

Technology Engineering Commissioning (TECx)

Why This is a Necessity

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2020 BICSI FALL
Conference & Exhibition



Learning Objectives

- Which disciplines are included within Technology Cx?
- Discuss technology commissioning as a service.
- When to engage a Technology Cx Provider
- Cross discipline touch points with Technology (MEP Cx)
- Construction benefits with Technology Cx engagement
- Lessons Learned in Technology Cx
- Properly designed systems save energy and provide operational efficiencies

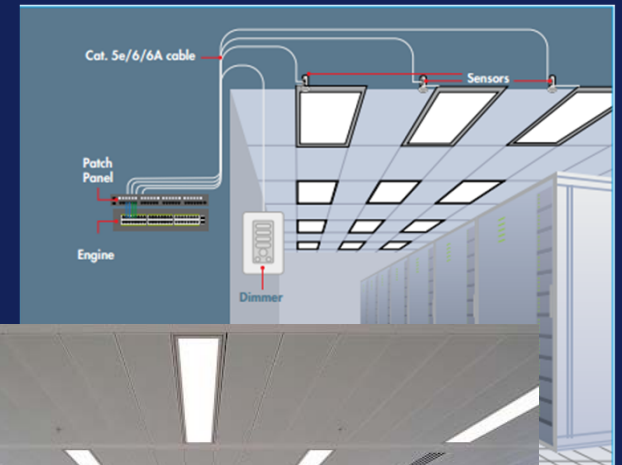
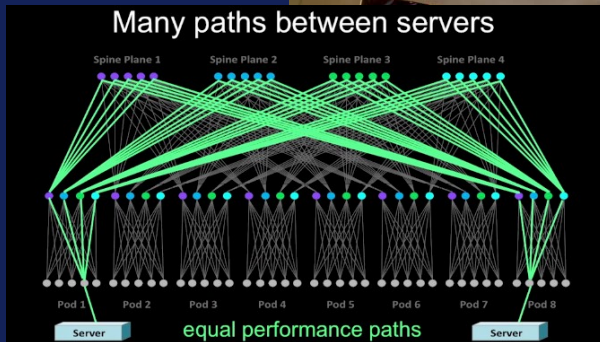


Technology Cx Disciplines

- Telecom and Structured Cabling (Network, PoE, and Lighting)
- Wireless (Wi-Fi, DAS, ERRCS, LMR)
- AV Systems (Control systems and Voice Fire Alarm)
- Security Systems (Access Control, Intrusion Detection, and CCTV)



Telecom and Structured Cabling (Network, PoE, and Lighting)



Wireless (Wi-Fi, DAS, ERRCs, LMR)

11AX THE PATH TO TRULY BRILLIANT WI-FI

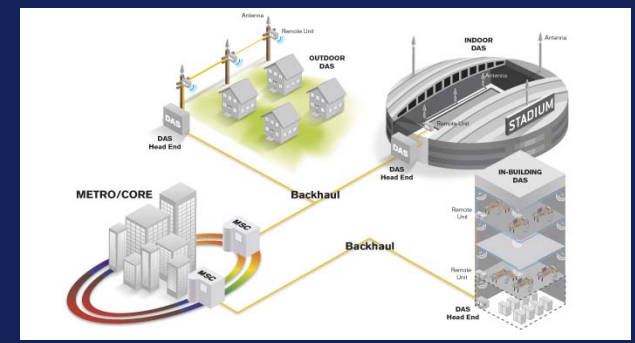
4x BETTER IN DENSE ENVIRONMENTS
Improve average throughput per user by at least four times in dense or congested environments

FASTER THROUGHPUT
Deliver up to 40 percent higher peak data rates for a single client device

INCREASE NETWORK EFFICIENCY
By more than four times

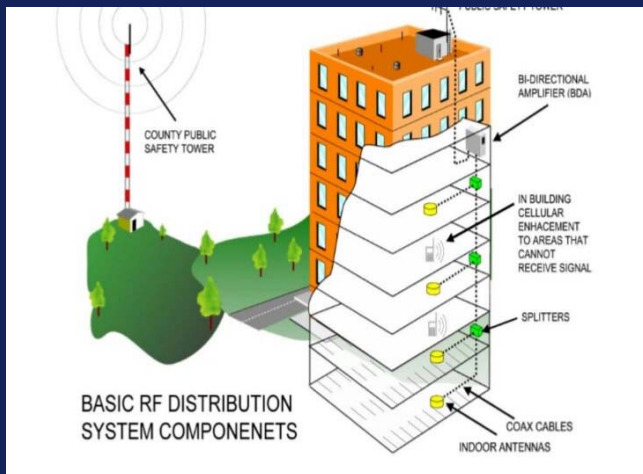
EXTEND BATTERY LIFE
Of client devices

intel

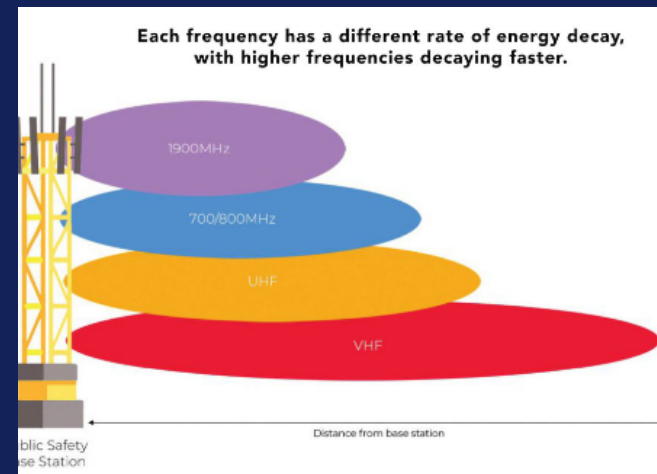


Wireless (Wi-Fi, DAS, ERRCs, LMR, continued)

Emergency Radio Communications System (ERCS) NFPA-72, Ch. 10



Land Mobile Radio (Bldg. Engineering, Operations, Security, etc.)



Audio Visual (Control Systems and Voice Fire Alarm)

Audio Visual integrated with Lighting and Environmental controls



Wireless Temperature and Humidity Sensors

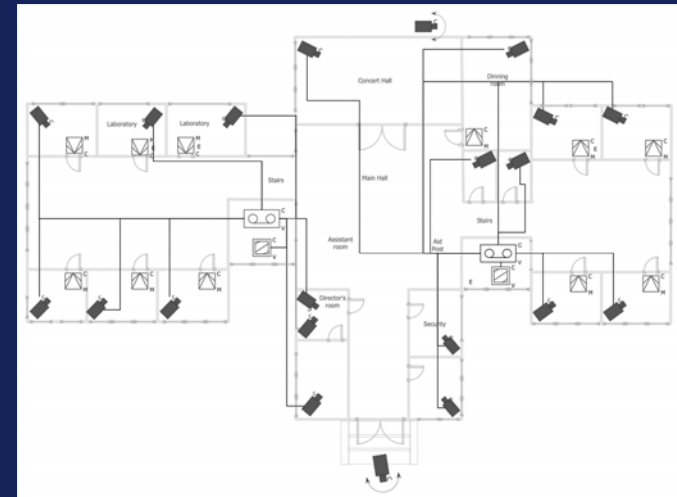


Security Systems (Access Control and CCTV)

Access Control with Elevator Destination Dispatch



Not So Simple CCTV and Intrusion Systems



When to Engage with Technology Cx Professionals

Conceptual to Construction Documents

- Early to plan Technology rooms
- Owner's Project Requirements
- Basis of Design
- Technology Cx Specs
- Programming requirements and testing, interoperability
- QA/QC and review of documentation
- Coordination cross discipline

Construction Administration

- Contractor tasking
- Review of Shops
- Alternative product reviews
- Report writing
- Programming review
- Physical integration adherence
- Black Starting



Cross discipline touch points with Technology

Mechanical, Electrical, Lighting, Fire Alarm, Plumbing

- Programming requirements and testing, interoperability and APIs
- Energy Touch points
- Physical or logical separation of networking
- Code required connections
- Single pane of glass or operations efficiencies
- Physical security

Operational Efficiencies

- Reduced call backs for network related outages
- Reduced operational time for tasks in the Technology related space ex. (WHY DOESN'T MY PRESENTATION WORK?)
- Healthcare security and other medical systems
- Day 2 installations



Construction Benefits with Technology Cx Engagement

Uptime, coordination of systems that need to run before Day-1

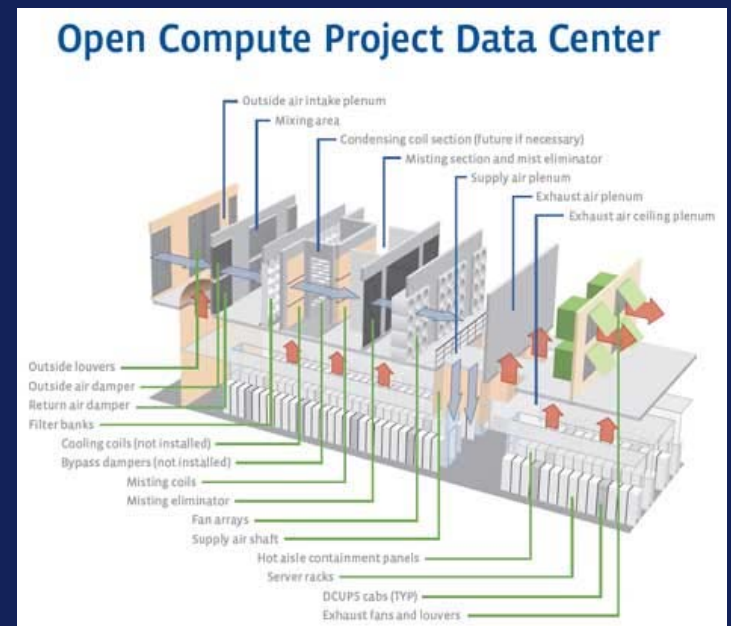
- Temp or permanent power
- Room ready. What does this mean?
- Connectivity to the outside (ISP)
- Monitoring and logging of system performance.
- Secure site sooner.
- Operations and punch list coordination
- Turnover of Building and Systems



Lessons Learned in Technology Cx

What has gone wrong and how to help prevent it.

- Cyber Security, Largest Personal Credit Card data Breach through BAS System
- Moved schedules and compressed installation therefore reduced quality
- Increased budgets for operations and Capital Expenditures.
- Increased Change orders
- Frustration and lack of communication



Who can help guide those Technology Cx scopes and what tools can be used?

What Professionals should be involved?

- Plenty of qualified Cx professionals, but not a lot of concentration in Building Technology
- Professional Engineers who specialize in Technology Engineering
- Help from RCDDs, PSPs, CPPs, CTSs, CTS-Ds,
- Technology Engineering Firms



Questions?

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