



Bringing Building Services into BIM

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Perspectives

Infrastructure Analyst, UNC Facilities Services
- 20 years of facility operations

Chair, OASIS oBIX Technical Committee
Co-Chair, OASIS Technical Advisory Board

FIATECH Element 5 Co-Champion
“The Self Maintaining and Self Repairing Facility”

NIST Domain Expert Workgroup, Building to Grid

NIST Emergency Response Situation Awareness Workgroup

Emerging Markets and Venture Technical Analysis Consultant



**Today, performance cannot
be directly linked to service
provided**



**New markets and new
mandates make
unresponsive buildings a
liability**

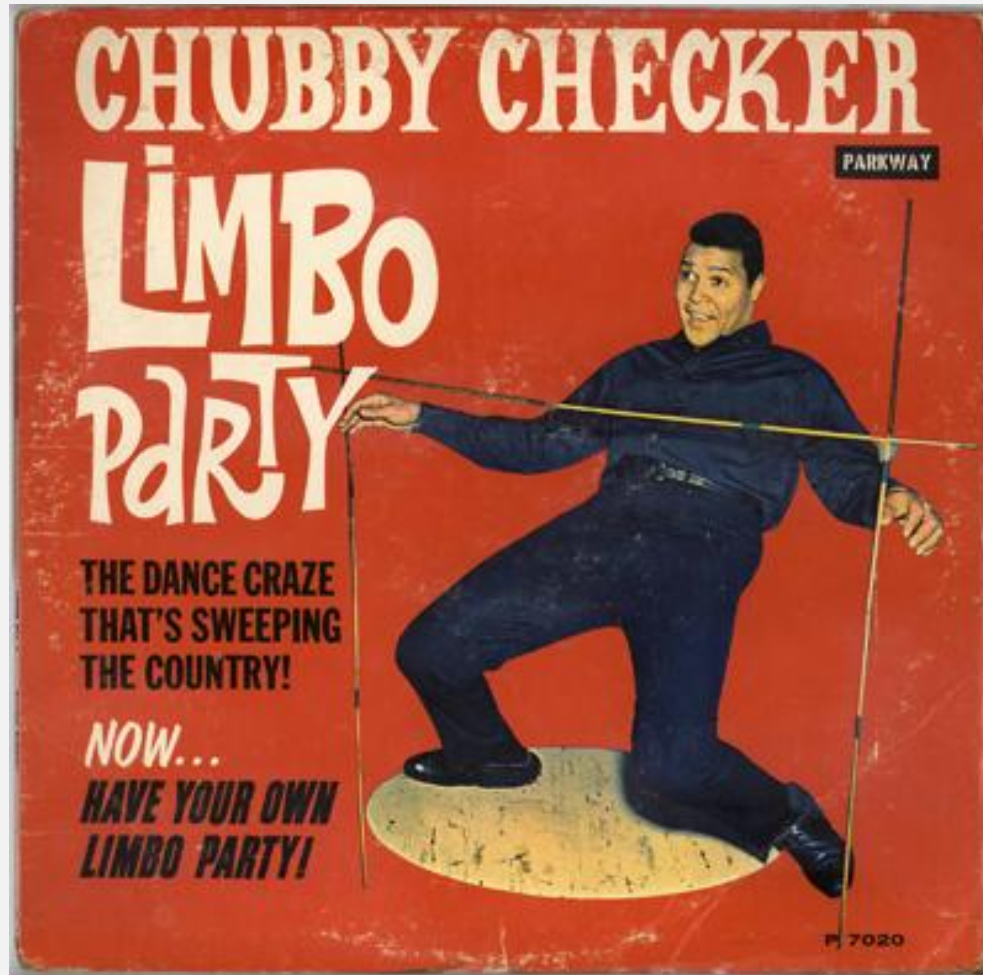


**BIM specification of
Building Services will
improve delivery, enhance
amenity, and reduce costs**

**Today, building systems
offer up name/value pairs
rather than services**



**Code compliance merely
defines poor performance**



**Building systems are
designed in the field and
discovered by the owner.**

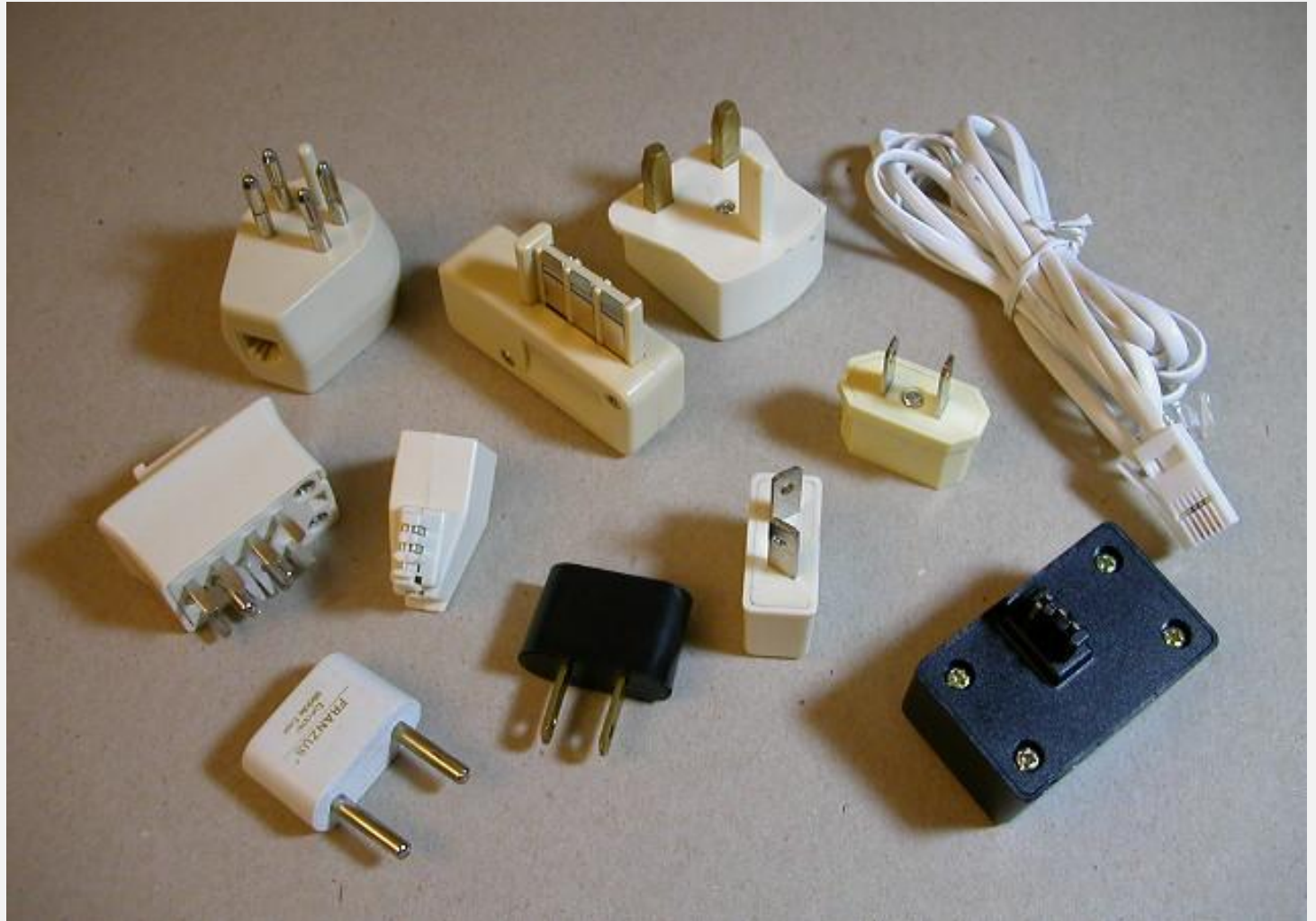


**Lacking design, we
substitute capacity for
performance**

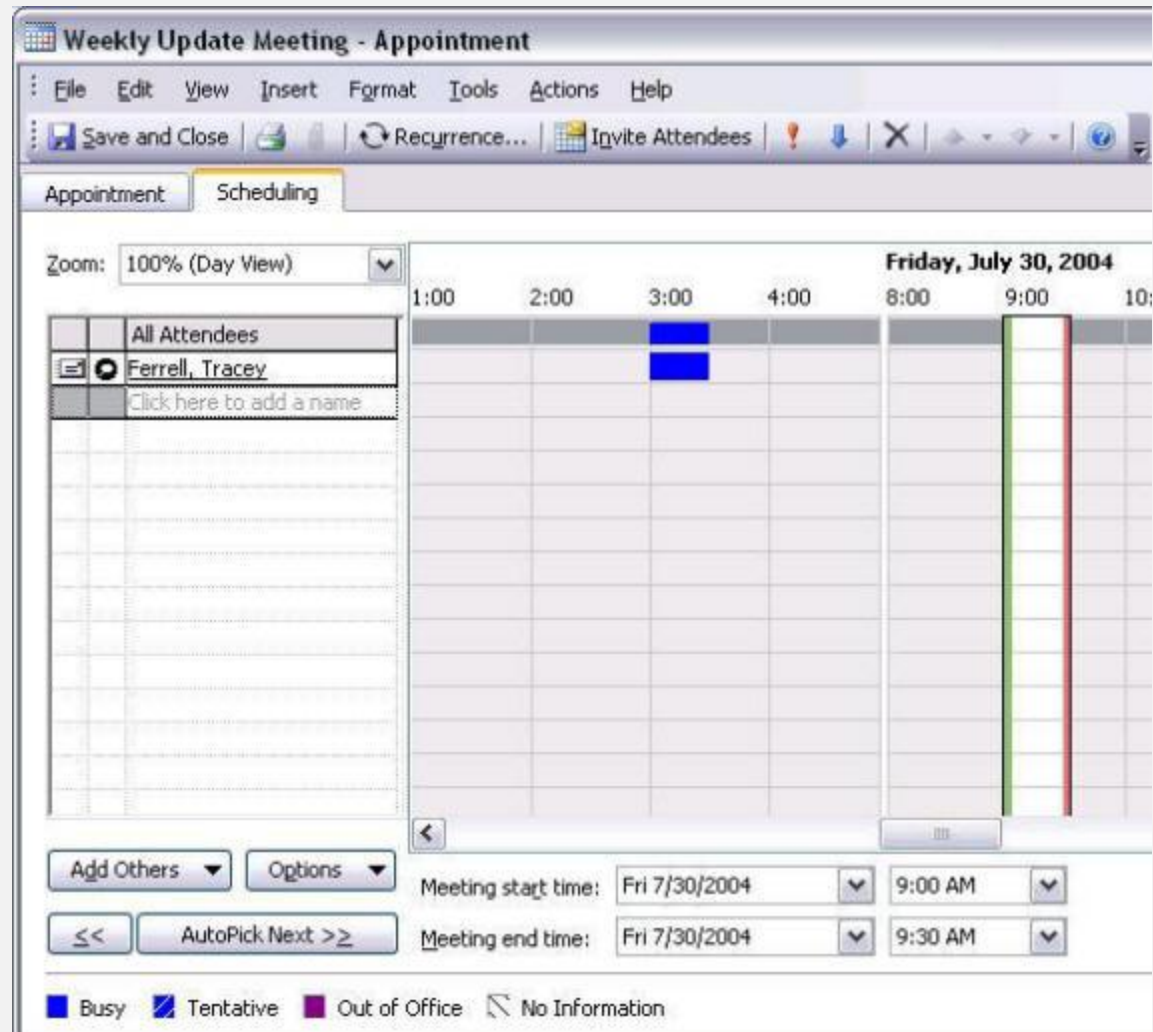


Building systems must embrace enterprise protocols and metrics





Schedule system for results, not system processes



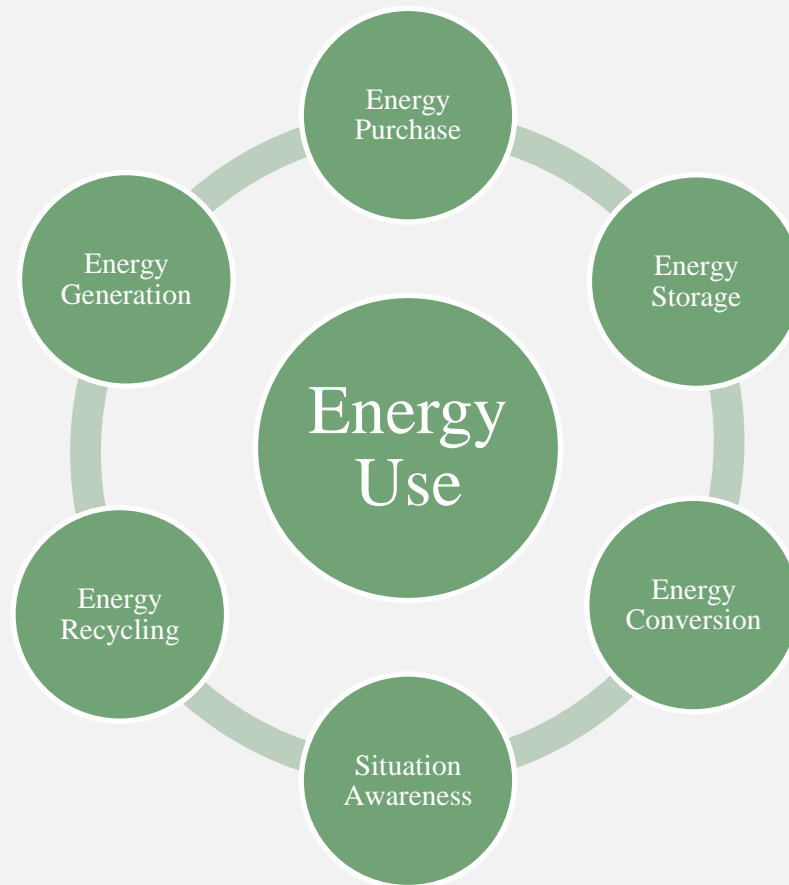
**Define business needs, not
technical processes.**



Service interfaces invite new modes of interaction




Zero net energy buildings will require new levels integration





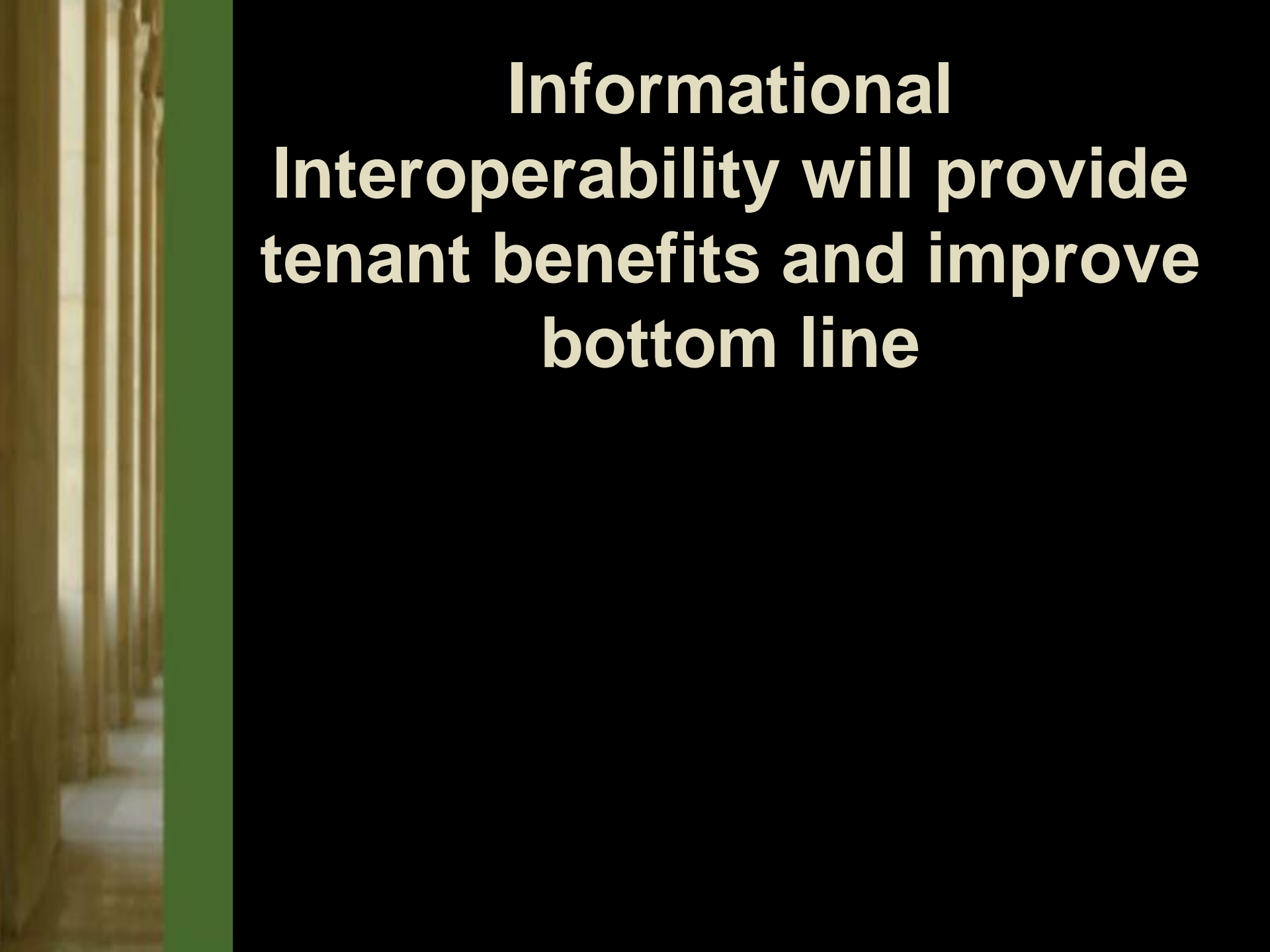
Leasing agents want the language to sell service performance

- Sustainability is starting to sell
- Healthy building indices balance effects of energy efficiency
- Provably productive workers can trump costs of office space
- Perpetual commissioning supports operations transparency (and trust)



Your building agent will be your personal day trader in new energy markets

- System agents defend mission
- Enterprise defines value
- Power Grid offers clearing market
- Building agents choreograph response



**Informational
Interoperability will provide
tenant benefits and improve
bottom line**

**Dissimilar systems can
compete on value delivered**



**Only coordination that is
simple and secure will scale**



New markets will develop with new market rules





**BIM will specify building
systems by semantic
services and performance.**



Discussion

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