

Cisco Intelligent Information Network Foundation for Metropolitan Data Network

- Building Next-Generation Networks
- Developing Innovative Services
- Driving Knowledge-Based Communities for a Sustainable Future and a Good Quality of Life

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Agenda

- **Metropolitan Data Network**
 - **Broadband For All**
 - **Drivers, Challenges & Benefits**
 - **From Vision To Implementation**
 - **Choosing The Right Business Model**
 - **Creating The Vision**

Metropolitan Data Network: A Peek Into The (Near) Future



A Communications Revolution

Citizen

Education

Enterprise

Government

Healthcare

Connecting citizens with services, services with networks,
and networks with one another

Next-Generation Network



Security



Voice and Video



Internet



Mobility



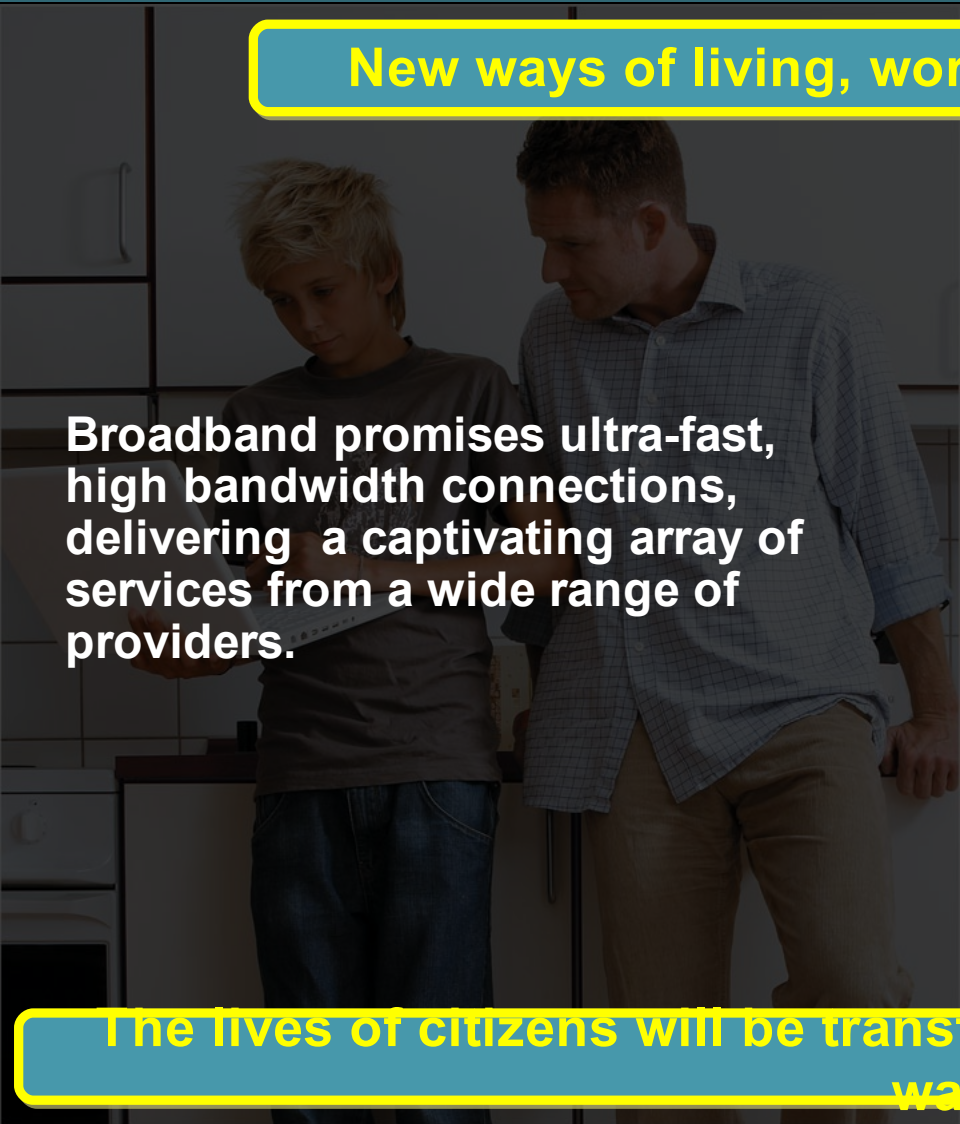
Content




Collaboration

Innovative Services

New ways of living, working & communicating



Broadband promises ultra-fast, high bandwidth connections, delivering a captivating array of services from a wide range of providers.



Citizens access the Internet at high speeds

With a single connection, they can:

- View HDTV and videos
- Make low cost telephone calls
- Videoconference with friends and family
- Enable students to do homework and submit assignments
- Monitor homes from remote locations
- Manage home appliances remotely

The lives of citizens will be transformed in numerous and diverse ways

The Connected Home: Supplies an Array of Services



Communication Services

- Internet and communication
- IP Mobile and wireless phones
- Presence
- In-home key systems
- Video chat



Automation and Control Services

- Home surveillance
- Nanny cam
- Heating, ventilation and lighting
- Home appliances
- Fire and burglary alarm



Information Services

- Network security (VPN)
- Home networking
- Parental control
- Firewall
- Back up and storage



Entertainment Services

- Video
- Music
- On-Line Gaming

Broadband For All



Broadband Scenarios: Urban, Regional, and Rural

Greater Choice in Deployment Network to Different Population Areas



Metropolitan/Urban Areas: Metro Ethernet and Wireless



Regional Areas: Fibre in Backhaul and Wireless/DSL Access



Rural Areas: Wireless Wi-Fi, Wi-MAX and Satellite Access

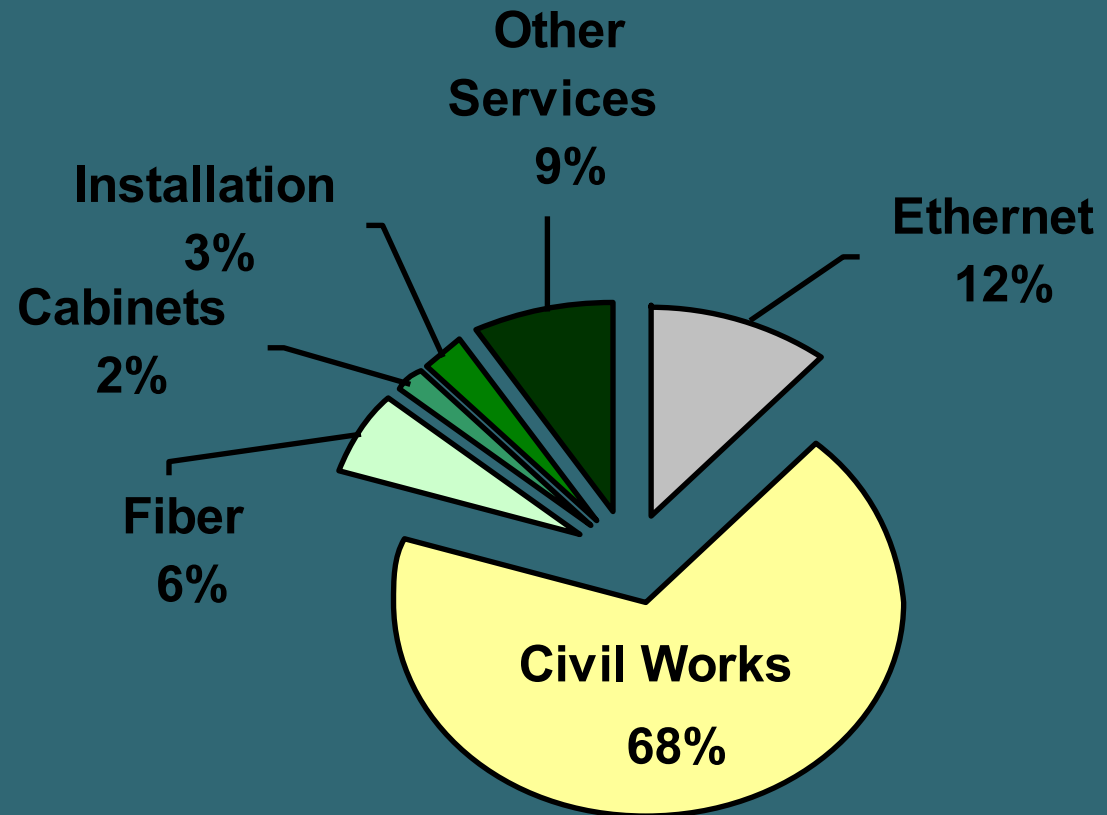
What is the Market Outlook?

- **June 2005: 2.51 million FTTH homes/buildings passed (over 28 percent higher than June 2004) with a global penetration rate of 25.7 percent => 2.51 million homes passed**
- **June 2005: 646,570 FTTH subscribers in EU (over 18 percent higher than in June 2004) => 646,570 homes activated**

Players involved in FTTH Segmentation June 2005

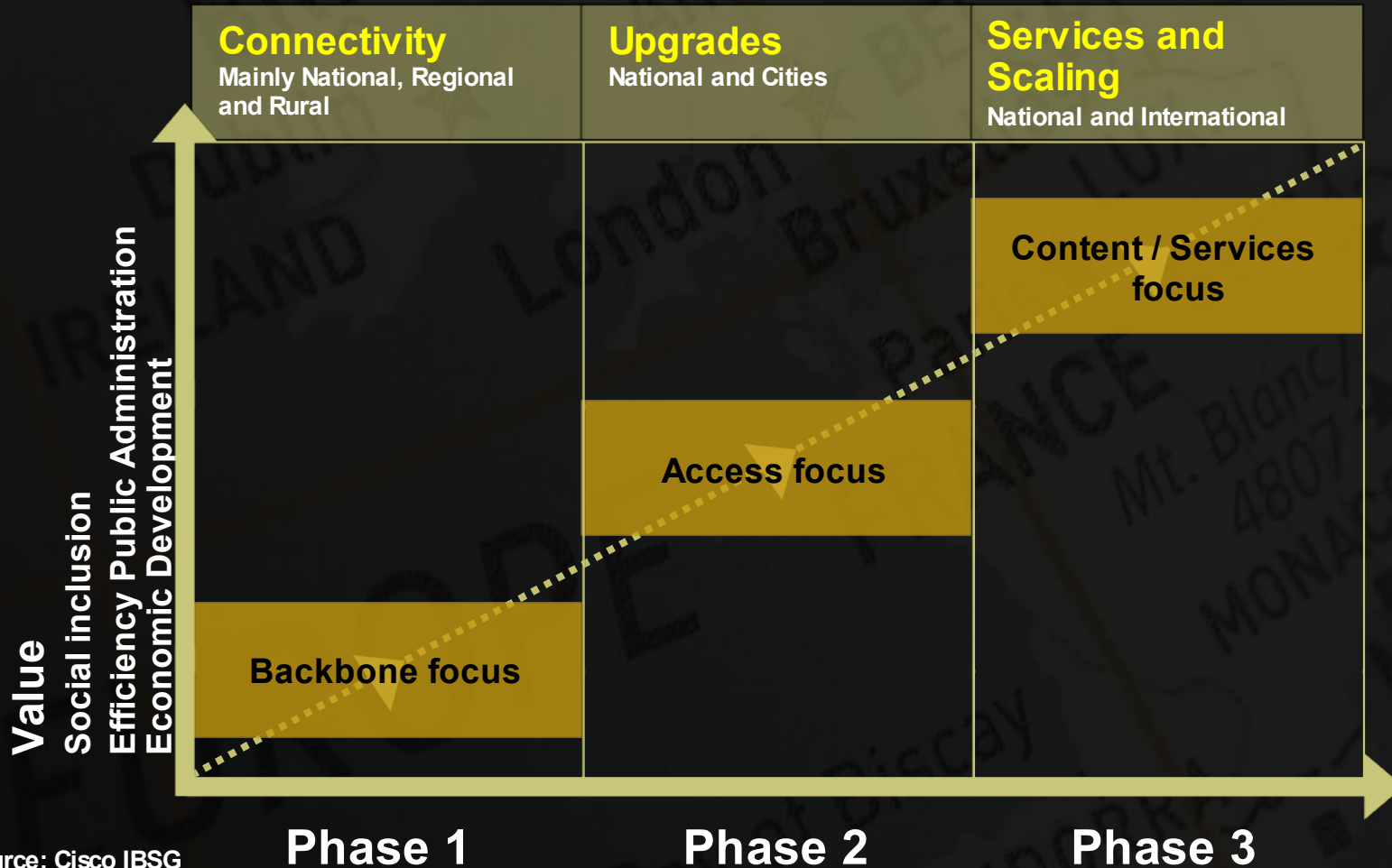
Incumbents	9	7.8%
Municipalities / Power Utilities	78	67.2%
Alternative operators / ISPs	13	11.2%
Housing companies & Other	16	13.8%

Fiber to the Home Deployment Costs Initial Year



Source: Corning & FTTH Council Europe

Network Government: Evolution




Source: Cisco IBSG

Drivers, Challenges and Benefits



Policy Drivers




Better Educated Communities



Healthier Communities



Prosperous Communities



Safer Communities

From Vision To Implementation



Developing the Business Strategy

1

Decide on strategic option

2

Capital investments and operating costs

3

Develop a plan for how project might be phased

4

Develop a timeline

5

First draft of potential business plan

Case Study

City of Amsterdam

I amsterdam.



Starting the Operation

Identify leadership positions

Drawing up detailed master project plan

Business strategy
Competitor analysis
Marketing awareness campaign
Sales strategy
Business support systems
Hire start-up staff
Training
Finances

**Citywide
Broadband**

Connect customers

Implement process framework

Fibre rollout plans finalized

Developing the Business Plan

1

2

3

4

5

Finding the right partners

Agreed-upon roles and responsibilities



Contract framework

Assurances of financing

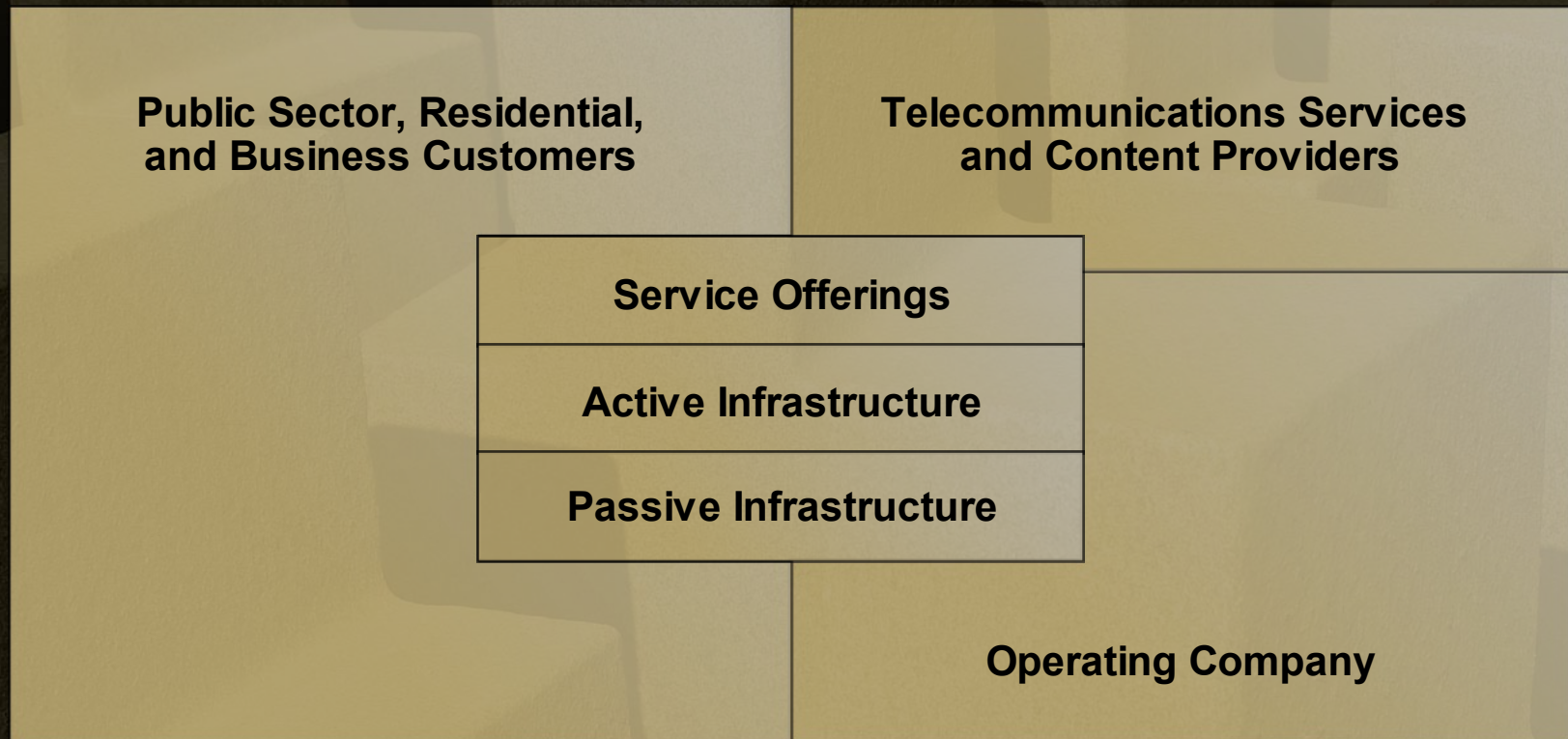
Final decision to go ahead with project

Choosing The Right Business Model



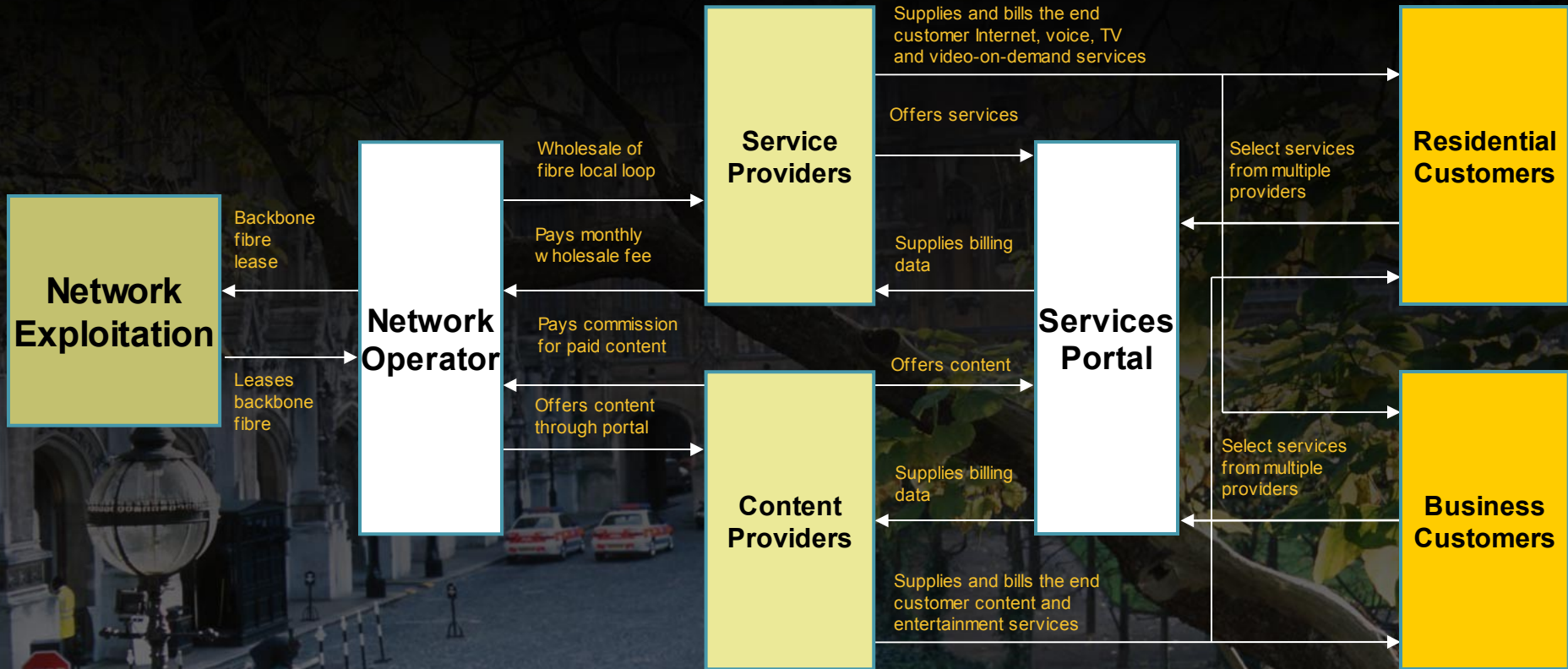
Generic Broadband Business Model

Building Blocks to a Broadband Vision

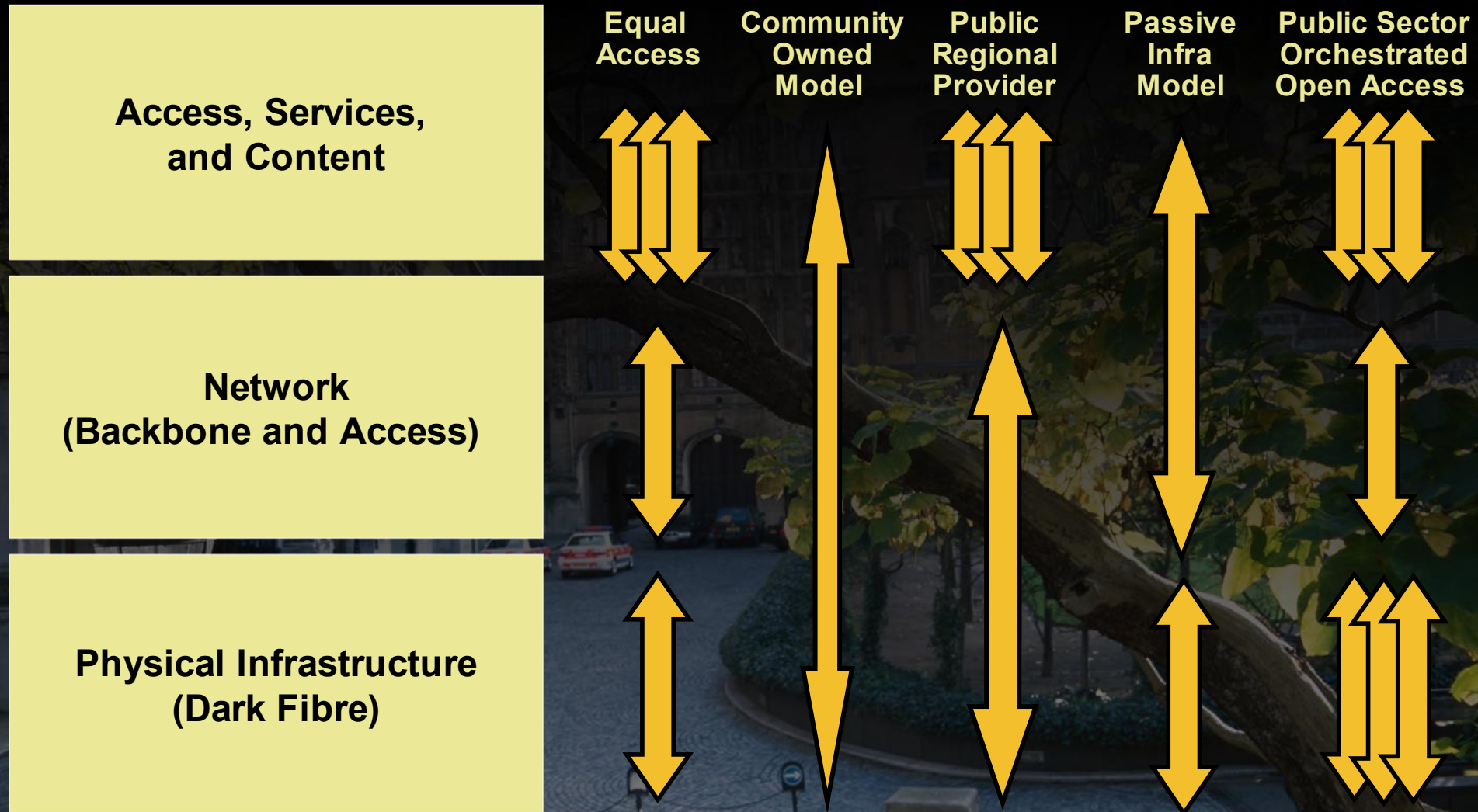


Source: The Broadband City Roadmap for Local Government Executives, Cisco Systems, Internet Business Solutions Group, Jan 2005

Functional Broadband Model



Public Private Partnership Model



Source: Cisco IBSG

Community-Owned Provider Model

Access, Services, and Content

Several Service Providers
Competing

Case Study

Wienstrom



Case Study

Localret



Case Study

Acantho



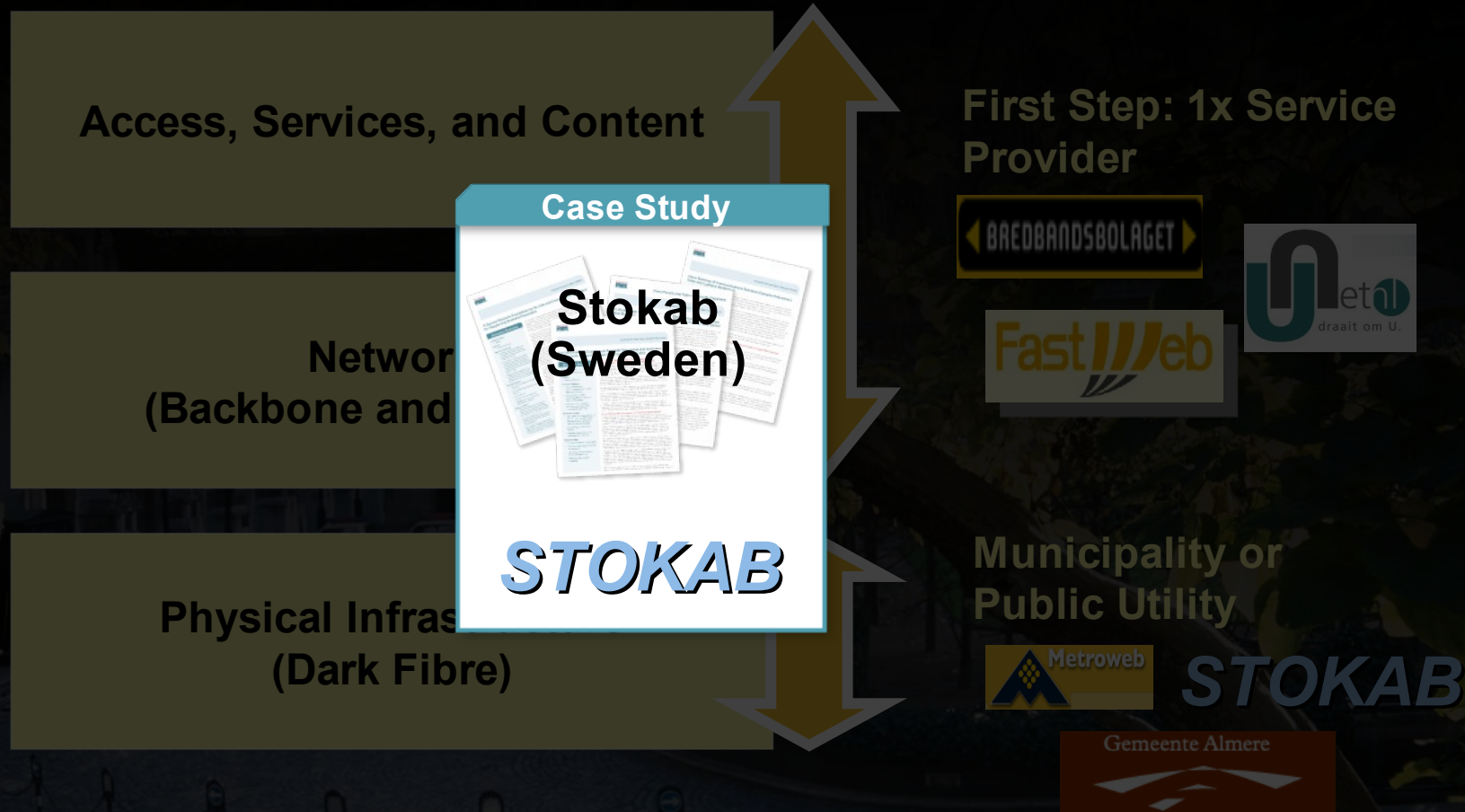
Case Study

Terrecablante

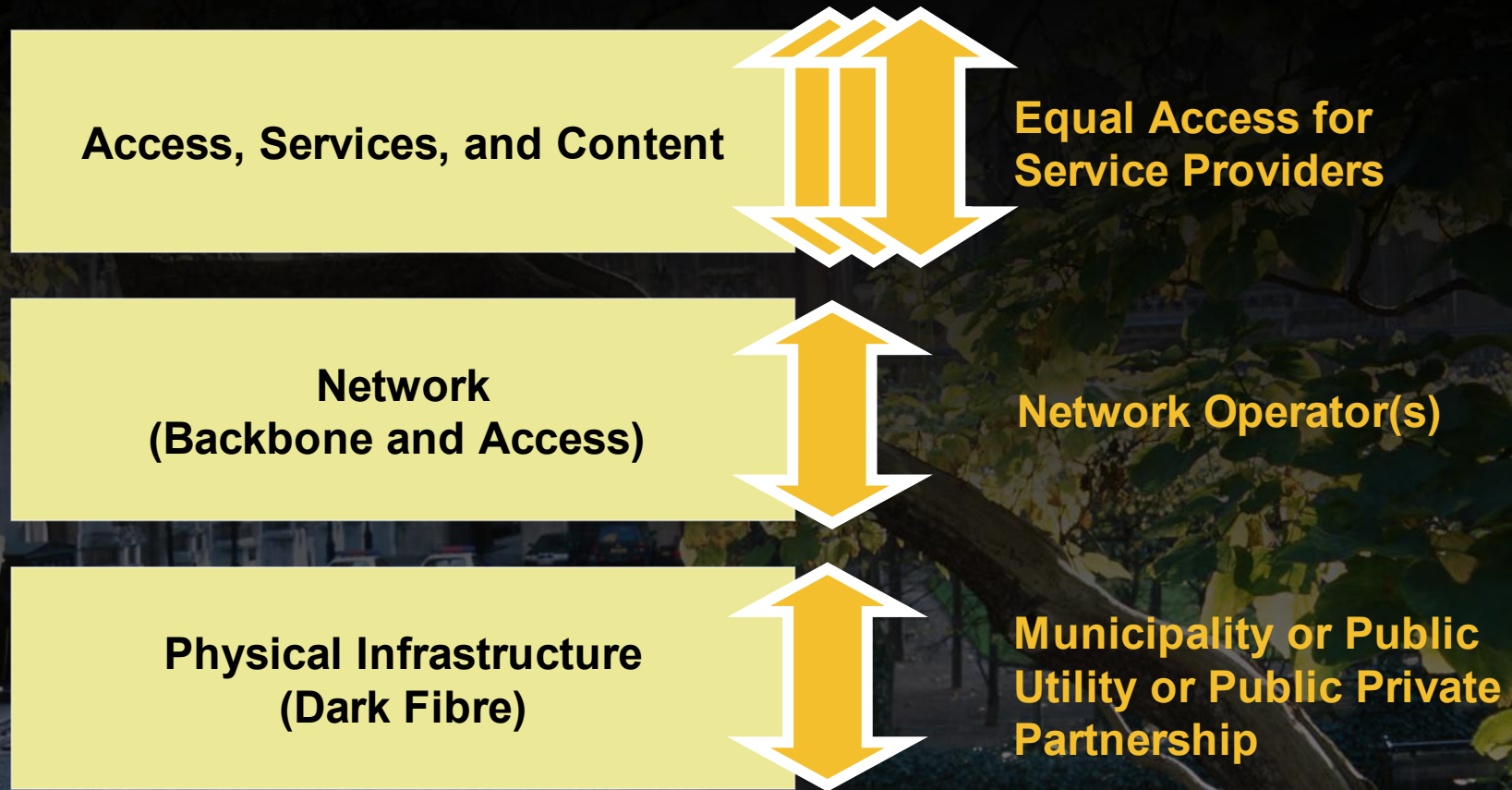


(Dark Fibre)

Passive Infrastructure Model



Equal Access Model



Public Orchestrated Open Access Model

Access, Services, and Content

Network
(Backbone and

Physical Infras
(Dark Fibre)

Case Study

Citynet
(Amsterdam,
Holland)

CITYNET
Amsterdam.nl

CITYNET
Amsterdam.nl

Creating The Vision



Key Cisco Solutions Making The Vision Possible



Cisco® Security Foundation Network

Provides future-proof broadband networks and protection against evolving threats

Cisco Unified Communications

Provides:

- * Unified Communications**
- * IP Telephony & Video/Audio Conferencing**
- * Customer Contact Center solutions**

Cisco Mobility and Wireless Solutions

Provides foundation of a connected community by allowing governments to deploy a secure, scalable future-proof broadband network

Cisco Data Centre Solutions

Provides secure data and application storage and back-up facilities and enables the next step to shared eGovernment services

Cisco Industry Leadership

- **Almost 20-year track record as the industry leaders in networking**
- **World-class Cisco® certified networking engineers with in-depth networking expertise**
- **Extensive experience in scalable network design, operations, management, and support**
- **Broad range of technical experts and engineers**
- **Unrivaled partnerships**
- **Industry-leading, standards-based network solutions**



Intelligent Information Network Changes the Way We Live, Work, Learn, and Play



Cisco® empowers the vision of connected communities through delivering an **intelligent information network** to local governments and citizens, transforming communities into thriving sustainable economies.

Intelligent information network (IIN) is an ubiquitous vision of intelligent networking to connect citizens to local government agencies **anytime, anywhere and any place.**

IIN allows **citizens and public agency employees** to **access, use, and enhance information** in an intelligent, secure and user-friendly manner to do things better, faster, and more effectively.

Cisco Solutions for Connected Communities



Connected Communities: What to expect from Cisco®

- **Comprehensive, open standards-based intelligent information network**
 - IP next generation network**
 - Future proof application-enabling network solutions through a service oriented network architecture**
 - Smart business communications**
- **Continuously evolving local government solutions and technology roadmap**
- **Innovative partner collaboration and eco-systems**

New Technologies and City projects

Existing innovative City projects have delivered tangible benefits in 3 key areas:

- 1. IMPROVE SERVICES TO CITIZENS AND ENTERPRISES**
- 2. IMPROVE INTERNAL EFFICIENCY AND REDUCE COSTS**
- 3. DRIVE ECONOMIC DEVELOPMENT**



Solution

- **Video-surveillance**

- **Wireless Cameras**, easy to install and move (no street work), using **IP protocol** to enable surveillance and management from anywhere on the IP secure network
- Helps fight crime, traffic offenses both by improving detection and providing proofs of evidence

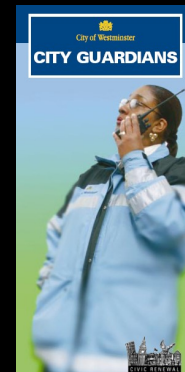
- **Noise, Pollution, Flood detection, Distant Meter reading**

Wireless sensors provide constant measurement and can send automatic alerts. Wireless meters can be read remotely saving agent's time



Solution

- **PC or PDA with WI-Fi connectivity allowing agents to perform anywhere:**
 - access to agenda and email, fill and send forms, access office applications and data
 - check plans, existing networks, for example when digging a new hole in a street
 - update cases online, route them to colleagues, exchange information between agencies
- **Categories of Mobile workers and usages**
 - Managers (agenda, email)
 - Inspectors (forms, case management)
 - Street workers (case management and access to office data)
 - Municipal Police (alerts, quick exchange of information, take control of videosurveillance cameras,...)
 - parking attendants (forms, send picture of offender,..)
 - Social helpers (access to office applications)
 - ...



Solution

- **Mobility for municipal transports**

- **Video surveillance in buses**
Passengers and driver's safety

- **Information screens in buses and at bus stops**

Delivers information about next bus arrival time, connections, traffic perturbations, and broadcasts news for passenger distraction ...

- **Bus position follow-up, load measurement**

Allows to have interactive information and statistics to optimise bus management



- **Enables agent mobility and virtual teams**

- ✓ Unlike traditional telephones, an IP telephony is not related to a telephone number, **any IP telephone can be used by anybody, association to a given telephone number is made on the telephone**. By entering his userid/password, a user personalises the IP Phone with its telephone number and all his setting (address book, call redirection, etc...)

- ✓ IP telephones allows advanced call redirection rules according to agenda and/or to caller:

- If I am in a meeting then go to my mailbox
- If my boss calls, IP phone rings first, then mobile phone, then home phone...

- ✓ A PC can become an IP Phone with Cisco IP Communicator software, allowing to call on Voice over IP anywhere you find an Internet access

- ✓ IP Phones can also be wireless



- **Supports productivity applications**

- ✓ Presence and Time management
- ✓ Information messages broadcast
- ✓ Display of caller contextual information (from a caller database)
- ✓ Teleconferences (Meeting Place) to enhance government employees training on new laws, regulations, processes and tools

Examples:

- ✓ Timestamp children entry and departure in a creche to automate bill production and have an up-to-date list of present children
- ✓ IP telephone in a building attendant home allowing better case and requests management



- **Solutions for Visually Impaired and Blind users**

- ✓ Tactile discernable keys
- ✓ Cisco Unity provides ability to listen to email via Text-to-Speech
- ✓ IP phone functions can be activated by voice rather than keys or screen menus



- **Solutions for Hearing Impaired and Deaf Users**

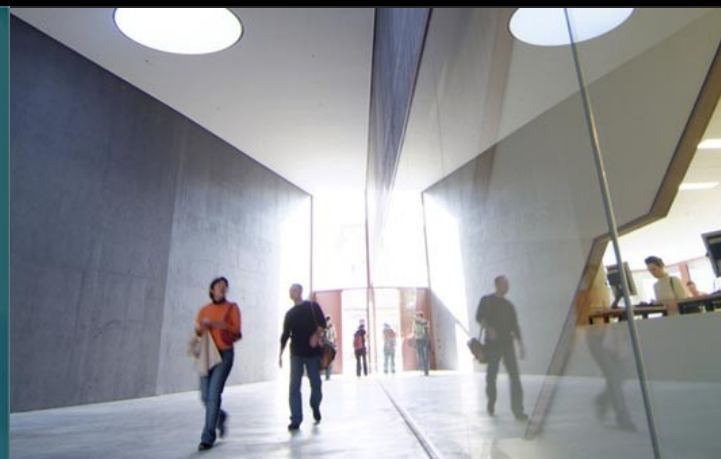
- ✓ Coupling of the handset to a Hearing Aid
- ✓ Text Telephone can be interface to Cisco IP Communication Solution using any analog gateway
- ✓ IP Phone can be associated to a web-cam allowing video conferencing



CONCLUSION

- **Network as a platform to build e-government projects to link central and local government departments to each other and save costs in the process.**
- **This same architecture can then be used to provide high bandwidth connections to schools, libraries and other public facilities.**
- **This same architecture and opening up the network to citizens can have an equally great impact, improving service.**
- **They are KEY ENABLERS for changing the way we Work, Live, Play and Learn**

Q & A





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