Futureproofing Commercial Buildings: The Unification of Multiple Building Systems
Imagine
the building of the future
Building

Spaces
Peoples
Systems
Resources

Enterprise Systems
Converged Networks
Robust Infrastructure
Advanced Security

IT

Futureproofed “IoT”
Building

Connected systems
& people
SO HOW DID WE GET HERE?

Evolution of a Modern BAS
EVOLUTION OF A MODERN BMS

Cost Savings
- Opex
- Capex

Modern Building System Scope

Yesterday    Today    Tomorrow
EVOLUTION OF A MODERN BMS

Yesterday, Today, Tomorrow

Cost Savings
- Opex
- Capex

Energy Efficiency
- Optimized usage

Sustainability Initiatives
- Carbon footprint
- Occupant engagement

Modern Building System Scope
EVOLUTION OF A MODERN BMS

Modern Building System Scope

Cost Savings
- Opex
- Capex

Energy Efficiency
- Optimized usage

Sustainability Initiatives
- Carbon footprint
- Occupant engagement

Occupant Wellbeing
- Comfort
- Safety

Appeal
- Attract
- Retain

Holistic View of Building

Yesterday
Today
Tomorrow
NEW RULES AND THEORIES APPLY

3 – 30 – 300 Theory

Energy: $3/SF
Rent: $30/SF
Employees: $300/SF

Jones Lang LaSalle IP, Inc.
USE OF IP TECHNOLOGY

Evolution of a Modern BAS
TRADITIONAL USE OF IP IN BUILDING SYSTEMS

IP building Infra-structure dedicated LANs
THE RISE OF IP IN BUILDING SYSTEMS

Number of IP devices associated with BMS is rapidly increasing
- Chillers
- Energy Meters
- Switchgear
- Air Handling Units
- CRACs
- VFD’s
- VRF
- Lighting
- Security
WHY CONVERGENCE OF BMS AND LIGHTING?

Unified building control strategies can result in demonstrated savings in excess of 30% on HVAC and up to 60% on lighting.

- Hannover University of Applied Sciences and Arts
WHY STOP THERE?

Growing Number of ‘Connected Devices With REST, XML and other IoT protocols ’

- Electric, Gas Heating, Solar
- Thermostats / Humidistats
- Parking Garage
- Water Systems
- Vending Machines
- Access Management
- Controllers
- Card Readers
- Pumps
- Chillers and boilers
- VAV Units
- Weather
- Cameras
- Dampers
- Air Quality Services
- Air Filters
- Air Handling Unit
- Controllers
- Fans
- Smoke Detectors
- Elevators
- Lighting
- Heating Units
- Sustainable Energy
HOW DO WE BRING IT ALL TOGETHER?

Unifying the User Experience
UNIFYING THE USER EXPERIENCE – THE SINGLE PIECE OF GLASS
HEAT MAPPING/ROOM AVAILABILITY
Integrated to Google Maps for Multi-Site Portfolio
Rich Dashboards: HTML 5 Web Responsive, Scalable Graphics
Real-time Troubleshooting
HOW DO WE IMPLEMENT THIS?

Network Architecture Evolution
TODAY: INTEGRATED SYSTEMS

Visualization

Network Mngt. / Archiving

Integration

System, Equipment & Display

Room Controls

Field Devices

BACnet MS/TP
LonWorks

BACnet MS/TP
TOMORROW: UNIFIED SYSTEMS

Visualization

Network Mngt. / Archiving

Integration

System, Equipment & Display

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INTELLIGENT BUILDINGS | Technology – A Real Example!

HOW LED LIGHTING ENABLES INDOOR POSITIONING SERVICES

1. Store LED lighting acts as a beacon to signal mobile devices through Visible Light Communication (VLC) and Bluetooth Low Energy (BLE) technology.

2. Connected shoppers opt-in to "listen" with a retailer's loyalty app on their mobile devices.

3. Engaged shoppers enjoy a tailored experience, easily find the items they need with pinpoint accuracy and can request assistance and relevant digital content along the way.

4. Platform ties to retailer's digital marketing systems to deliver location-based services and personalized content to the shopper.
INTELLIGENT BUILDINGS | Technology – A Real Example!
80 billion connected devices worldwide by 2020

CABA Member, Frost & Sullivan
The IoT Building

- Interoperability – Smarter systems/cities/planet
- Sustainability – durability
- Distributed intelligence
- Data
- Performance
- User experience
APPLYING TOMORROW’S TECHNOLOGY TODAY!
HEY, WAIT A MINUTE! ISN'T THAT MY OWN FINGER?
Breaking Down the Barriers

IT Department
New Construction
Retrofit Opportunities
HOW DO WE EXECUTE?

Specifying Unified Building Controls
Where does IoT Fit?

Division 15/23  Division 25  Division 16/26
MEP Div. 25
End User

MEP Contractor

BMS
Contractor

ME

EE

Electrical
Contractor

IT

LD &
Architect

MEP

LD
Architect

Div. 23 09

Div. 26
Your IoT Building

GET IT SPECIFIED

We Want You!
THANK YOU!