

# Telchemy

*Actively Managing Multimedia*

## Solving IP Centrex Customer Premise Management Problems

Alan Clark

President, Telchemy Incorporated

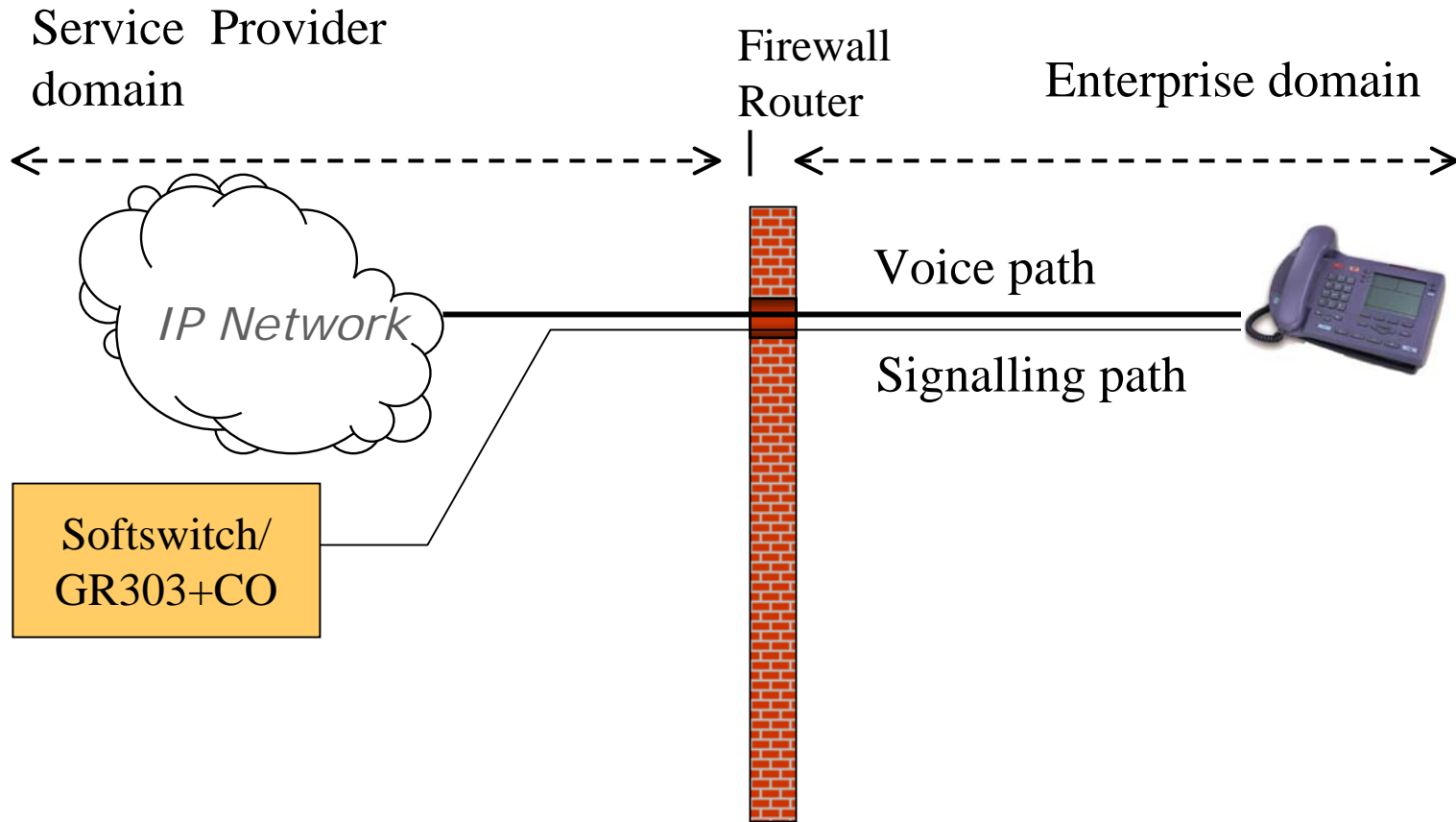


# IP Centrex Management

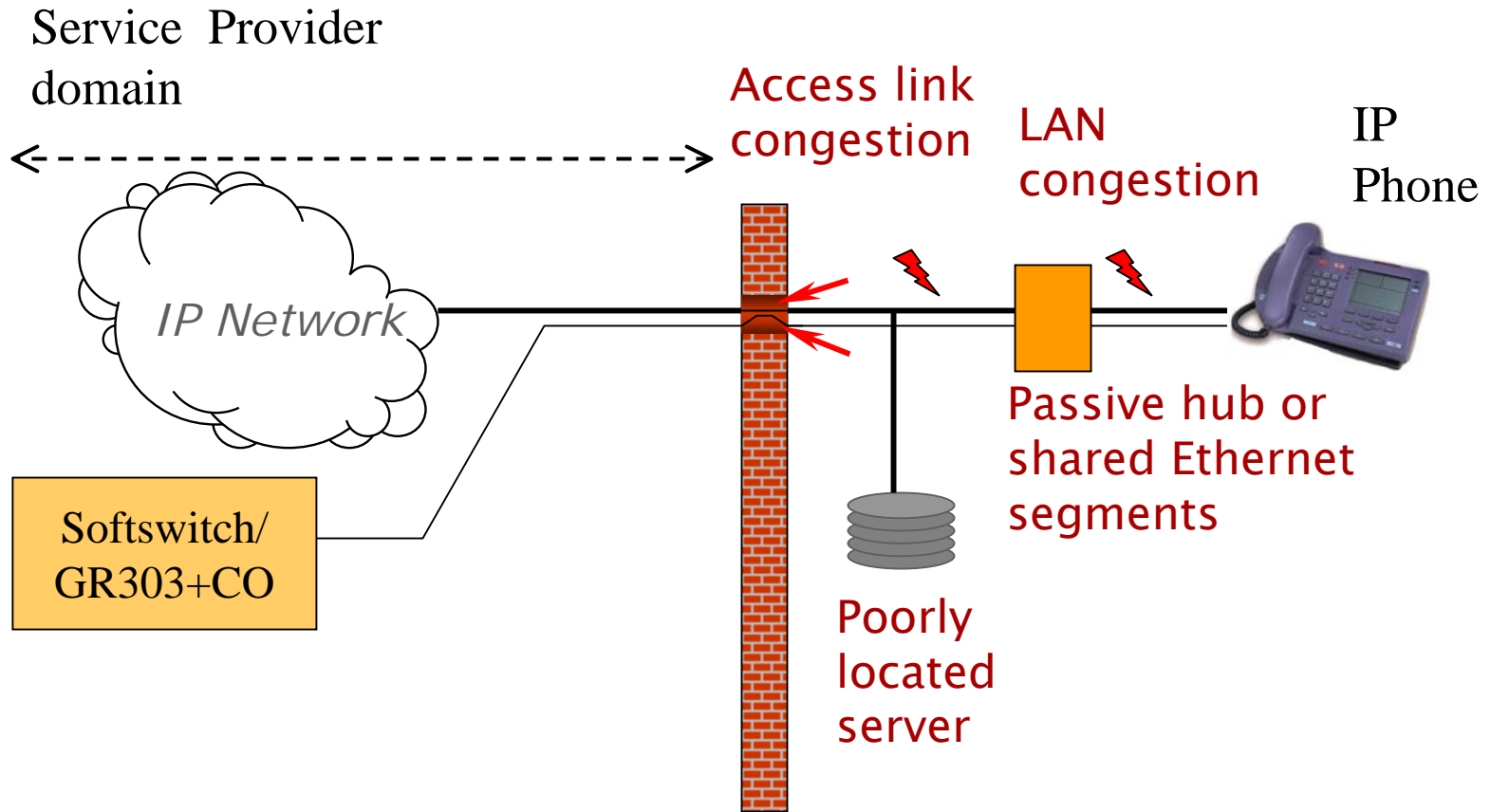
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- Customer premise management problems
- Approaches to monitoring service quality
- Integrating monitoring and management
- A solution for the customer network management issue

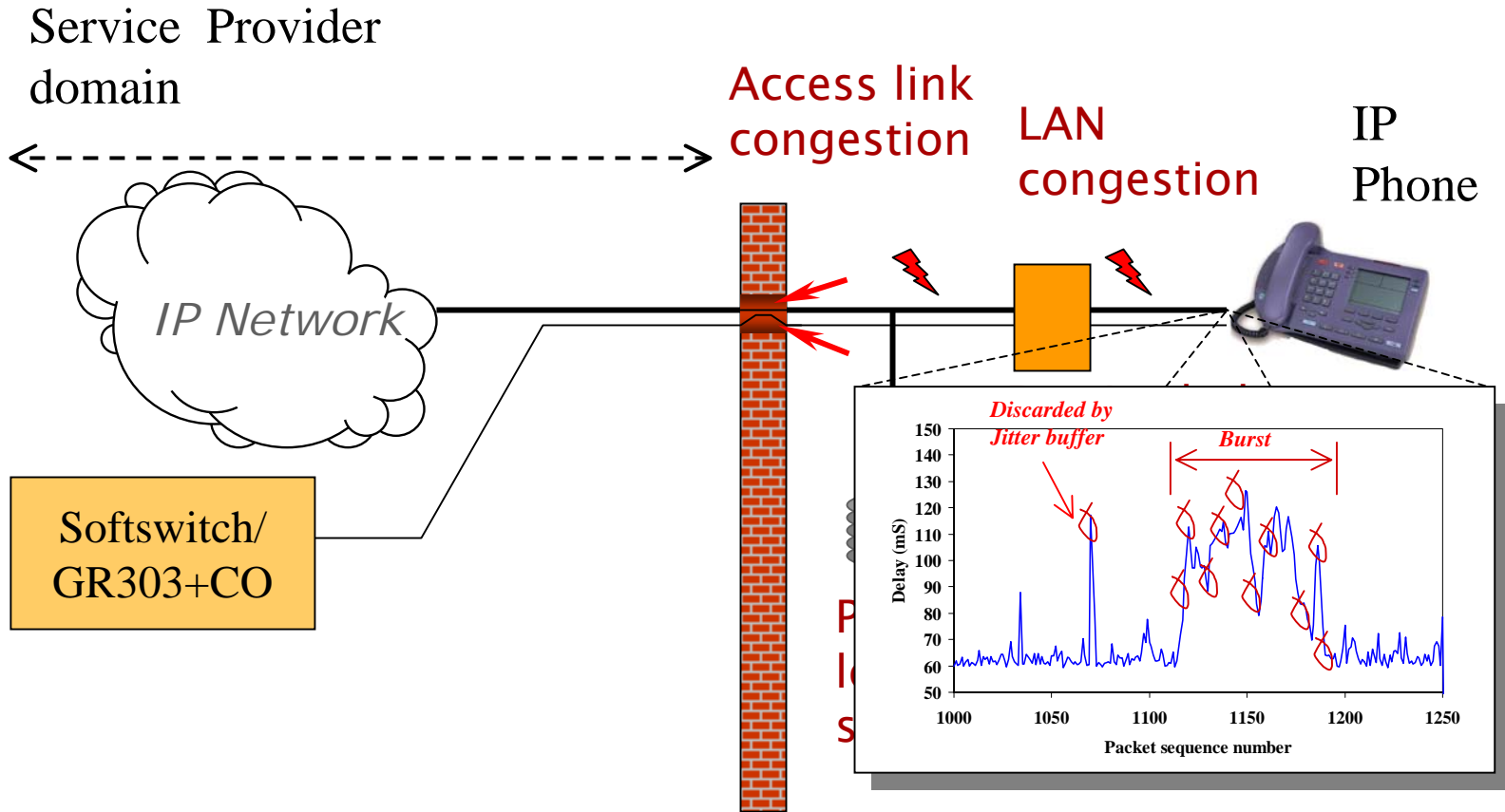
# IP Centrex - Scenario



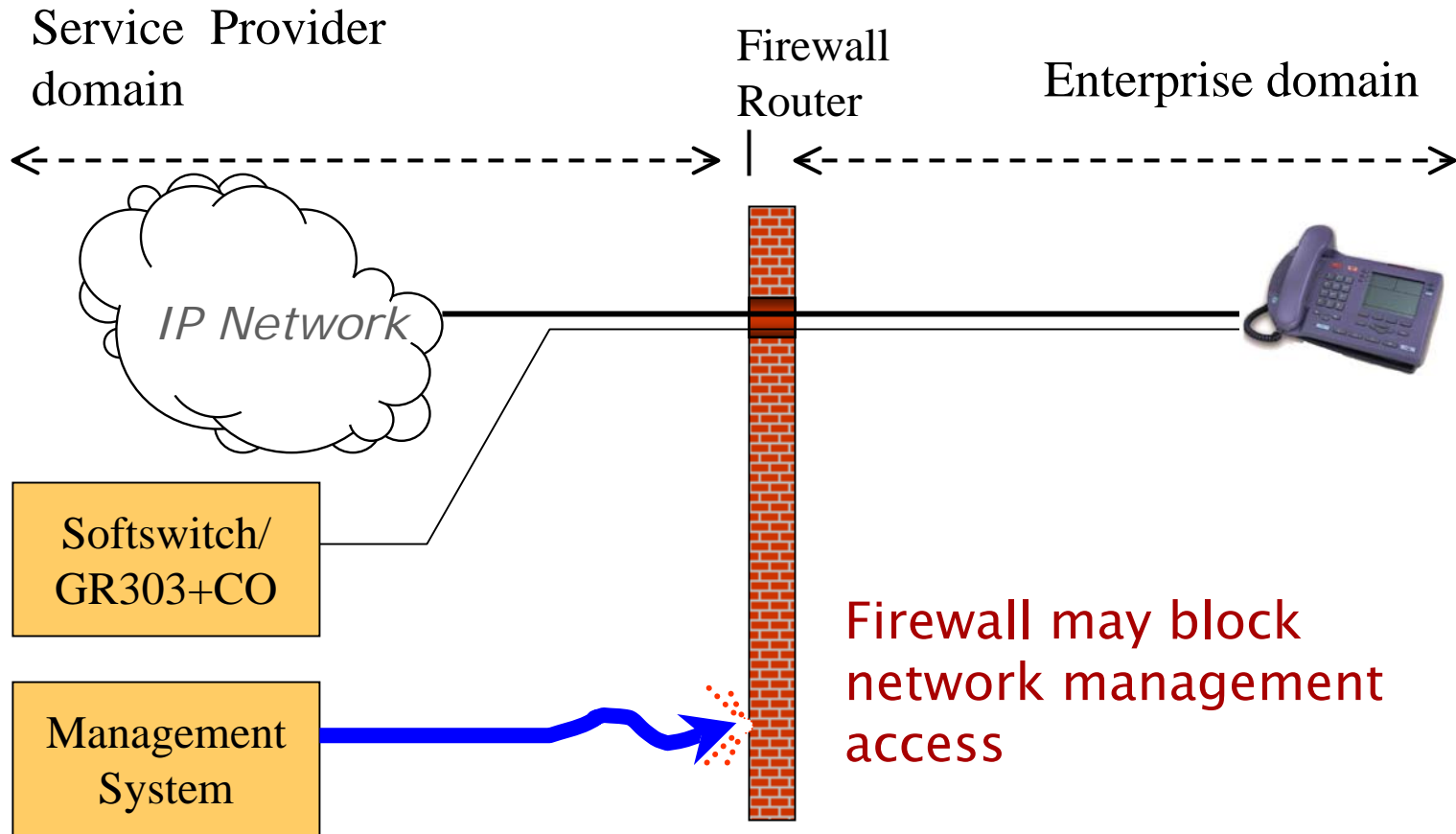
# Customer LAN Issues



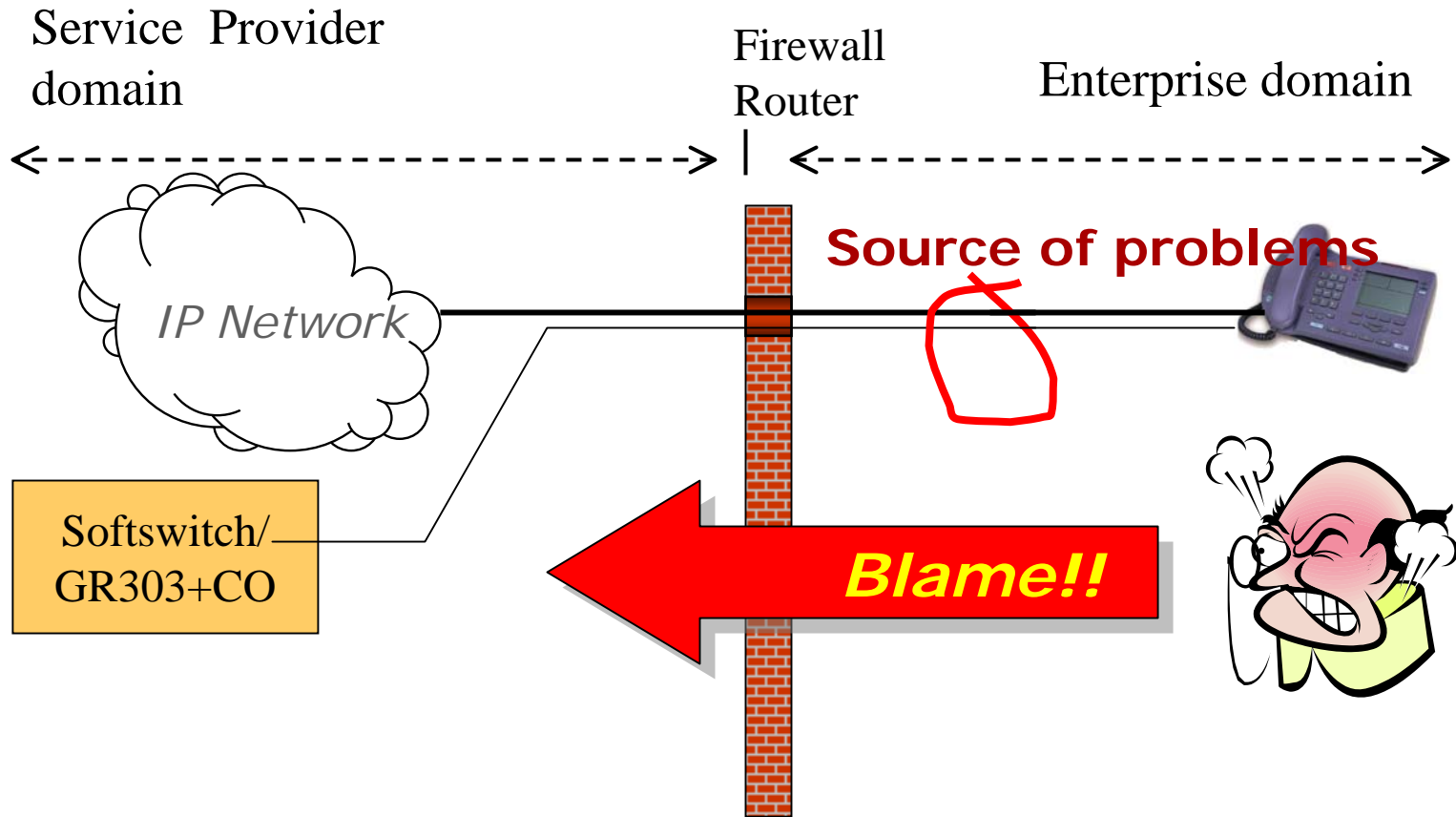
# Customer LAN Issues



# Lack of Management Access



# Guilty until proven innocent?



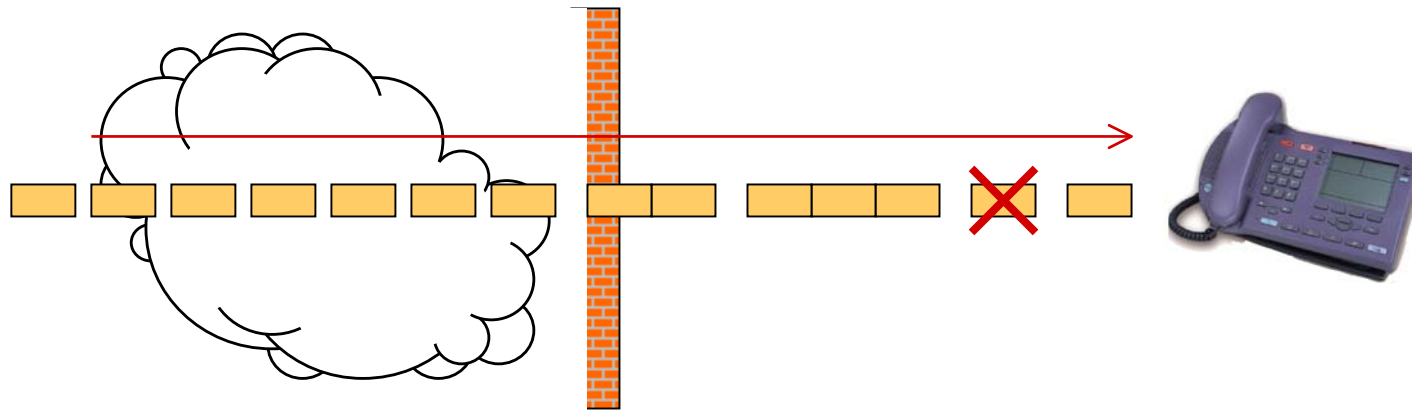
# So what's the solution?

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- Rapid identification of problems
  - Detect problems at the customer end of the VoIP path
- Get information on customer net problems through the Firewall
- Be proactive in informing customers that they have service-quality-affecting problems

# IP Phone's viewpoint?

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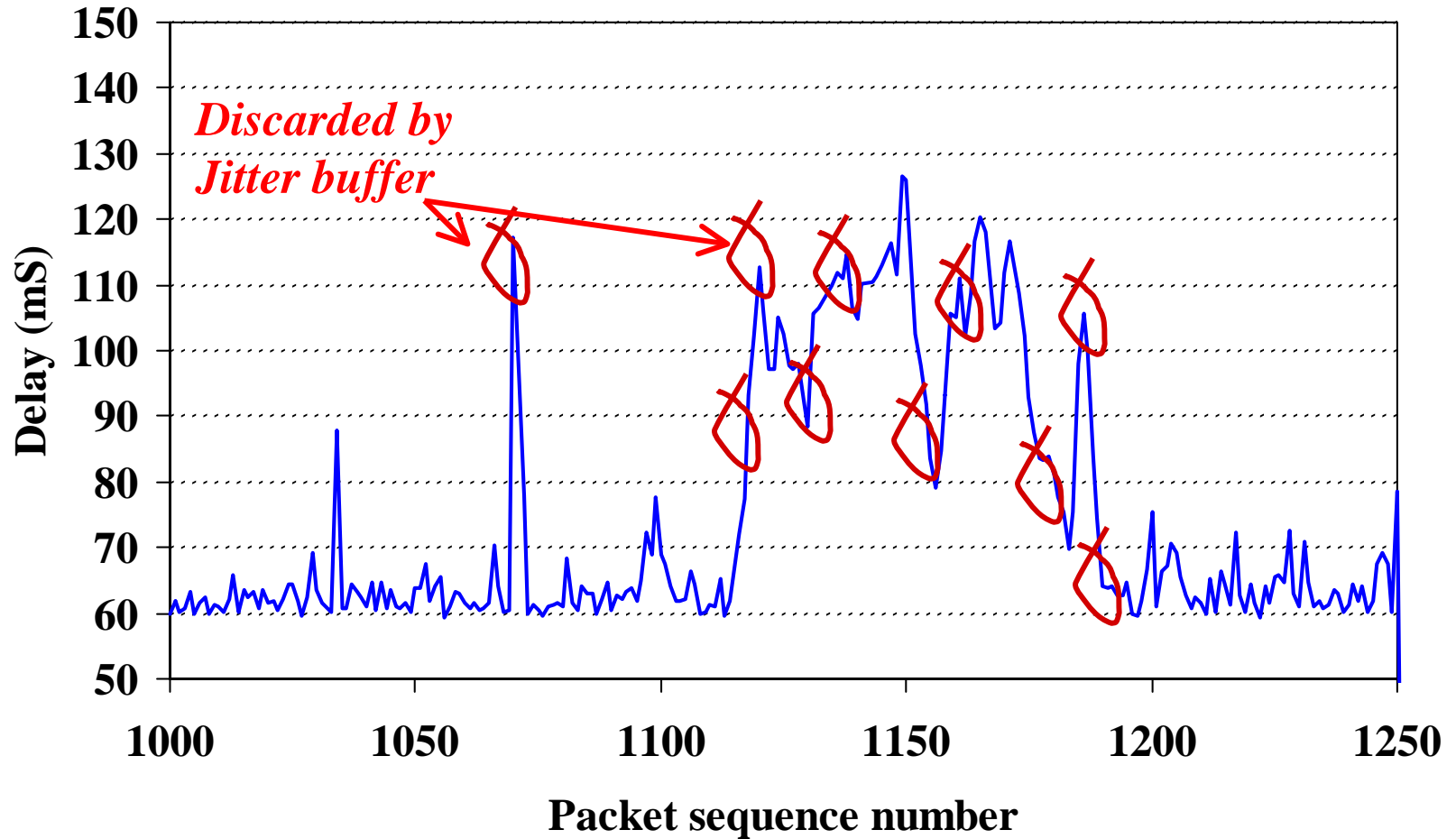
*Impairments from:*

Service provider  
IP network

Access  
Link

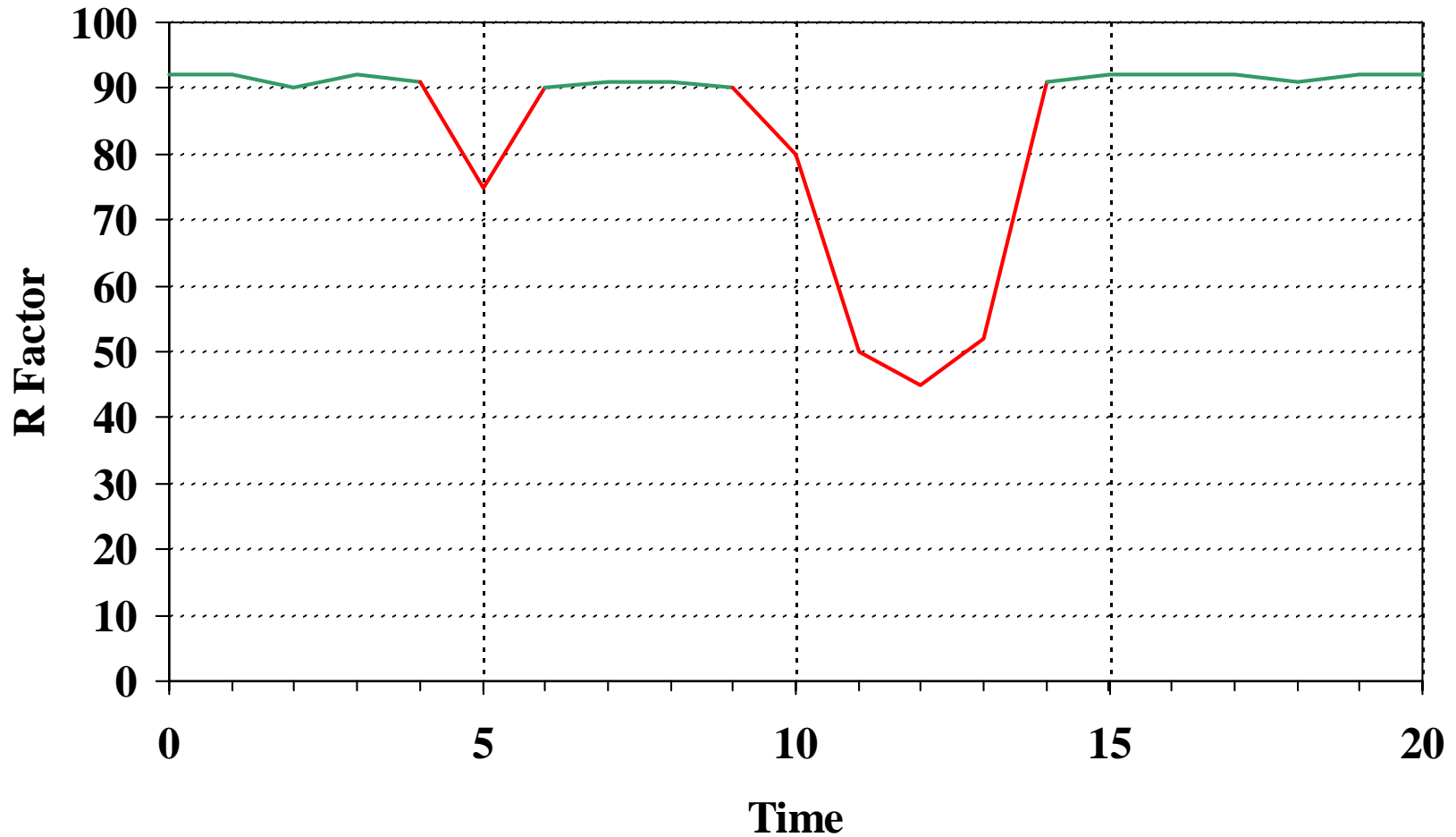
LAN

# IP Phone's viewpoint?

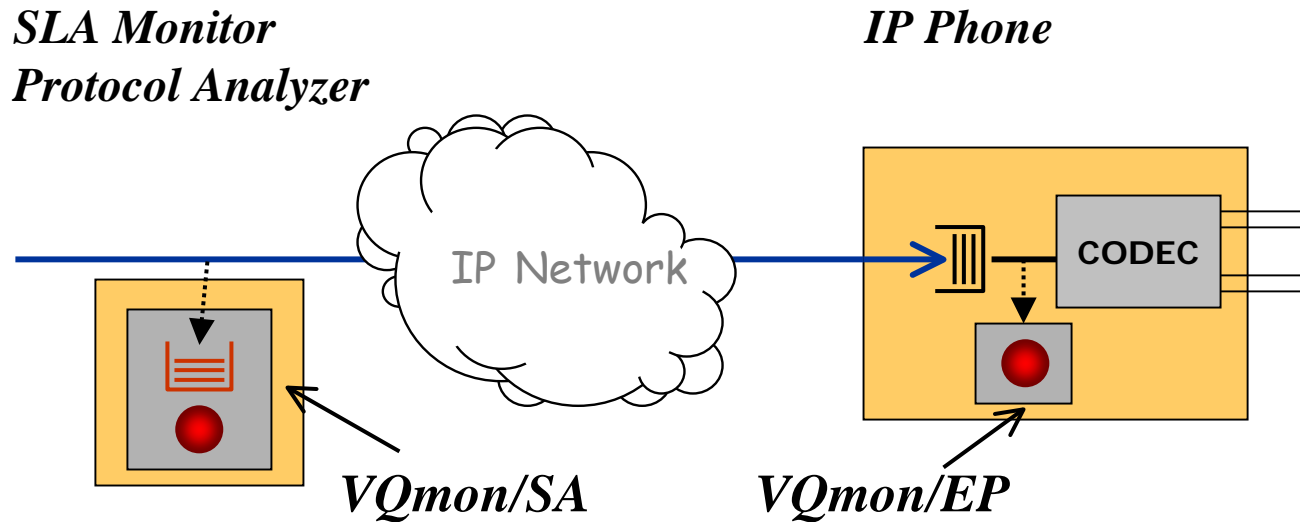


# Result - time varying quality

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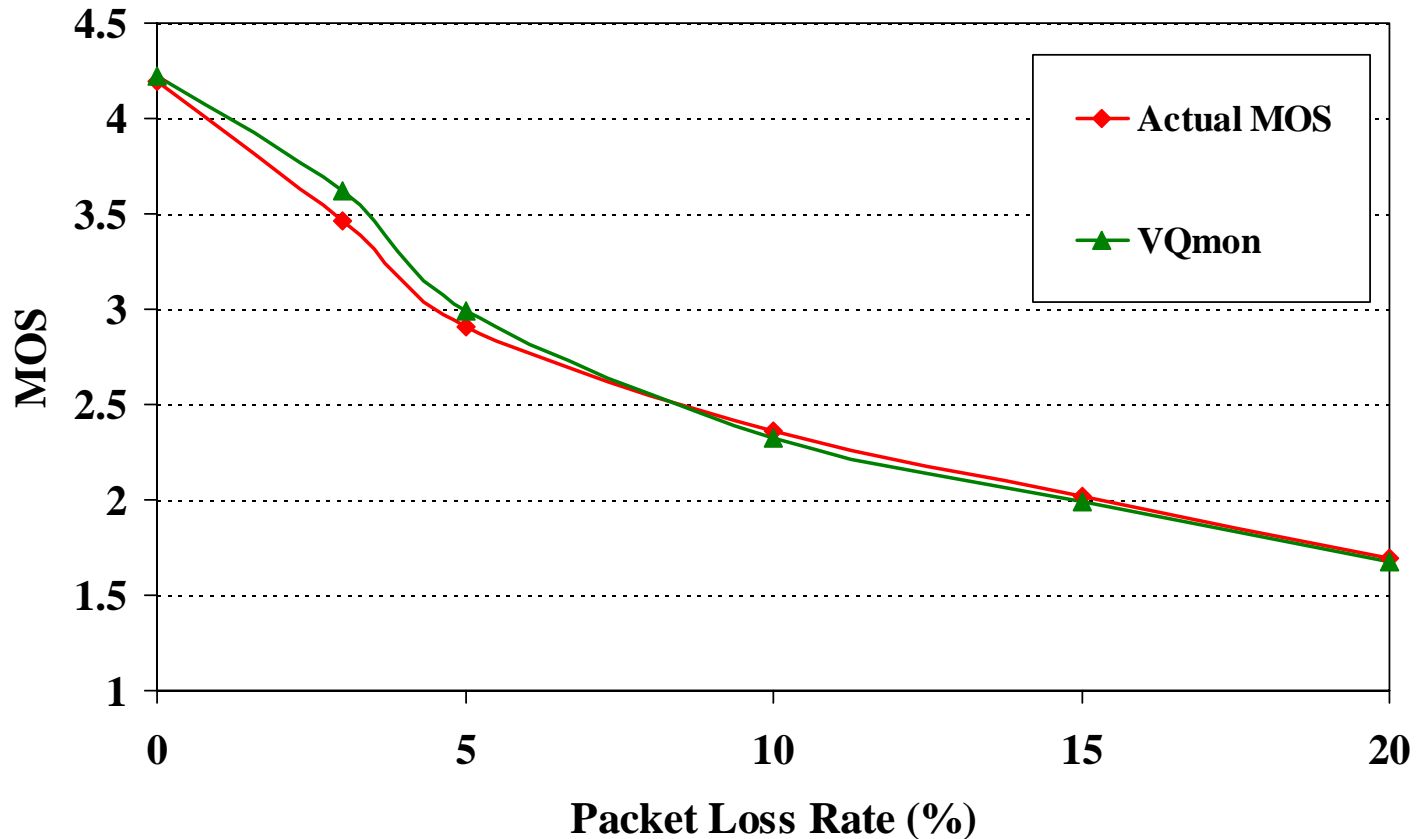


# Embedded call quality monitoring



VQmon provides *real time monitoring* of large numbers of VoIP calls, measures *time varying* and *transient* impairments and provides a *perceptual quality score*.

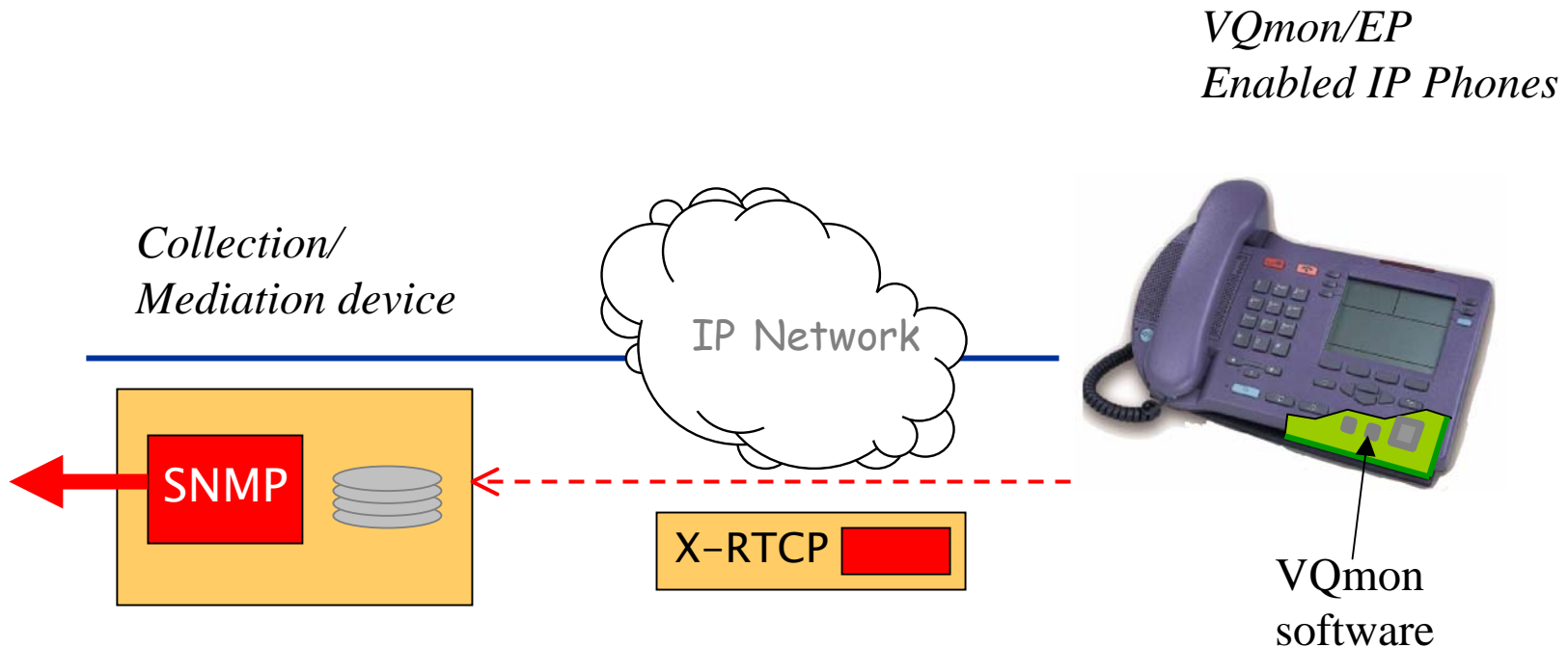
# How accurate?



Subjective data from COMSAT

G.711 PLC

# Extended RTCP



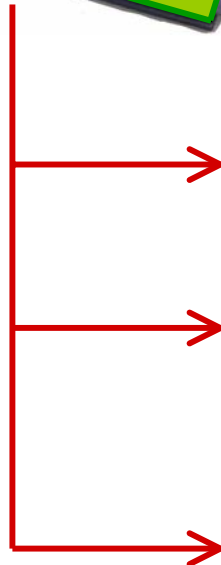
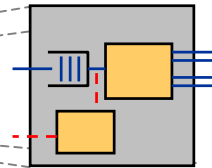
The new RTCP Reporting Extensions draft provides an ideal way to get metrics from an IP phone, through a Firewall and to a management system

# Implementation in IP Phone

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VQmon/EP software embedded  
into phone control uP/DSP



Call quality metrics in end-of-call  
message (e.g. H.323 DRQ)

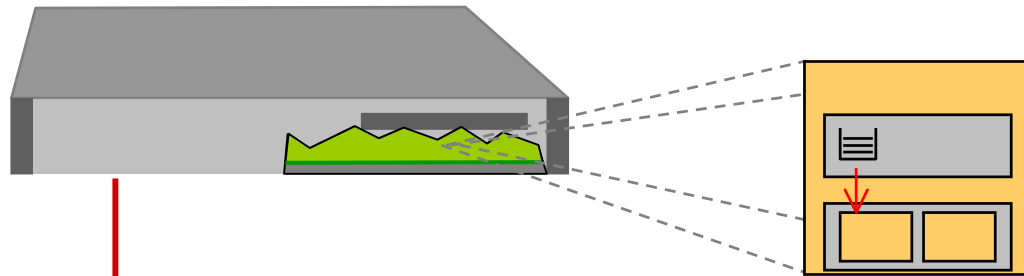
Call quality metrics in Extended RTCP  
message (X-RTCP) during call and/or at  
end-of-call

Other formats - XML, SNMP...?

# Implementation in Probe

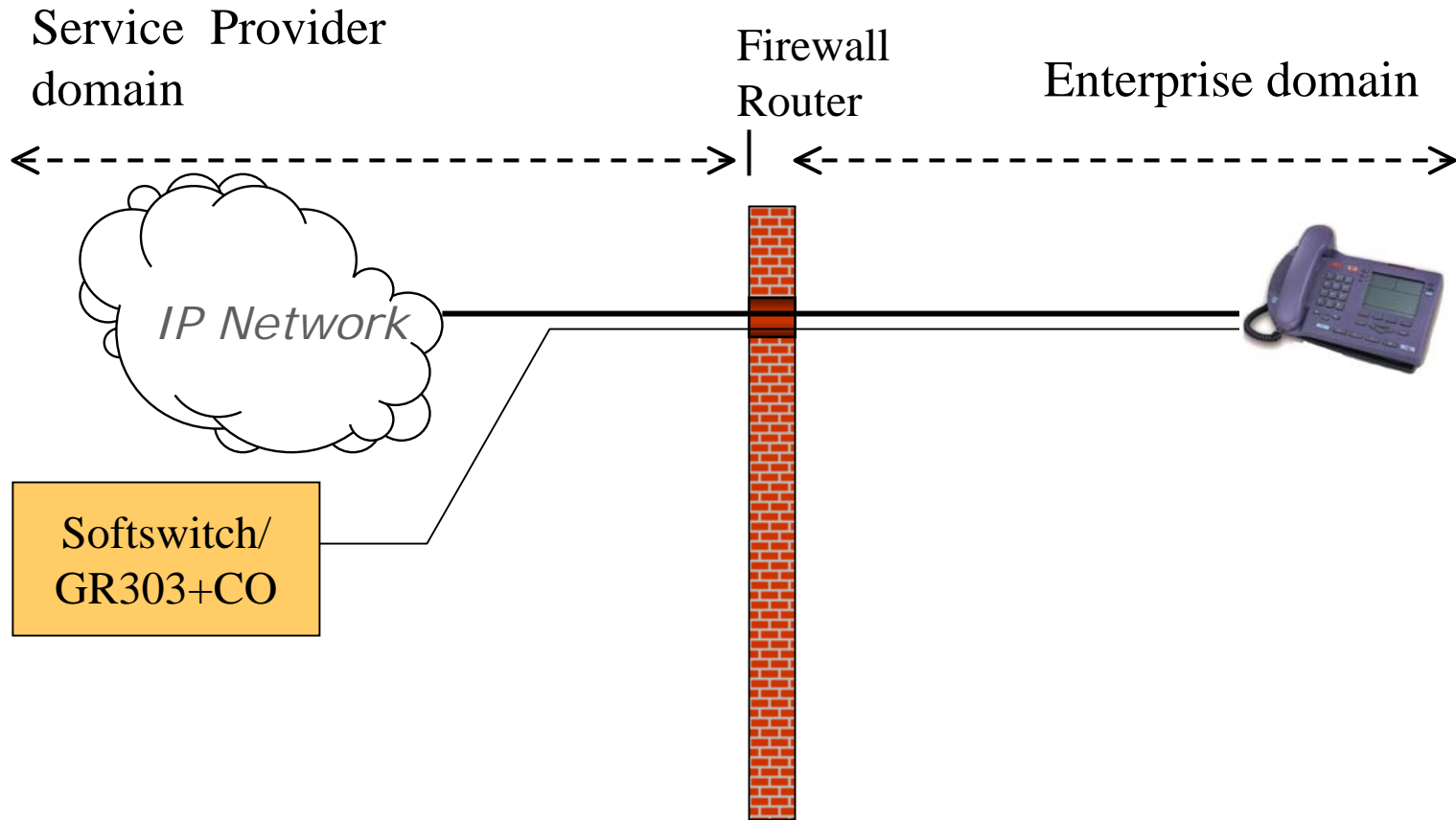
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VQmon/SA embedded into 3<sup>rd</sup> party  
SLA Monitor/ Probe/ Analyzer

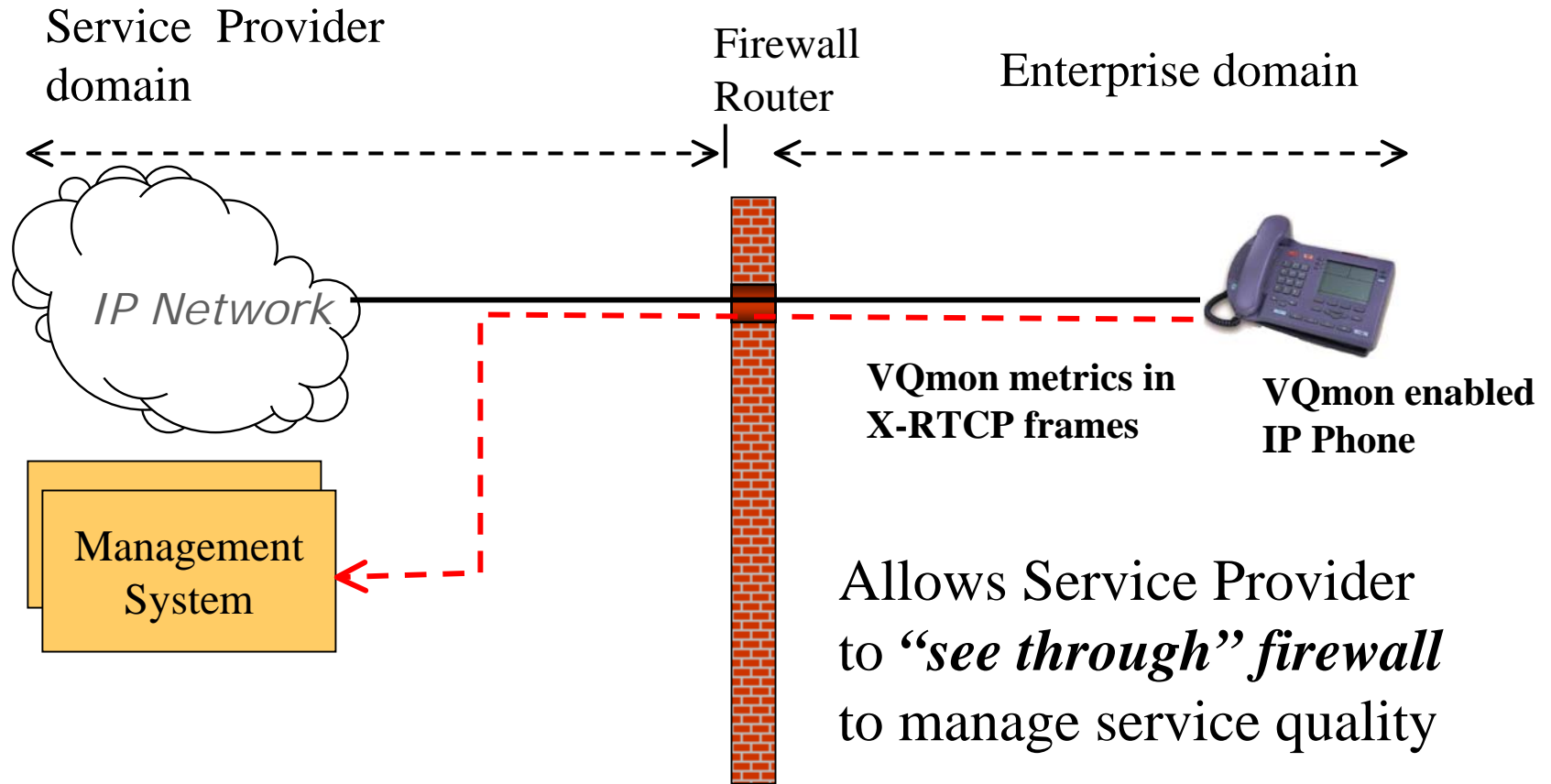


Call quality scores (MOS, R)  
Degradation factors (% due to.....)  
Burst loss and discard data  
Out of order, duplicate.....  
Jitter metrics  
Trace analysis

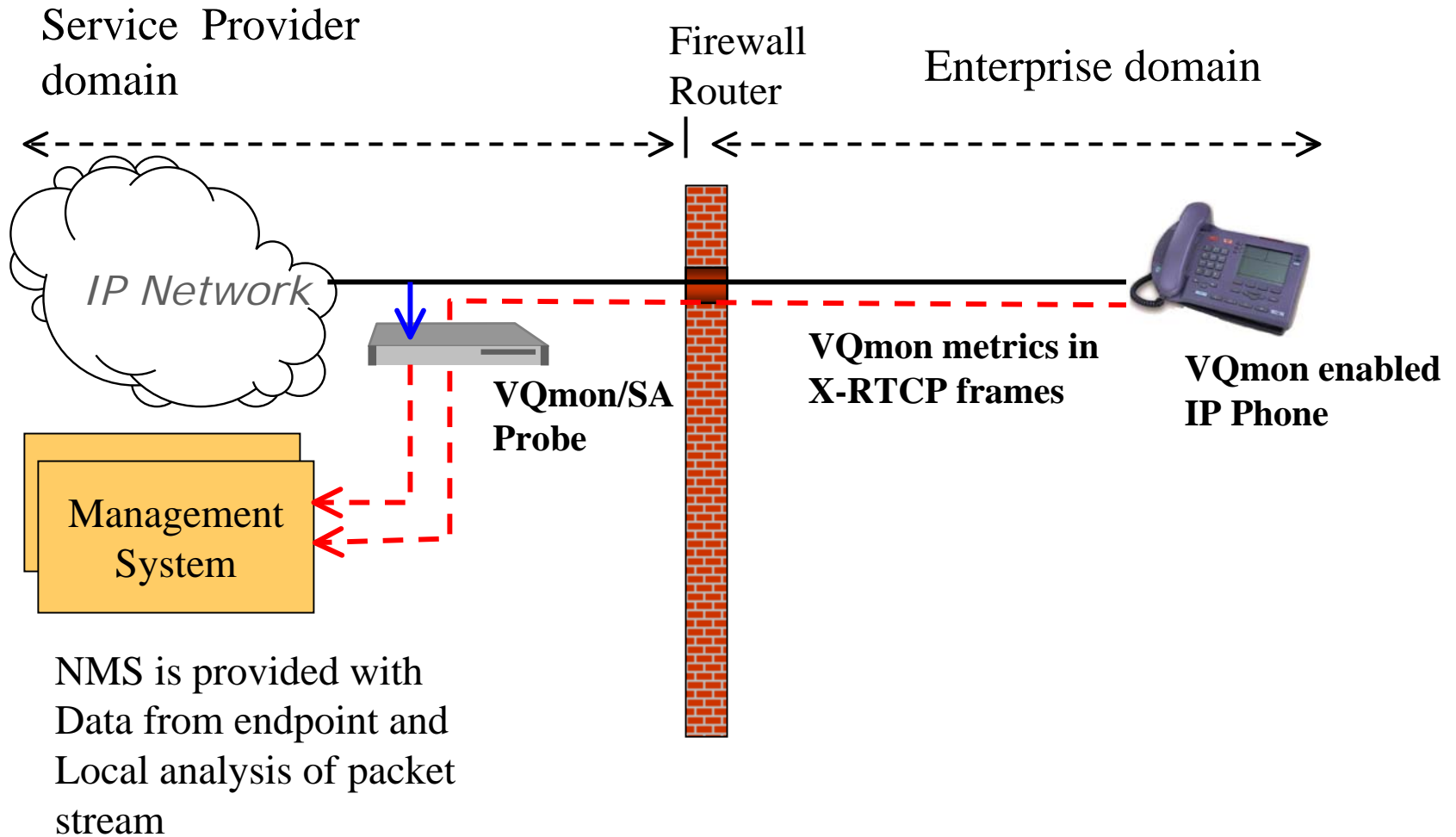
# IP Centrex - Scenario



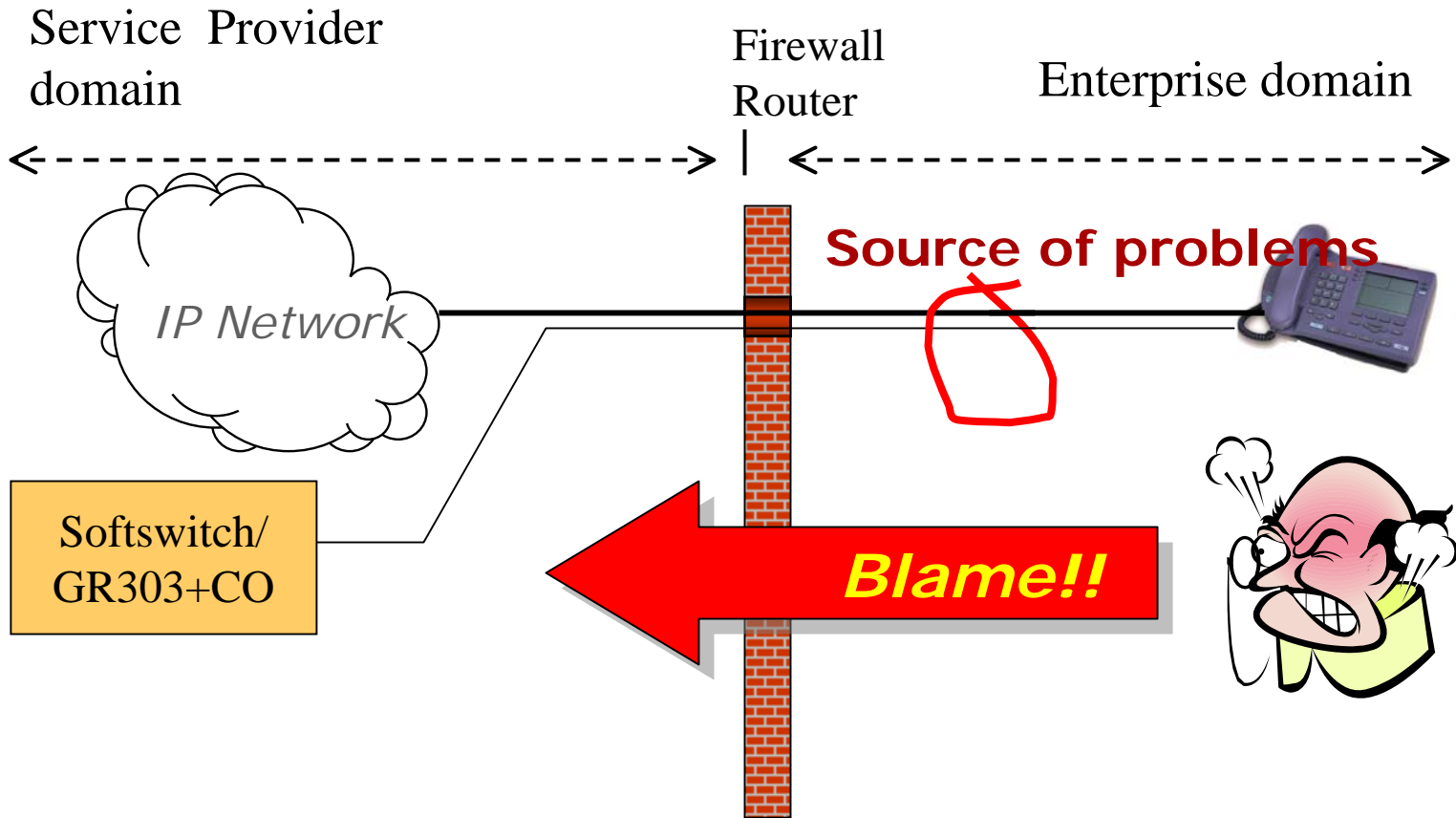
# Solution to IP Centrex problem



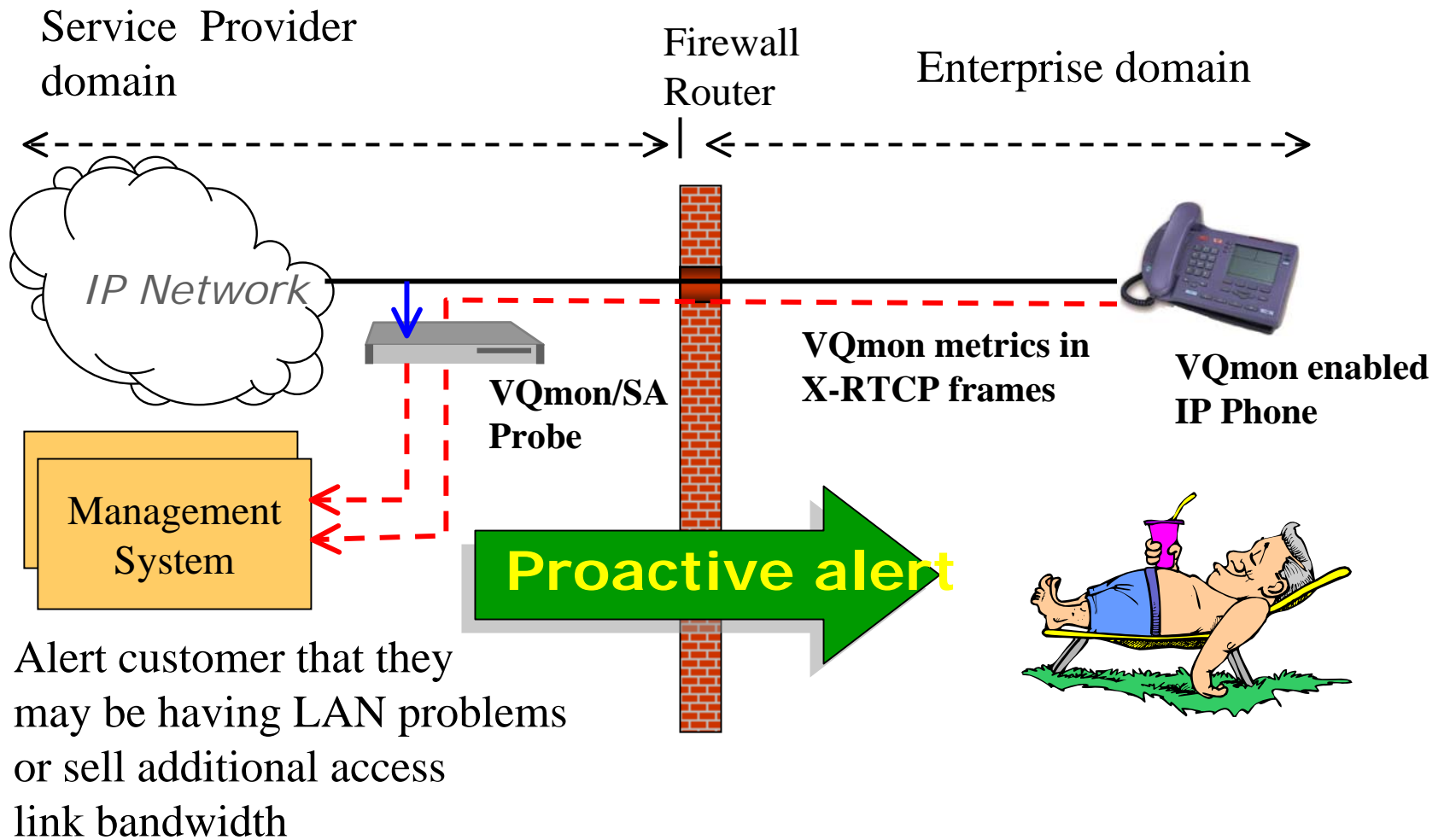
# Solution to IP Centrex problem



# Guilty until proven innocent?



# ..or marketing opportunity?



# Summary

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- Proactive solution to managing customer network problems
- Based on multi-vendor technology
- Same basic monitoring and diagnostic technology is available in:
  - SLA monitoring systems
  - Sniffer/analyzers used for fault isolation
  - Products used by Service Provider and Enterprise

# About Telchemy

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- **Focus**
  - Founded in August 99, first product launched in April '01
- **Focus**
  - Providing essential management infrastructure for IP based Voice and Video services
- **Value Proposition**
  - Reduce direct and indirect operating costs
  - Improve/ maintain quality of Voice and Video over IP services
- **Business Model**
  - Software with high algorithm/ IPR content
  - License and OEM products to equipment manufacturers
- **Technology**
  - Two “Best of breed” products already on the market