

Buildings 2.0 and Technology

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- *"Buildings 2.0 is a vision that intricately intertwines buildings with Internet technologies."*
 - Anytime, anywhere access
 - Comprehensive, standards-based solutions
 - Scalable
 - Interoperable
 - Best-in-class solutions

- Do we have anytime/anywhere access today?
 - Only where high speed IP connectivity is available
 - Advances in cellular communications holds terrific promise.
 - GPRS, EDGE
 - CDMA EDVO
 - G3
 - Data service plans from carriers is key

- Where are we with standardization?
 - The building community has been focused on data protocols at the field bus level
 - oBIX is the first attempt to address enterprise connectivity and address the Internet adoption of XML.
 - BACNet WS is under development through the committee process
 - Much work is required to make it possible to integrate applications and tools

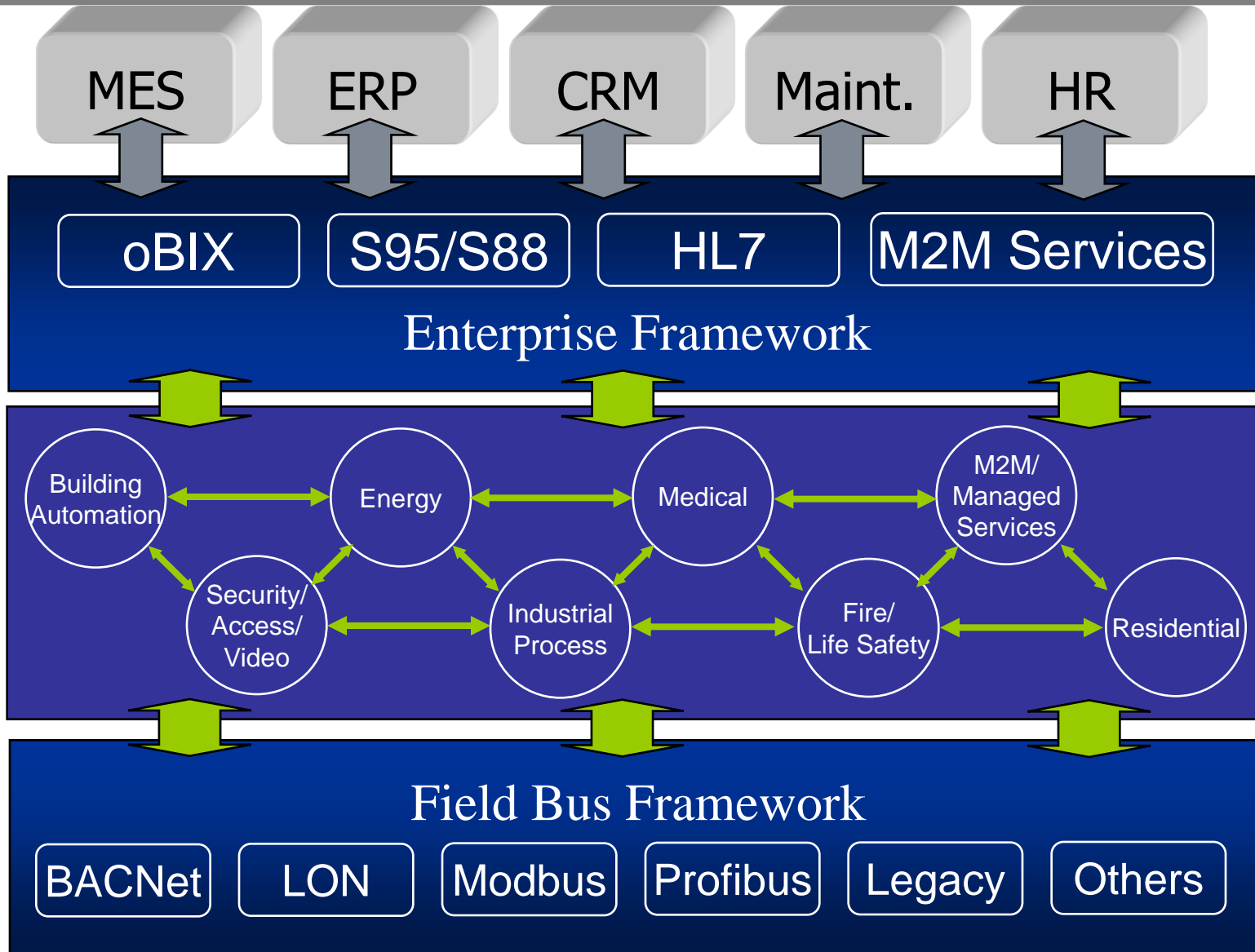
- Google estimates that it maintains over 450,000 servers
- The point is that Internet applications are designed to scale. The technology exists in both hardware and software.
- There is nothing about building systems that will present a unique challenge to scalability.

- Standard protocols achieve integration, they do not make systems interoperable.
 - Support for standard protocols is not “standard” by vendor
 - Each vendor has unique tools, with unique application code.
 - Lack of interoperability makes it very difficult for customers to purchase best-in-class solutions



- HVAC Mechanical Systems
- Access and Surveillance
- Video Monitoring
- Gas Detection
- Elevators
- Interior Lighting
- Utility Monitoring
- Life Safety
- Intelligent Restrooms
- Digital Signage
- Intelligent Kitchens
- Electrical distribution equipment

- Software Platform
 - Designed for both system integrators and software developers
 - Support for industry standard communications
 - Wired
 - Wireless
 - Support for legacy systems
 - Interoperability of applications
 - Single tool for configuration and programming
 - Reuse information from remote sources
 - Scalable



oBIX Building

- HVAC equip
- Fire
- Elevator, etc

oBIX Energy

- Meter
- Price structures

oBIX Security

- Users/badges
- Doors/readers
- Cameras/video

oBIX Industrial

- Process
- 1131/1499
- Batch/recipes

oBIX Enterprise

- Distributed database: query, search, navigation, caching
- Ontology: site, building, story, equipment, space, relationships

oBIX 1.0 Foundation

- Object model
- XML
- Contracts
- Web Services
- Watches, points, histories, alarming