

Telchemy

Actively Managing Multimedia

Managing Voice over IP “edge” Services

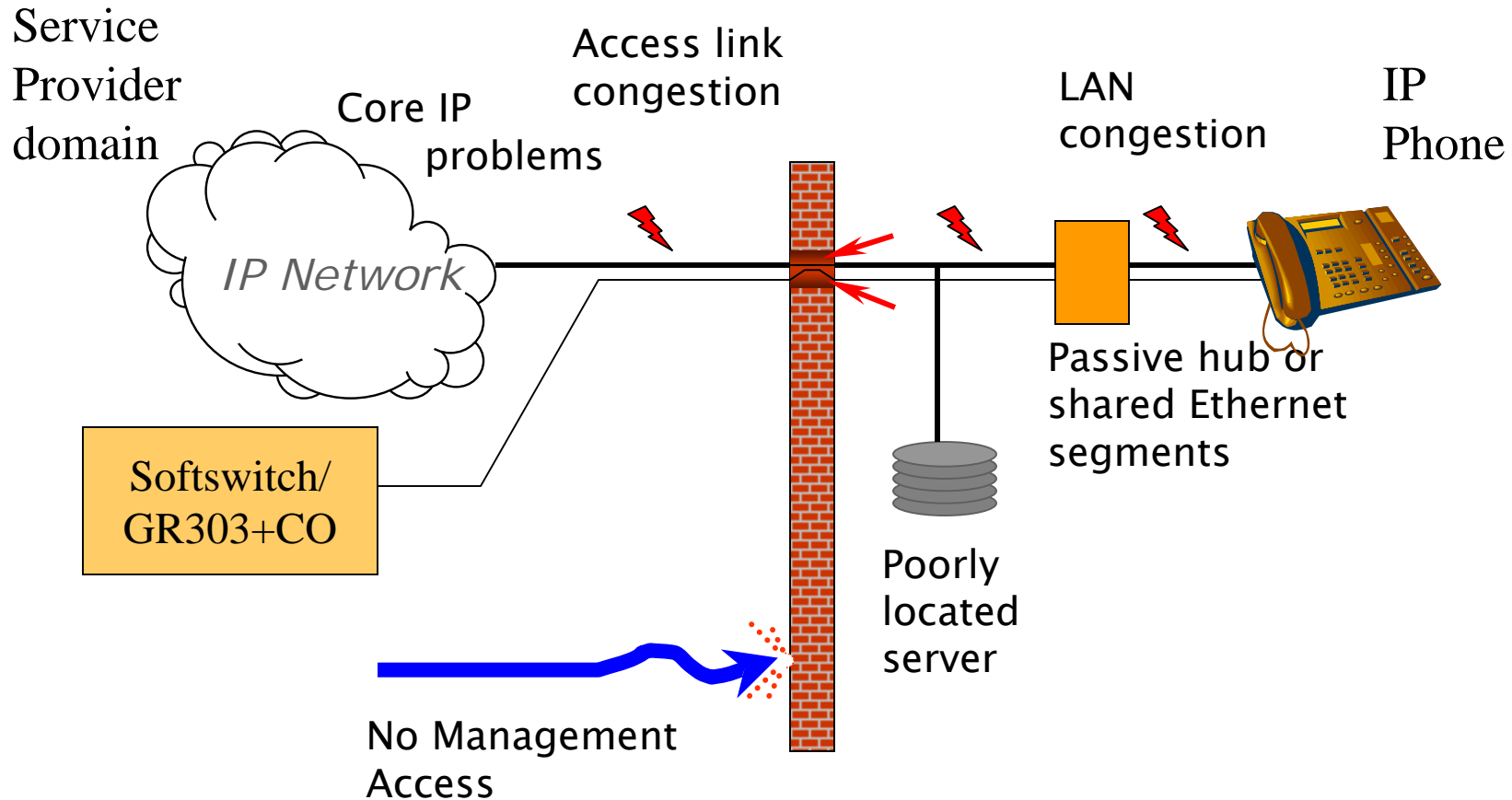
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Voice over IP “edge” Services

- Carriers have high capacity, under-utilized optical/IP networks
- Need to generate new revenue from value-added services
 - *IP Centrex/ Hosted PBX*
 - *Managed IP Services*
 - *Residential/ Small Business VoDSL and VoCable*
- ..but these services rely on low capacity/ trouble-prone access networks and customer access links/ LANs
- Successful revenue generation must be supported by reliable services

Example - IP Centrex Service



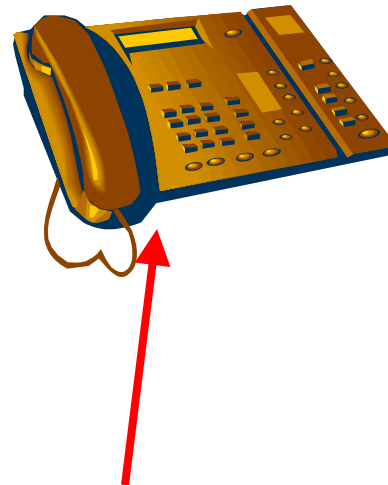
Why study Qosmology

- Some service providers plan to manage using simple loss, jitter, delay metrics
- Why is this a *not a good idea?*
 - Networks don't suffer from “average” impairments
 - 1% bursty loss can sound worse than 5% random loss
 - 5mS of jitter (reported via RTCP) can sound terrible
- Result
 - User complains about service quality and the service provider doesn't know why
 - QoS problems appear insoluble
 - Service provider loses customer

Qosmology 101

IP Phone/ IP CPE

1. Measure *distribution* of lost and discarded packets when estimating QoS

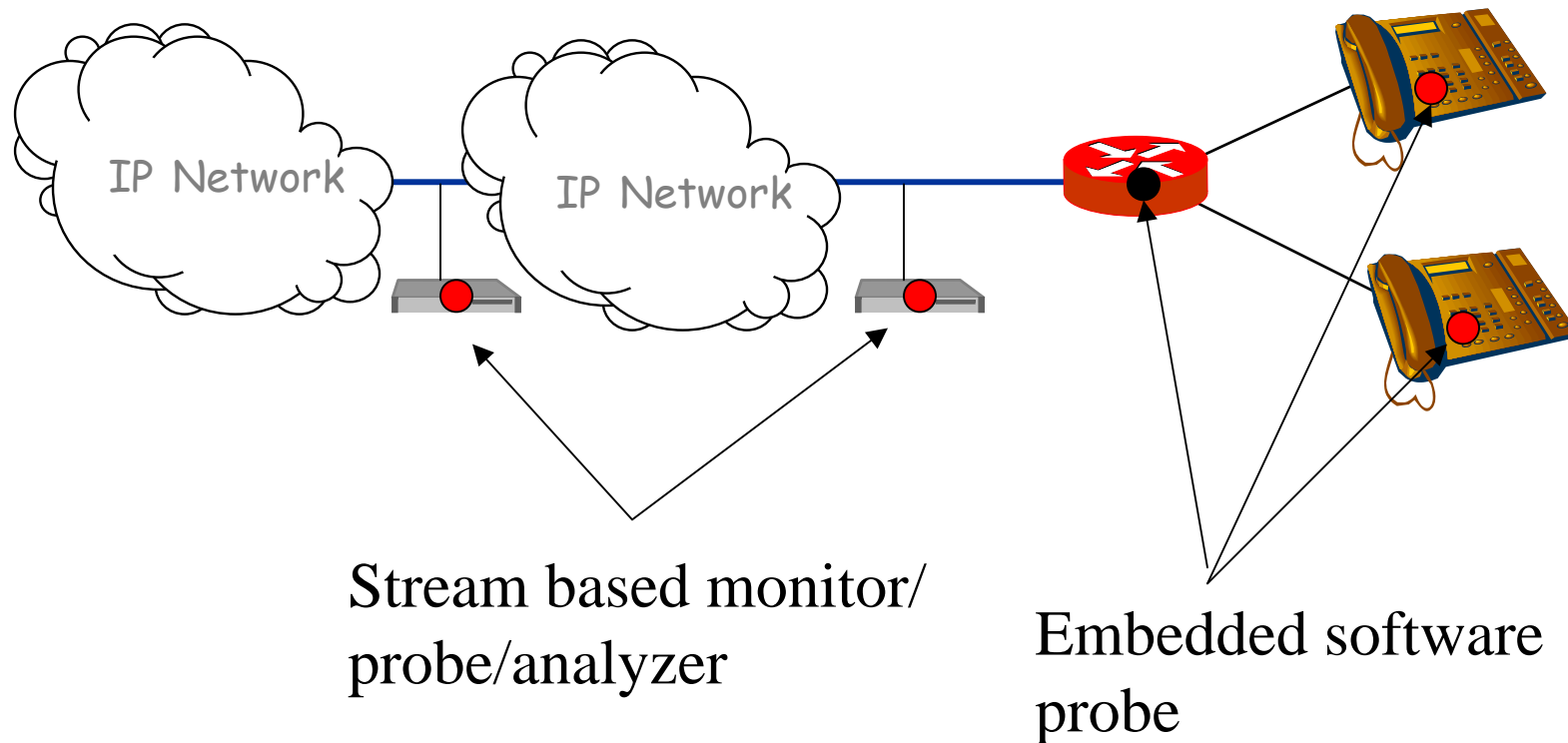


3. Report data via RTCP or signaling protocols

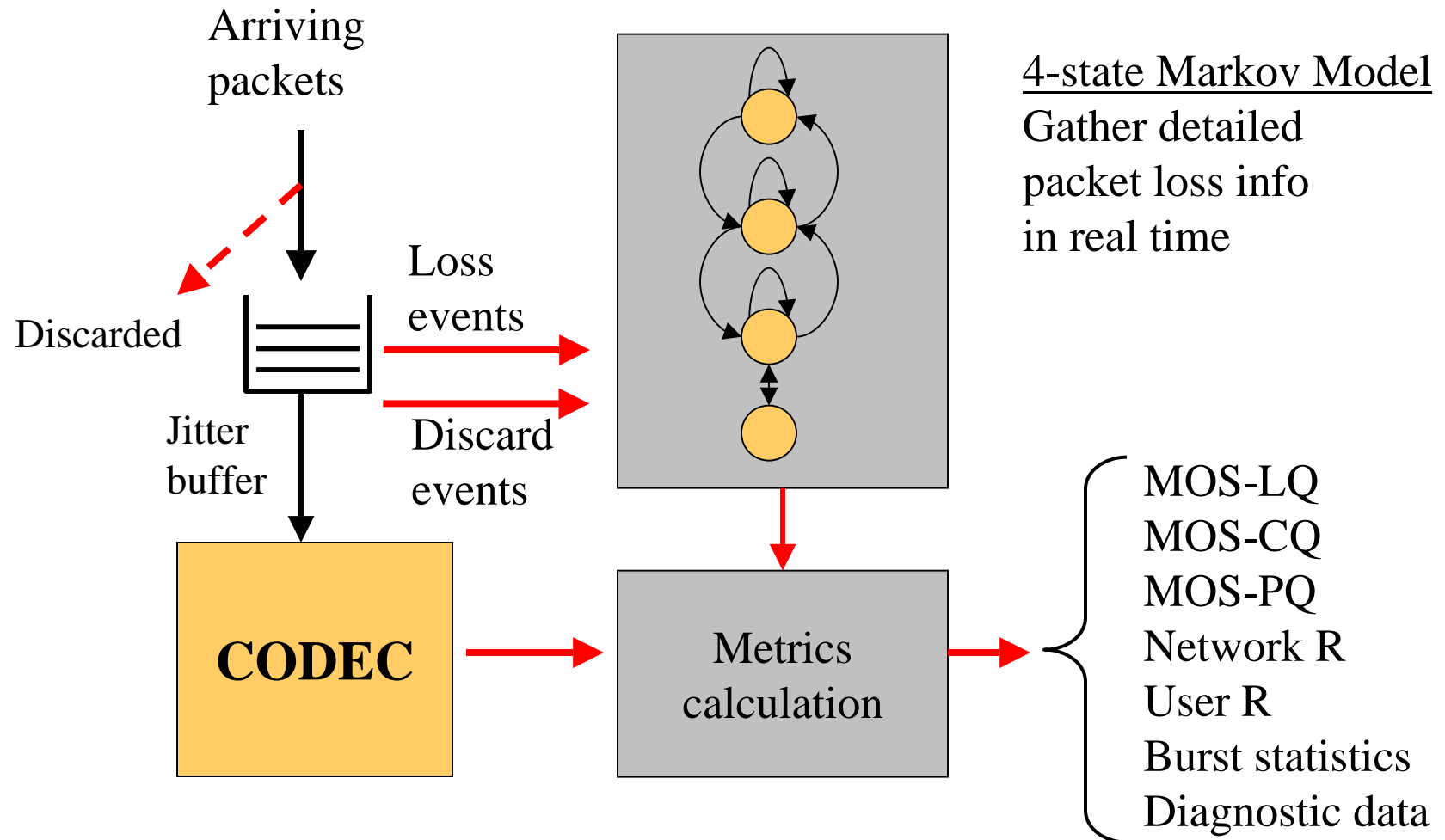
2. Get data from a *software probe* embedded into CPE (cheaper, less hardware to fail)

Qosmology 201

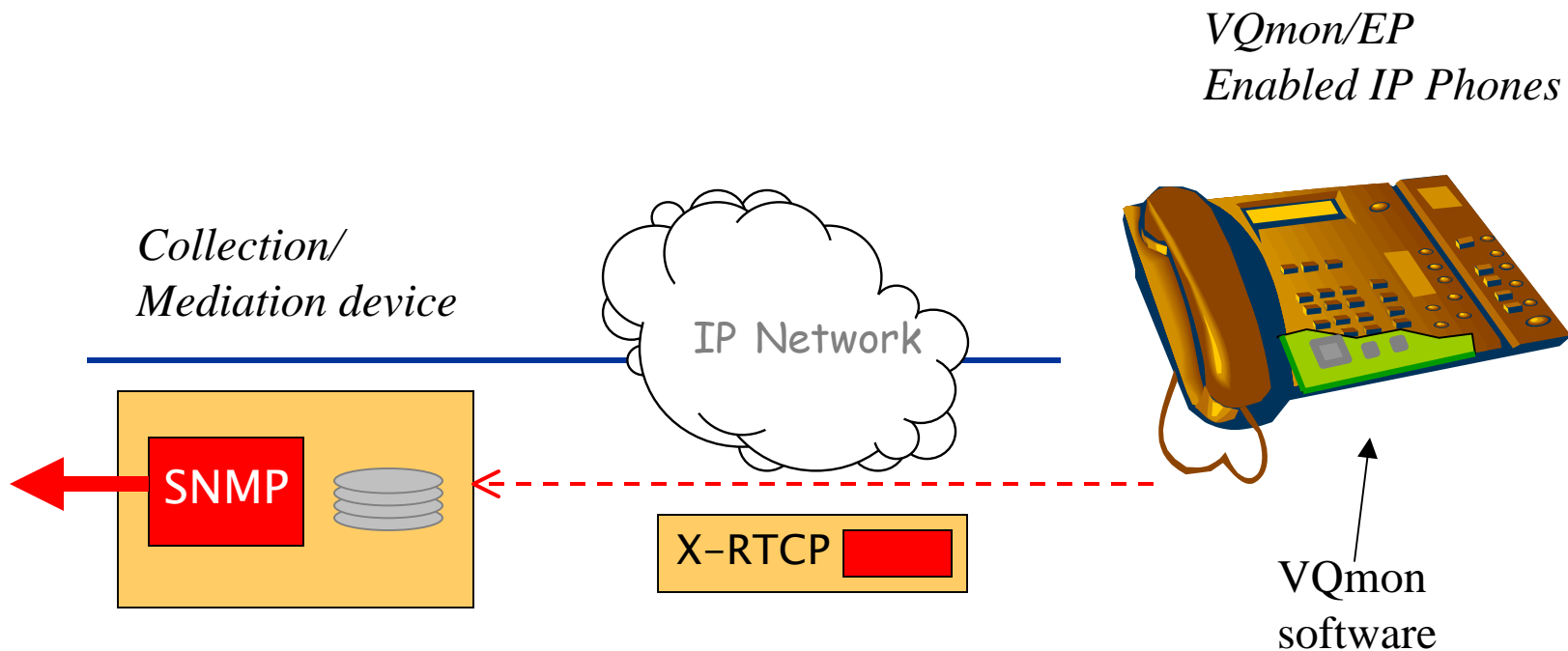
4. Use both Endpoint and Stream based problems to detect and diagnose problems



Qosmology 301 - Monitoring

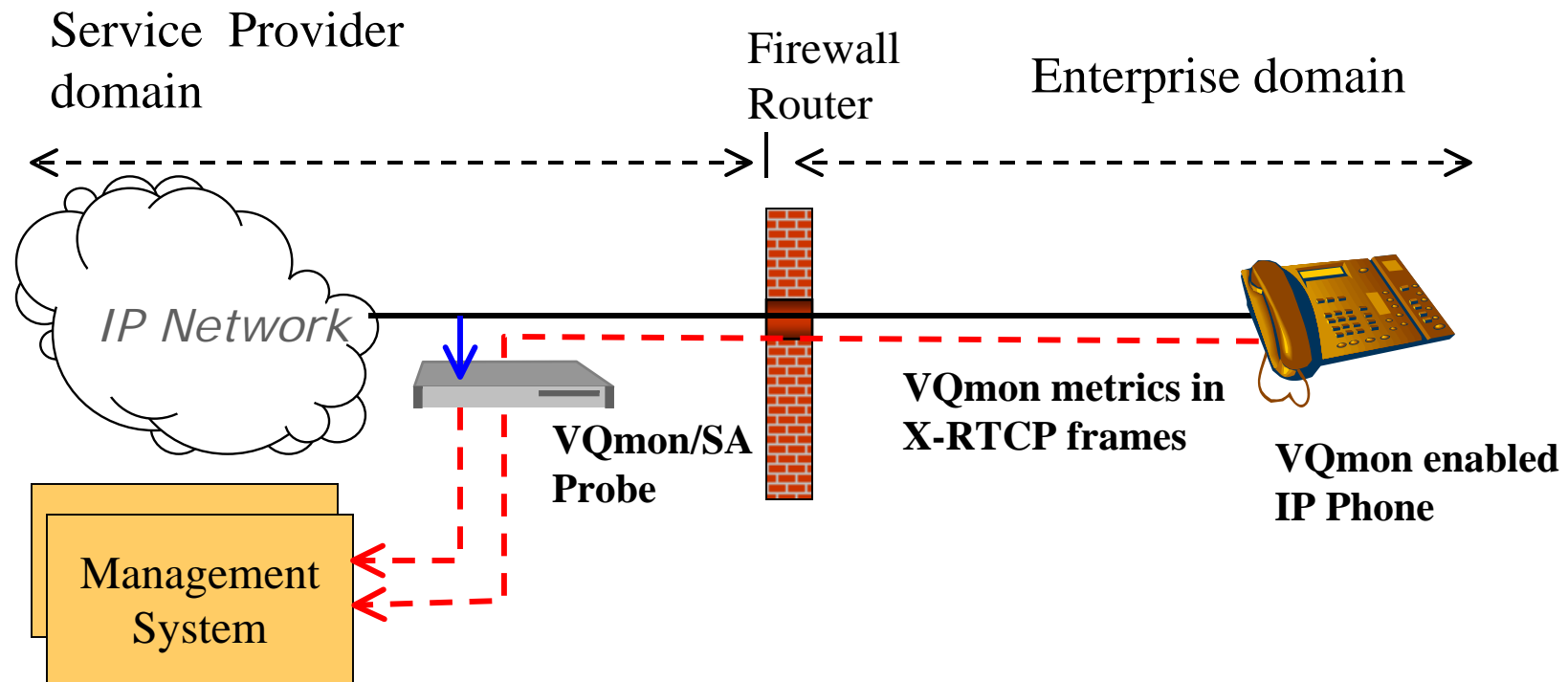


Qosmology 301- Reporting



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

Solution to IP Centrex problem



NMS is provided with
Data from endpoint and
Local analysis of packet
stream

Why study Qosmology?

- Basic IP metrics are **not enough**
- Need to understand how IP problems affect user
- Need to be able to detect and resolve problems
- VoIP is still viewed with suspicion by many telecom managers
- Qosmology = science needed to create a reliable revenue stream from VoIP

About Telchemy

- Provides software technology for non-intrusive and active Voice over IP service quality monitoring and problem diagnosis.
- Pioneered an embedded software approach - provides a lowest cost - network wide real-time monitoring
- VQmon technology licensed by Artiza, Brix Networks, Brooktrout, Finisar, Nortel Networks, Visual Networks
- Key partnerships with leading DSP software vendors to incorporate key software components directly into Vocoder - makes integration easy
- VQmon has been deployed in the field for over 12 months and is used by many service providers and key Enterprise networks

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