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Streaming Media

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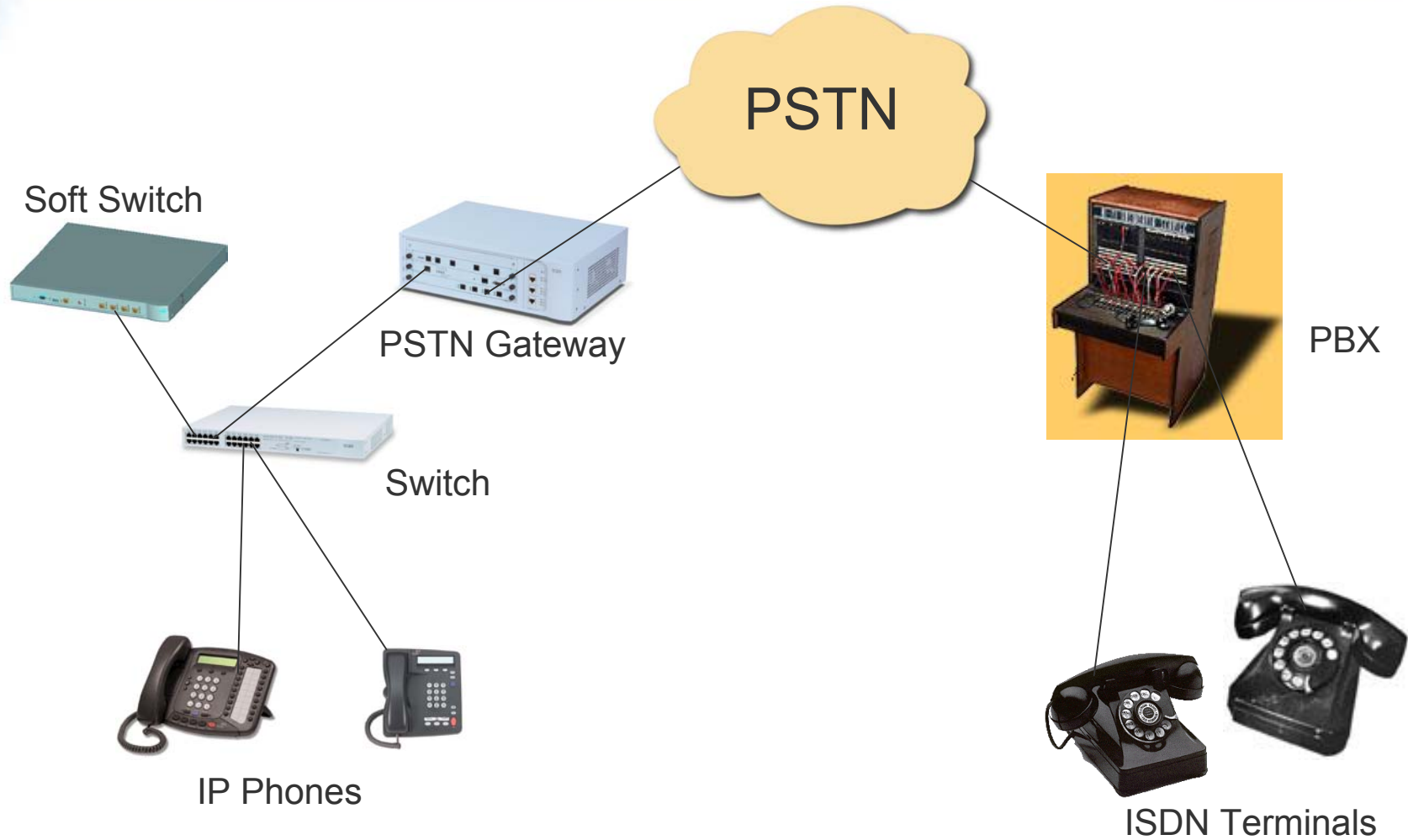
Streaming applications

- Video
  - Consumer electronics
  - Webcam
  - Security
- Automation
  - Telemetry
  - Control
- Audio
  - Consumer electronics
  - Telephony

Reliable, Timely, Ordered Delivery

Competitive analysis

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- Video
  - 802.3 vs. 1394
  - 802.3 vs. ATM
  - 802.3 vs. Infiniband
  - 802.3 vs. DeviceNET
  - 802.3 vs. ProfiBus
  - 802.3 vs. FibreChannel
  - **802.3 vs. ISDN-BRI**

Competing networks

Reliable delivery

- ## 802.3
  - Voice applications typically accept some percentage of lost packets – other applications may not
  - Concealment of lost packets
    - 4-12 "16 bit fixed point DSP" MIPS
    - 2-4K program space
    - 2-8K data space
    - Data networks are typically over engineered to minimize packet loss

- ## ISDN-BRI
  - Can't happen

Timely delivery

- ## 802.3
  - Voice applications typically balance total latency while minimizing too late delivery
  - Cost of buffer due to packet to packet delivery jitter
    - 1-3 "16 bit fixed point DSP" MIPS
    - 1-3K program space
    - 2-8K data space
    - Data networks are typically over engineered to minimize jitter

- ## ISDN-BRI
  - Can't happen

Other problems

- 802.3
  - Packet buffers are several KB
  - Extraneous datagrams
  - Out or order delivery correction
  - Changing landscape nullifies certain cost savings

- ISDN-BRI
  - Voice buffers of 2-4 bytes
  - Point to point
  - Out of order delivery can't happen
  - 35+ years of cost honing

Not too pessimistic

- 802.3 based telephony is growing
- 802.3 volumes drive many cost saving
- TOC is in favor of 802.3

However

- In 2002 IP PBXs accounted for less that 10% of the PBX market

802.3 improvements

- Guaranteed latency bounds packet to packet jitter

- Reliable delivery eliminates packet loss concealment

- Together latency and reliability reduces numerous other issues and provide Ethernet based technology to compete more effectively

Thank You

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