Demystifying Audio-Visual Design

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Overview

Human Experience and Audio-Visual

Audio-Visual Design and Construction

Design Coordination and Technology
Human Experience & Audio-Visual
Human Experience Design

+ Human experience aims to create positive outcomes in the design process by focusing on the user

+ Understanding a user’s intention is **critical** to creating a positive experience
Experience Design & Audio-Visual

Understanding Client Needs

+ Who is the end-user?

+ How can audio-visual technology improve the user’s experience in the space?

+ How does the user utilize audio-visual technology today? In the future?
Choosing the Audio-Visual Project Delivery Method

- Design-Bid-Build (Consultant led)
- Design-Build (Integrator led)
Audio-Visual Design & Construction Process

Exploration & Analysis
+ Audio-visual needs assessment meetings
+ User groups
+ Costing exercises
AV Design & Construction Process

Design

+ Space Planning
+ Coordination with other Consultants (Interior Designer, M+E)
+ Preparation of Contract Documents
Audio-Visual Design Drawings
Audio-Visual Design & Construction Process
Audio-Visual Design & Construction Process

- Audio-visual Drawings and Specifications issued to integrators for a supply and installation contract
- Bids are reviewed for technical compliance and price
AV Design & Construction Process

+ AVIXA recommendations:
  + Stick with the same provider after a design only contract
  + Include construction administration services with the design contract
  + Switching providers can lead to miscommunication, delays, and extra costs
Audio-Visual Design & Construction Process

Implementation

- Shop Drawings, Site Inspections
- Final Deficiency Review
- Closeouts
Audio-Visual on the Converged Network

Technology needs to be coordinated early with relevant parties to support working and functioning audio-visual systems from day one.
Audio-Visual on the Converged Network

- Client Calendar System
- Client Phone System
- Room Scheduling
- Video Over IP
- Audio Over IP
- AV Control
Lighting Systems Integration

**Traditional Design**

- Direct connection between audio-visual system and lighting control system via serial control
- Typically not connected to Base Building
- Stand alone room solution
**Lighting Systems Integration**

**New Design**

+ Direct connection between audio-visual system and lighting control system via serial control
Multiple Tenants

The Internet

- Firewall + VPN

- Tenant's Network

- AV VLAN

- AV Control System

49th Floor

- Tenant's Network

- AV VLAN

- AV Control System

25th Floor

- Base Building Network

- Lighting VLAN

- Lighting Control System

Ground Floor

- Firewall + VPN

- Tenant's Network
Room Booking Systems
Room Booking Systems: Requirements

+ Network drop
+ Usually powered by PoE (Power Over Ethernet)
  + Check datasheet of each device as PoE+ may be required.
+ If client requests a “non-standard” device
  + Some non-standard devices are NOT PoE and require additional infrastructure requirements, third party equipment, etc.
+ Conduit (if cable pathway required in finished walls or ceilings)
Wireless Presentation Systems
Web Conferencing
## Video Bandwidth Requirements

<table>
<thead>
<tr>
<th>Type of Video</th>
<th>Bandwidth Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full uncompressed HDTV (1080p)</td>
<td>1.5 Gbps</td>
</tr>
<tr>
<td>Typical streaming video bitrates</td>
<td>300 Kbps to 20 Mbps</td>
</tr>
<tr>
<td>4K Video using JPEG2000 codec</td>
<td>2 Gbps</td>
</tr>
<tr>
<td>4K Video using proprietary codecs</td>
<td>Under 1 Gbps</td>
</tr>
</tbody>
</table>
So, You Want to Adopt Video Streaming?

+ What task(s) will the system be used to perform?
+ Who is the intended audience and where is the intended audience?
+ What kind of endpoints (devices) do you need to stream to? Desktop/mobile devices/large displays?
+ What kind of content do you need to stream?
Questions?