Broadband Mobility Access and Opportunity

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Free is not a viable business model

Why free isn't free!

- **"American cities' plans for ubiquitous internet access are running into trouble"**. Aug 30th 2007 | SEATTLE
From *The Economist* print edition

- **San Francisco:** Mayor Gavin Newsom's effort to blanket the city with a free Wi-Fi network, which already had run into snags with the Board of Supervisors, dies when EarthLink backs out of a proposed contract.
San Francisco Chronicle

- **Houston:** Earthlink agrees to pay a $5 million penalty for missing deadlines on Houston's Wi-Fi project and Mayor Bill White says the company could decline to do the project altogether without paying additional penalties.
Houston Chronicle

- **Chicago:** Rising costs, declining demand and increased competition from private Internet providers prompt Chicago to shelve its ambitious plan to build an $18.5 million Wi-Fi system after negotiations with EarthLink and AT&T bog down.
Chicago Sun-Times

What else is going on?!

- "As the first generation of muni-wi-fi's unbounded enthusiasm comes to an end, it's time to redouble efforts in order to **stay focused on the ever growing need to improve the quality of life and opportunity for American citizens** in the 21st century."   Lev Gonick

- Is municipal Wi-Fi dead? **Not exactly.** What's dying is the dream that cities could reap the benefits of vast wireless networks for free.
13th Floor

- While most of the chatter about municipal Wi-Fi focuses on citizens and businesses, the biggest beneficiaries **may be governments themselves**.
Governing

- EarthLink's announcement that it will lay off nearly half of its workforce is a blow to broadband competition and to its municipal Internet business, but some industry followers say it **doesn't signal the end of municipal Wi-Fi**.
InfoWorld

- **Philadelphia:** Mayor John Street says his city's wireless initiative is continuing to **"move full steam ahead"** despite a Earthlink's restructuring and layoffs. Officials say the network is operational in more than 50 percent of the city.
Philadelphia Inquirer

Why Broadband Mobility?

Run projects and organizations more efficiently	Improve transportation and infrastructure	Improved Citizen Security and Safety	Attract new business and residents. bridge Digital Divide

Enable workers data access everywhere	Tracking of public transport units and cameras	Access to critical information for Timely Decision Making	Interconnect businesses, citizens, and tourists.

Governments are Leveraging Mobility to Enhance Their Capabilities to the Benefit of the Community

Public Safety and Security

Empowers first responders with critical information and resources at the point of need

Service Effectiveness

Increases employee productivity by allowing them to be connected when they are on the move

Citizen Empowerment

Provides citizens with easier access to services from government

Economic Development

Differentiates community and allows business and visitors to get access on the move

Social Inclusion

Allows more citizens an economical way to get broadband and be connected to the community

Mobile Government: A Phased Approach

Local Mobility Zones

Wireless Building connection

Internal Efficiency and Cost Reduction

Mobile Government: A Phased Approach

Mobile Workforce

Local Mobility Zones

Traffic and Parking management

Video-Surveillance

Wireless Building connection

Noise/Pollution/Flood Monitoring

Internal Efficiency and Cost Reduction

Mobility for Municipal transports

Public Safety, City Management thru Mobility Corridors

Mobile Government: A Phased Approach

Mobile Workforce

Open Networks
for Citizen Access

Local Mobility Zones

Traffic and Parking
management

Open Networks
for Innovation

Video-Surveillance

Wireless Building
connection

Noise/Pollution/Flood
Monitoring

Mobility for Tourists

**Internal Efficiency
and Cost Reduction**

Mobility for
Municipal transports

Rural Broadband

**Public Safety,
City Management
thru Mobility Corridors**

**Economic Development,
Inclusion and Innovation**

Prescription for Success

What makes a broadband mobility deployments successful?

Applications are Key!

Internet Services	Advertising	Public Safety	Municipal Government
> **Residential** > **Business** > **ISP Wholesale** > **Social Inclusion**	> **Local Business** > **Location Based Target Advert**	> **Video Surveillance** > **Mobile Law Enforcement** > **First Responder Interoperability**	> **Bldg Inspection** > **eGovernment** > **Meter Reading** > **Asset Mgmt** > **Traffic Mgmt** > **ITS** > **Fleet Mgmt** > **Case Mgmt**

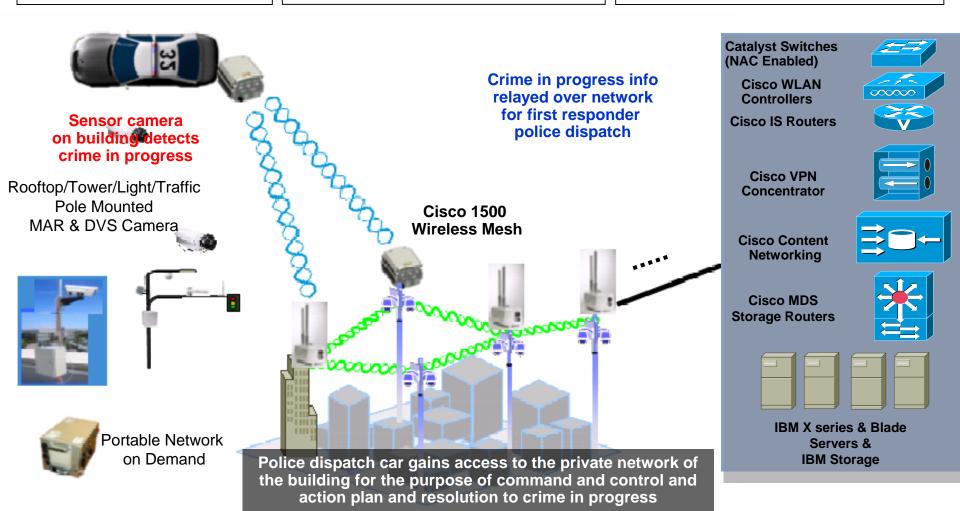**Service Provider Revenue Capture**

Cost Savings, Revenue and Services

Public Safety
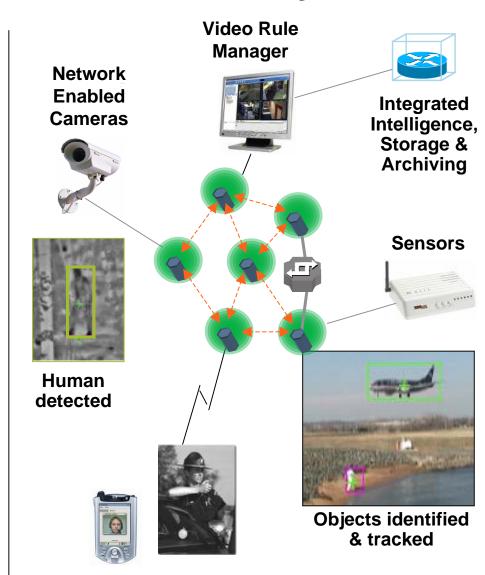# Network & Sensor Enabled Surveillance Solution

| Networked Video | Wired and Wireless Transport | Video Data & User Application |

Sensor camera on building detects crime in progress

Rooftop/Tower/Light/Traffic Pole Mounted MAR & DVS Camera

Portable Network on Demand

Crime in progress info relayed over network for first responder police dispatch

Cisco 1500 Wireless Mesh

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Police dispatch car gains access to the private network of the building for the purpose of command and control and action plan and resolution to crime in progress

Catalyst Switches (NAC Enabled)

Cisco WLAN Controllers

Cisco IS Routers

Cisco VPN Concentrator

Cisco Content Networking

Cisco MDS Storage Routers

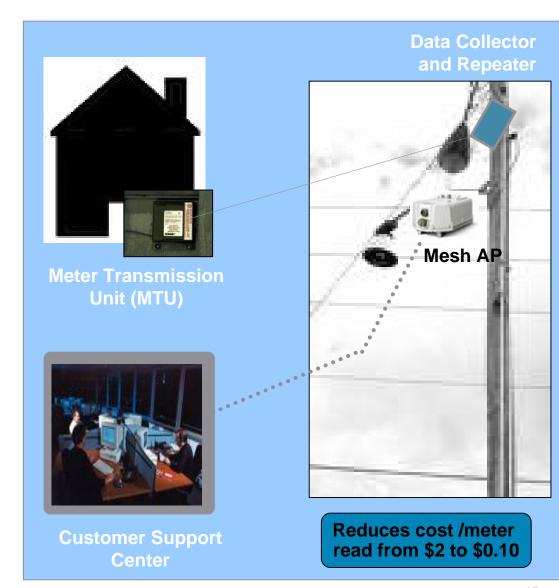**IBM X series & Blade Servers & IBM Storage**

Application - Intelligent Video Analytics

- Accessible from anywhere on the network

- Customized Intelligence - per node, agency, officer, incident

- Adaptive bandwidth management

- Intelligent response & forwarding of alarms & video snapshots

- Backend integration with applications such as license plate recognition

- Compatible with video network management and archiving systems

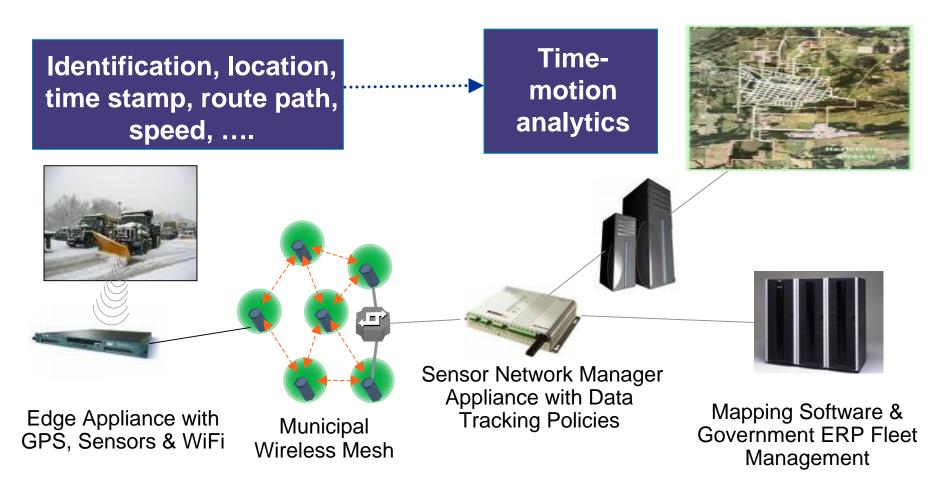- Only for fixed locations or onboard monitoring

Network Enabled Cameras

Video Rule Manager

Integrated Intelligence, Storage & Archiving

Sensors

Human detected

Objects identified & tracked

Application - Automated Meter Reading

- **Improves data reliability and accuracy**

- **Improves billing accuracy**

- **Eliminates estimated meter reads**

- **Reduces labor costs**

- **Improves employee safety**

- **Reduces customer complaints**

- **Improves management of delinquent accounts**
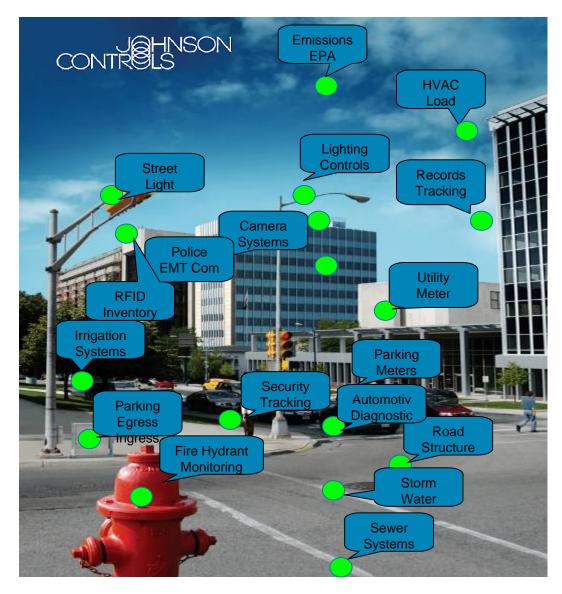
- **Accelerates cash flow based on monthly billing**

Data Collector and Repeater

Meter Transmission Unit (MTU)

Mesh AP

Customer Support Center

Reduces cost /meter read from $2 to $0.10

Application - Fleet Asset Tracking

Identification, location, time stamp, route path, speed, ….

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Time-motion analytics

Edge Appliance with GPS, Sensors & WiFi

Municipal Wireless Mesh

Sensor Network Manager Appliance with Data Tracking Policies
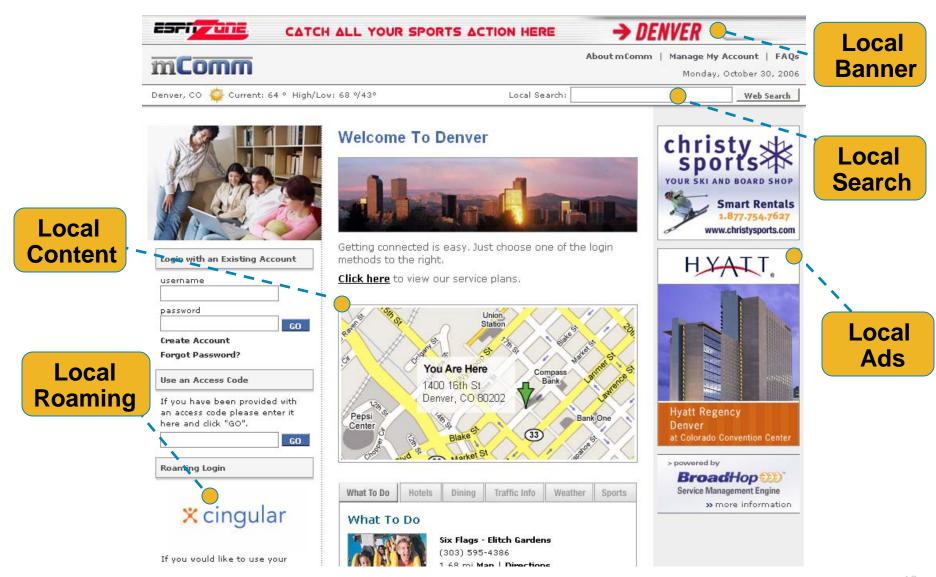
Mapping Software & Government ERP Fleet Management

- Reduces insurance, operating, maintenance costs, overtime expense, inventory losses
- Improves driver performance, safety, security and content security, asset loss recovery and prevention and customer service
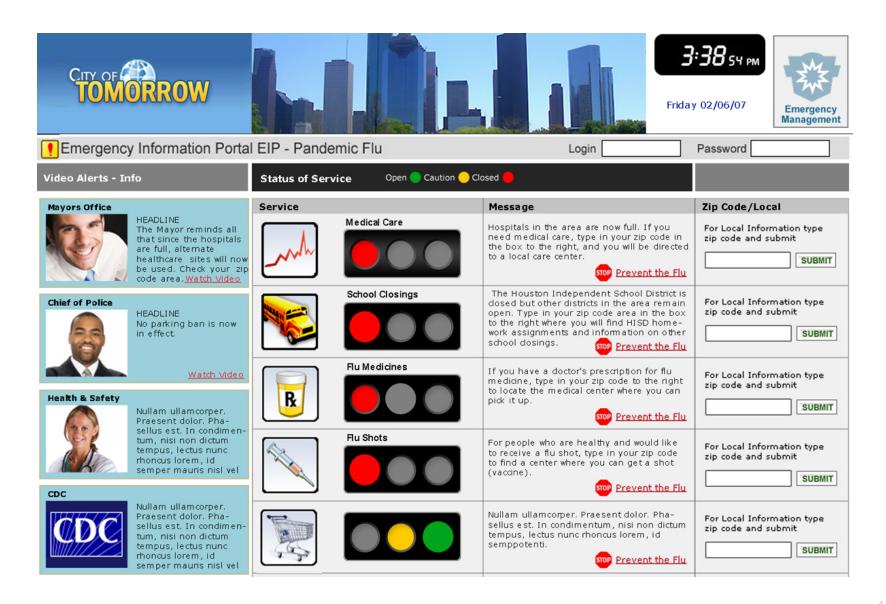- Maximizes vehicle utilization and proof of delivery

Remote Sensing - An "Internet of Things"

Location-Based Convention & Visitors

Local Banner

Local Search

Local Content

Local Ads

Local Roaming

eGovernment Portal

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Cisco's Mobile Government
Solution Strategy

Viable Business Models	Best of Breed Applications	Broadband Wireless	Full Life Cycle Services

- Broadband Mobility is a Fast Growing, Viable market!
- The Network as the Platform!
- The Goal is Value!
- Multi-Use Creates Value!
- Applications are the King, Solutions are Key!
- Win – Win Business Models assure Long Term Viability!
- Build an Architecture… Think Scalability, Drive Security!
- Long Term Economic Development and Social Inclusion…

Viable Business Models
- > Wireless ISP's/ Service Providers
- > Revenue Sharing
- > Secure anchor tenants

Best of Breed Applications
- > Advertising
- > Automated Meter Reading
- > Digital Video Surveillance
- > Asset Tracking
- > Bldg Inspection
- > Public Safety

Broadband Wireless
WLAN
Mesh   WiMAX
Optical
- > Indoor WLAN
- > Wireless Mesh
- > WiMAX Mobile
- > Packet Optical

Full Life Cycle Services
- > Phased approach for Design, Deploy, Support, Evolve
- > Business Consulting
- > Systems Integration
- > Program Office

Network as the Platform
Leverage your Investment / Focus on Value!

What do successful deployments have in common?
Prescription for Success

1. Partnership between employers, cities/counties/state and with **experienced market leaders**

2. Integration of **multi-use requirements and defined deliverables**

3. Focus on Best of Breed **applications that deliver immediate value**

4. Mobility architecture designed as an **extension of the core network**

5. Reasonable expectations in a **phased approach and scalable design**

6. Win/Win business model for **improved services & economic viability**

7. Upfront understanding of the **cost to build and own assets**

8. Economic Development through **data availability**

9. Quality of Life, Social Inclusion, Citizen Satisfaction for **public benefit**

10. Proven service providers to operate and maintain if there is **public access**

Key Take Aways

- **Purpose built Network for Access**

    Focus on access to applications & service delivery

- **Coordinated Effort**

    State, Counties, Cities & Private sector

- **Viable Economic Model**

    Public & private

Thank You!

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