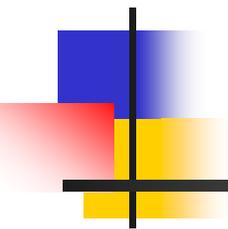
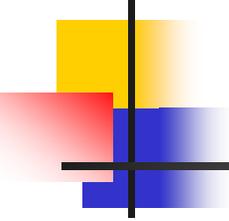


# Voice over IP



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Issues  
&  
Impacts

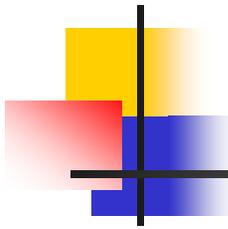


# VoIP is great!

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- New features enhance end users productivity
- Provides centralized management for telecom administrators
- Allows link of voice with web servers and database applications
- Combines overhead of voice and data expertise and infrastructure



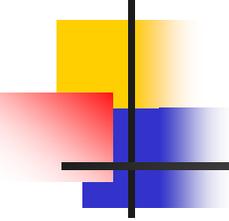


# Why the slow deployment?

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- Currently VoIP is more complex to administer than traditional voice
- VoIP has been more expensive to deploy than traditional voice
- Traditional telephony is globally deployed and works well
- Several high-profile VoIP implementation failures among large enterprise adopters



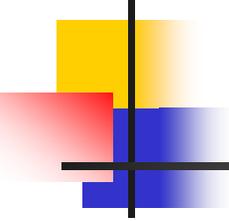


# VoIP Challenges

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- E 911 – Public Safety
- Security
- Interoperability
- Network Infrastructure Readiness
- Power Requirements
- Network Administration and Staffing
- Organizational Readiness
- Call Quality





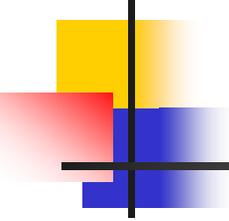
# E 9-1-1

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Keeping track of a user within the VoIP network for emergency location information is a challenge.

No standard method of handling E911 in a VoIP environment.



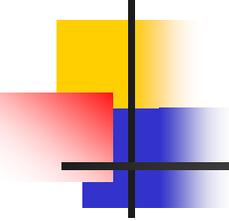


# VoIP Security Risks

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- Eavesdropping
- Denial-of-Service
- Spam
- Phishing
- Redirect attacks





# Interoperability

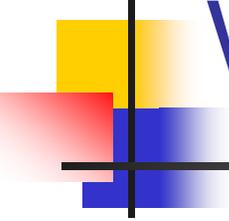
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VoIP is still an emerging technology with:

- New and developing standards
- Changing feature sets
- Competing approaches

Making interoperability a major challenge.





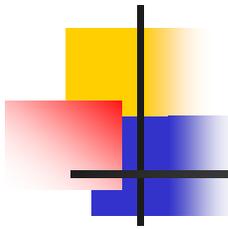
# VoIP Network Readiness

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*Is the network ready to deliver toll-quality voice services?*

- Preliminary Data Network Assessment
- Analysis of Voice Traffic Requirements
- Network Health and Capacity Planning





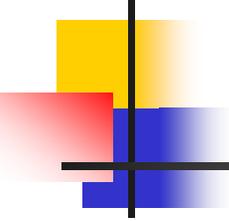
# Power

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Power over Ethernet (PoE) provides IP phones with power through VoIP enabled Ethernet switches.

UPS and/or backup batteries and generators are necessary to maintain dial tone during a power outage.



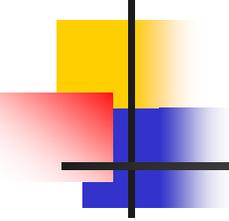


# VoIP Network Administration

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- VoIP involves complex applications with high availability and performance requirements
- Implementation usually requires continued support and migration of legacy systems
- Support requires skilled staff



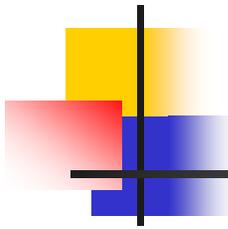


# Organizational Readiness

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- VoIP requires consolidation of IT Management of Voice and Data.
- Unknown territory -VoIP is new to IT organization
- Technology cross training
- Organization restructure requires mandated leadership





# Call Quality

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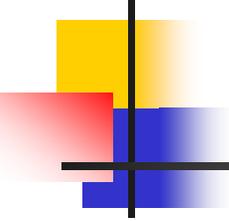
Successful VoIP implementations are based on user's perception of call quality.

Expectations are high based on traditional voice service levels.

Inherent characteristics of IP networks cause:

- Echo
- Noise
- Distortion





# VoIP

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- VoIP has legitimate potential
- Implementations are gaining momentum
- Technology is not yet mature
- Telephone systems are high profile
- VoIP requires careful planning

