



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Smart Buildings

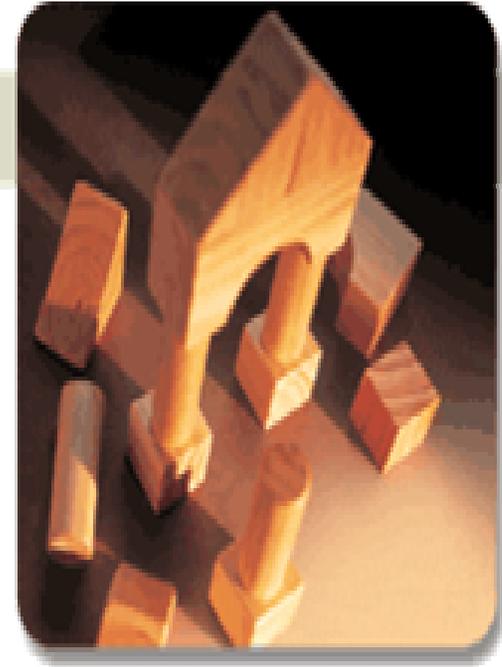


No microprocessors

- Comfort systems
 - Pneumatics
- Information technology
 - Paper...paper...files

Proprietary stand-alone systems

- Fire alarm
- Building temperature control
- Security – burglar alarm





It's the communications infrastructure, designed from the ground up of all the system that makes a building run which in corporate and allow full voice, data, Internet access to all tenants of the building from the moment they move in.

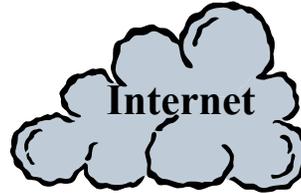


- *High Level of electronic microprocessor base control systems*
 - *Lighting*
 - *Heating Ventilating and Air Conditioning (HVAC)*
 - *Power*
 - *Vertical Transportation*
 - *Fire and Life Safety*
 - *Security*

- *Telecommunications Systems*
 - *Voice*
 - *Data*
 - *Video Transmission*



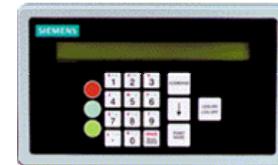
Technology- The New Way



Ethernet



TCP/IP



Building Automation

Alarms Status

Alarm View Help

PRI1 PRI2 PRI3 PRI4 PRI5 PRI6
Failed Normal Man Dis. Out/Ser

Most Recent Alarm: Most Recent BLN Msg:

Memo	Point Name	Value	Initial	Current	Ack	Status	Priority	Ack
	Howard Hall South Entrance	ON	03:15:00	11:56:20		*A*	Operator	
	Student Union.AHU3.CO2	832.00	03:15:00	07:02:00		*A*	None	
	Chemistry Room 010. Temp	70.00	03:15:00	06:59:00		*A*	None	
	Heinz Hall.N Parking Lot.Ligh	ON	03:15:00	06:50:00		*A*	Operator	
	Student Union.Room 101.Ter	78.00	03:15:00	06:43:00		*A*	None	



The New Way Risk

- More complex technologies
- More complex solutions
- 21st century skill sets needed / construction & maintenance





Must Have Building Systems



<ul style="list-style-type: none"> •Classrooms •Offices •Pressurized Zones 	<ul style="list-style-type: none"> •Card Access •Video •Door Monitoring •Asset Tracking 	<ul style="list-style-type: none"> •Smoke Detection •Audio & Visual •Smoke Control •Voice Evacuation 	<ul style="list-style-type: none"> •Classrooms •Offices •Public Areas •Parking 	<ul style="list-style-type: none"> •Power Monitoring •Consumption Monitoring •Utility Purchase Assistance •Billing Analysis 	<ul style="list-style-type: none"> •Cabling •PBX •Messaging •Applications •Paging •Mobility 	<ul style="list-style-type: none"> •LAN •WAN •Remote Access •Internet Access
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Why Integrate Building Systems

Optimize installation

Increase productivity (comfort, IAQ, lighting)

Decrease operating costs (energy, manpower)

Increase functionality

Protect life & property

Reduce maintenance costs

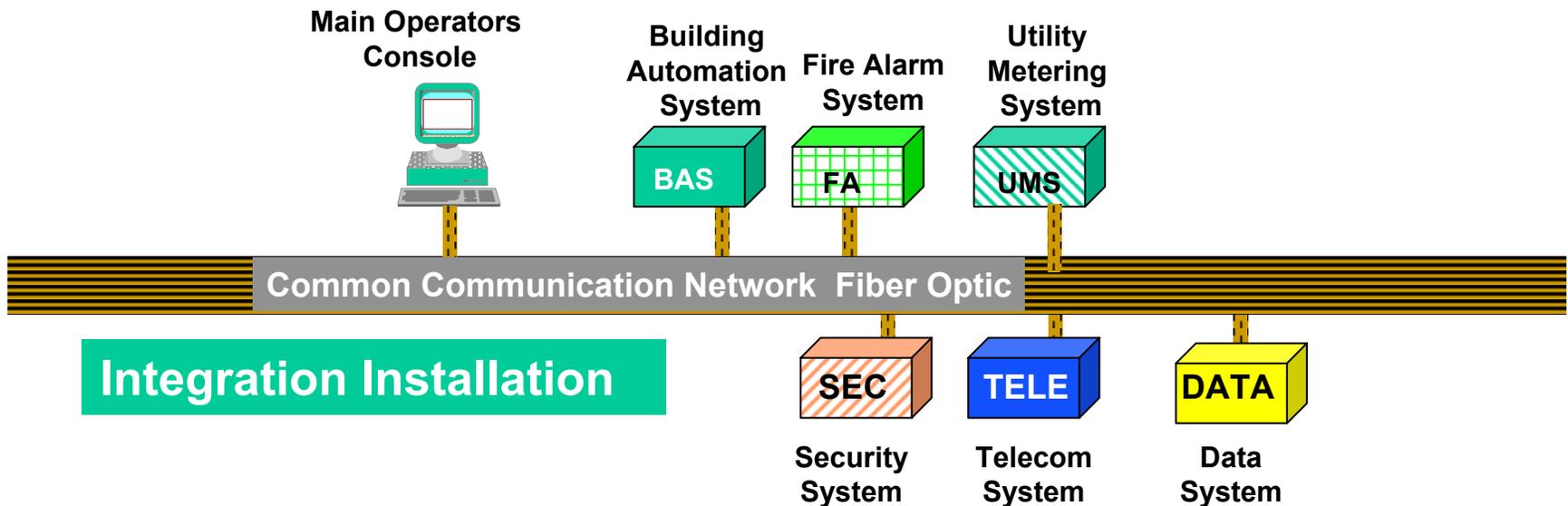
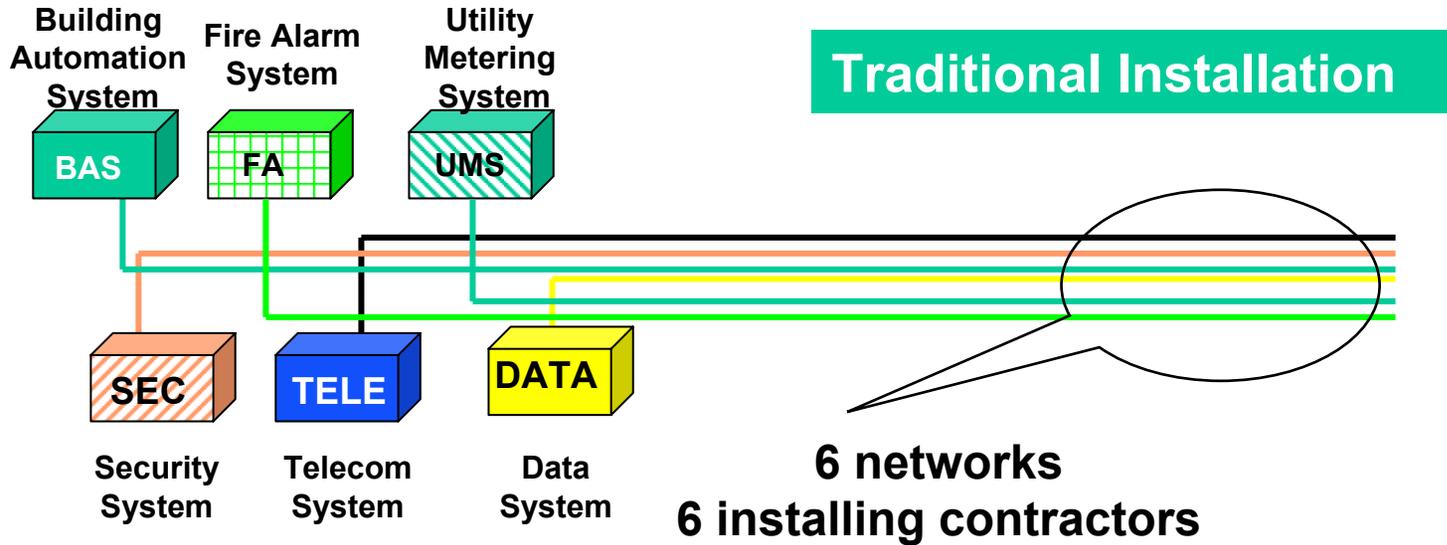
Track assets

Increased system flexibility





Consolidated Installation





Customers Expect More

Higher functionality at less cost

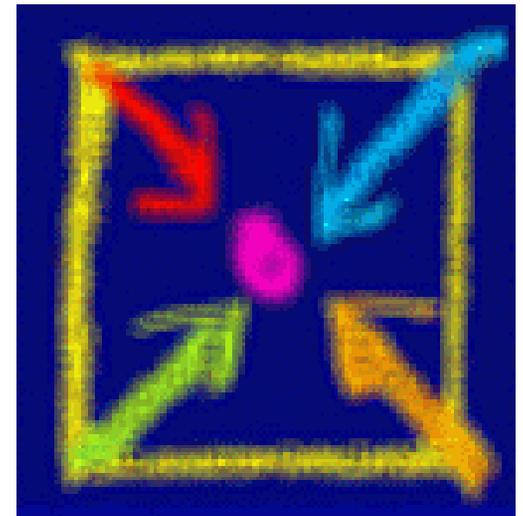
Higher operational productivity from fewer people

Improved quality control

More complete and accurate documentation

No gaps, no exceptions, no excuses

Working toward



the same goals



...How to Deliver More?

Design Involvement

Single Seat Project Management

Integrated System Commissioning

Web Based Solution Offerings





Questions??

