a year, to one that is for three years, to one that is for five years.

There are also a variety of technology-based factors that also impacts the pricing that the reader will receive from MAN service providers. One of these factors was mentioned in the first of these articles. That factor being whether or not there is already an optical fiber in place between the company and the service provider.

A second factor is the increments in which the MAN service provider is capable of offering service. As was shown in Figure 1, customers are extremely interested in MAN services that make it easy to increase the bandwidth in megabit per second increments. However, some MAN service providers today offer only two speeds – 10 Mbps and 100 Mbps. Some other MAN service providers only provide an entire λ .

Another such factor is the breadth of functionality that is included in the MAN service. Table 1 contains some of the additional functionality that should be of interest to the readers. A MAN service provider may provide this functionality as part of the basic service, or it may be provided only at additional cost. A third option is that it is not provided at all by the MAN service provider, and customers may be forced to provide that functionality themselves.

| |
|-----------------------------|
| Inside Wiring |
| Managed CPE |
| Managed Firewall |
| Managed Encryption Server |
| Digital Certificate Service |
| IP Filtering |

| |
|------------------|
| NAT |
| Redundant Access |

**Primary Additional Functionality
Table 1**

Service Level Agreements

In general, the SLAs associated with legacy MAN and WAN services are anemic. So, the question was, would the SLAs associated with new aged MAN services be any better?

Similar to how service providers in general are reticent to give details of pricing, full details of SLAs are often held back unless a customer submits a formal Request for Proposal, or enters into similar negotiations. However, the authors found evidence that there is somewhat more substance to MAN SLAs than is with legacy services.

Table 2 contains the set of service level parameters that the readers should look for when analyzing MAN services.

| |
|--------------------------------------|
| Bandwidth Committed Information Rate |
| Ability to Burst |
| Packet Loss Ratio |
| Latency |
| Jitter |
| Mean time to Install (MTTI) |
| Mean time to increase Bandwidth |
| Mean time to Restore |
| Availability |

**Service Level Parameters
Table 2**

Generally speaking, the credits for MAN SLAs are only slightly stronger than those for legacy services. For example, the authors were often told that the Monthly Recurring Charges (MRC) were pro-rated to account for the MAN service provider not meeting their promised availability metrics. However, the authors did find a vendor who will auto-credit the customer's account when SLAs are not met. This particular MAN service provider offers a credit of 30% of Monthly Recurring Charge (MRC) in the event monthly availability falls below 96%.

Conclusion

On paper at least, the new aged MAN services are a big step forward. They are much more cost effective than the equivalent legacy services, and offer somewhat better management and Service Level Agreements. They are, however, new services being offered with new management systems. That means that potential buyers need to be cautious. In particular, potential buyers need to closely examine any MAN service they are considering deploying in part because these services are evolving extremely rapidly.

In addition, we advise the readers to avoid long duration contracts and investments in MAN-specific CPE, because of escalating price competition and rapid technology obsolescence. Potential buyers should also brace themselves for all of the highs and lows of the first generation in a new era of MAN services. However, these services look good enough that it does make sense to consider using them today for Internet Access and connectivity among sites in a metropolitan area. Hopefully, we will soon be able to also use them for WAN access, most notably to VPN services as part of a common VPN solution across the MAN/WAN.