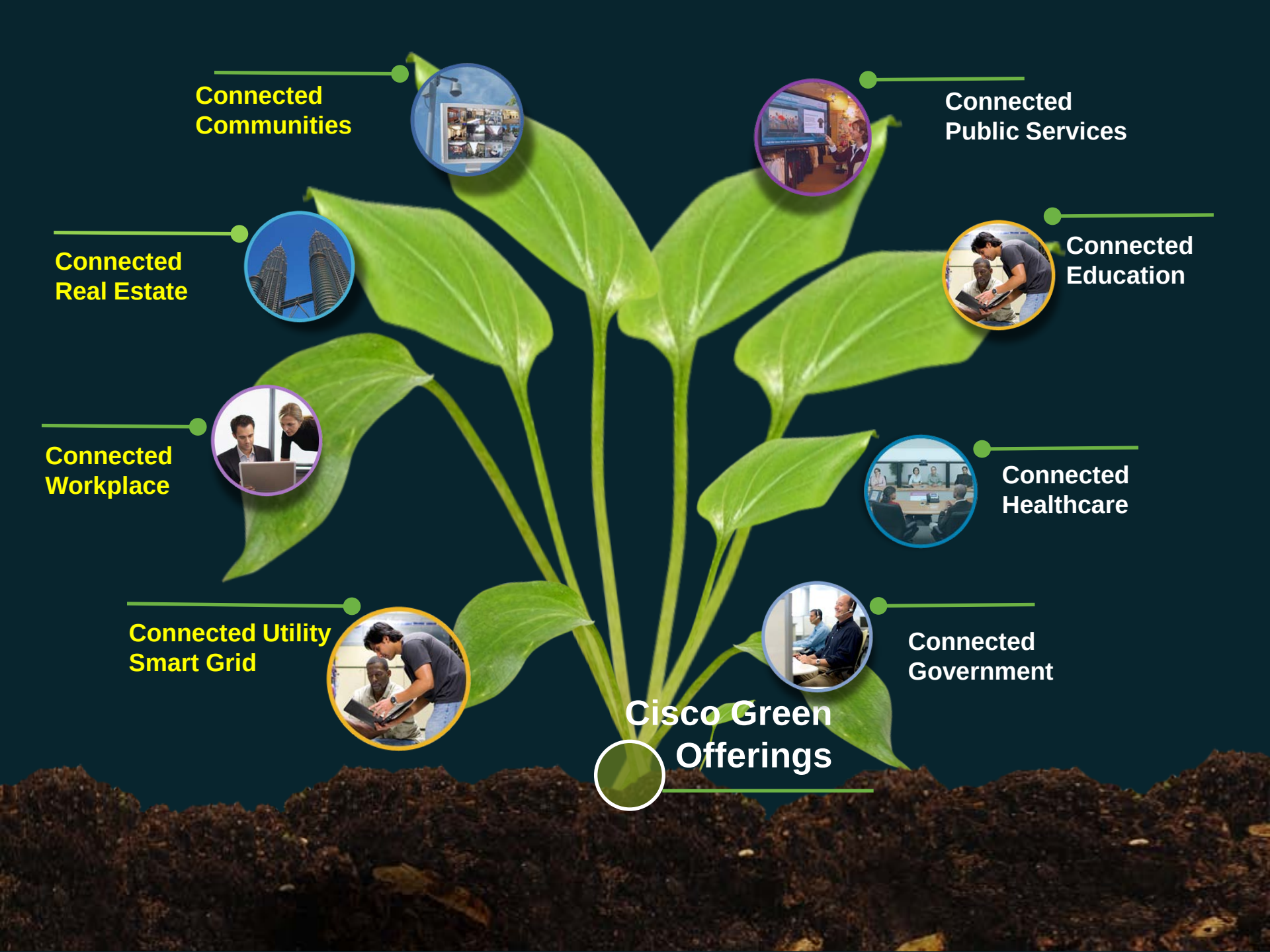
Cisco Systems: A New Approach to Creating Smart+Connected Communities

Gordon Feller, Director: Cisco HQ

© 2010 Cisco and/or its affiliates. All rights reserved.


Connected Communities
Connected Public Services
Connected Real Estate
Connected Education
Connected Workplace
Connected Healthcare
Connected Utility Smart Grid
Connected Government
Cisco Green Offerings

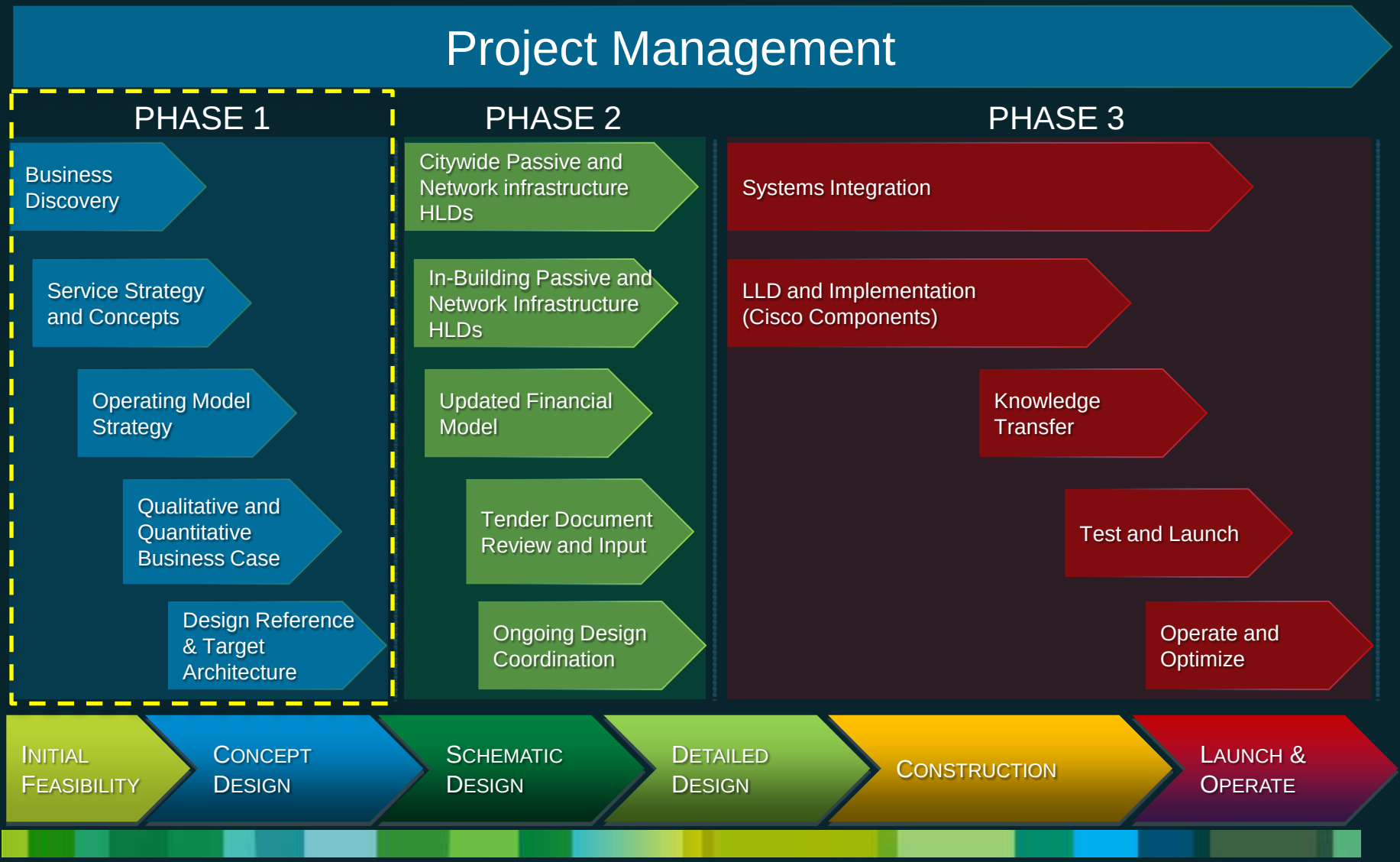
Smart Community

© 2009 Cisco Systems, Inc. All rights reserved.

Lakeside (Chicago, IL)

Services need to be mapped to a development project's natural lifecycle

Detailed Further



© 2011 Cisco and/or its affiliates. All rights reserved.

Clarify drivers, from which ICT operating principles follow

Key business drivers

Development

- Create a "connected" destination that promotes economic and social responsibility, where quality of life is paramount.

Target Segments

- A lifestyle-centered destination for retail, commercial, education, and residential uses.

Property Value and Returns

- Increase property value (through sale or rental premiums) by offering a differentiated, one of a kind destination that caters to the needs of the target segment.

Branding

- Augment the brand recognition of 5401 North and value for CPRT.

Operational principles

© 2011 Cisco and/or its affiliates. All rights reserved.

services aligned to operational principles are matched to each type of building

Day-1 services in **BOLD**

Essential services

Provide basic functionality for next generation buildings and address inefficiencies in construction and property management

- **Energy Management - Building**
- **Intelligent Infrastructure Management Service (IIMS)**
- **Intelligent Maintenance Management Service (IMMS)**
- **Smart Card**
- **Web and Mobile Portal**

Transversal services

Common to all types of buildings and tenants

- **Triple Play**
- **Information operations center (IOC), which enables**
  - **Automatic Accident Detection**
  - **Green Aware**
  - **Integrated Safety and Security**
  - **Energy Demand Management**
  - **Grid Monitoring and Control**
- Citizen and Authority Interaction
- Emergency Notification
- IP Interoperability and Collaboration System (IPICS)
- License Plate Recognition
- Network Energy Management
- Security Video Analytics
- Smart Grid - Specific User

OFFICE LEASE + SMART WORK CENTER

- **Co-Location**
- **Desktop Collaboration**
- **Office Resource Management**
- **Personal Virtual Office (PVO)**
- **Telepresence - Managed**
- **Unified Communication**
- Office-in-a-box
  - Disaster Recovery
  - Managed IT / Remote Desktop Support
  - Network Security
  - Storage
- Additional services
  - Extended Telephony
  - Visitor Management
  - Digital Signage - for Information and Advertising
  - Virtual Attendant
  - Virtual Desktop

WAKE TECH

- **Desktop Collaboration - Collaborative Learning Environment**
- Digital Signage - for Education
- Rich Video Learning Environment
- Telepresence - Education

RESIDENTIAL

- **Smart Home System**
  - **Home Automation**
  - **Home Energy Management**
  - **Home Intercom**
  - **Home Mobile Access**
- Additional services
  - Home Entertainment
  - Home Personalization
  - Home Security
  - Virtual Learning
  - Virtual Visit (Telepresence)

PUBLIC AREAS

- **Citizen Wi-Fi Hot Spots**
- **Web and Mobile Portal - City Portal**
- **Smart Car Parking**
- Digital Signage
- Location Based Services
- Smart Kiosk
- PDA Employee - Street

DUKE MEDICAL

- **Inter-Hospital Collaboration / Health services exchange**
- Connected Imaging
- Connected Mobile Clinics
- Digital Media Health Education and Awareness
- Healthpresence

RETAIL

- **Footfall Tracking**
- **Location Based Services**
- **Personalized Advertising**

SCHOOLS

- **Desktop Collaboration - Collaborative Learning Environment**

YMCA

- Digital Community Center
- Digital Signage

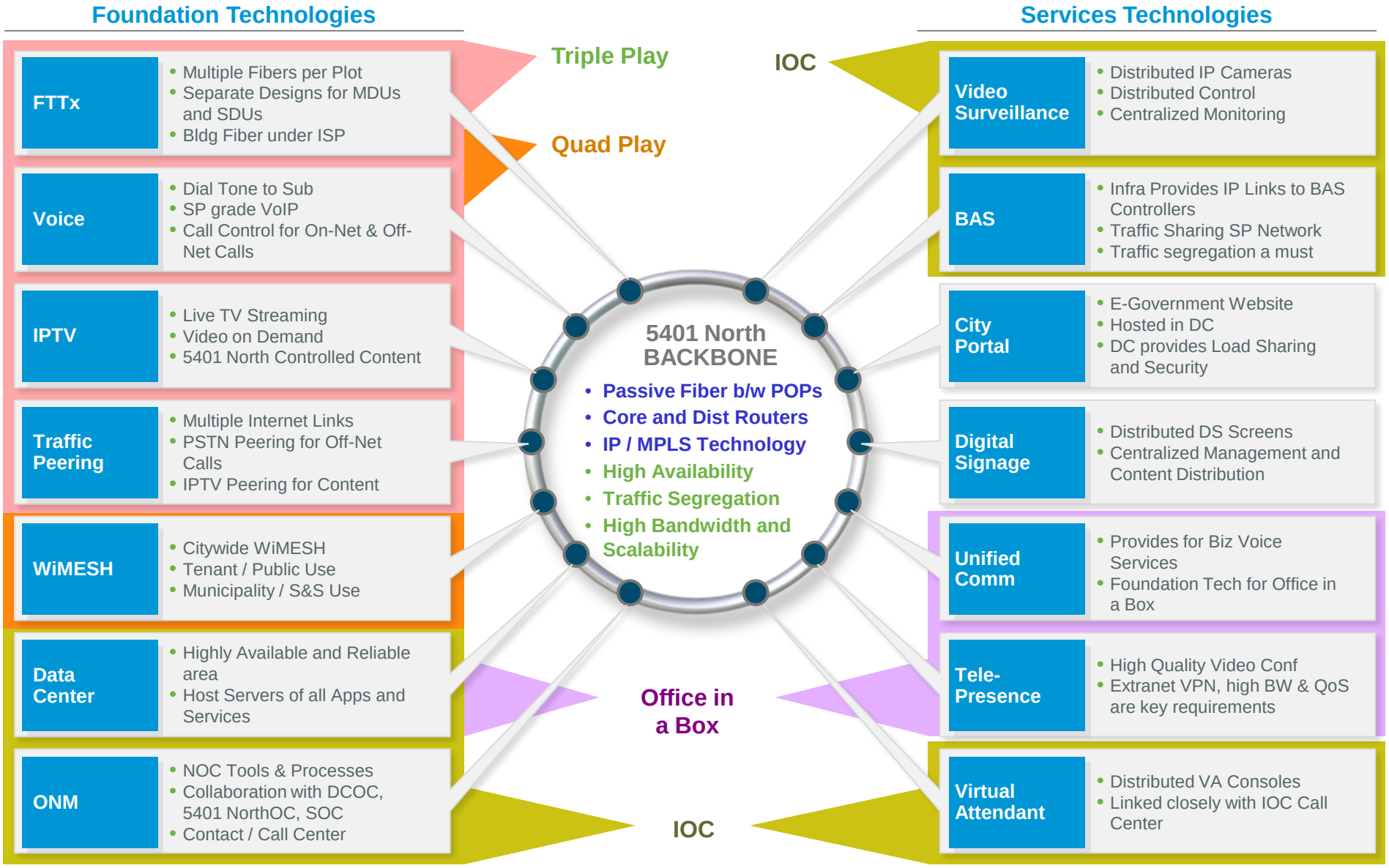
TRANSPORTATION

- **Transit Digital Displays**
- Dynamic Traffic Management
- Green Corridor
- Reversible Lanes
- Car Data Collector

© 2011 Cisco and/or its affiliates. All rights reserved.

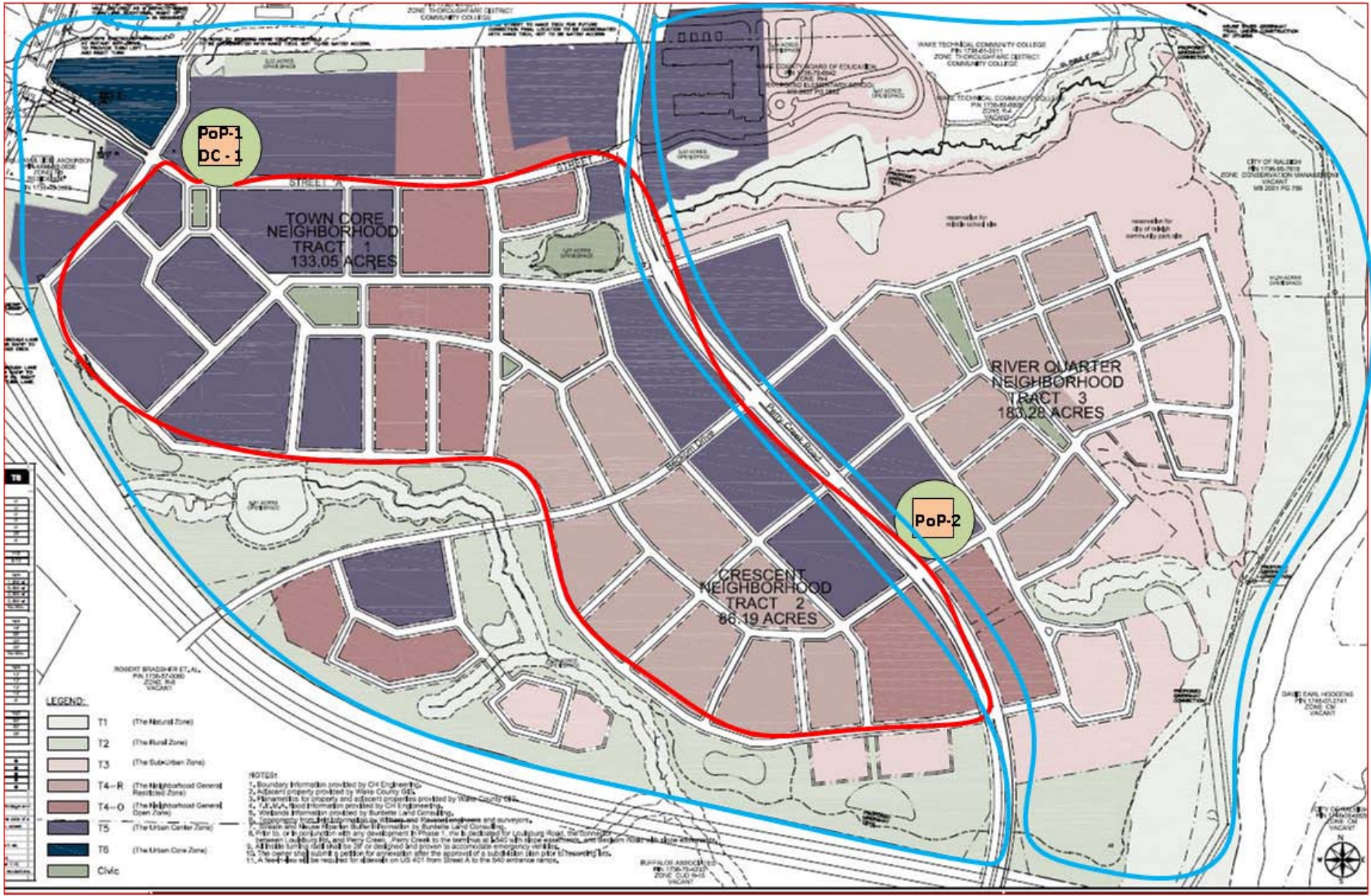
The infrastructure network will help support the implementation of foundational and services technologies

ILLUSTRATIVE



© 2011 Cisco and/or its affiliates. All rights reserved.

Based on industry standards, 2 Points of Presence are needed -- to provide redundancy and availability of services to the community at all times



ICT

Totally Connected, Personally Controlled

CHALLENGE

Integrate technology to expand opportunities

- Provide new ways to educate
- Enhance access to healthcare
- Enable infrastructure and energy systems to reach maximum potential
- Power the neighborhood utility services
- Connect the southeast lakefront community to advanced information technologies

ICT

Totally Connected, Personally Controlled

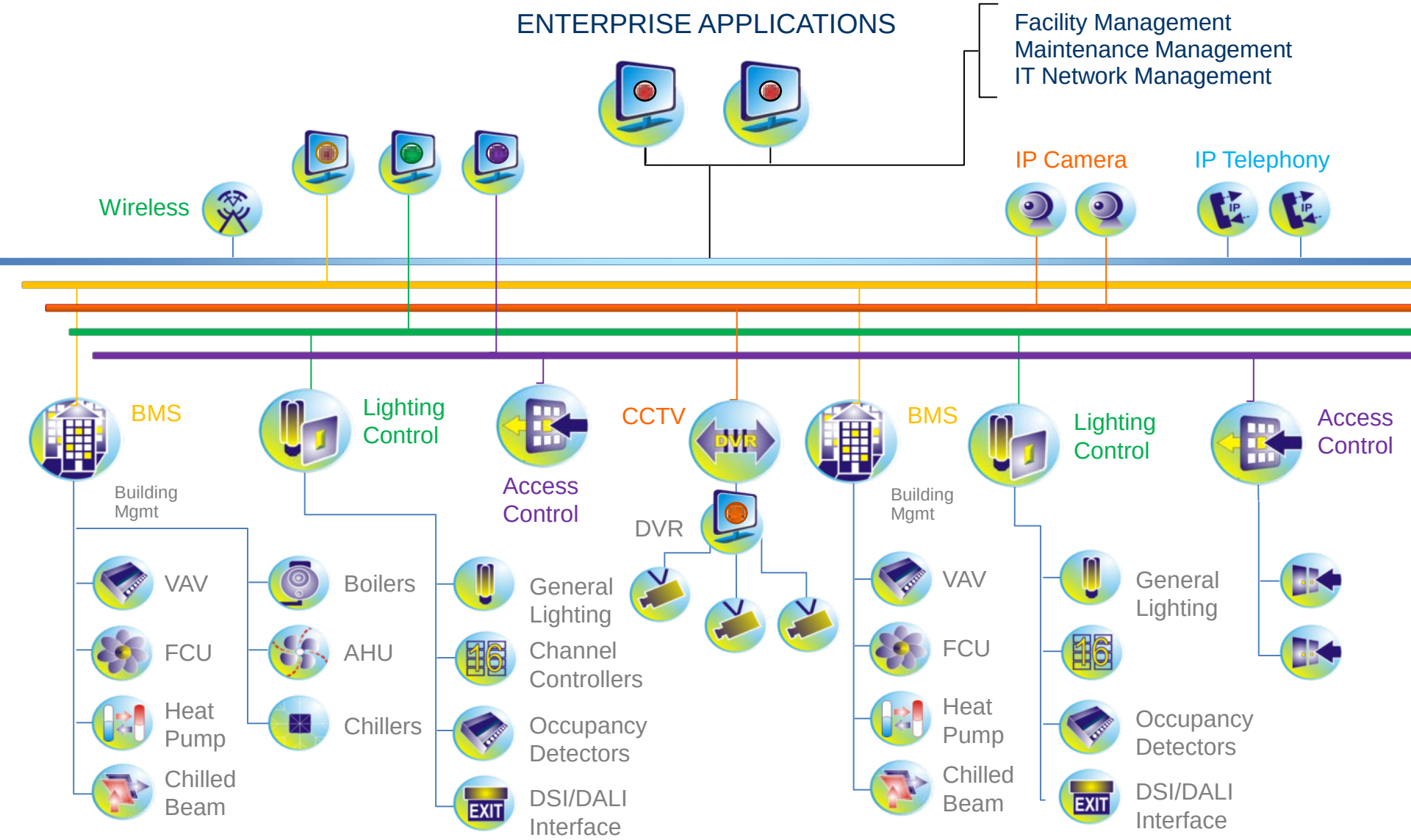
Lakeside can build the most advanced and integrated information and communication technology network in the world

- **Providing a robust and integrated digital platform that improves safety, expanded services and quality of life**
- **Positioning Lakeside as a hub for new and innovative research, healthcare and education**
- **Promoting an open and entrepreneurial environment to create new business opportunities, local and global.**
- **Expanding the network to provide access and opportunity beyond Lakeside.**
- **Enabling a seamless personal experience: Any service, anywhere from any device.**

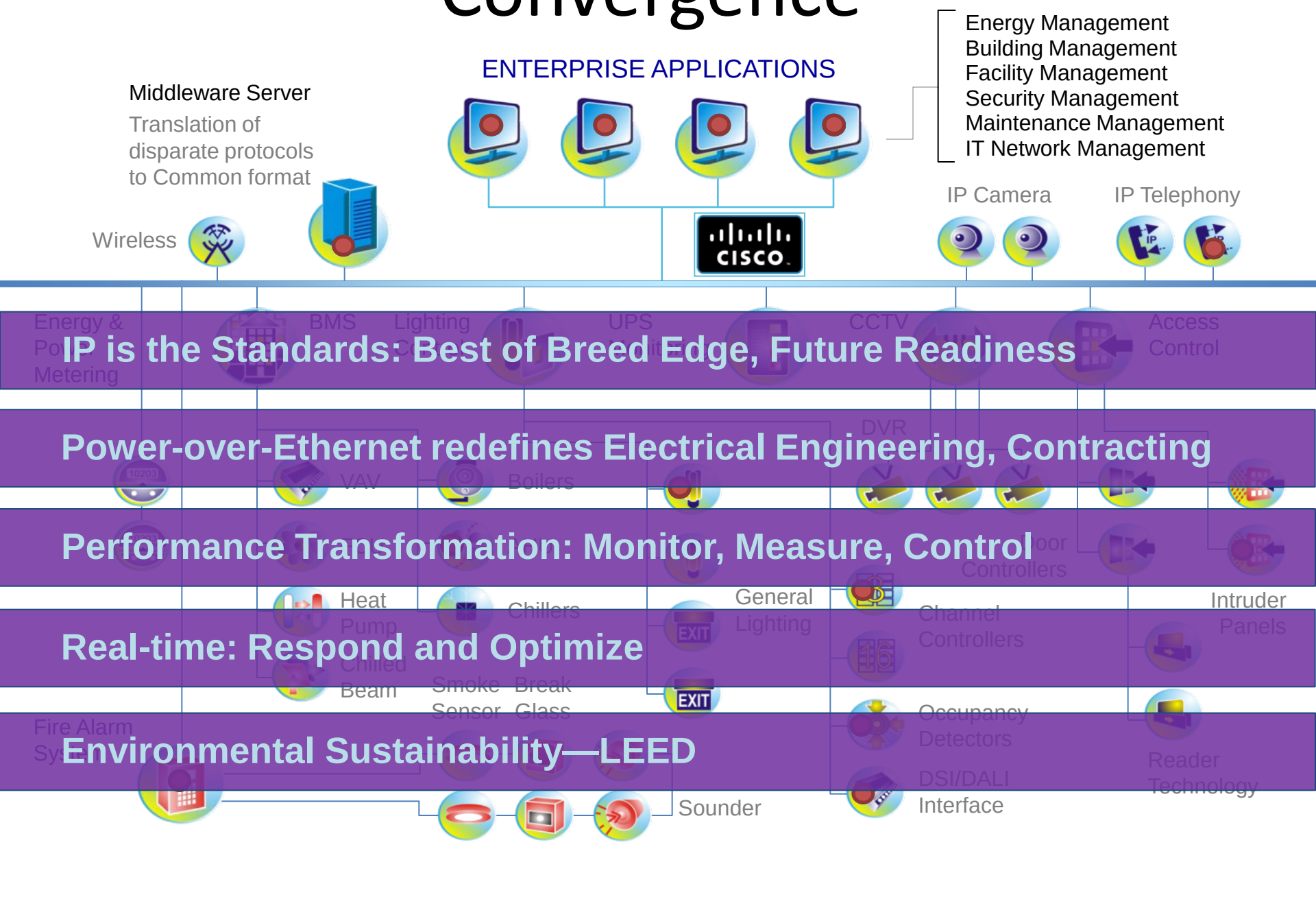
Smart Buildings

© 2009 Cisco Systems, Inc. All rights reserved.

Legacy


ENTERPRISE APPLICATIONS
Facility Management
Maintenance Management
IT Network Management
Wireless
IP Camera
IP Telephony
BMS
Building Mgmt
VAV
FCU
Heat Pump
Chilled Beam
Boilers
AHU
Chillers
Lighting Control
General Lighting
Channel Controllers
Occupancy Detectors
DSI/DALI Interface
Access Control
CCTV
DVR
DVR
BMS
Building Mgmt
VAV
FCU
Heat Pump
Chilled Beam
Lighting Control
General Lighting
Occupancy Detectors
DSI/DALI Interface
Access Control

Convergence



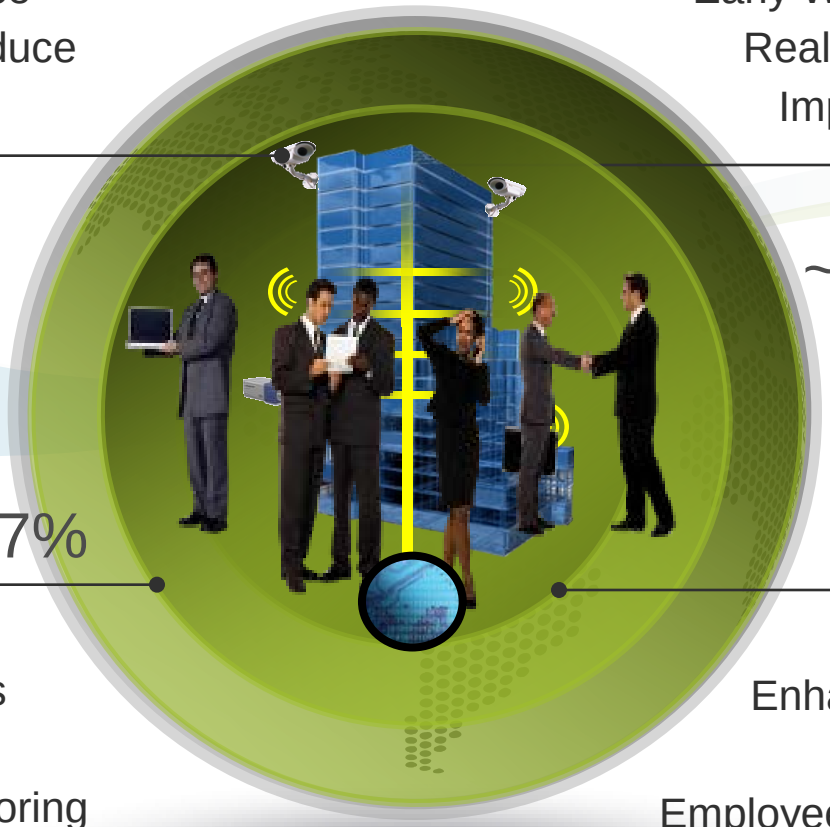
Innovative Intelligent Networks
Smart+Connected Real Estate

Regulatory Compliance
Monitor, Manage, Reduce
Demand Response

Energy Savings ~28%

Early Warning and Notification
Real Time Communications
Improved Response Time

Safety and Security ~21%



Operational Efficiency ~17%

Staff Mobility
Centralized Operations
Extended Lifecycle
Critical Systems Monitoring
Infrastructure Convergence

Financial Incentives

Reduced TCO
Enhanced Tenant Services
Stakeholder Value
Employee Attraction / Retention
Green – Reduced Industrial Waste

Experience / Services

© 2009 Cisco Systems, Inc. All rights reserved. Cisco Confidential

The “Building Information Network”

Information Services

- High-Speed Internet
- Wireless
- Mobility – Remote Access
- Unified Comms
- Audio and Video Conferencing
- Telepresence
- Interactive media
- Digital signage

Building Services

- Lighting
- Elevators
- RFID - Tracking
- HVAC – Sensors
- Fire
- Video Surveillance
- Access
- BAS – Energy

© 2010 Cisco Systems, Inc. All rights reserved.

Connected Anytime Anywhere Any System

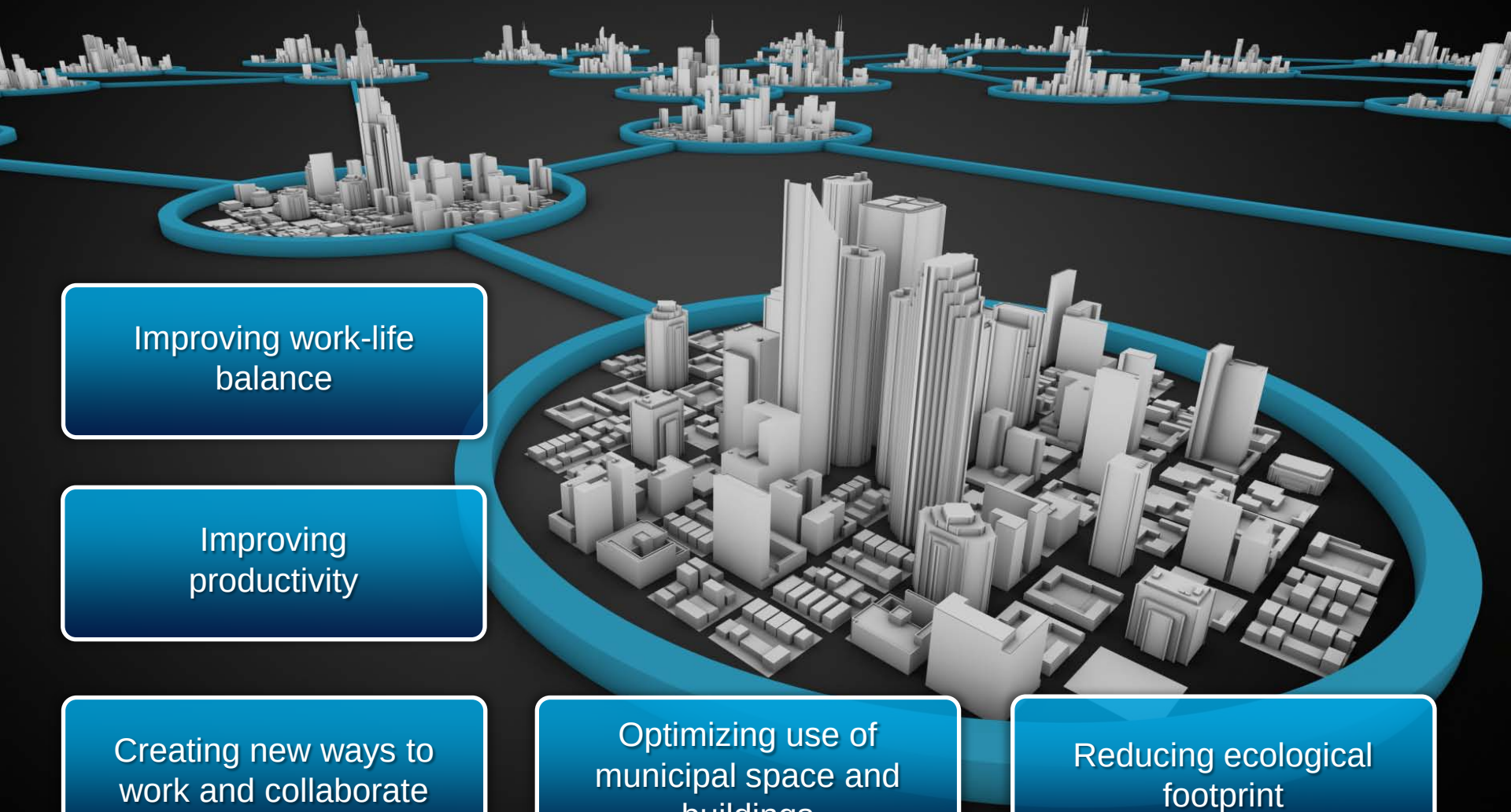
Smart Work Center

© 2009 Cisco Systems, Inc. All rights reserved.

Smart+Connected Communities:

Cisco Smart Work Centers: Foster Urban Regeneration, Social Inclusion, and Reduced Carbon Footprint

Smart Work Center offers a flexible and user-centric work space with enhanced communication technologies designed to reduce carbon footprint



Improving work-life balance

Improving productivity

Creating new ways to work and collaborate

Optimizing use of municipal space and buildings

Reducing ecological footprint

Smart Work Center

At a Smart Work Center location, the local authority, enterprises, small- and medium-sized businesses, and entrepreneurs can rent dedicated space or use available space in the flexible workplace

- Reception and Concierge
- Building and facility management services
- **Child Care**
- ICT Services
- Postbox registration
- Catering

© 2012 Cisco and/or its affiliates. All rights reserved.

Smart Work Center – **Booking**

- **Cisco's Smart Work Center Reservation System**
  - Real Time Traffic Information
  - Office availability
  - Conference rooms
  - Telepresence
- **Cisco's Physical Access Control system**
  - Personalization
  - IP Telephony and Internet access activated

© 2012 Cisco and/or its affiliates. All rights reserved.

Smart Work Center – **Arrival Lobby**

Hallway Digital Sign:

- Welcome message
- Office maps and directions
- Building energy consumption
- General information's

Office Digital Sign:

- Personal profile
- Reports on past visits
- Benchmarks against other employee energy consumption
- Suggestions on how to improve power usage

© 2012 Cisco and/or its affiliates. All rights reserved.

Smart Work Center – **Office**

Cisco's Unified Communications and Wireless Features:

- WebEx
- Voicemail
- Presence
- Messaging

Cisco's IP Phone:

- BMS functions
- Technical support

© 2012 Cisco and/or its affiliates. All rights reserved.

Smart Work Center – **Check Out**

- **Office Facilities Features:**
  - TelePresence
  - International Calls
  - Printing & other services
- **Unified Billing**
  - Credit Card
  - Invoice

© 2012 Cisco and/or its affiliates. All rights reserved.

Technology Components

- Flexible Workspaces & Conference rooms
- Highspeed Internet Access
- Internet Wireless
- TelePresence
- IP Telephonie

Social Components

- Close to residential community
- Close to Highways
- Flexible Meeting space
- Child Care
- Financial Services e.g. ATM
- Employment Agency Services
- Sport & Entertainment

Smart Work Center - **Benefits**

Workers and businesses

- Offers economies of scale through sharing centralized facility and technology services
- Professional infrastructure and business support
- Contributes to work-life balance by reducing commute time

Local Authority

- Reduces workspace overhead, real estate costs, and building operation costs
- Creates spaces for people to meet in person or virtually, for business or social activities
- Reduces traffic congestion

Community

- Provides a vision and infrastructure for tomorrow's resilient community
- New patterns of work, enhancing economic output, social cohesion, and community attractiveness
- Creates competitive, innovative, sustainable work-life environment

Presence-based Smart Services

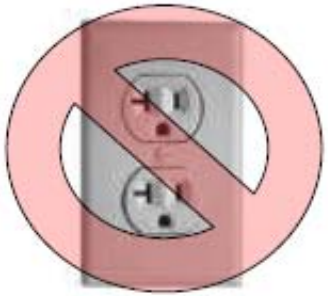
- On-demand resource enablement
- E.g. With integration to the calendaring tool, activation of lights, lifts, and, HVAC during extended hours or weekends
- Increased Energy Savings
- Provides scope to add new presence based services in future.

© 2010 Cisco and/or its affiliates. All rights reserved.

Example – Smart Workplace

cisco

Industry Changing Technology - PoE



- Part of the DC Micro Grid
- No Vampire power loss

EnergyWise: Managing Energy Consumption of Networked Devices

Business Objectives:

- Reduce grid load and peak surcharges
- Smooth and time shift power usage
- Control Laptops, PCs, APs, Phones

Solution:

- EnergyWise deployed on existing Cisco Catalyst Switches + PC Agent

Business Value:

- 51 tons GhG/$20,558 savings = 15 mid-sized cars off road for a year
- 371 tons GhG/$74,230 savings from Phase 1 power-down =111 cars

© 2008 Cisco Systems, Inc. All rights reserved. Cisco Confidential

Dashboards – Sustainability - Awareness
Changing Behavior Drives Savings

Environmental Dashboard

Carbon savings today – 3.5 tons

(each ½ ton = 1 tree)

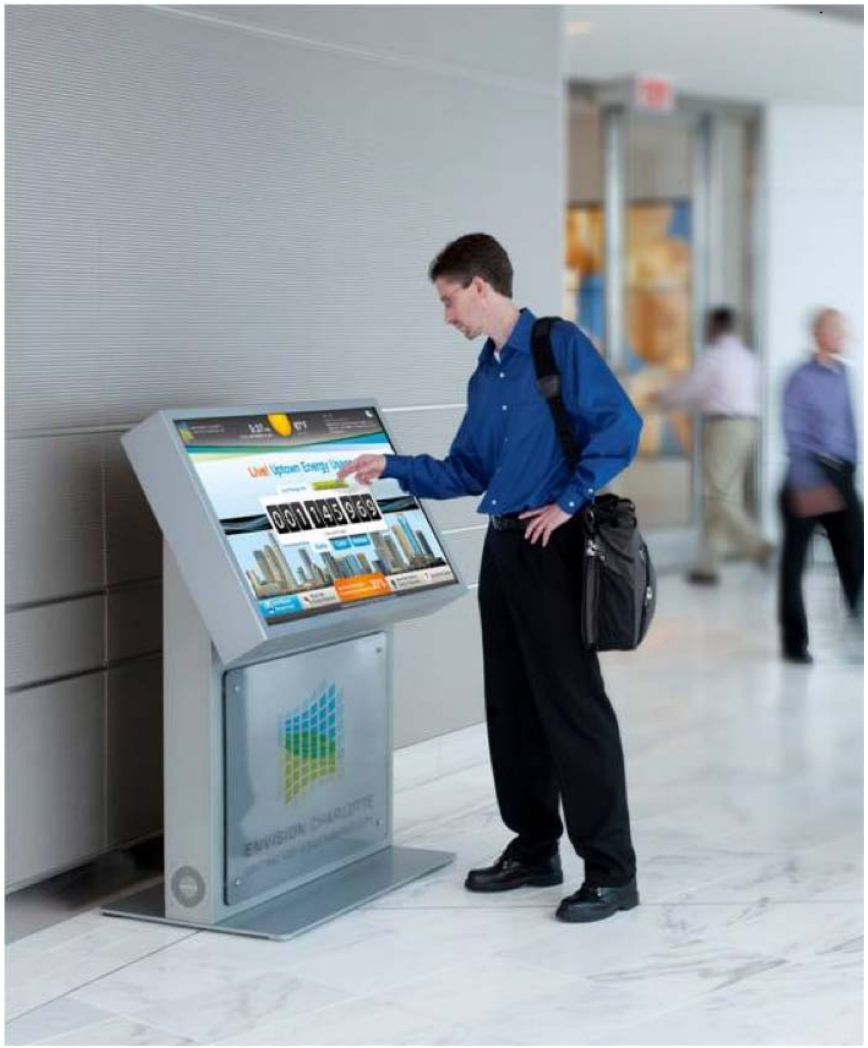
1200 PC's, Servers and other IT equipment

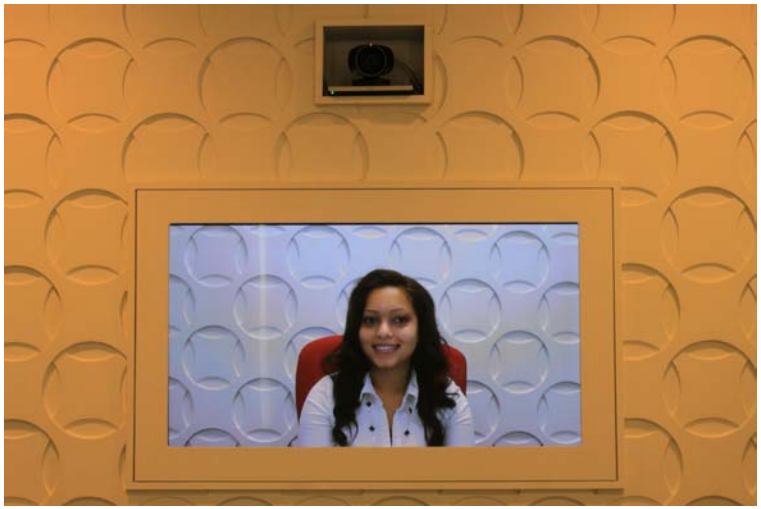
Energy Savings Month to Date

I.T. Systems	Lighting	Air Conditioning
17.2 tons	9.4 tons	12.2 tons

 © 2007 Cisco Systems, Inc. All rights reserved. Cisco Confidential

Smart Services at your finger tips





© 2010 Cisco Systems, Inc. All rights reserved.