

Managing for Service Quality in 4G Networks

Panel on “4G – Drivers and Challenges for Wireless Network Evolution”

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Key Challenges in Managing for Service Quality

- **Define a structure for Service Quality Management**
- **Gain visibility into service performance characteristics**
- **Optimize the usage of your expensive network**
- **Put management information in the right place at the right time**

Example Structure of Quality Indicators

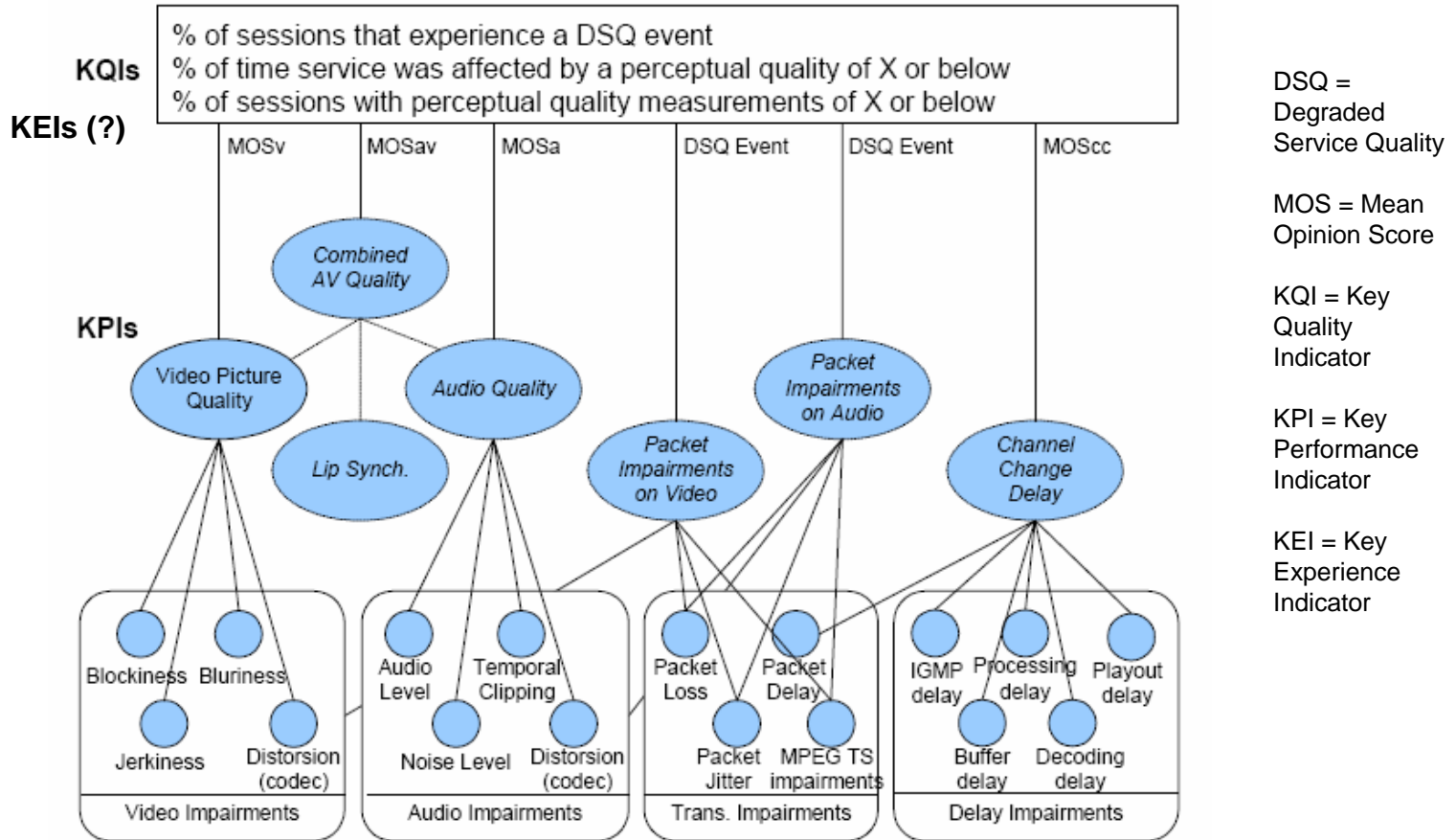
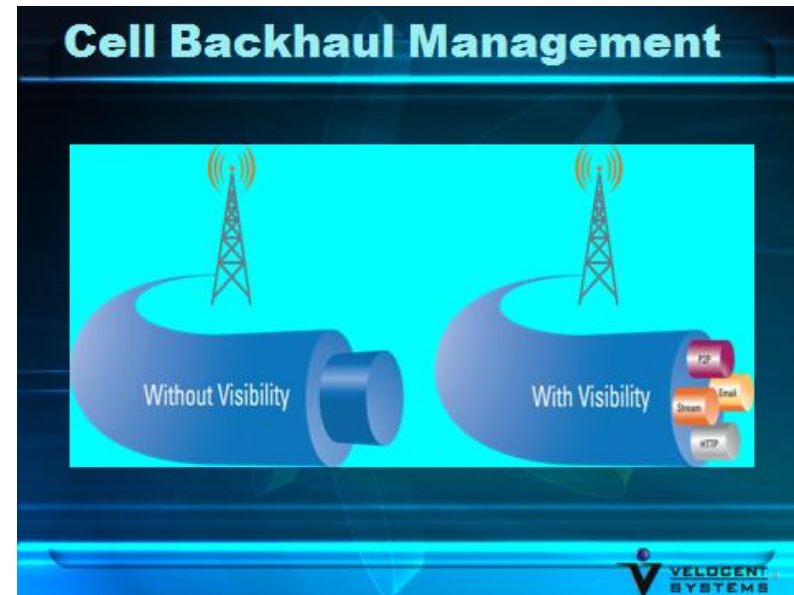
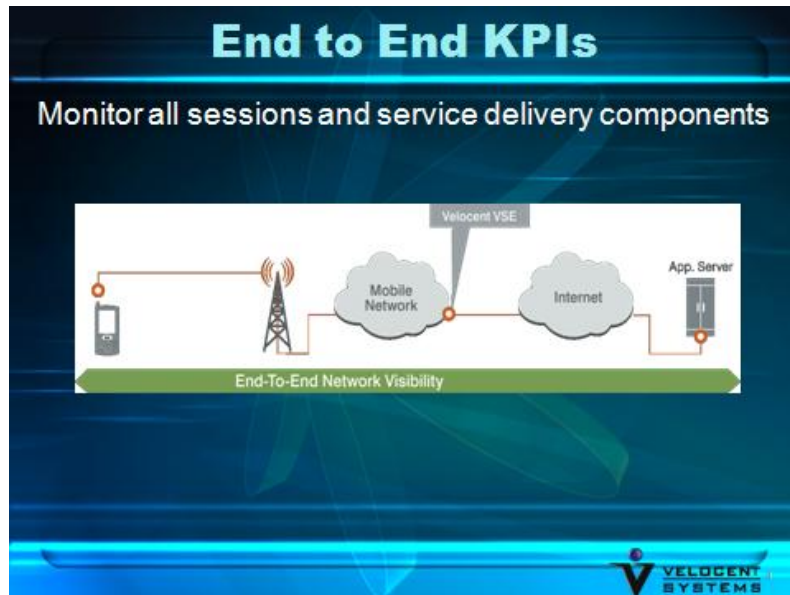


Figure 4-1 KPIs and Measurements

Source: TM Forum GB 938 "Video Over IP: Wireline and Wireless Application Note," Jan 2007

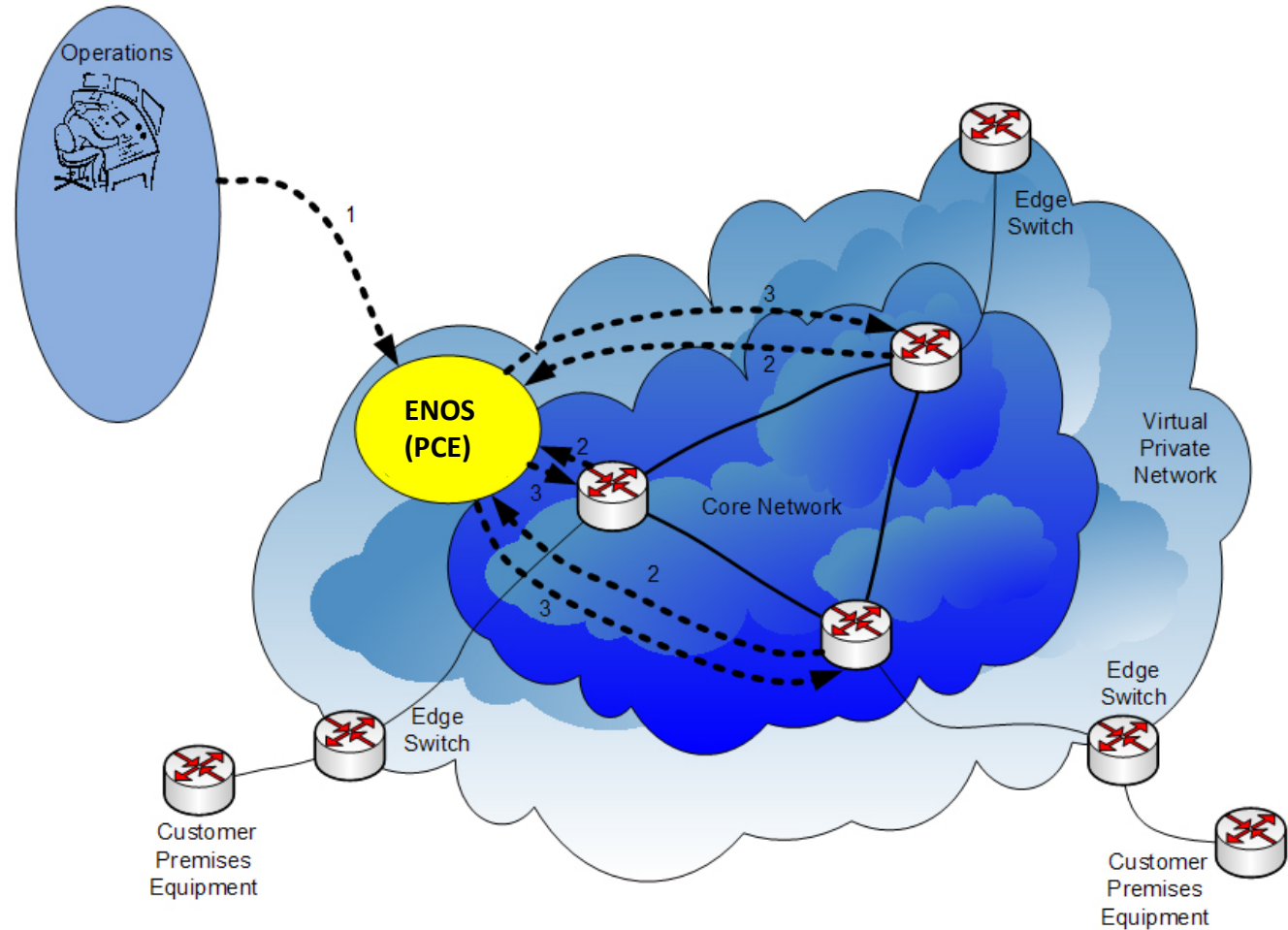
Measurement Technology for Visibility



Source: B. Peterson, "Achieving Service Excellence,"
3GSM, Feb 2008. (Courtesy Velocent Systems)

Dynamic Optimization of the Core Network

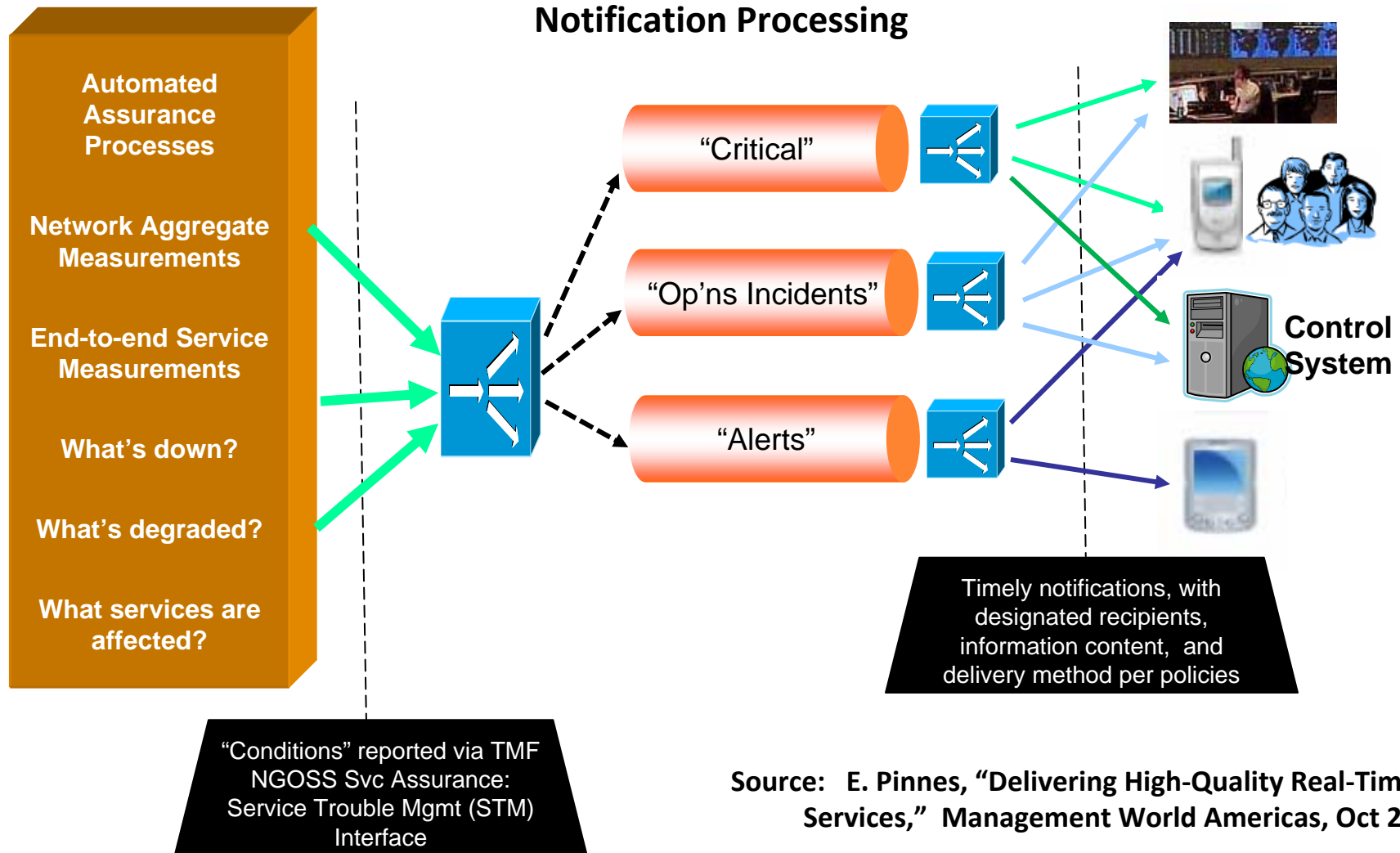
- Use of Path Computation Element (PCE) per IETF RFC 4655 et seq.
- Augment basic PCE functionality with *dynamic optimization* implemented in Elanti Network Optimization System (ENOS)
- Introduce sophisticated computational techniques with *dynamic performance*
- Intelligent optimization of traffic flows according to traffic demand and CoS



Source: E. Pinnes, "Delivering High-Quality Real-Time IP Services," Management World Americas, Oct 2007

Policy Driven Notification for Service Management

Multi-channel Policy Driven Notification Processing



Source: E. Pinnes, "Delivering High-Quality Real-Time IP Services," Management World Americas, Oct 2007