The Power of Collaboration

- **Information Technology Authority**
- **Cisco in Oman**
- **The Human Network**
- *break*
- **Real Estate**
- **Transforming Education**
- **Unified Communications**
- *lunch*

Oman
Cisco Expo
2007

Role of Technology in the Real Estate

Amr Salem

Director, Real Estate Segment

Real Estate Developers Business Drivers

Attracting Residents & Businesses

Creating New Revenue / Experiences

Protecting Your Assets

Reducing Total Cost of Ownership

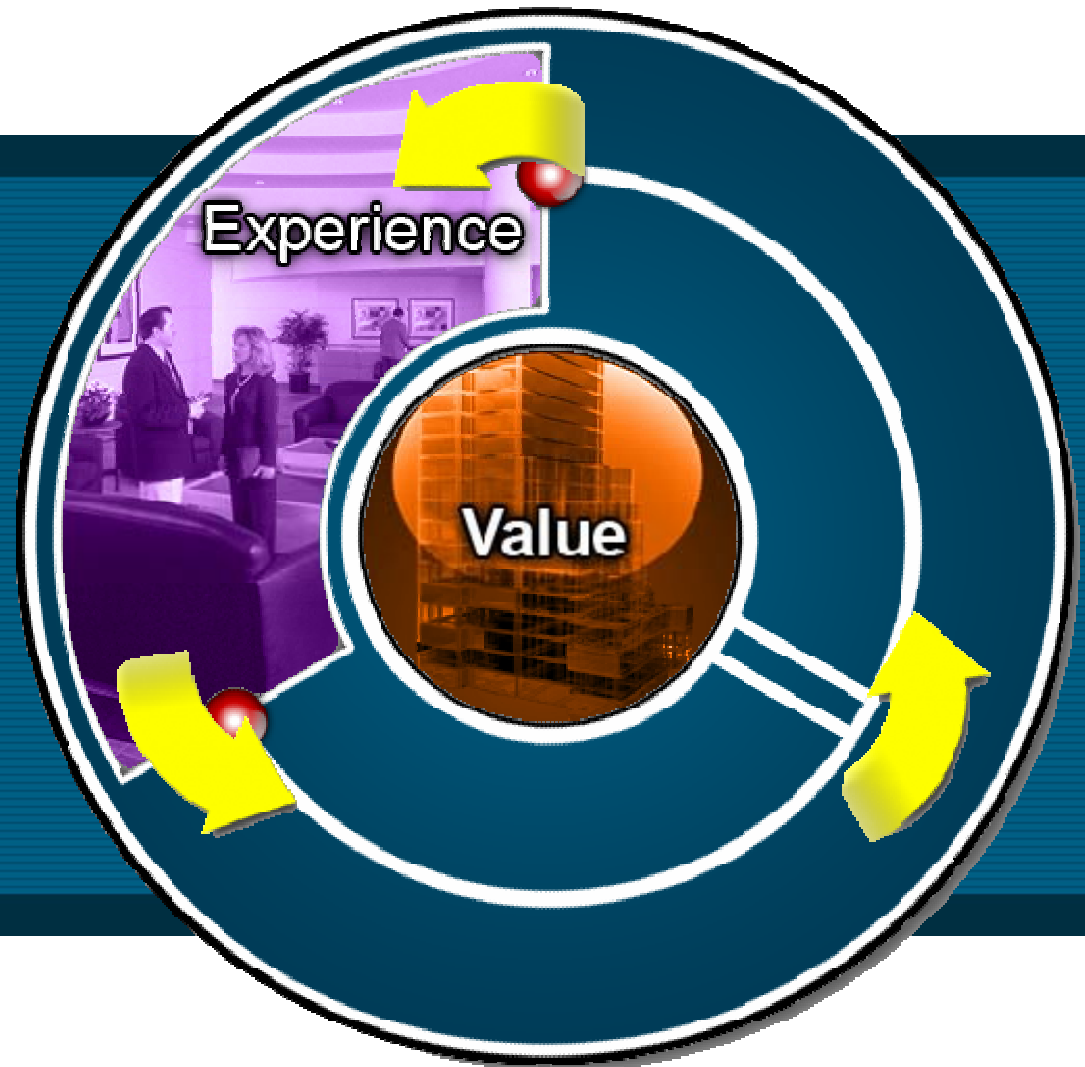**Increasing Stakeholder Value**

Addressing Sustainability

Oman Cisco Expo 2007

Creating Value

Creating Value for Business and Real Estate Owners

- Human experience
- Simple interaction
- Brand attraction
- Media rich
- Support business

Connected City/Community Vision

Lifestyle   Fun   **Resident**   Security   Safety
Comfort   Convenience

Design | Space | Value Added Services ① | Amenities | Location

② Connectivity   Connected RE ③

Operating Model ④

Developer

Operator

Service/Content Providers
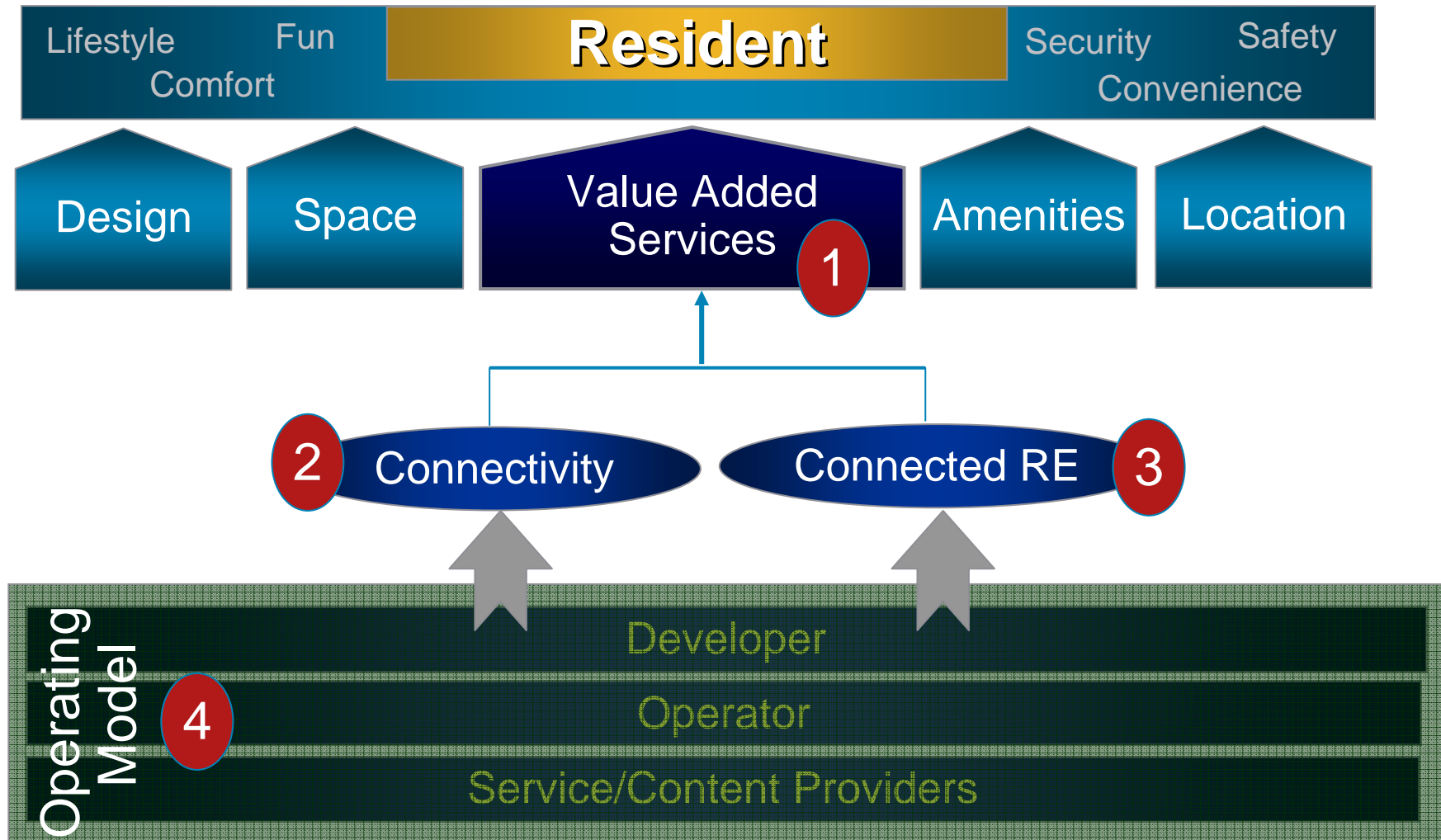
Service Oriented Architecture

Services

Disaster Recovery   Local Information   Concierge   Personalized Content

VoD   Executive Security Services   IPTV   Wireless   Video Conferencing

Service Creation
Create Correlations Between Processes to Create Services

Processes

Content Management   Maintenance   Renovation and Upgrades

Systems Integration
Create an Information Sharing Platform Between Systems

Systems

BAS   Safety   Cabling   Asset Management   A/V

Converged Network
Industry Standard Communication Backbone

Devices

Lights   Fire Alarm   CAD   Access Control   Cameras

HVAC   RFID   Elevators   Voice Communication

WiFi Networking

Connected City/Community

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Community/City Vision:
1- Value Added Services

	Resident		
Lifestyle Fun Comfort		Security Safety Convenience	

Design	Space	Value Added Services	Amenities	Location

1

2 Connectivity   Connected RE **3**

Operating Model **4**

Developer

Operator

Service/Content Providers
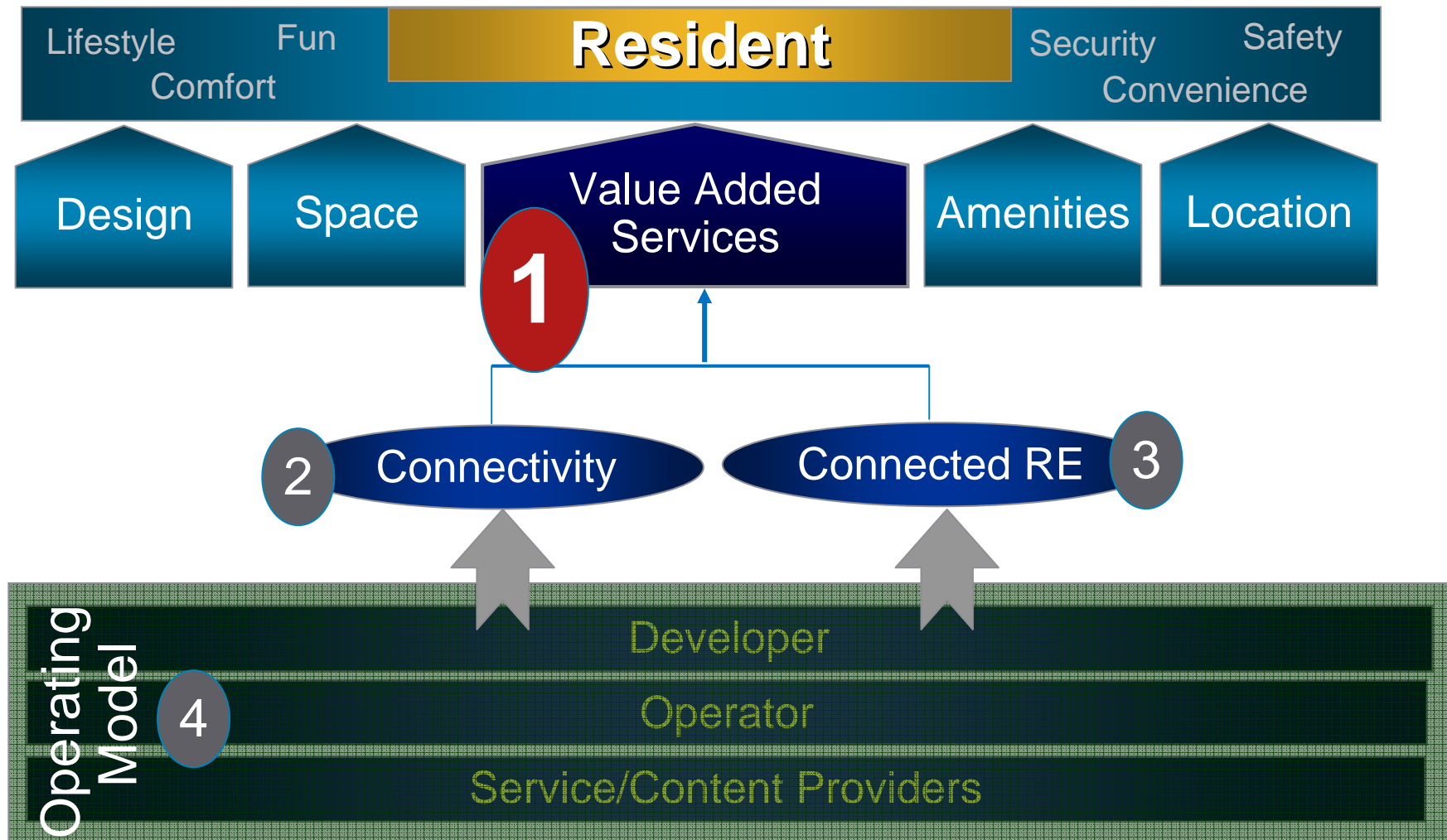
Value Added Services Framework

Service Delivery Channels to Customer (Portal, Call Centre, Retail)

Residential

Office

Hospitality

Transportation

Retail

Health

Education

Financial

Shared Services (Shared, Public and Community Services)

Connectivity Infrastructure (Wired + Wireless)
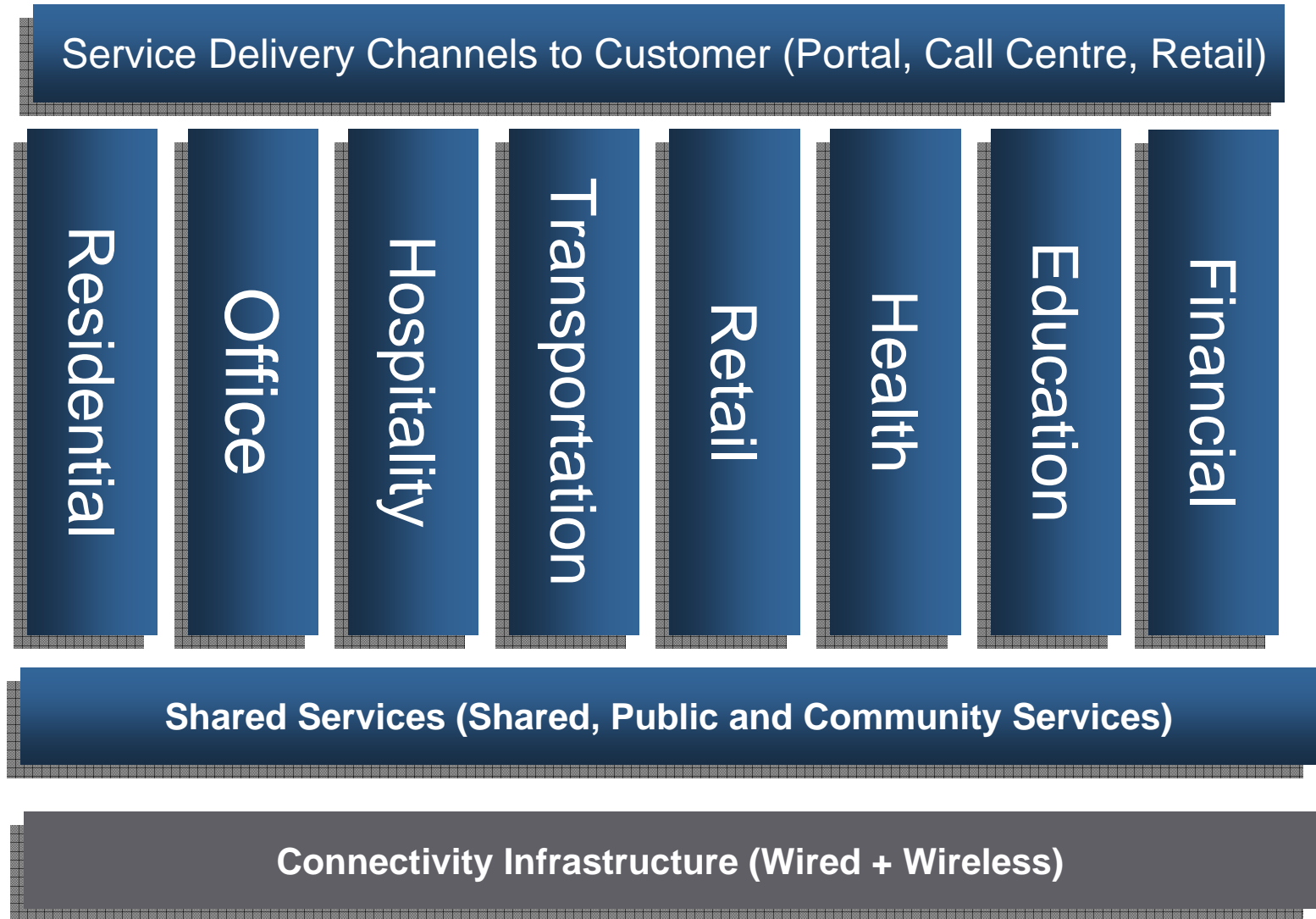
The vision concept is built up from a basic infrastructure, shared services for the common good, industry and residential specific services and the channel to deliver them to the customer.

Shared/Public Services:
Integrated Operations Center

**Integrated Operations Center**

Economies of scale benefits through integrating the Network, Security, and Facilities Operations into ONE Integrated Operations Center

Shared/Public Services: Asset Tracking

- RFID (Radio Frequency Identification)
- RTLS (Real Time Asset Location, indoor and outdoor)
- ViTTS (Victim Tracking and Tracing System)
- Mapping suspicious movement, objects

RFID in Retail

WIFI Asset Location and Tracking

Baggage Tracking

Pilot: KLM (NL)
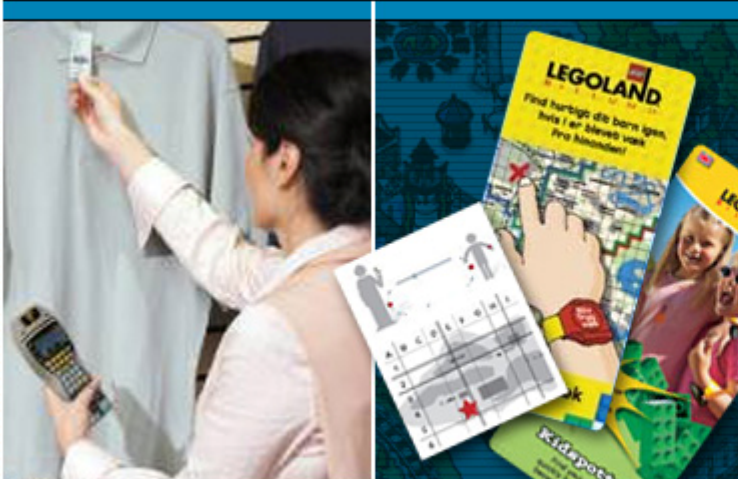
Kid Spotter System

Goods Tracking and Container Management

Shared/Pubic Services:
Contact-free smart cards

Retail

Access

Transportation

Attracts Businesses
Retailers can accept e-purse payments

Boosts Community Performance
Access Control: homes, leisure facilities, community centers, parking areas…

Attracts Residents
Smart Card & CRM integration
Comfortable & easy community living

Source: Octopus web site; Team analysis

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2007

Shared/Public Services: Outdoor

- Physical security
- Advertising
- Directory services
- Digital design

Smart Public Infrastructure

Wireless IP Base Station

Public Video Surveillance

Digital Signage

Shared/Public Services:
Outdoor

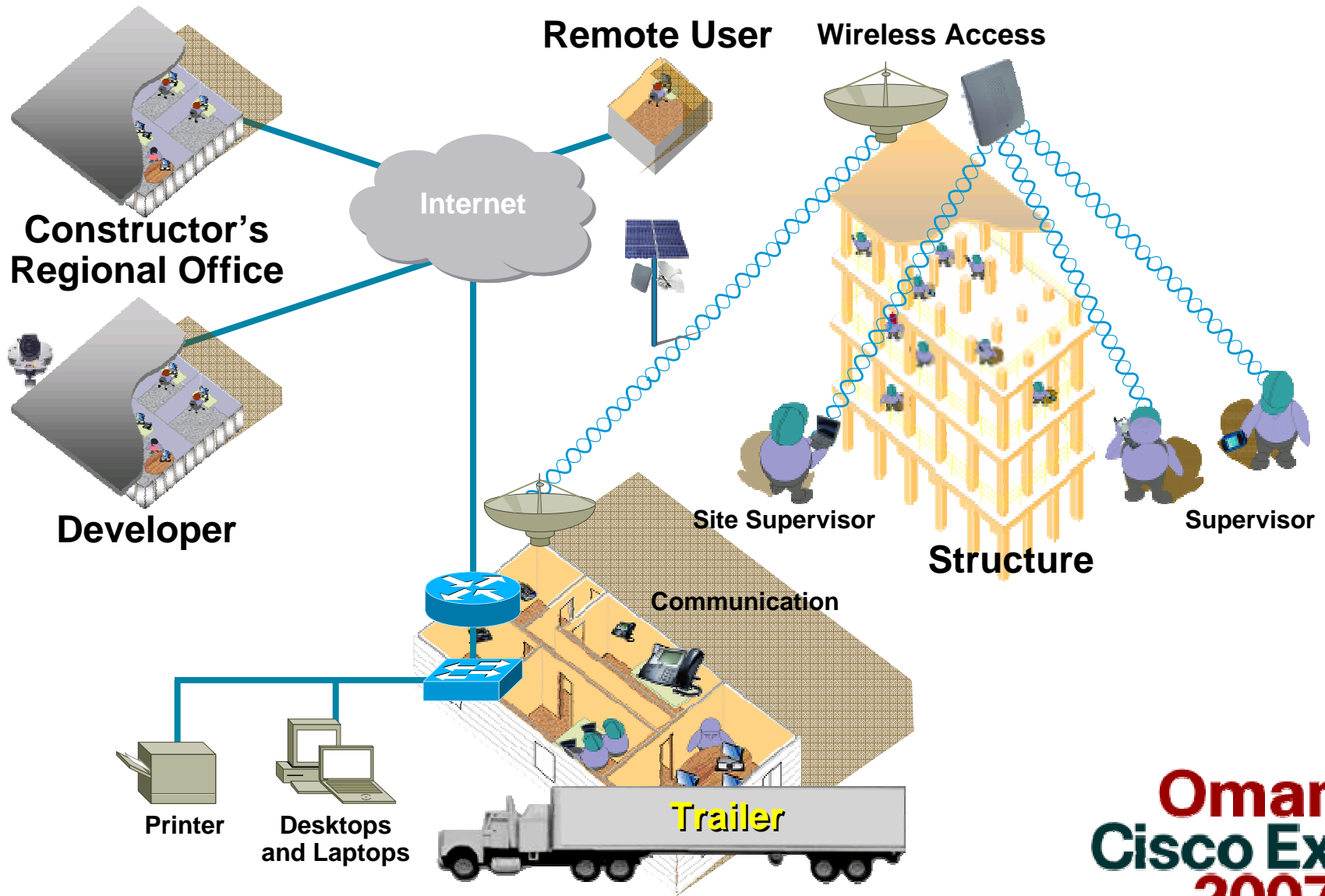Example: Street light

Street Light

Video Surveillance

Wireless AP

Advertising, Messaging

Internet Access
Maps, Guides, eGov Services Voice ?

Shared/Public Services:
Construction Site

Remote User

Wireless Access

Constructor's Regional Office

Internet

Developer

Site Supervisor

Supervisor

Structure

Communication

Printer

Desktops and Laptops

Trailer

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Service Delivery Platform:
Community Portal

- Community meeting place

- Concierge services

- Services provisioning

Vertical Services:
Retail

- Mobile phone purchasing
- Personalized advertising ("follow me")
- Fulfillment tracking/tracing
- Shopper profile in personal identification
- Online (pre)-shopping

WIFI Asset Location and Tracking

Use Phone as a Wallet

Shopper Profile

Directory Services

Asset Tracking

Kid Spotter System
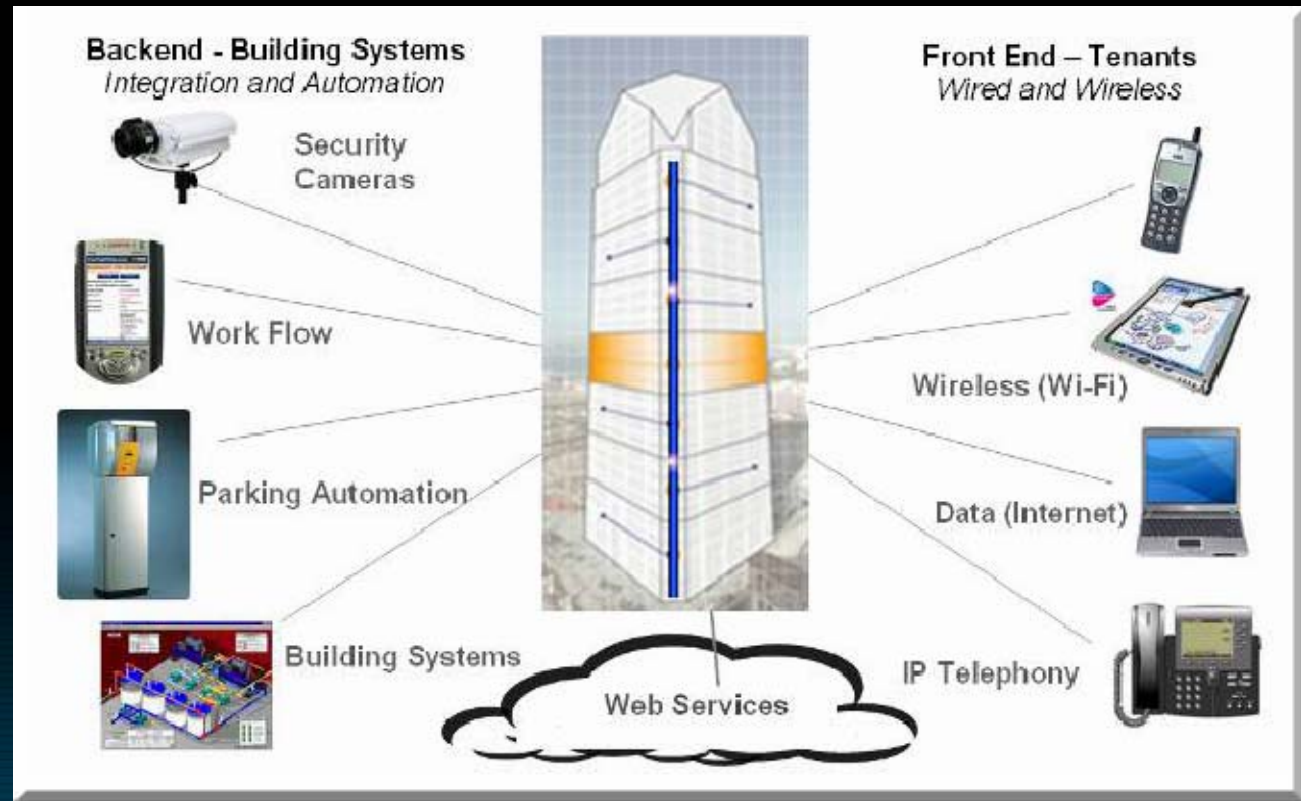
Vertical Services:
Office

- Adaptable working space

- Office provisioning

- Asset tracking

- Interactive services

- Security services

Vertical Services: Hospitality

- Interactive guest services
- Integrated travel services
- Asset tracking
- Outsourced facilities management

Customer Intimacy
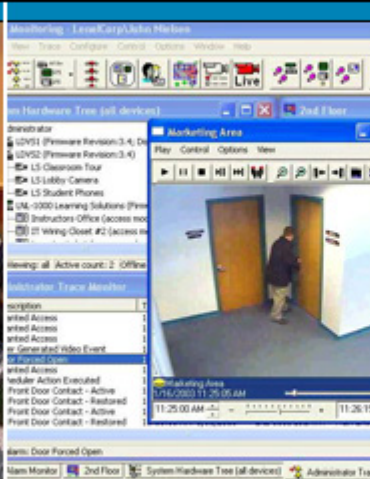
Connected Rooms
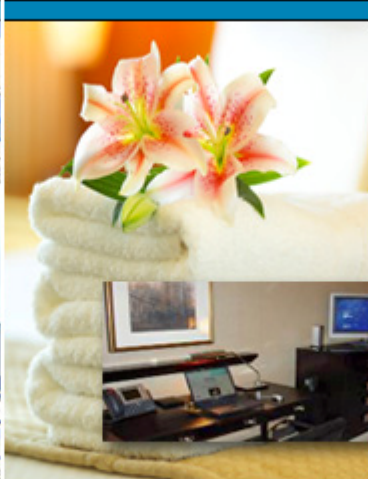
Employee Productivity

Security

E-Concierge

Vertical Services:
Residential

TV Screen · **PDA** · **Tablet PC** · **Smart Phone** · **Home PC** · **Phone**

Home Middleware

Internet

IP Based STB

Digital Video · **Video On Demand** · **Music** · **E-Prog. Guide**

Lighting and Appliances · **Pool Control, Irrigation Shutters** · **HVAC** · **Keyless Entry, Security, Cameras** · **Multiroom A / V**
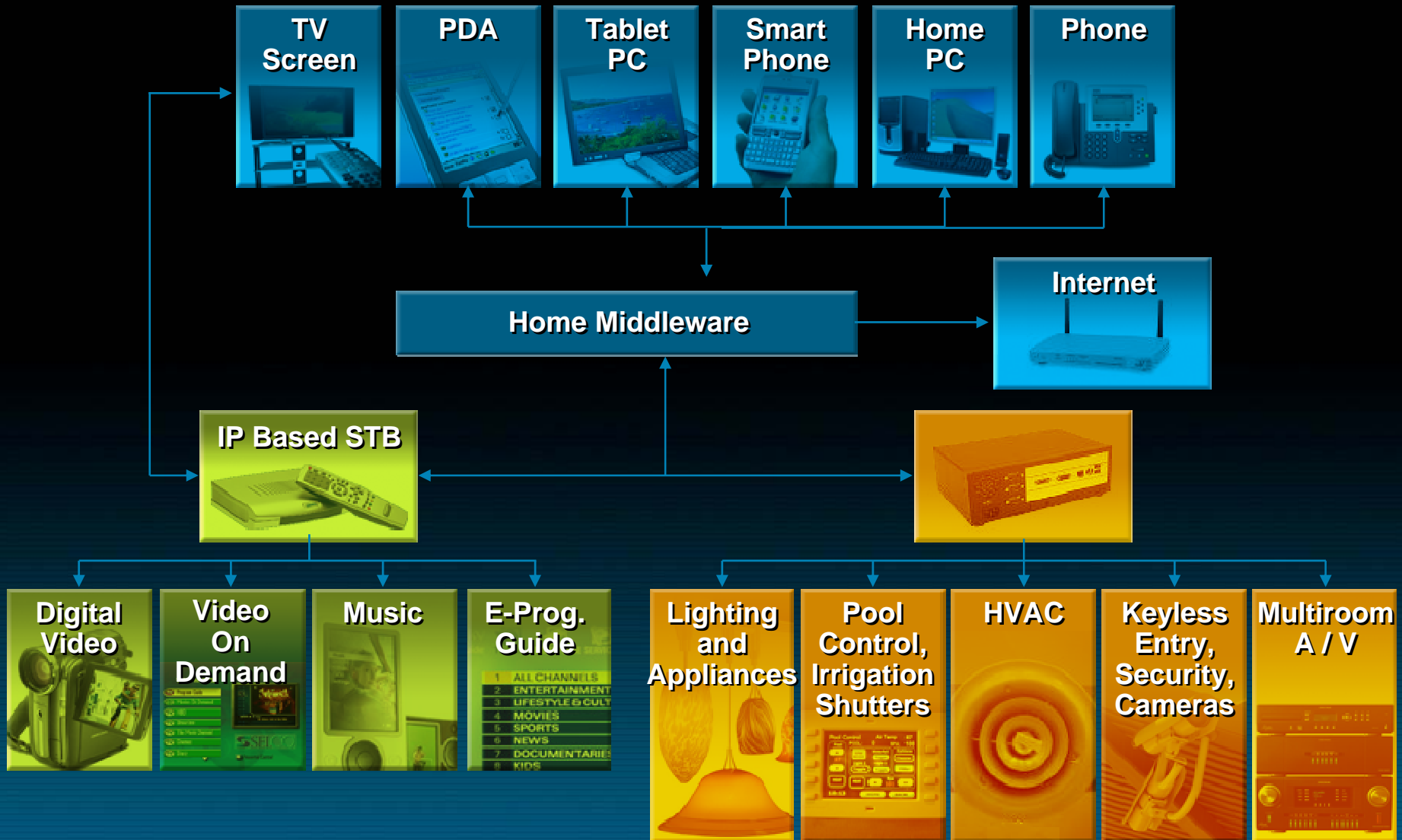
Community/City Vision:
2- Connectivity
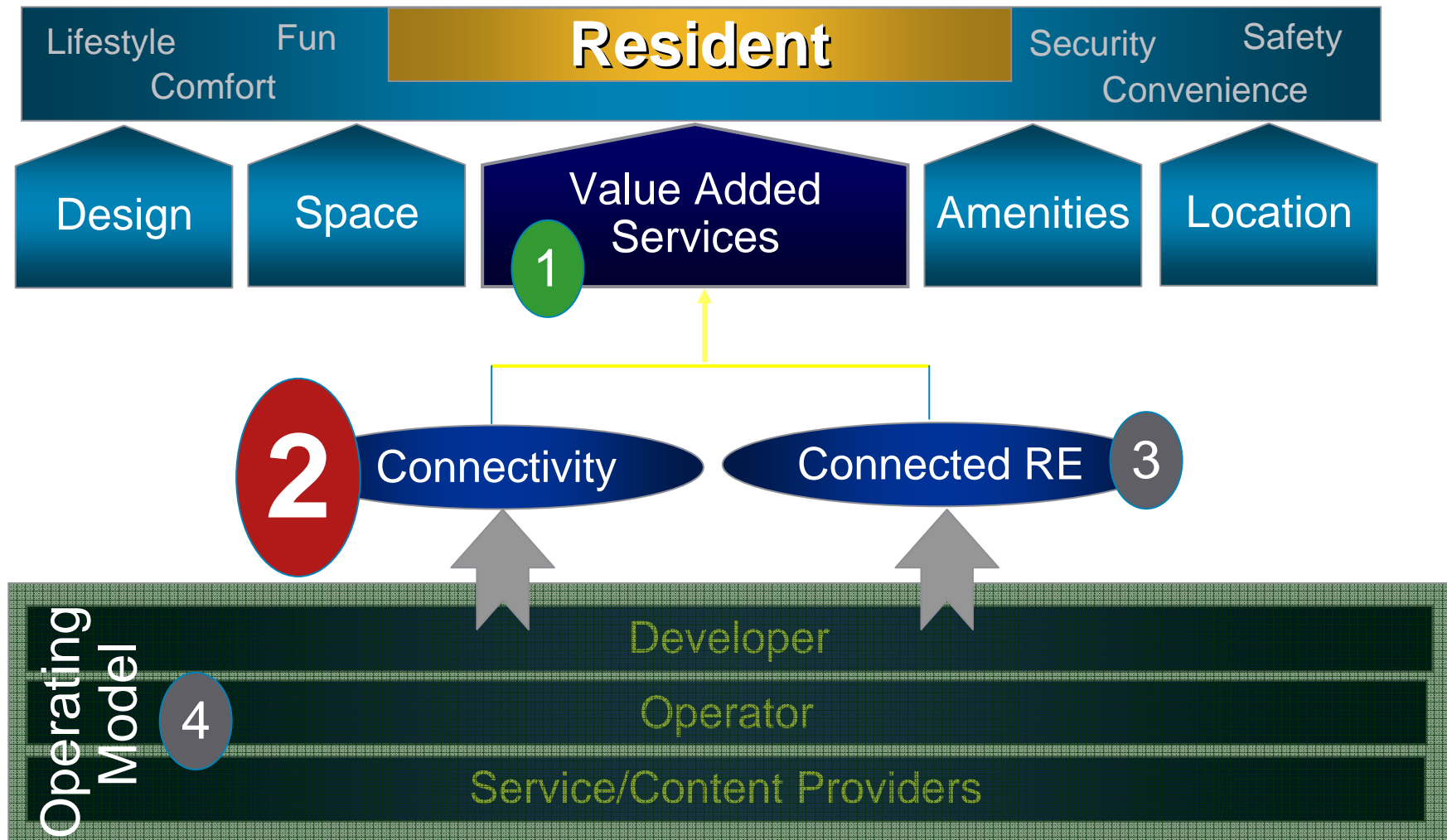
Connectivity Infrastructure:
Wired Community

NGN Node
To NGN Network

Building the Community Network Model

Connectivity Infrastructure:
Wireless Community
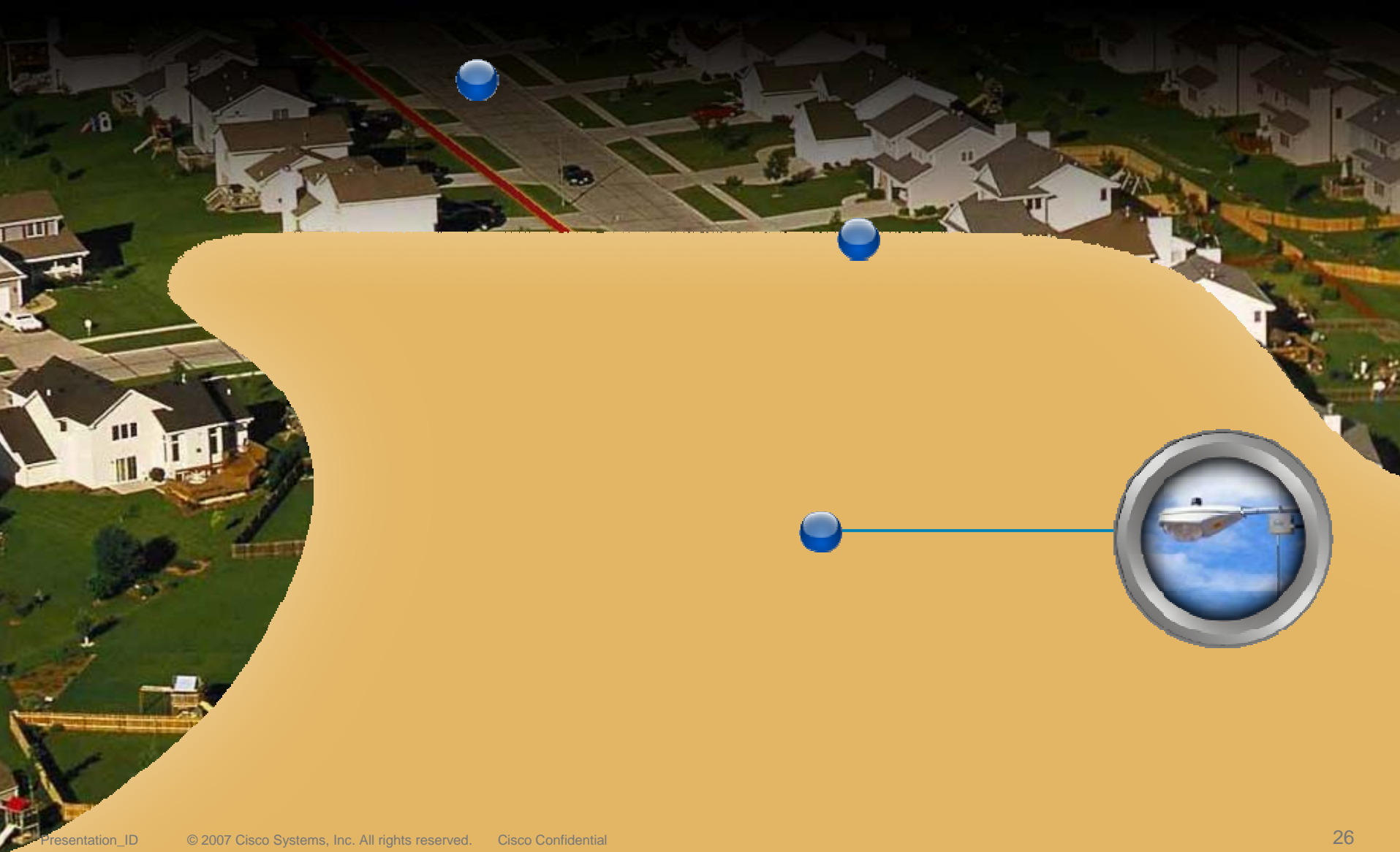
Connectivity Infrastructure:
Buildings and Real Estate
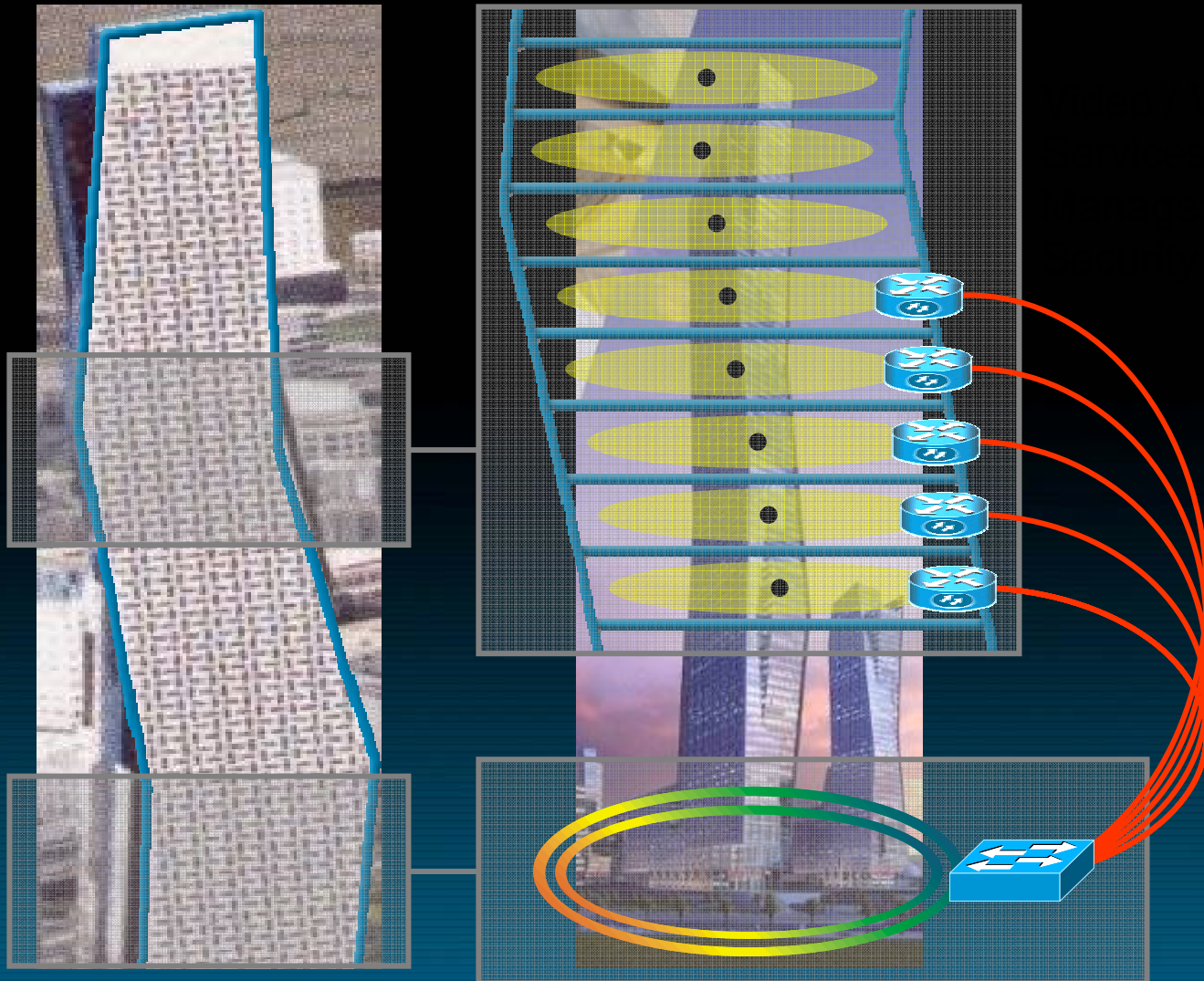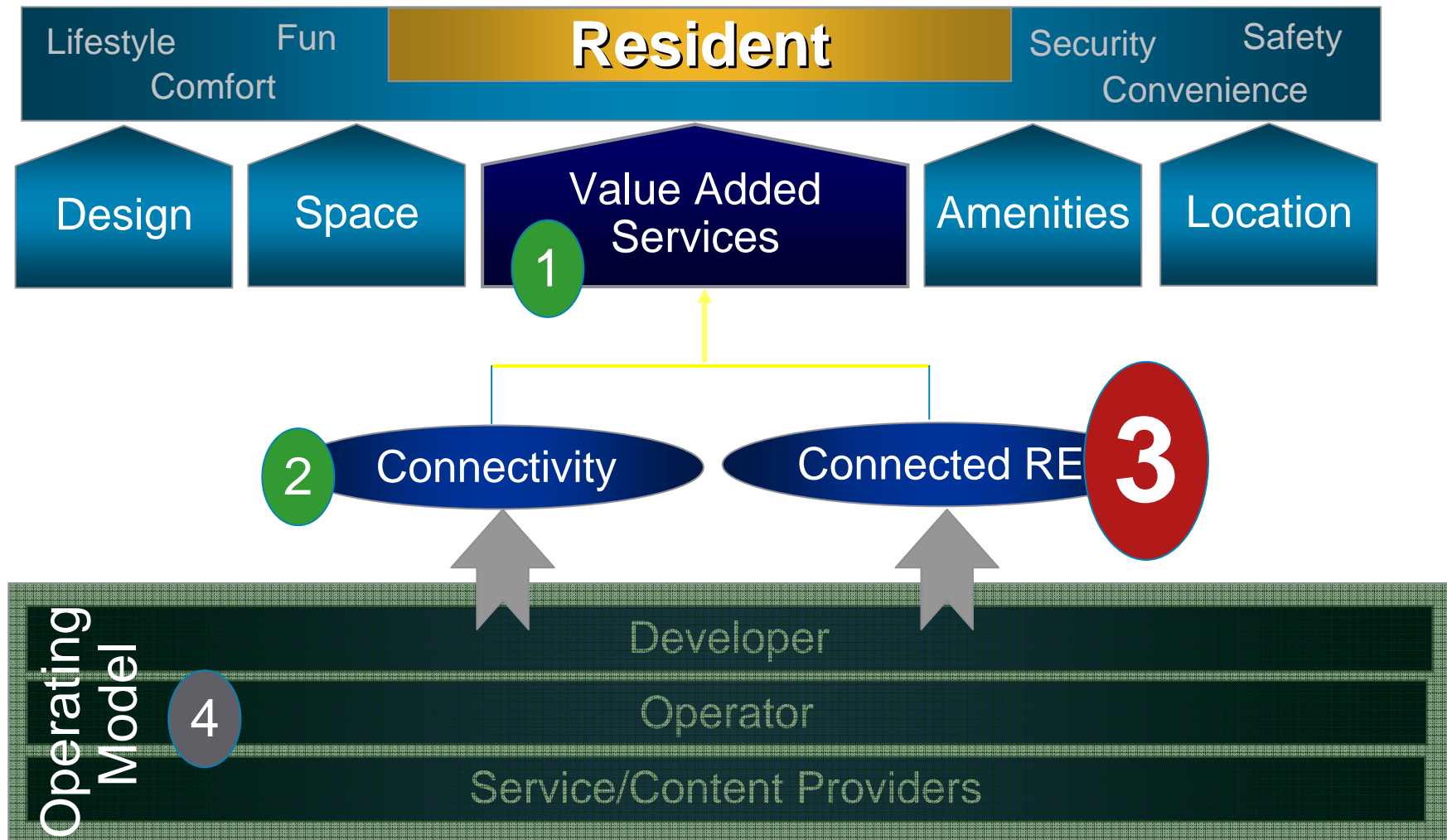
Connected Real Estate:
Building Systems

Enhance Building Performance   Situation: **Proprietary and Disparate**
Services Only Relevant to FM
Non-Interoperable
Maintenance & Operational Lock-in

s e r v i c e s

Access   **Fire**   **HVAC**   **Lighting**

Surveillance   **Energy**   **Elevator**
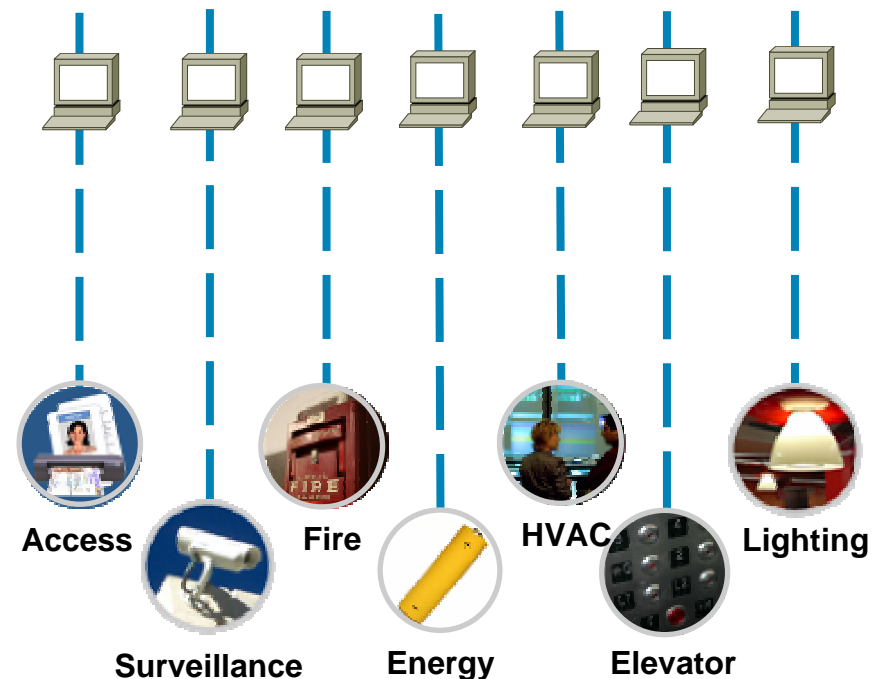
Connected Real Estate:
IT and Communications

Improve User Effectiveness

Situation: **IP-based technologies**
Open, highly interoperable

The Network is the Platform

s e r v i c e s

Media

Telephony

Access

Fire

HVAC

Lighting

Signage

Internet

Wireless

Surveillance

Energy

Elevator
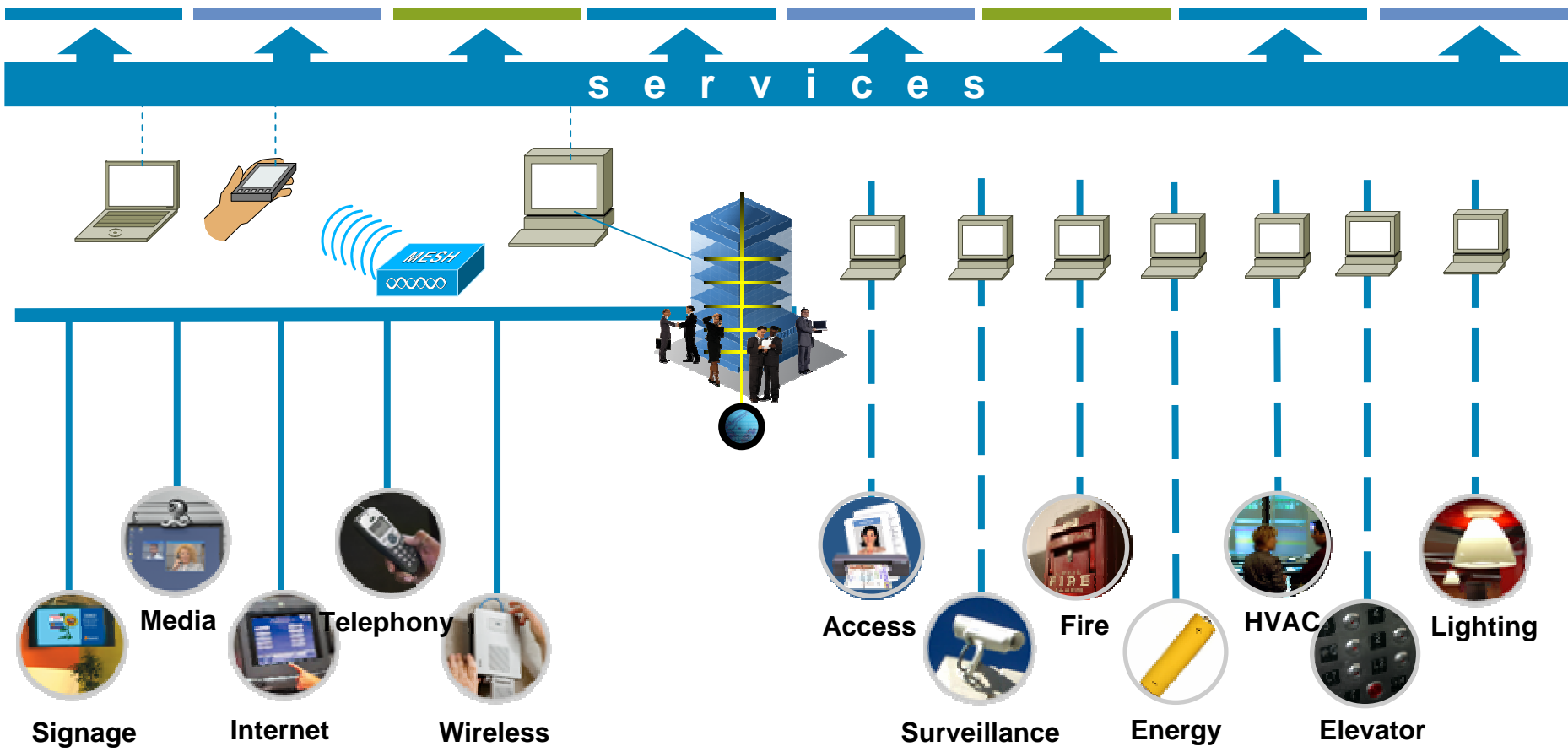
One Network - the 4th Utility

Extending the Platform for Transformation

Solution: **Building Systems move onto IP Integration with IP Telephony**

Gateways for Integration

s e r v i c e s

Signage

Media

Internet

Telephony

Wireless

Access

Surveillance

Fire

Energy

HVAC

Elevator

Lighting
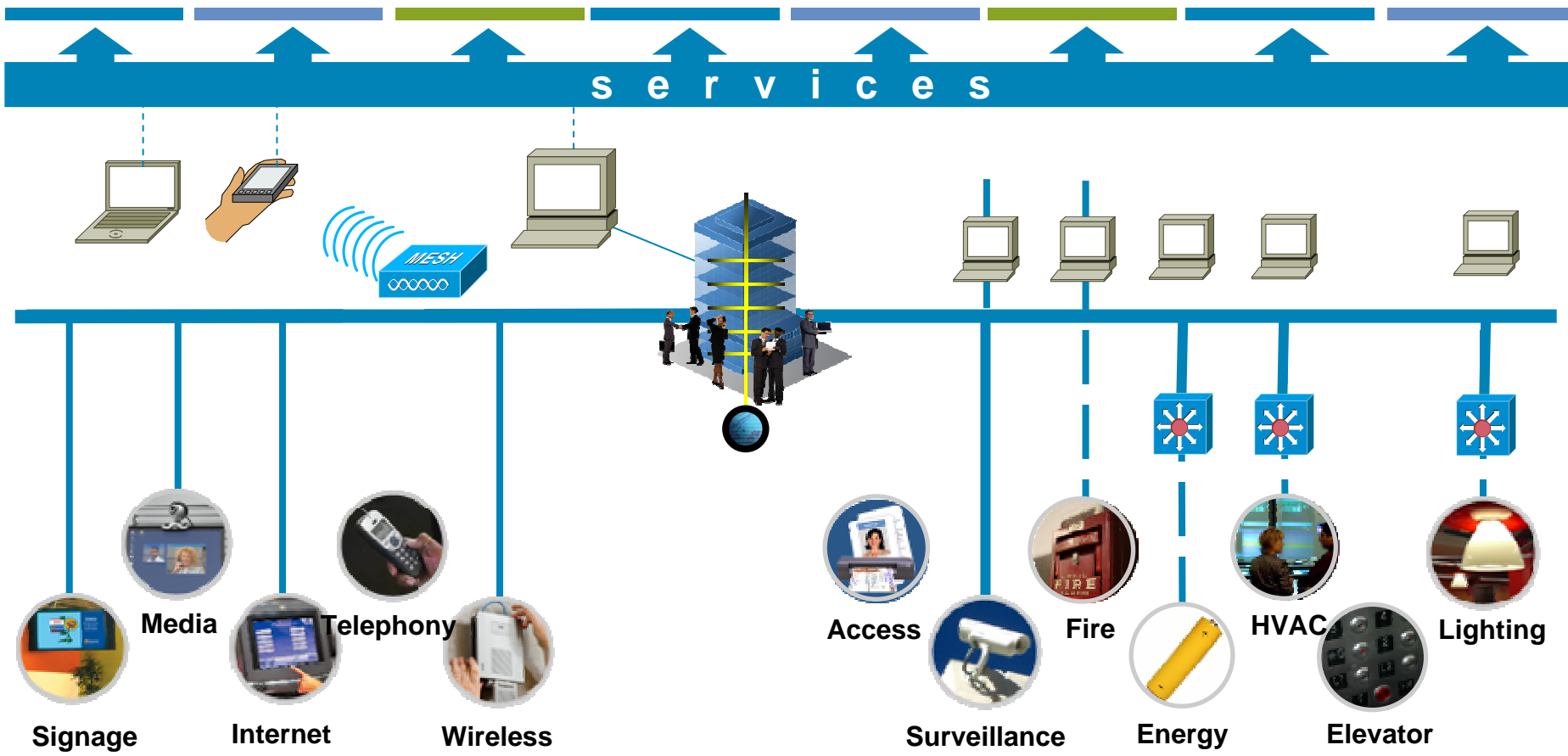
Convergence:
Introducing the 4th Utility

Gas   Electricity   Water

Essential Utilities

Internet

4th Utility
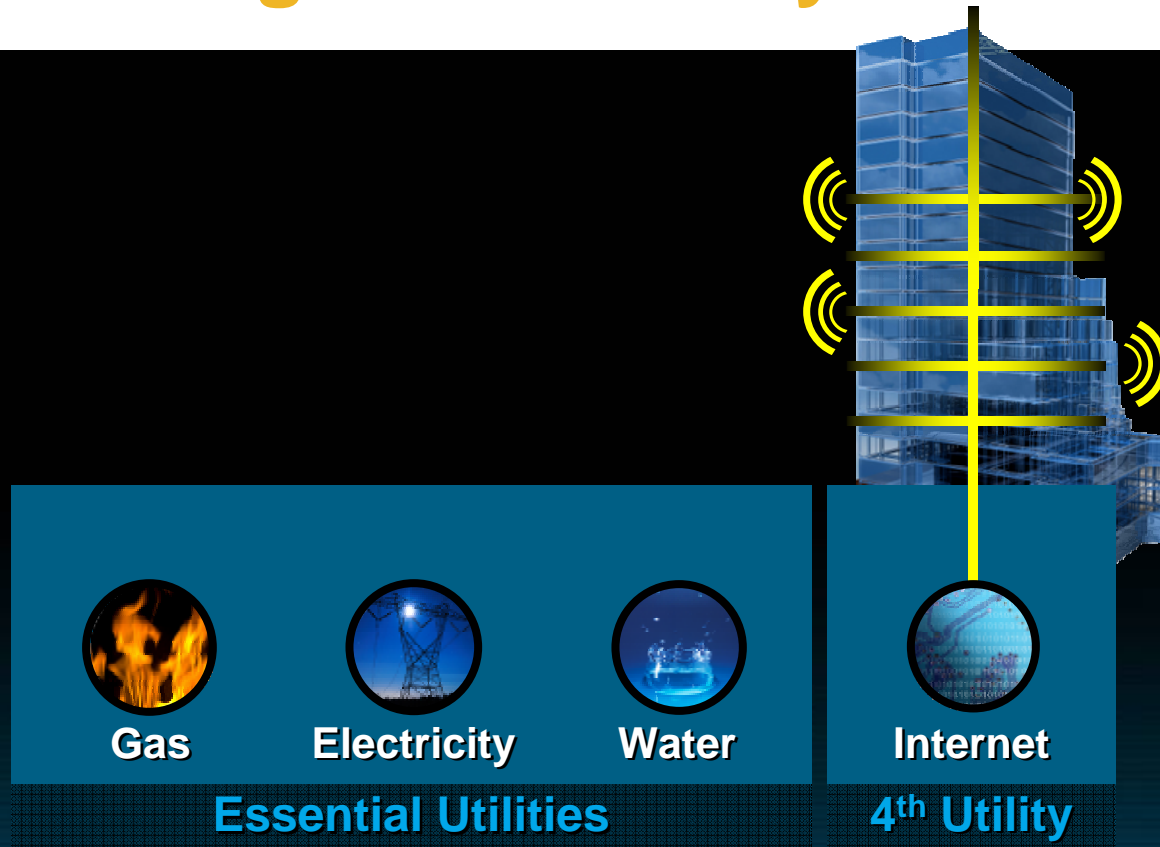
Reduce Cost and Complexity by Replacing Disparate Networks with One Simplified, Flexible, and Scalable IP Network

Community/City Vision:
4- Operating Models

Lifestyle	Fun	Resident	Security	Safety
Comfort				Convenience

Design	Space	Value Added Services (1)	Amenities	Location

(2) Connectivity   Connected RE (3)

Operating Model (4)

Developer

Operator

Service/Content Providers

Regulatory Overview

Residential | Commercial | Education | Healthcare | Hospitality | Retail | Government | Sports & Ent. | Oil & Gas | Manufacturing | Finance

One Offer

One Offer

SP Service Delivery Platform

RE Developer Service Delivery Platform

Advanced Regulated Services
- On-Demand Services
- Personalized Services
- Next Generation VVD Services
- Managed ITC services
- Data Center Services

Basic Regulated Services
- Voice (Telephony)
- Data (Internet Access)
- Video (IPTV)

Non-Regulated Real Estate Specific Services that can be offered by property owners

Real Estate Services
- Security & Access Control Services
- Facility Management Services
- Property Management Services
- Concierge Services
- Asset Tracking and Location Based Services

Telecom Network

Developer Network

Vertical Service Packages

Residential | Commercial | Education | Healthcare | Hospitality | Retail | Government | Sports & Ent. | Oil & Gas | Manufacturing | Finance

Community Service Delivery Platform

Residential | Commercial | Education | Healthcare | Hospitality | Retail | Government | Sports & Ent. | Oil & Gas | Manfacturing | Finance

One Utility Platform
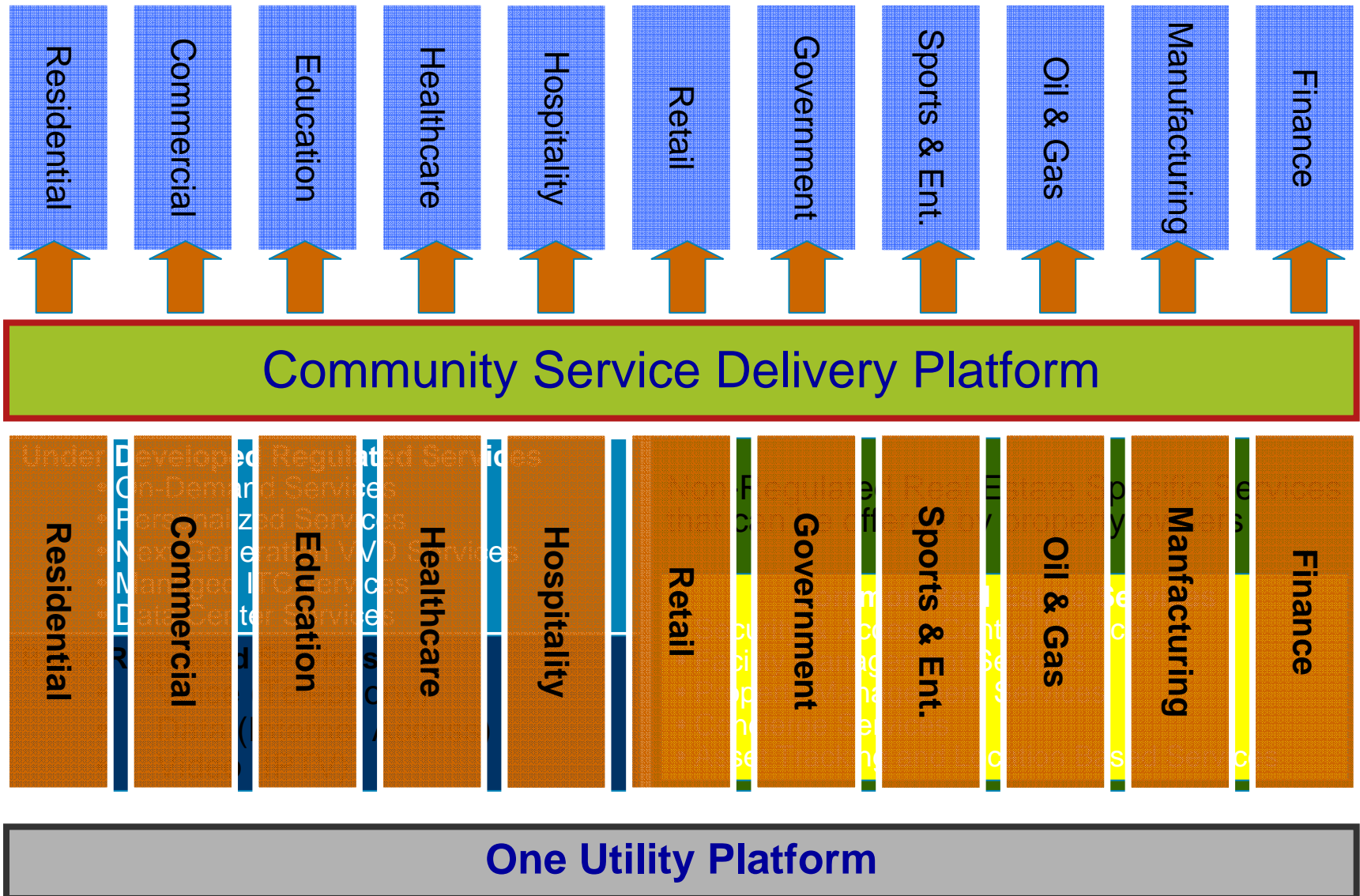
Financial Benefits

Oman
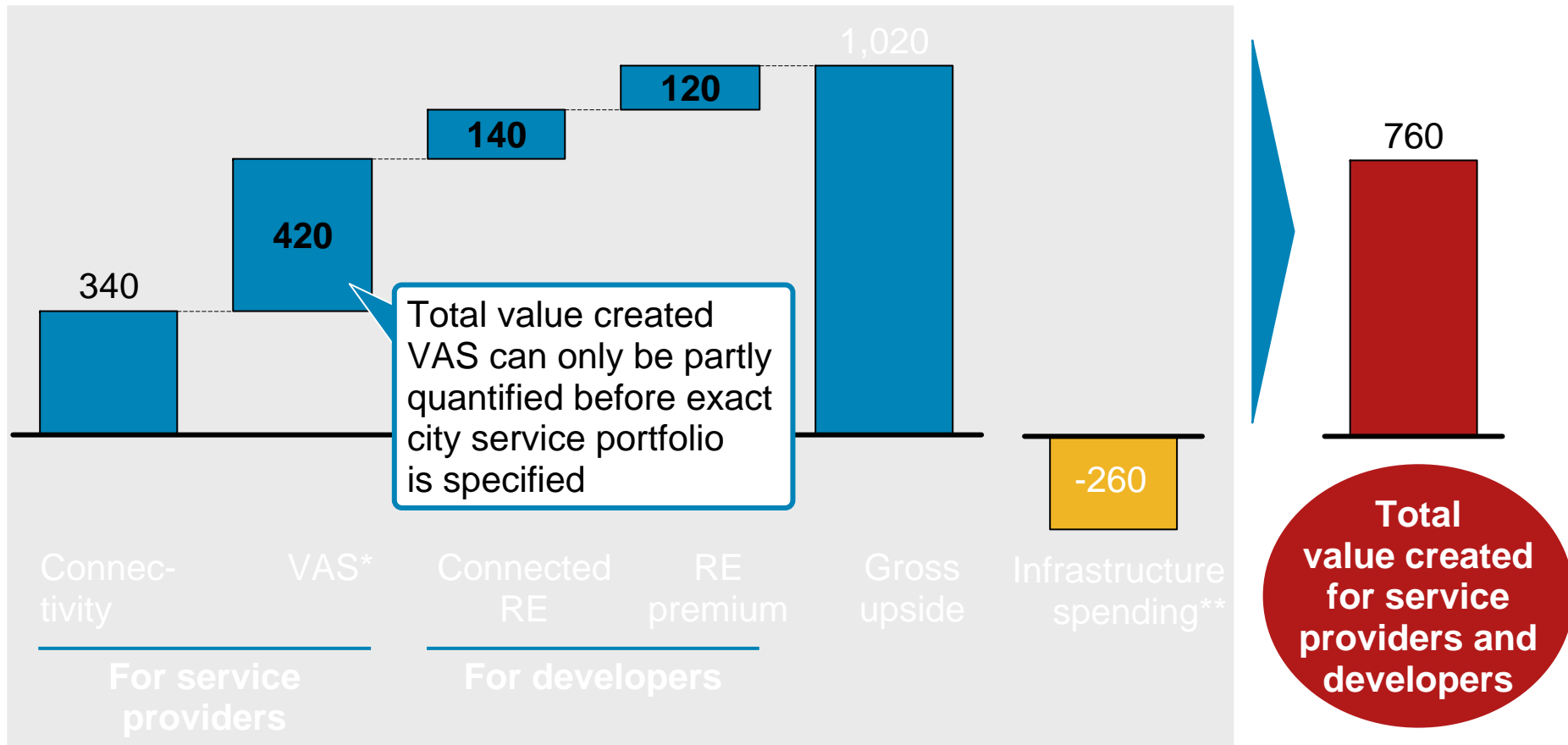**Cisco Expo**
2007

Smart cities create significant value for the service providers and developers

NPV of 10 year business case for a Mega-City with ~0.5 million inhabitants
SAR million

Total value created VAS can only be partly quantified before exact city service portfolio is specified

	340	420	140	120	1,020	-260	760

Connec-tivity · VAS* · Connected RE · RE premium · Gross upside · Infrastructure spending**

For service providers · **For developers**

Total value created for service providers and developers

* Including only the value created for the service provider. Value created for the service consumer not included

** Including CAPEX and reoccurring CAPEX investments in passive and active network components

Source: Generic city Mega city model; Telco/ISP annual reports; Cisco material; Building Intelligence Group; Gardner; RS Means Construction CostWorks 2007; Autorité de Régulation des Communications électroniques et des Postes

Ballantyne Village – Case Study

- Cost avoidance ($1 - $2 psf)
- Operational savings ($0.50 psf)
- New hard dollar revenue ($3 psf)

- Leasing/Marketing advantages
- Faster move in
- Tenant value/loyalty (stickiness)

- Frequent media coverage
- Future-minded foundation
- Continuous product development

Tenant Menu Card

1 Sign-up

| ✓ | Basic Digital Access
(Full package detailed on reverse of card) | $299 |

2 Enter number of telecom upgrades

#	Additional Cisco display phone (First 1-3 $59 ea., next 4-7 $49 ea., next 7+ $39 ea.)	$39-$59
#	Cisco color display phone	$9
#	Cisco wireless, all-campus phone	$9
#	Additional voice mail box w/ auto-attend	$9
#	Additional outlet activation	$9

3 Check premium services desired

✓	Muzak[tm]	$59
✓	Muzak[tm] On-Hold	$9
✓	Satellite Television	$59
✓	ScentAir[tm] Environment	$99
✓	Premium Internet & Data (Firewall, 4mbps bidirectional Internet, Remote Access)	$129
✓	Digital Signage Advertising (Ad Placement on: Digital Signs, Hot Spot, Way-Finding, Web Site)	$199

Return on Investment (ROI)
with Connected Real Estate

- Energy Savings – 12%

- Operational Savings – 10%

- Rental Rate Increase – 4%

- Occupancy Improvement – 4%

- Owner Occupied Building

    Energy & Operational Savings: Simple payback 4 years, ROI 95% over 5 years

- Developer Owned Building

    Occupancy & Rental Increases: Simple payback 1.4 years, ROI 265% over 5 years

Source: Building Intelligence Group

CAPEX and OPEX Savings Examples

Customizable services and experiences can be created over the connected building and IT systems.

Connecting building systems affect OPEX and CAPEX; and pays for itself !

CAPEX SAVINGS

- Cabling and cable pathways
- Labor and equipment
- Project management (design, implementation)
- Consolidation of servers for the systems
- Reduced training for personnel
- Simplified system configuration
- Wireless and Power over Ethernet

OPEX SAVINGS

- Service contracts, additions, remodeling
- Energy savings
- Improved load factor, coordinate supply
- Maintenance, repair and replacement
- Savings related to "productivity"
- Staff training, efficiency, IT support
- Cable and cable pathways, MAC

Barbizon New York City	1 America Plaza San Diego	The Shires Leicester, UK		Fairmont Vancouver	Pfizer Sandwich, UK	Cisco Systems San Jose
				energy savings	maintenance	security/surveillance
14%	**8.6%**	**15%**		**34%**	**15%**	**30%**