



PRESENTS

NETWORLD INTEROP

an INTEROP event

Three Components of Security in Metro Ethernet

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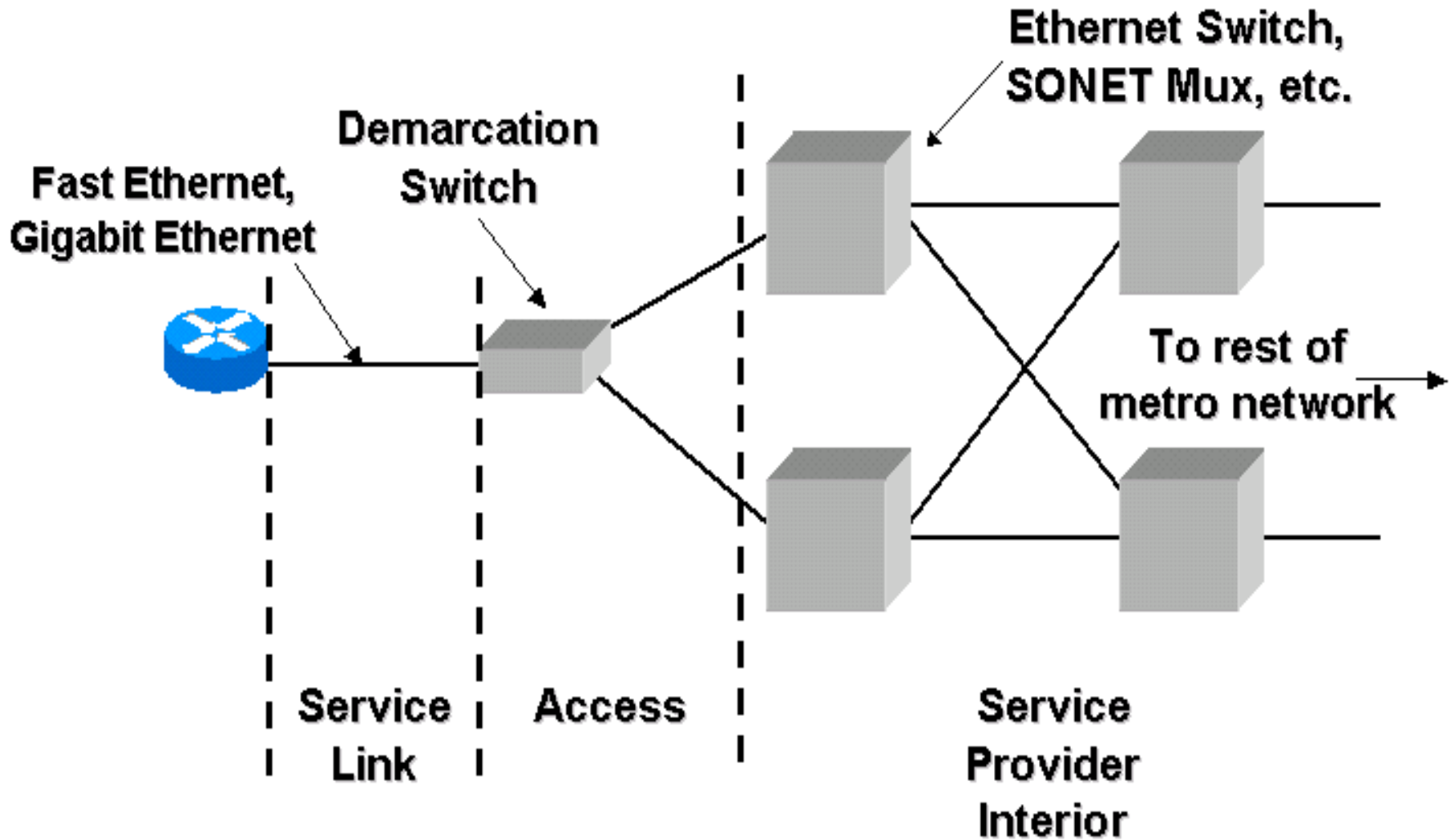
Founder and VP Product Development,
Telseon

12 September 2001

Metro Ethernet Networks

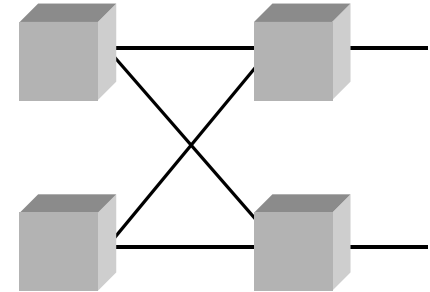
- Low cost network equipment
 - Approximately 90% less costly than ATM/SONET
 - Dropping more than 30% per year
- Easy to interface to service
 - Low equipment costs
 - Familiar protocol avoids need for additional personnel training
- But there are some security aspects that you should consider, i.e., ask your service provider about ...

3 Component Architecture



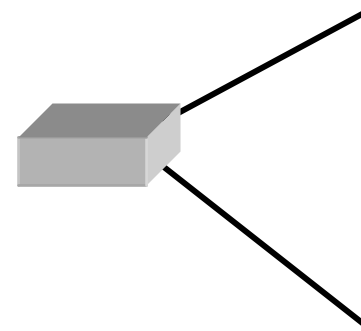
Service Provider Interior

- To prevent easy intrusion:
 - Equipment must be highly physically secure
 - All Ethernet must be full duplex, switched
- To maintain separation of customer traffic
 - Use VLANs, MPLS, etc.
 - Configuration must be simple, preferably automated
- Bandwidth must be correctly managed
 - Automation preferred



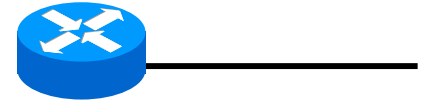
Access

- Not always physically secure
 - On customer premises
 - In common space in MTU
 - Must have defense for intruder getting control of device
- To prevent theft and eavesdropping
 - No monitor port
 - No local switching – all switching in interior switches
 - Frequent, periodic check and refresh of configuration of demarcation switch by Service Provider
 - Must be automated
 - Alarm all anomalies

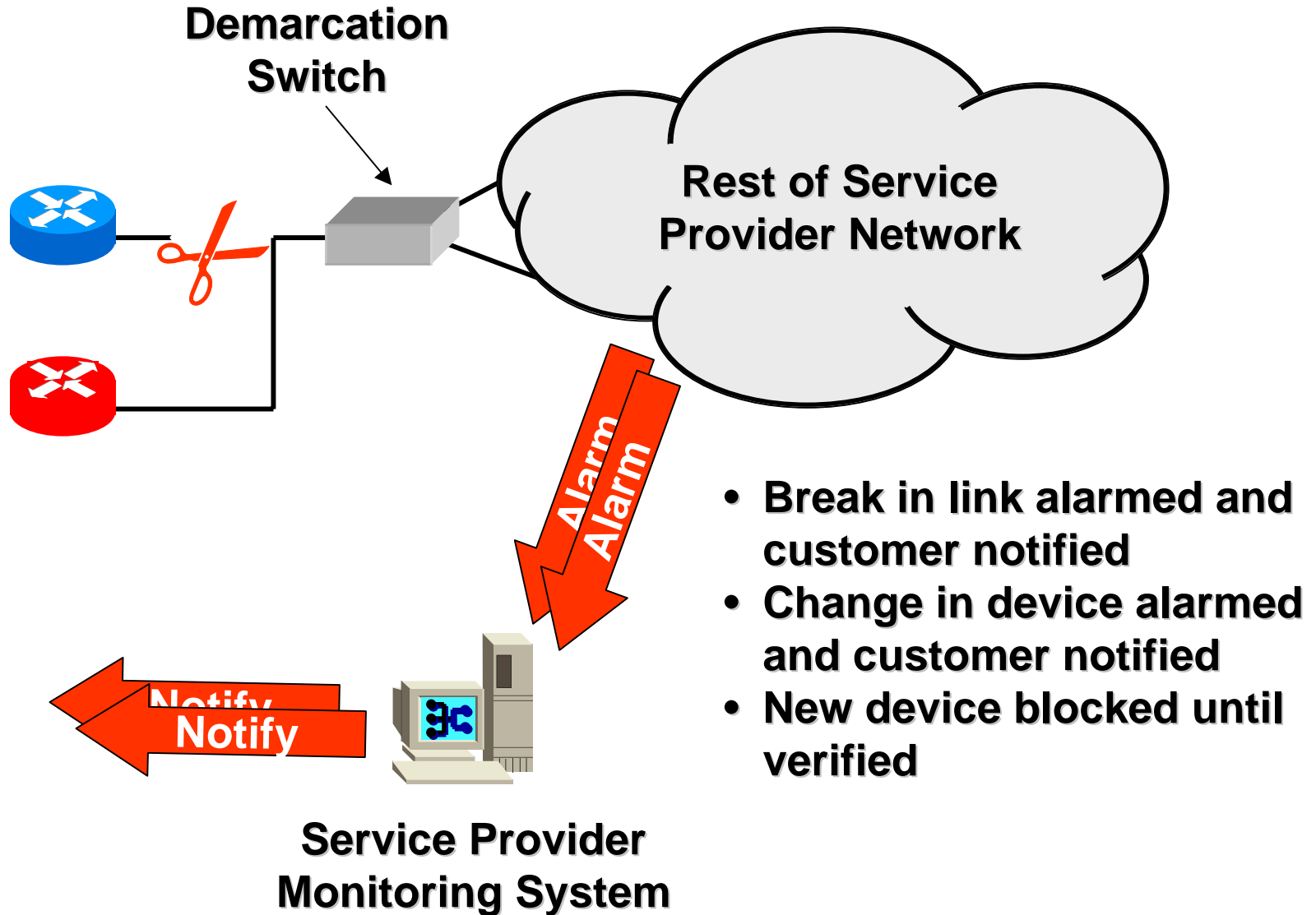


Service Link

- Wide range of vulnerability
 - Patch cord in customer rack
 - Riser in customer building
 - Cross-connect in Internet Data Center
 - Riser in MTU
 - And, it is usually multiple access capable
 - With a hub or a switch
- To prevent intrusion Service Provider should
 - Continually monitor links from demarcation switch
 - Alarm all breaks
 - Notify customer of all breaks
 - Monitoring and alarms must be automated

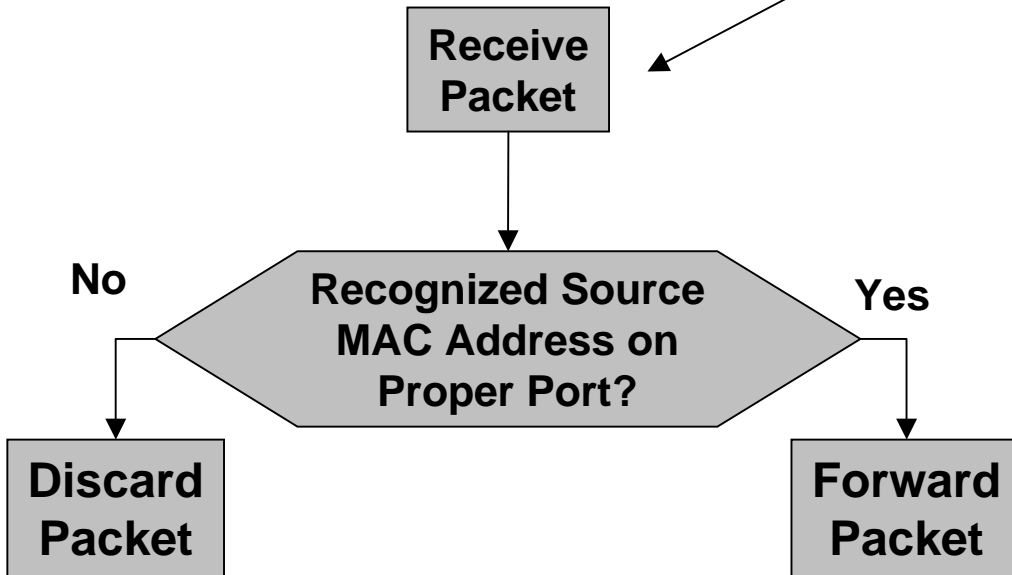
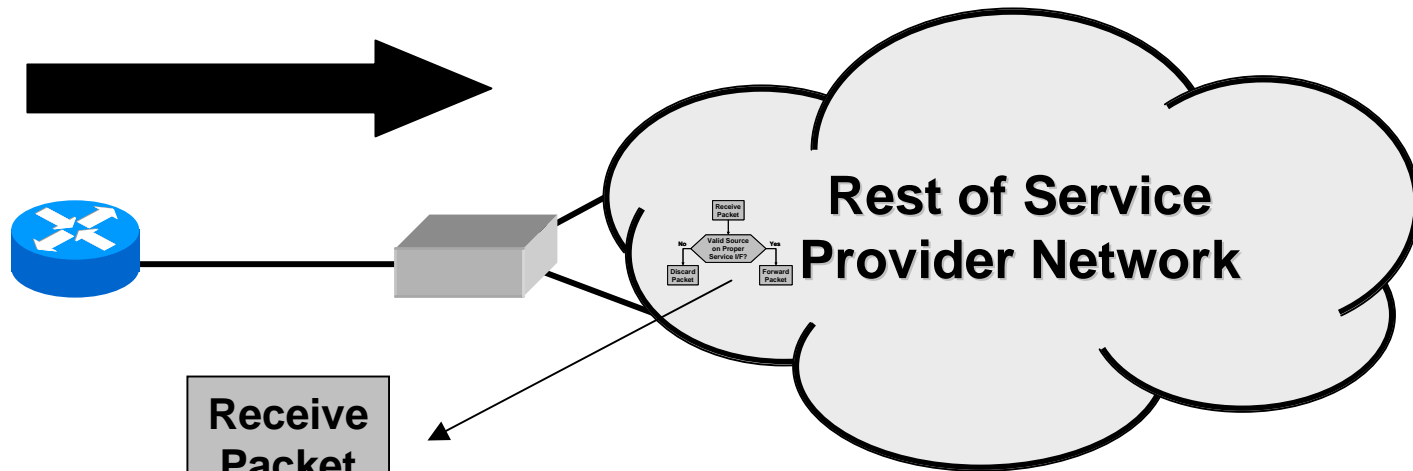


Service Link Intrusion Protection



Service Link Intrusion Protection

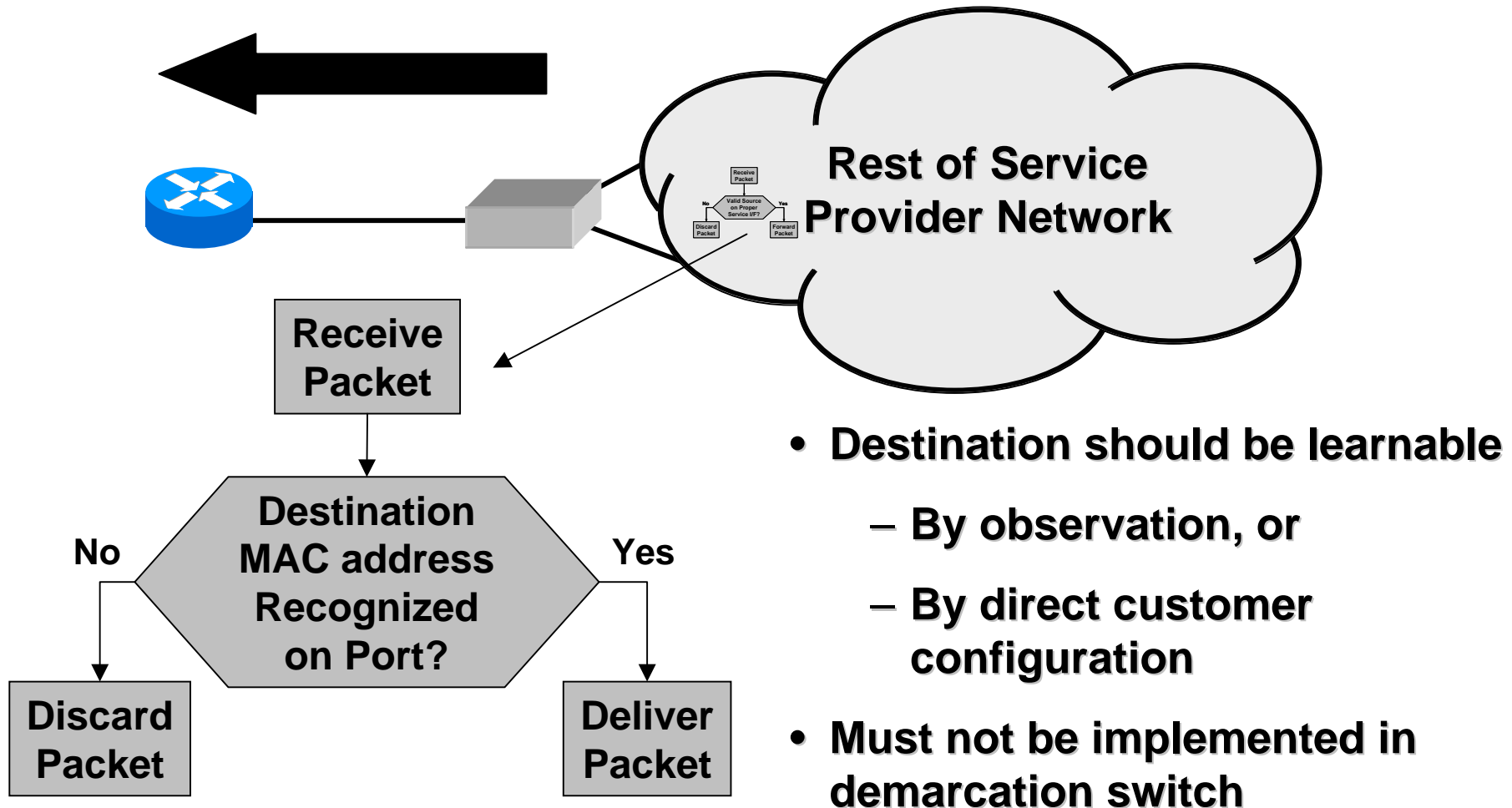
Admission Control



- **Source should be learnable**
 - By observation, or
 - By direct customer configuration
- **Must not be implemented in demarcation switch**

Service Link Intrusion Protection

Delivery Control



And of Course ...

- Continue to use all of the security methods you would with any WAN connection
- The good news is that you probably have already done these over Ethernet



T E L S E O N

Because Data Should Fly.SM

Thank You