



# Managing IT Services in a Converged IP Environment



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# Acknowledgements

- The initial work on this topic was conducted while I was working at SRA and is based, in part, on the experiences of SRA International, Inc. in support of the Army National Guard Network Operations Security Center (NOSC).



# Future IT Environment:

- Robust & Reliable Voice, Video, and Data IT Services Required for Mission Accomplishment
- On-Demand Access to Full Range of IT Services from Common-User Devices
- Seamless Delivery of IT Service across Wireless & Connected Environments



*Future Converged IT Services will be new services consisting of features from existing IT Services with unique inter-relationships.*

# Assumptions & Challenges

## Assumptions

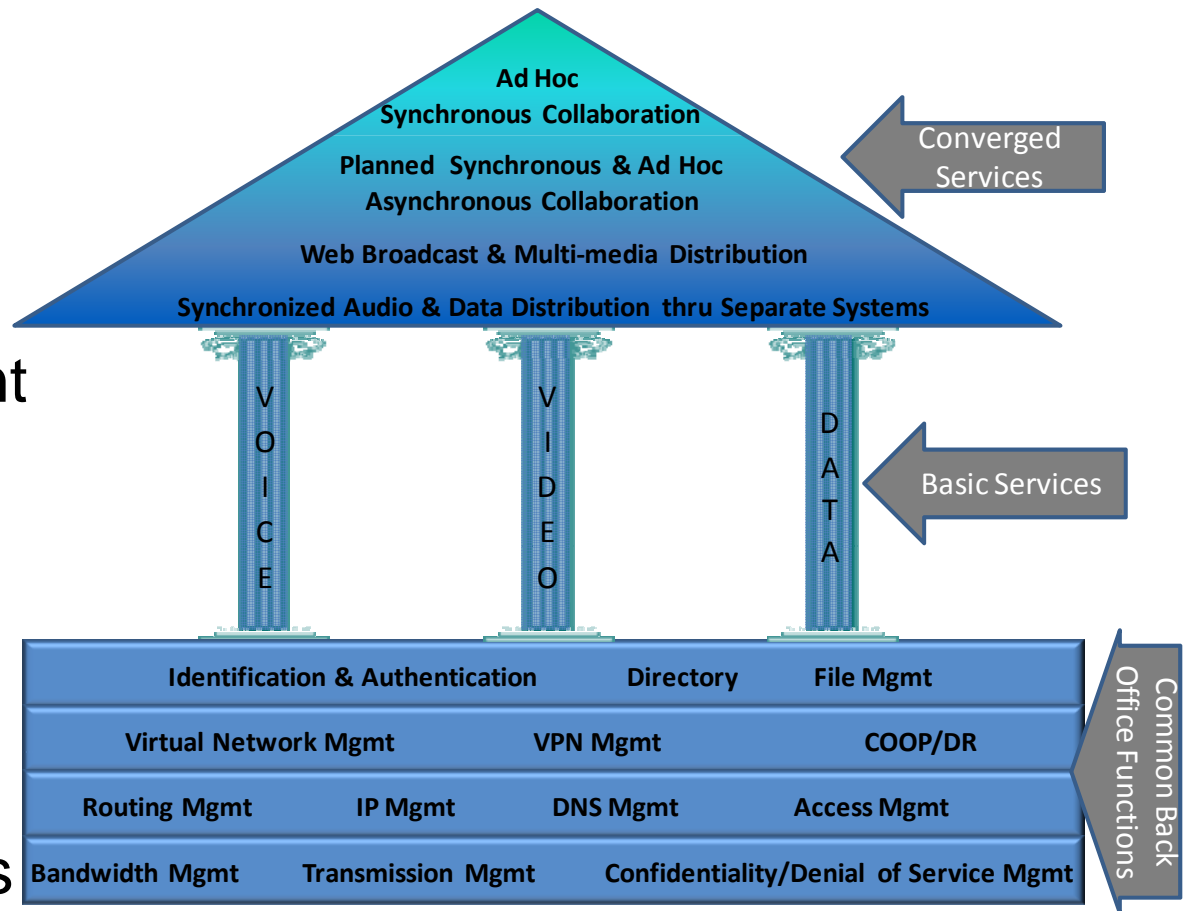
- Running in a converged IP infrastructure
- Mission accomplishment is dependent upon effective and efficient use of IT resources
- User satisfaction with IT services is a primary goal of the IT operations group

## Challenges

- Increased awareness of IT by users of IT capabilities and potential
- User focus on content & service as it applies to their mission
- Rapid evolution of technology

# Today's Situation

- Separate management infrastructure for each domain
- Lack of management (tools & techniques) for converged services
- Consumerization driving integrated multi-media services



*Today's Converged IT Services are built upon a foundation of common IP management tasks and traditional IT services.*

# Approach to Managing Converged Services

- Uniquely Define Converged Services Based on User View
  - Composed of user identifiable characteristics
- Understand the User's Key Performance Indicators (KPIs) and Associated Parameters
- Build Monitoring Thresholds Across the Service Delivery Map Based on Variations in KPI parameters
  - Assign Service Ownership
  - Organize to Support Service Delivery vice Technology Operations

# Defining Services

| WebEx Service                           | Voice     | Video     | Data      | Special Characteristics |
|---|-----------|-----------|-----------|-------------------------|
| Directionality<br>(Uni or Bi)           | 2-way     | 1-way     | 2-way     |                         |
| Timeliness<br>(Real-time or Delayed)    | Real-Time | Real-Time | Real-Time |                         |
| Scope<br>(1 – 1, 1 – M, M – M)          | M – M     | 1 – M     | M – M     |                         |
| Mode<br>(Still, Partial or Full Motion) |           | Partial   |           |                         |
| Persistence<br>(Stored or Transient)    |           |           | Transient |                         |
| Mobility<br>(Mobile or Fixed Access)    |           |           |           | Fixed                   |
| Presence<br>(Y/N)                       |           |           |           | Yes                     |
| Coordination<br>(Ad Hoc or Planned)     |           |           |           | Both                    |

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# User Key Performance Parameters

| WebEx Service KPIs                   | Voice   | Video   | Data   | Special Characteristics |
|--------------------------------------|---|---|--|-------------------------|
| Directionality (Uni or Bi)           | Ability to send & receive audio with no distortion or gaps  | The image is received in its entirety without pauses in painting the image  | Presence data, Chat, and Whiteboard data updated without loss of content       |                         |
| Timeliness (Real-time or Delayed)    | No noticeable delay in transmission   | Receipt of video image is timely & consistent with receipt of audio   | No noticeable delay in transmission  |                         |
| Scope (1 – 1, 1 – M, M – M)          | All participants have audio reception at acceptable level based on the capabilities of their receiving device | All participants receive the video at approximately the same time, consistent with the capabilities of their receiving device | Data transmissions received by all participants at approximately the same time |                         |
| Mode (Still, Partial or Full Motion) |   | Video image is complete without gaps or missing elements  |  |                         |

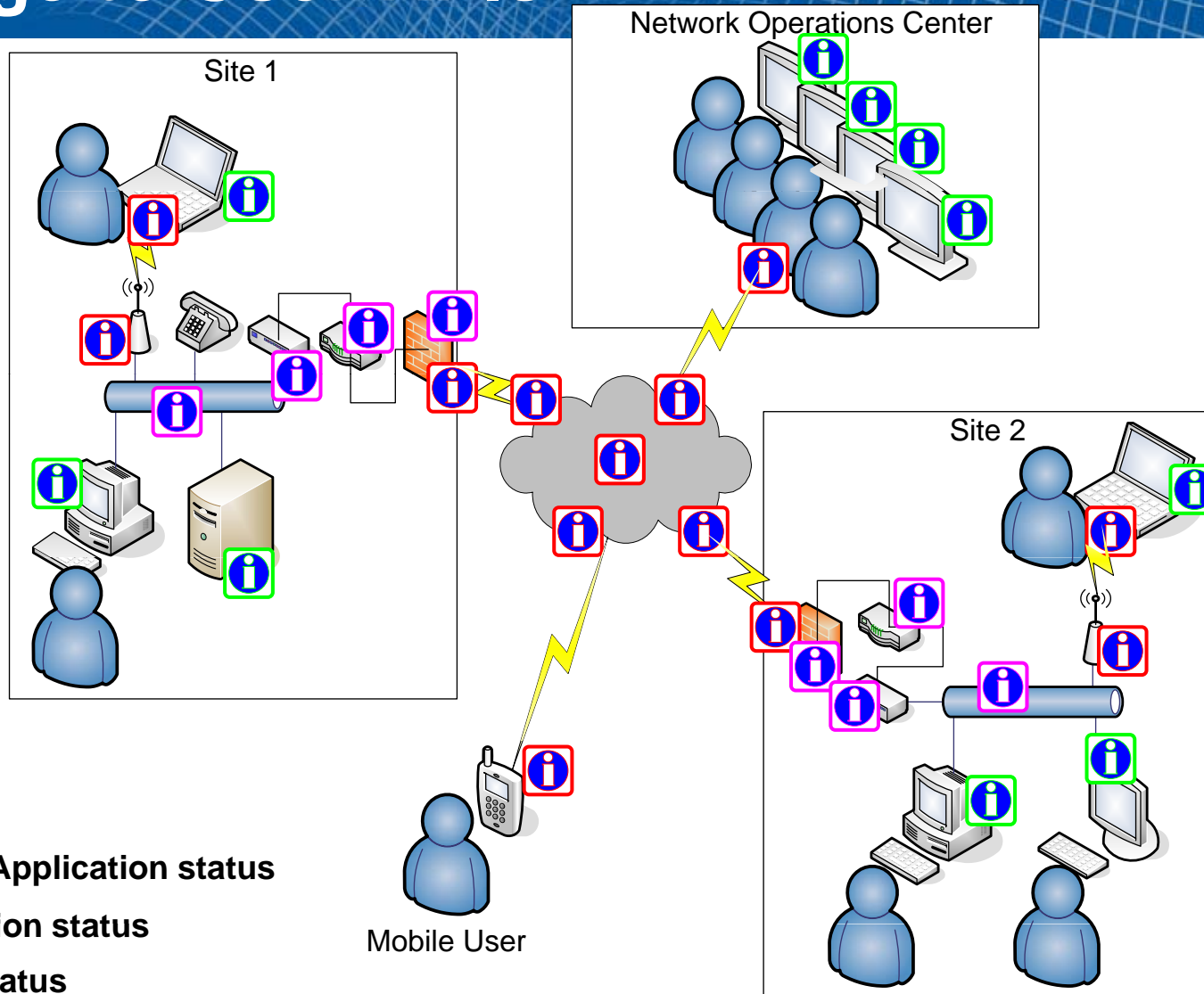
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# User Key Performance Parameters (continued)

| WebEx Service KPIs                | Voice | Video | Data   | Special Characteristics   |
|-----------------------------------|-------|-------|--|---|
| Persistence (Stored or Transient) |       |       | No residual impact on local device from having participated in the session |   |
| Mobility (Mobile or Fixed)        |       |       |  | Able to connect to the service from any thin client web browser without requiring administrative privilege to user device |
| Presence (Y/N)                    |       |       |  | All participants' status was visible to all   |
| Coordination (Ad Hoc or Planned)  |       |       |  | Service is able to be initiated with no advance notice or can be scheduled thru existing calendar system                  |

# Manage to User KPIs



-  System & Application status
-  Transmission status
-  Network status

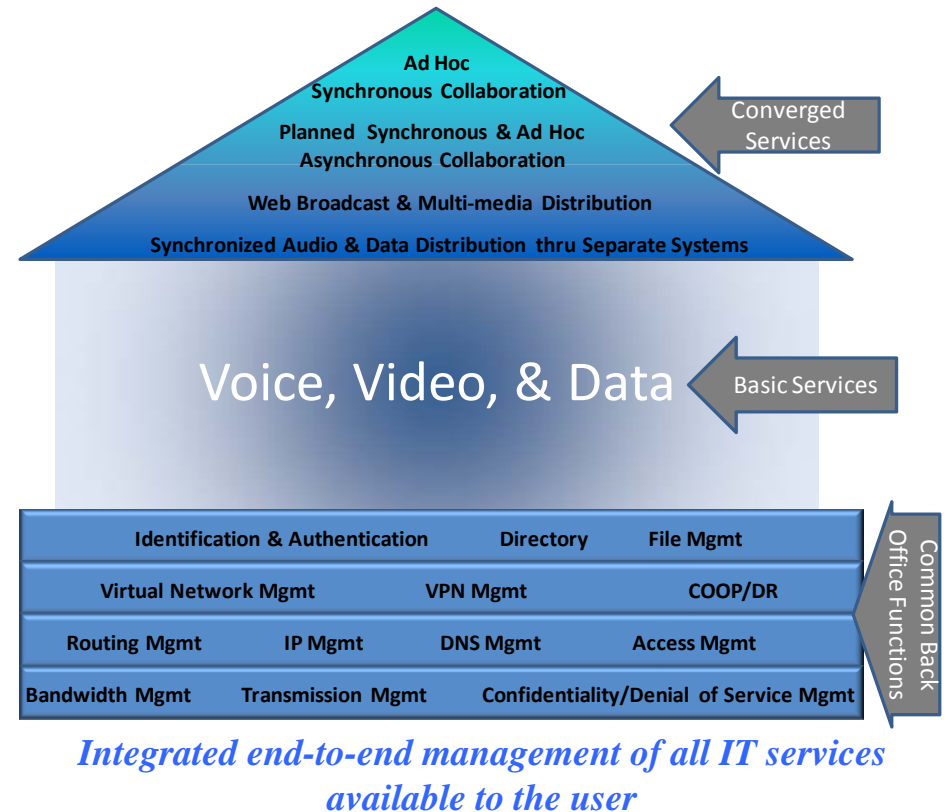
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# Implications

- Tools
  - Need network analyzer probes in the mix coupled with traditional network status measures
  - Visualization tools that combine network, system, and application performance into a consolidated view
  - Consider limited use of synthetic transaction devices at key locations within enterprise to approximate end-user experience
- Processes
  - Configuration and change management become critical as a mistake can bring down all IT services
  - Increased emphasis on service management
- Organization
  - Integration of previously separate sections into one infrastructure operations cell
  - Significant training requirements – everyone in the IT organization is going to have to learn at least one new skill
  - Need to identify the converged service owners

# Summary

- Users will demand more, not less, converged IT services in the future
- Organizations will demand “telephone” reliability with “data” flexibility for converged IT services
- IT O&M organizations will be held accountable for the secure, efficient, and reliable delivery of these converged IT services



IT O&M organizations must start now to restructure the tools, techniques, and organization to meet this challenge