



Cisco Expo  
2010

# Role of Technology in Smart Communities



**Amr Salem**

**Director, Emerging Markets**

**Smart+Connected Communities**

“Cisco is quietly preparing for markets that don’t exist – yet.”

San Jose Mercury News

March 7, 2009

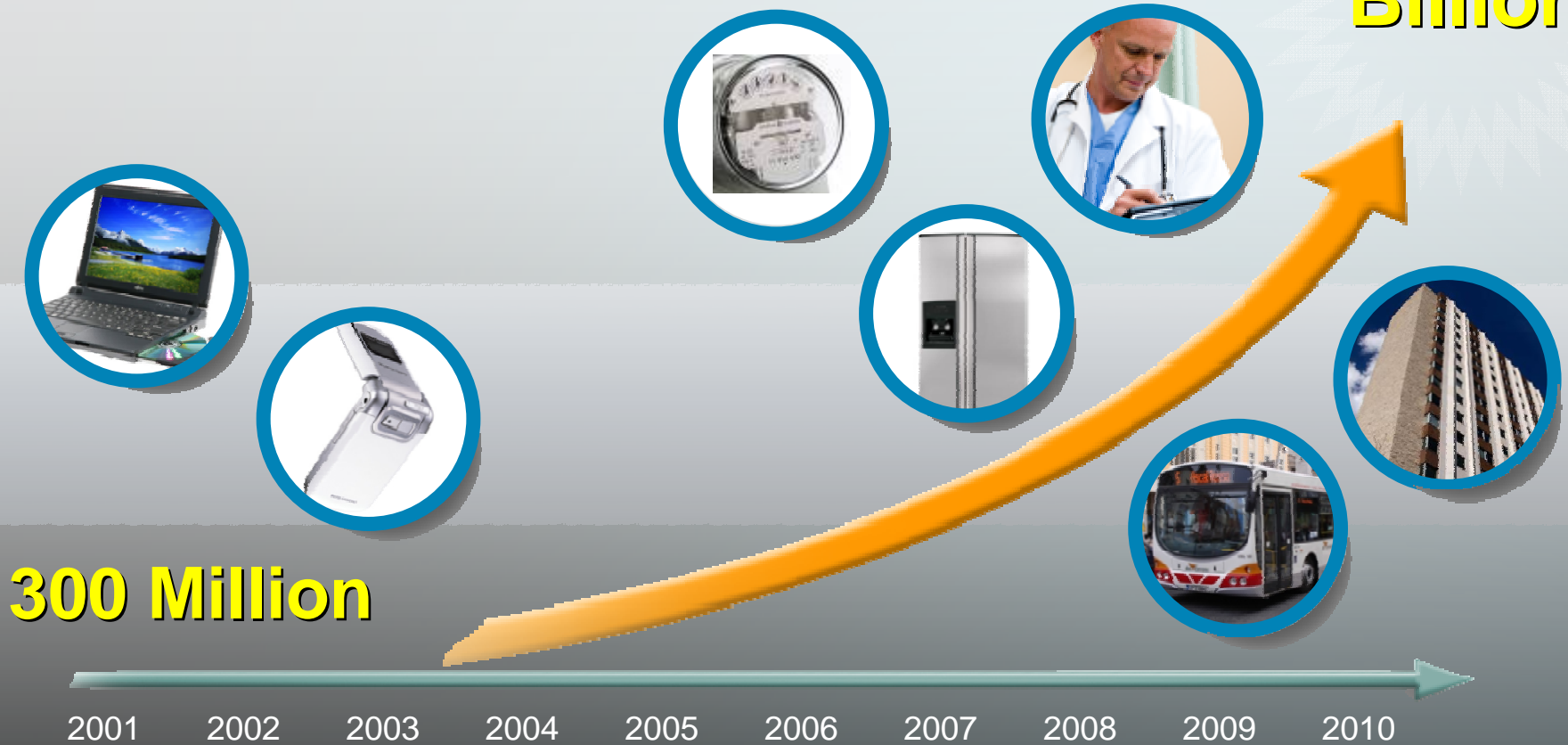


**“More than ever before,  
cities are home to humanity’s  
great expectations...**

**...they are also home to increasing  
social disparities, poverty, pollution,  
waste and environmental problems.”**

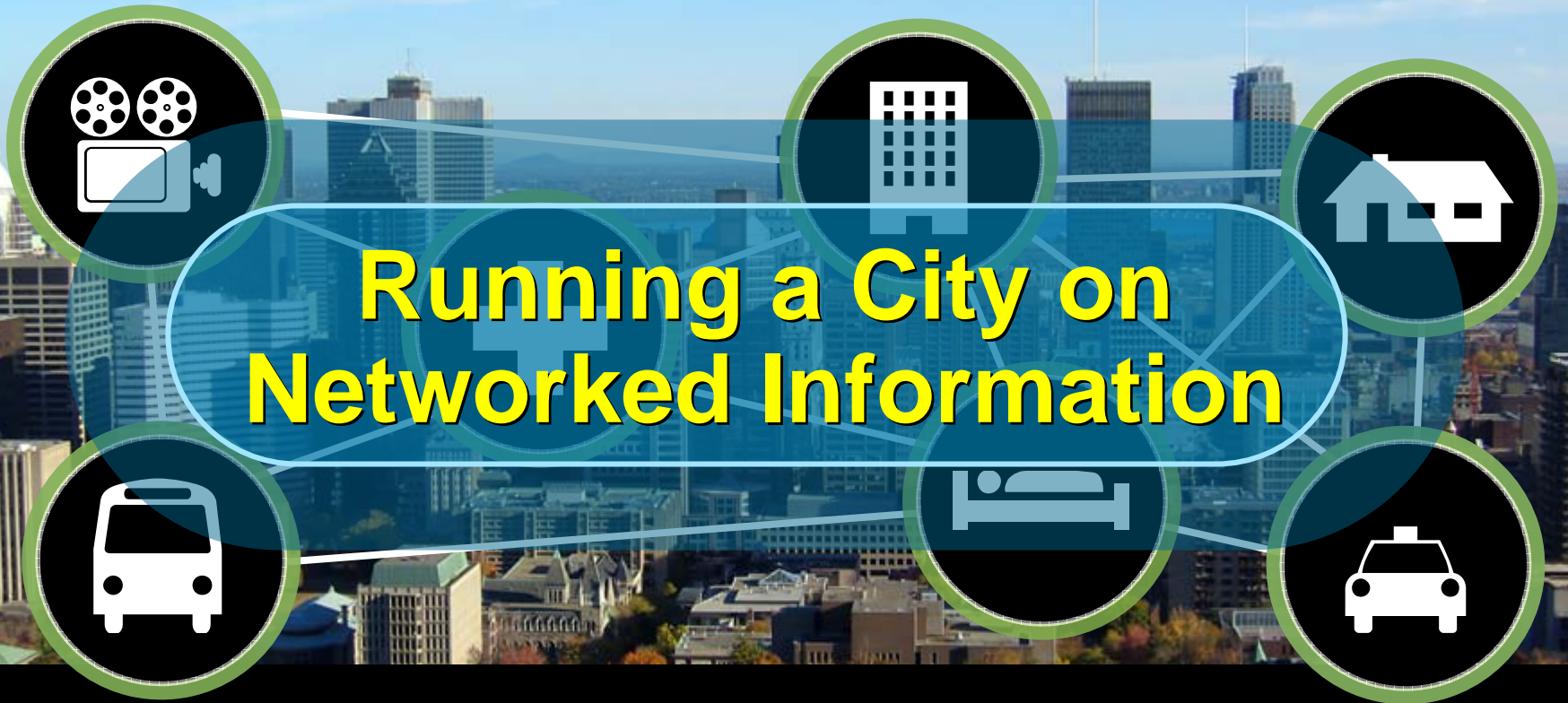
# The Internet of Things

14  
Billion



**Industrialisation of the Internet**

# Smart+Connected Communities



**Helps Transform**

**city management**

**economic development**

**citizen quality of life**

# Why build Smart+Connected Communities?

Within 20 years, a city of 5 million



**City revenues**  
**+\$15B**



**GDP growth**  
**9.5%**



**Energy efficiency**  
**+30%**

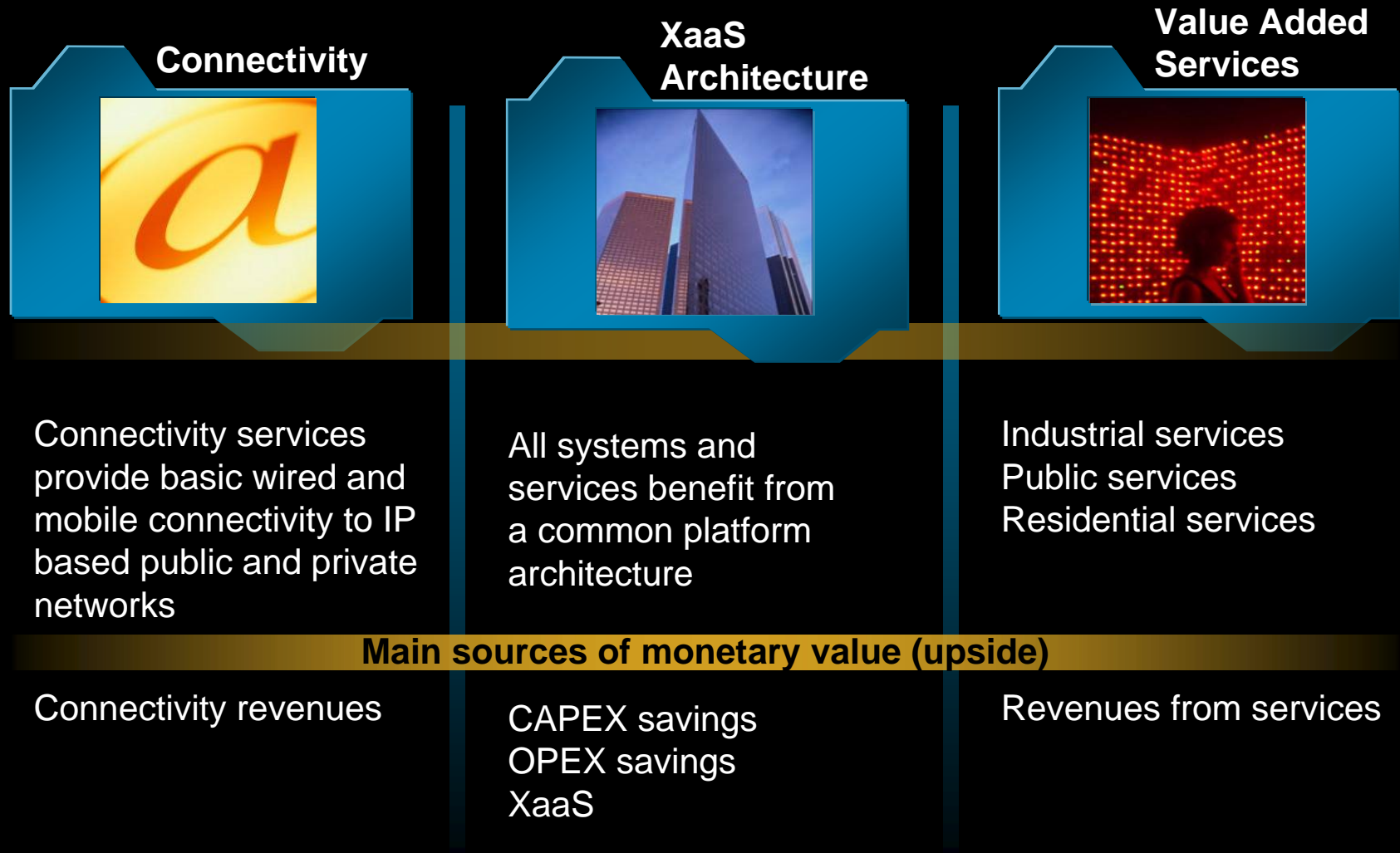


**New jobs**  
**375,000**

# The Goal: Sustainability



# How do “Smart+Connected Communities” deliver these values?





**Connected Community Effect**

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**Smart Solutions**



# Enhancing the + Drive Experience Transportation

Increase productivity during commute

Improve sustainability, reduce environmental impact

Optimize city transportation and logistics

Deliver key citizen services anytime, anywhere

# Protect Citizens and Secure Safety and Security

Automatic and unobtrusive detection and prevention

Informed assessment, coordinated response

Reduce human error and time lag

Increase effectiveness of response

# Delivering Better Care to Citizens Health

Improve quality of care and simplify communications

Prompt and secure access to digital images

Safeguard patient records and clinical applications



# Managing Smart Energy, Water & Gas Demand

Lower energy costs

More utilities for more people

Reduce carbon emissions

t



# Connected Community Effect

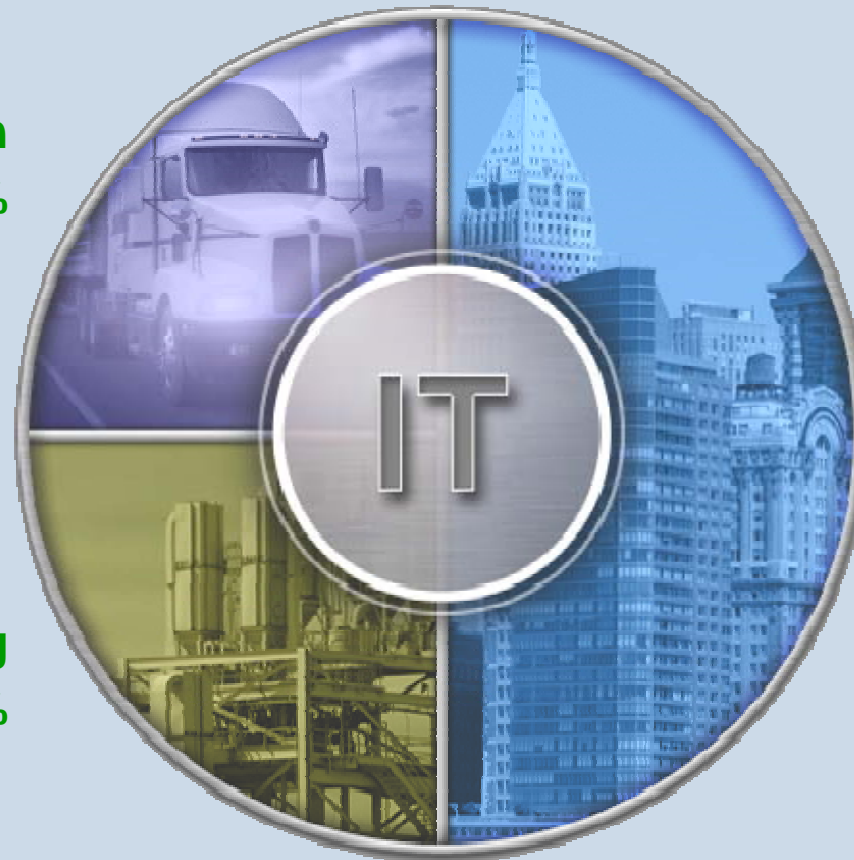
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## Energy Management

# Energy is becoming a Global Concern

## The distribution of energy consumption by sector

**Transportation**  
**25%**

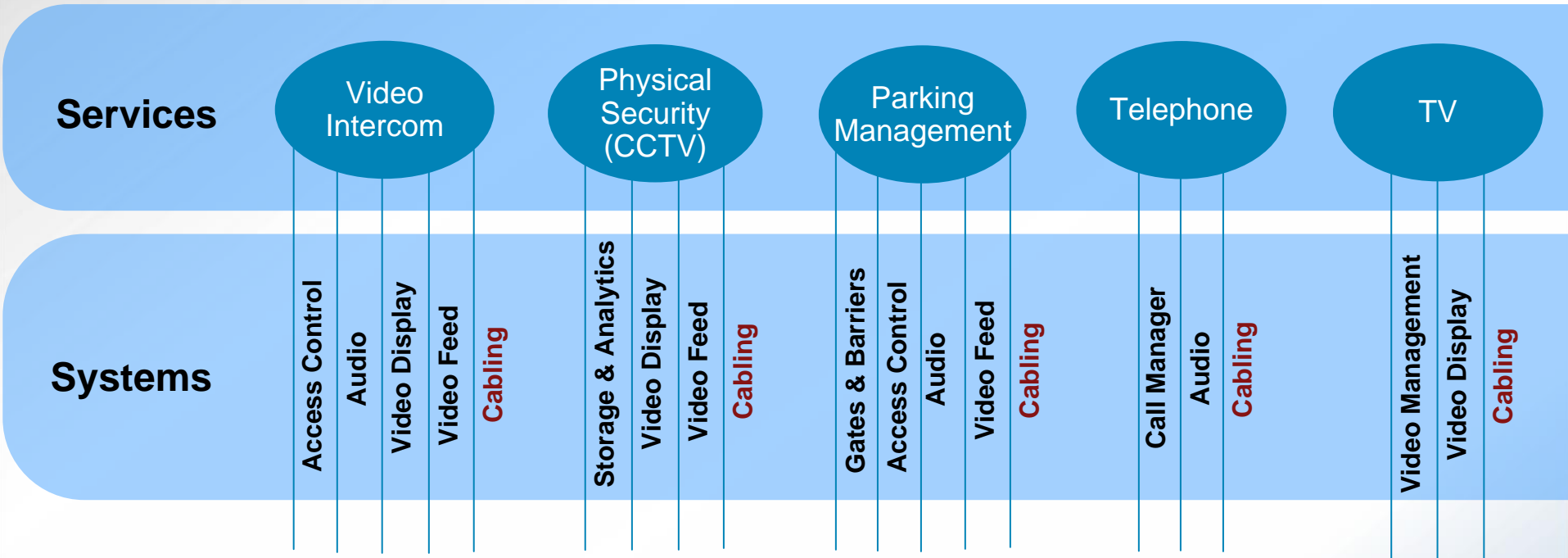


**Manufacturing**  
**25%**

**Buildings  
(Real Estate)**  
**50%**

Sources: BOMA 2006, EIA 2006, AIA 2006

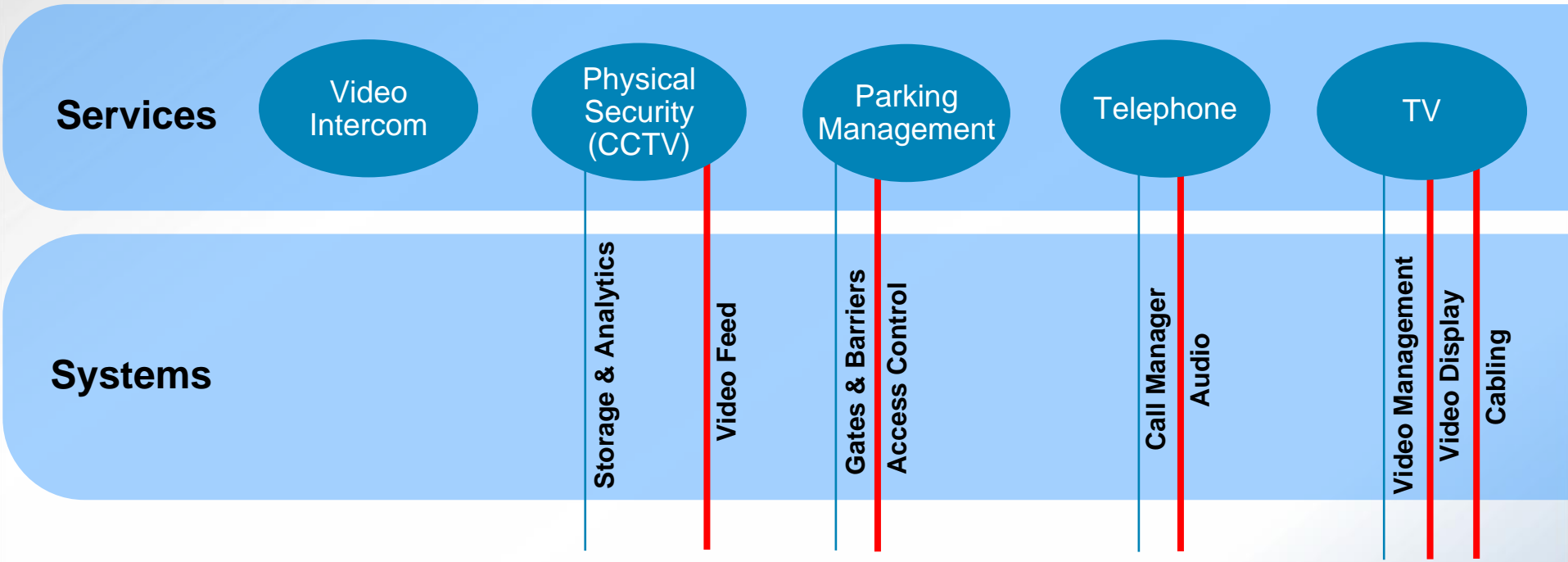
# Traditionally, all systems are built independently and supplied through different contracts...



... But there is too much overlap ...



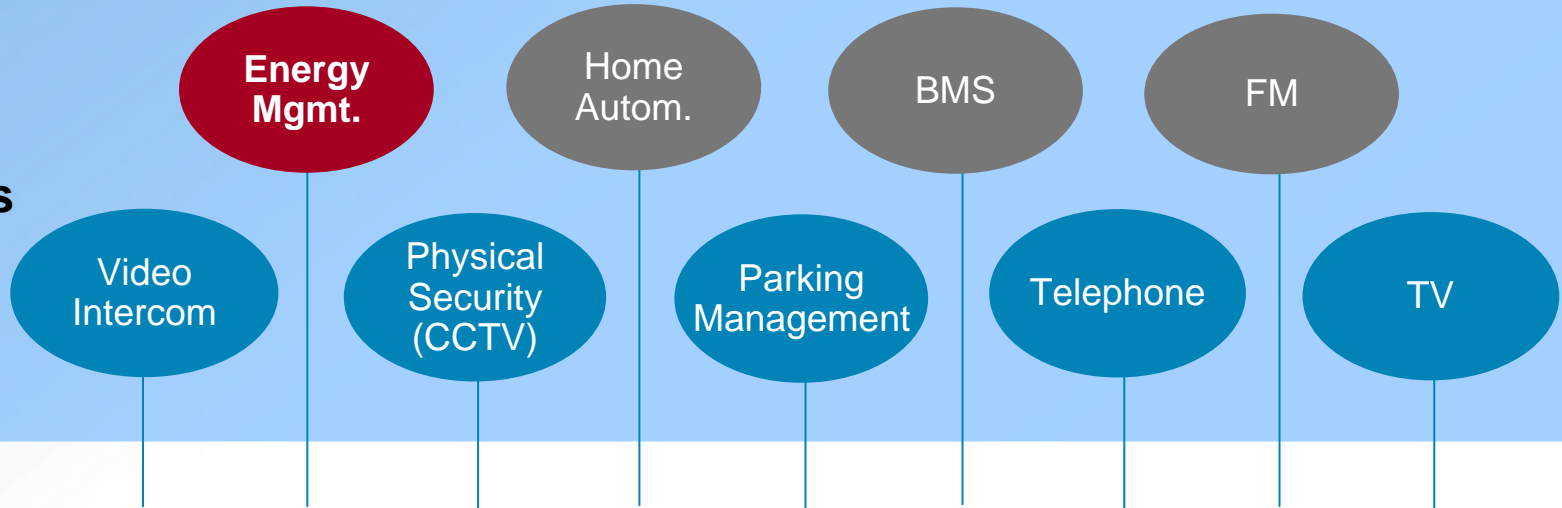
# What if we remove the overlapping systems?



**Lower Cost (CAPEX and OPEX)**

**Better Controls**

## Services



Service Delivery

Systems Integration

Physical Connectivity

## Systems

Storage & Analytics

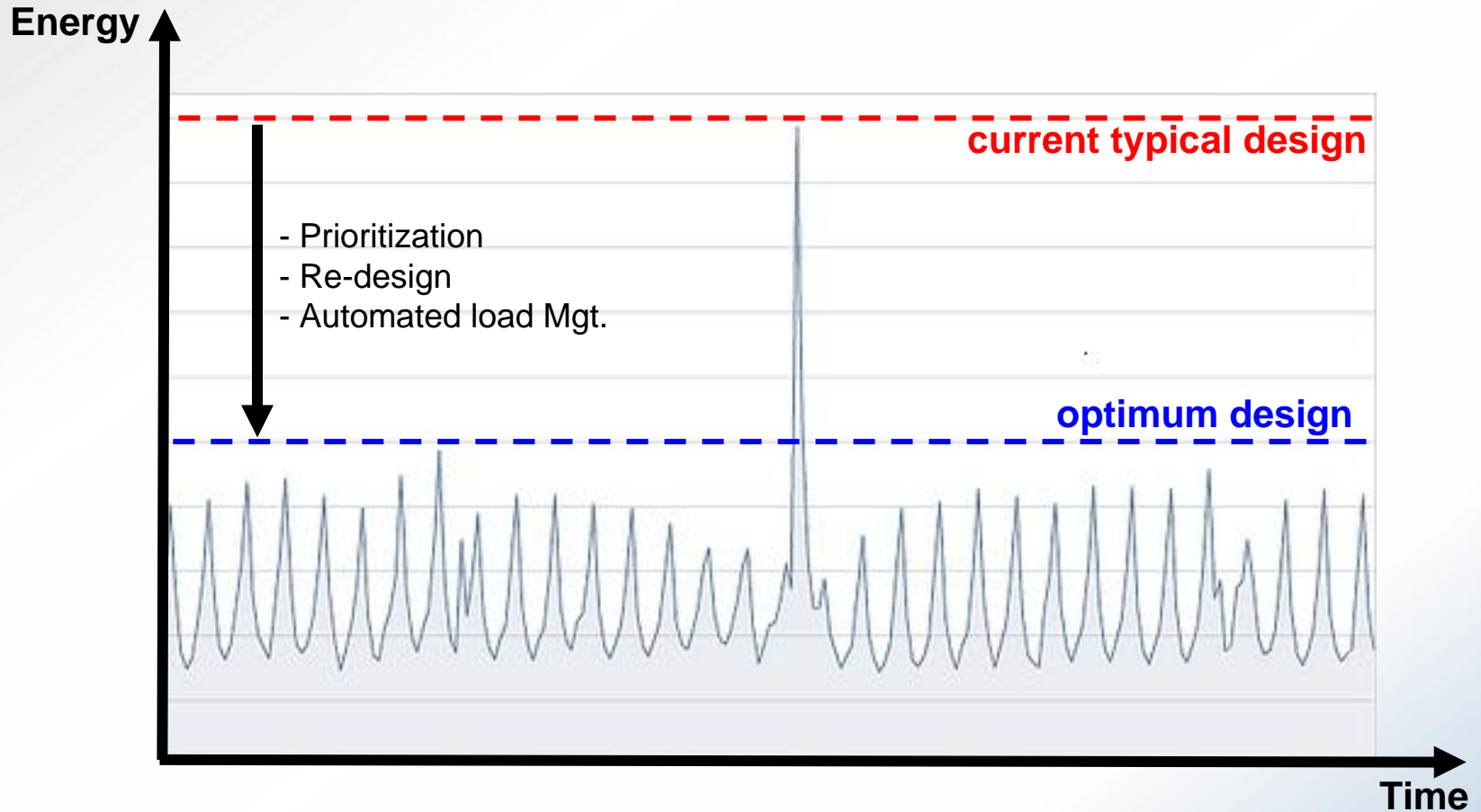
Video Feed

Gates & Barriers  
Access Control

Call Manager  
Audio

Video Management  
Video Display  
Cabling

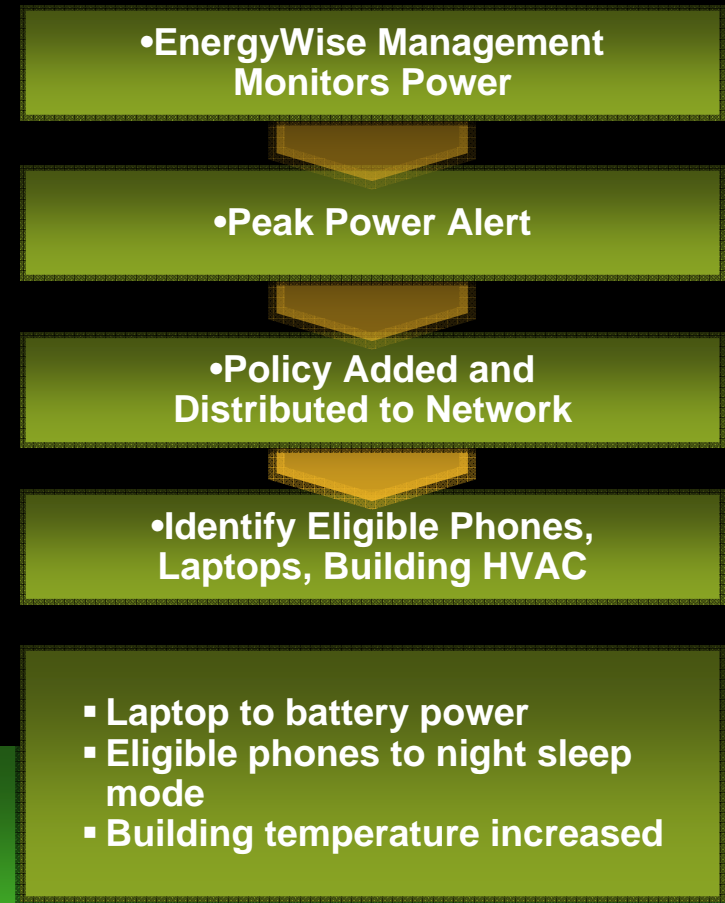
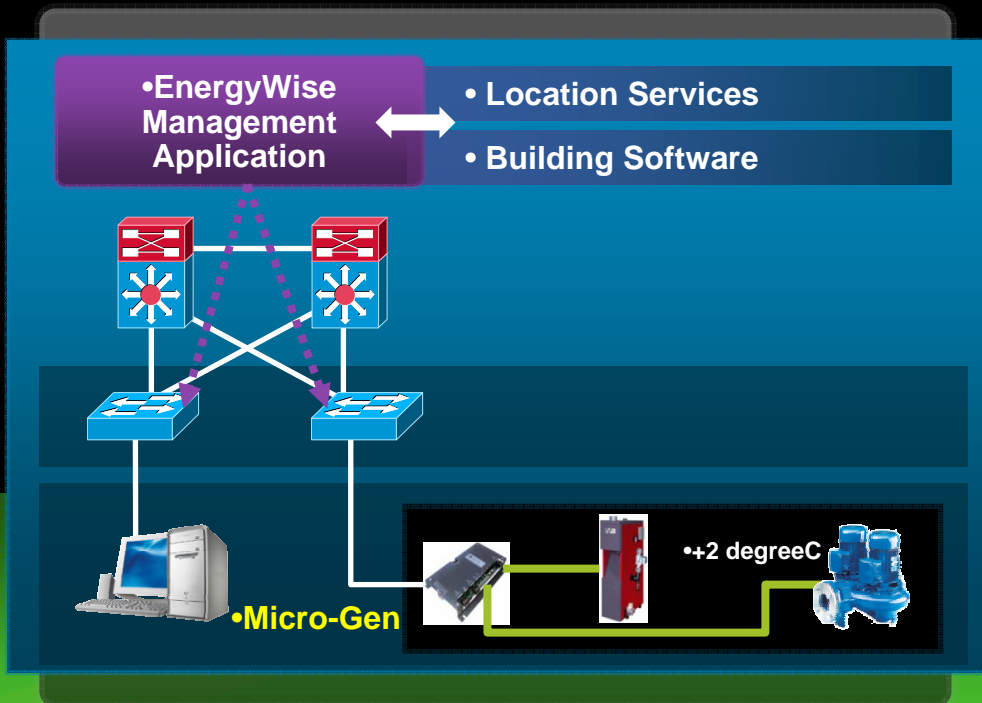
# Example: Energy Management



- CAPEX savings on Equipment and Space
- OPEX savings on Maintenance and Energy

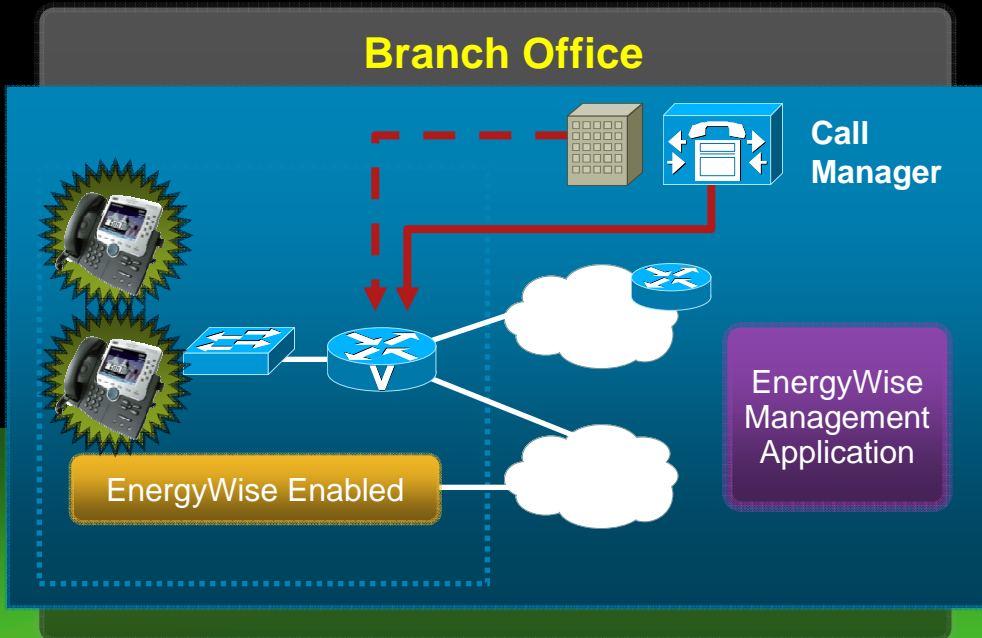
# EnergyWise Management Scenario: Reducing Headquarters Peak Power Usage

- EnergyWise controls laptops, phones, and building cooling
- Peak power reached – smooth and time shift power use



# EnergyWise Management Scenario: Reducing Bank Branch Carbon Footprint

- Operation 9 to 5
- Power off phones after hours and power on phones next day
- Legacy phone and switch



EnergyWise Application Asks to Turn Off Power at 7 PM

Policy Added to Network

Policy Communicated Across Switches

Time Is 7 PM Switch Identifies Phones Executes Policy

Switch Turns Off Port Power

Time is 7 AM Switch Executes Policy

Switch Turns On Port Power

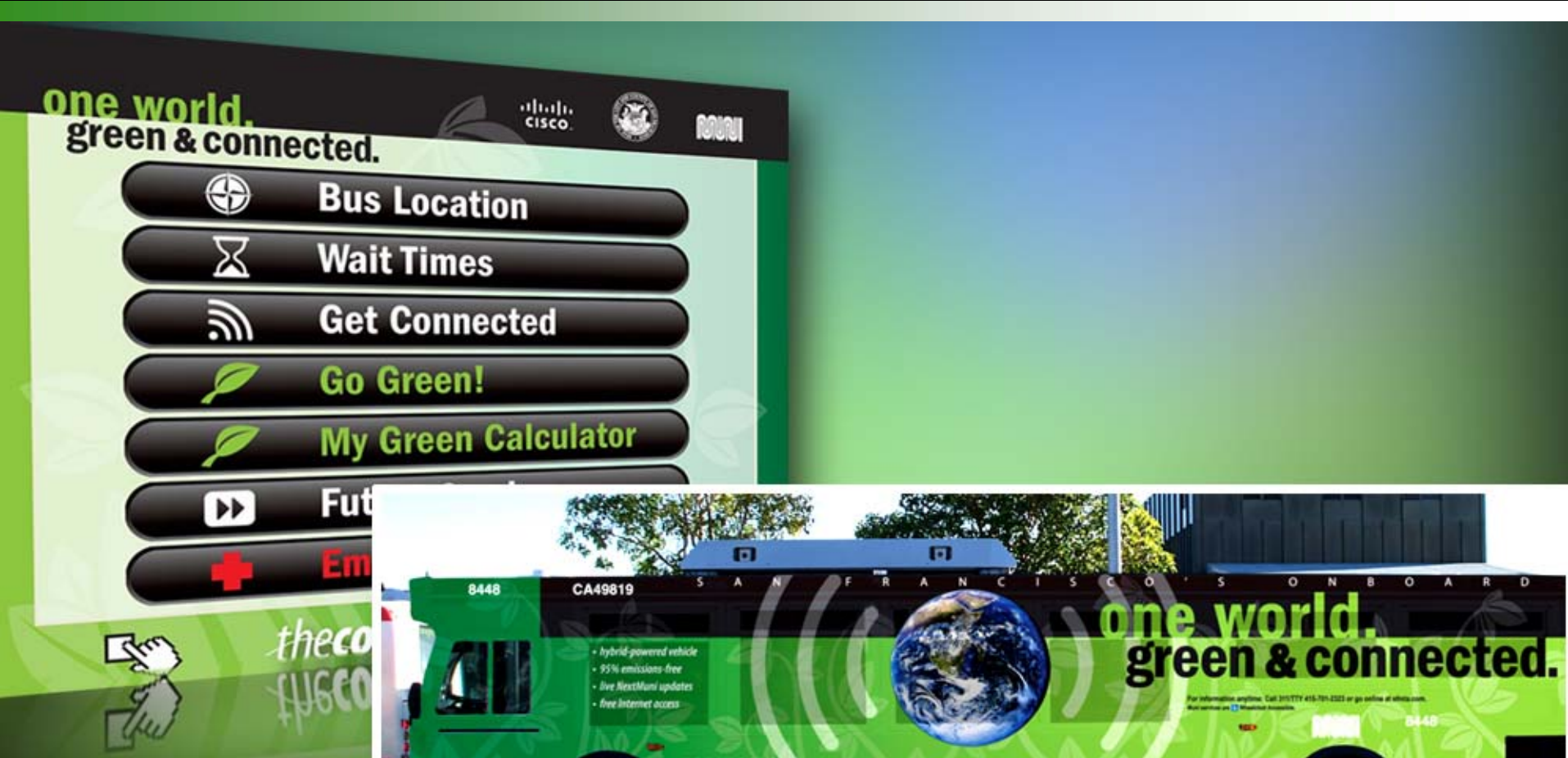
# Non-metropolitan Services, Infrastructure, and Waste Cities



Connected Community Effect

Citizen Quality of Life

# City of San Francisco: *the connected bus*



# Connected Transportation: Personal Travel Assistant





# City of San Francisco – San Francisco leading: EcoMap



# Smart City Bill

## Improved Convenience – One Payment For All Services

### BODY CORP

Body Corporation Pty Ltd  
ABN 23 042 123 103

Joe Citizen  
23 Citizen Place  
Citzenville  
CIT 0000

**Tax Invoice** issued 10 Dec 2004

Invoice Number: 1235896521

Total Due (inc GST): \$212.36

Due Date: 10 Jan 2005

### Service Usage Overview

Smart Meter Number: 2345 Billing Days: 30

Service	01 Nov 04	01 Dec 04	Total Usage	Charge	Daily Average
Electricity	124 kWh	122 kWh	246 kWh	\$12.28	8.2 kWh
Gas	120 m³	122 m³	242 m³	\$12.11	8.1 m³
Water	120 m³	122 m³	242 m³	\$12.11	8.1 m³

Previous Due: \$184.56    Amount Received: \$184.56    Balance Forward: \$0.00    New Charges: \$27.80

#### Account Summary

Billing Location: 23 Citizen Place, Citzenville, CIT 0000

Product Service	Description	Amount
Electricity	Usage from 01 Nov 04 to 1 Dec 04	\$97.17
	Monthly Service Charge	\$12.77
Gas	Usage from 01 Nov 04 to 1 Dec 04	\$10.46
	Monthly Service Charge	\$12.77
Water	Usage from 01 Nov 04 to 1 Dec 04	\$13.62
	Monthly Service Charge	\$3.40
Hot Water	Usage from 01 Nov 04 to 1 Dec 04	\$9.90
	Monthly Service Charge	\$2.10
Grey Water Rebate	Collected from 01 Nov 04 to 1 Dec 04	-\$4.47
	Monthly Service Charge	\$2.10
Sewerage	Usage from 01 Nov 04 to 1 Dec 04	\$19.24
	Monthly Service Charge	\$9.00

Bill Enquiries: Office Hours 9:30am - 5:00pm  
Telephone (07) 9332 4000

Emergencies: 24hrs  
Telephone 1000 555 555

Subtotal: \$193.05  
16% GST: \$19.31  
Invoice Total: \$212.36

# Smart+Connected City: Incheon, Korea

**One Common Infrastructure...  
...to Address Many Issues**

**Smart Connected Citizen Services**

**Smart Connected Transportation**

**Smart Connected Real Estate**

**Smart Connected Utilities**

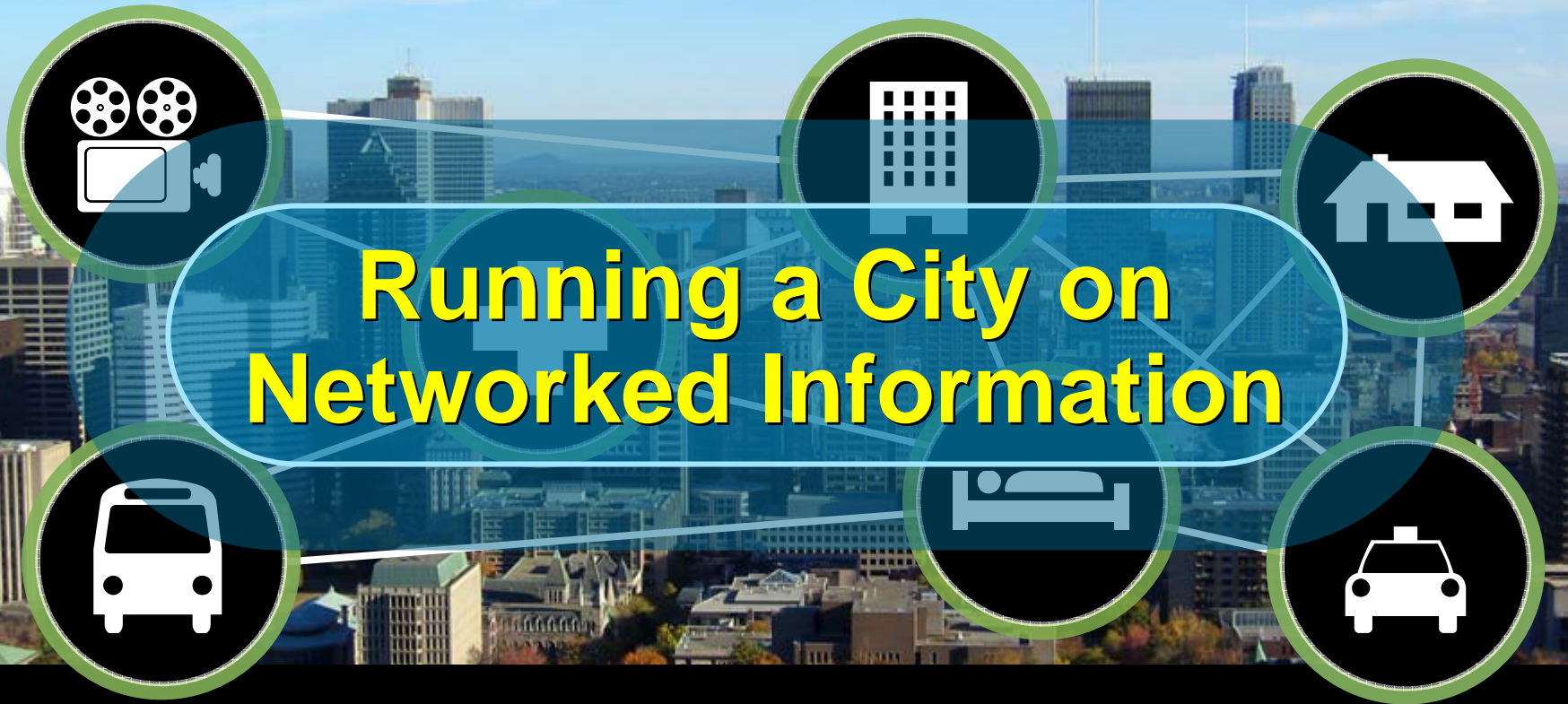
**Smart Connected Safety & Security**

# What do I do?

- 1- Call Cisco!! Or just come to Networkers Bahrain 2010**
- 2- Define your vision and associated services catalogue**
- 3- Define the impact of these services on your Infrastructure**
- 4- Include in the design from day ONE**

# Smart+Connected Communities

## Learning from the Legacy



**Helps Transform**

**city management**

**economic development**

**citizen quality of life**



  
**CISCO**