What Defines the Rural Smart Community

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The Communications Revolution

80 Days

Communication from Europe to U.S.

Nearly
Instant

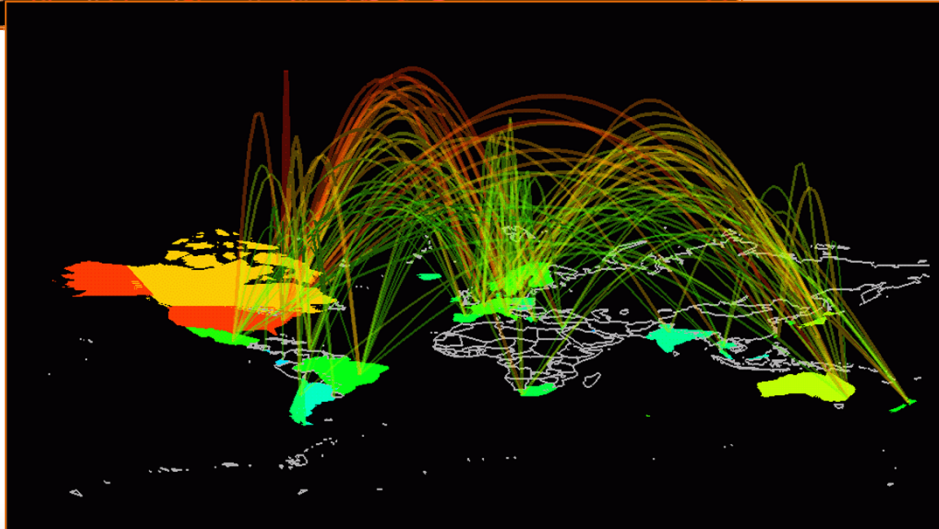1860 1875 1890 1905 1920 1935 1950 1965 1980 1995 2010 2025

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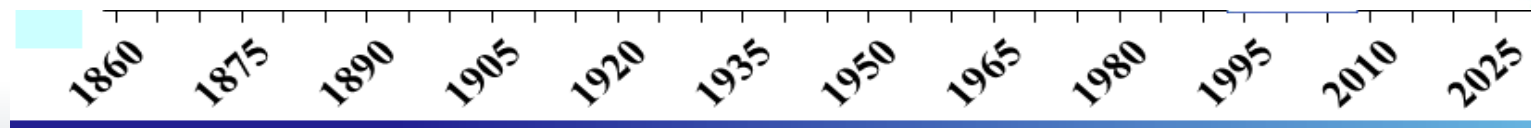
Two Events Made All This Possible

Development of Fiber Optics
in the 1970s and 1980s

Development of Internet
In the 1980s and 1990s

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The Future Broadband User

Home and Business Security

Advances in Telemedicine

Distance Education

Super HD Video

3D

Personalized On-Line Shopping

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Smart Community Network

What Is a Smart Rural Community?

What makes a rural community "smart" [NTCA] - A dynamic suite of broadband-enabled solutions that builds community strength and enables global competition. Fundamentally, a smart rural community uses broadband networks to enable applications that the community can leverage for innovative economic development and commerce, blue-ribbon education, first-rate health care, cutting-edge government services, robust security and more efficient energy distribution & use.

The Smart Community Network is based on the layered approach as services provided are separated from the network infrastructure. The network may provide **multiple services** from different providers who do not own or manage physical infrastructure of public networks.

The Smart Community Network provides **market opportunities** for manufacturers of a broad range of equipment types, including provider edge, metro access/aggregation, mobile backhaul equipment, data center switches, and enterprise switches and routers.

Why Smart Communities

The Smart Community is a future network currently being discussed domestically. Many carriers have already started building for the Smart Community (i.e. Verizon, AT&T, Google).

The Internet has two significant problems:
- **security** including spam and cyber-terrorism
- drop in **quality** when bandwidth is insufficient for a desired service.

Meanwhile, carriers are faced with a shrinking fixed line telephone market due to the growth of the cellular phone market. Correspondingly, cellular phone markets are near saturation.

To help address these challenges, carriers are creating a network that can provide all fixed-line, cellular, data, and broadcast services in addition shift to a business model that charges for the use of functions and services instead of for communication lines.
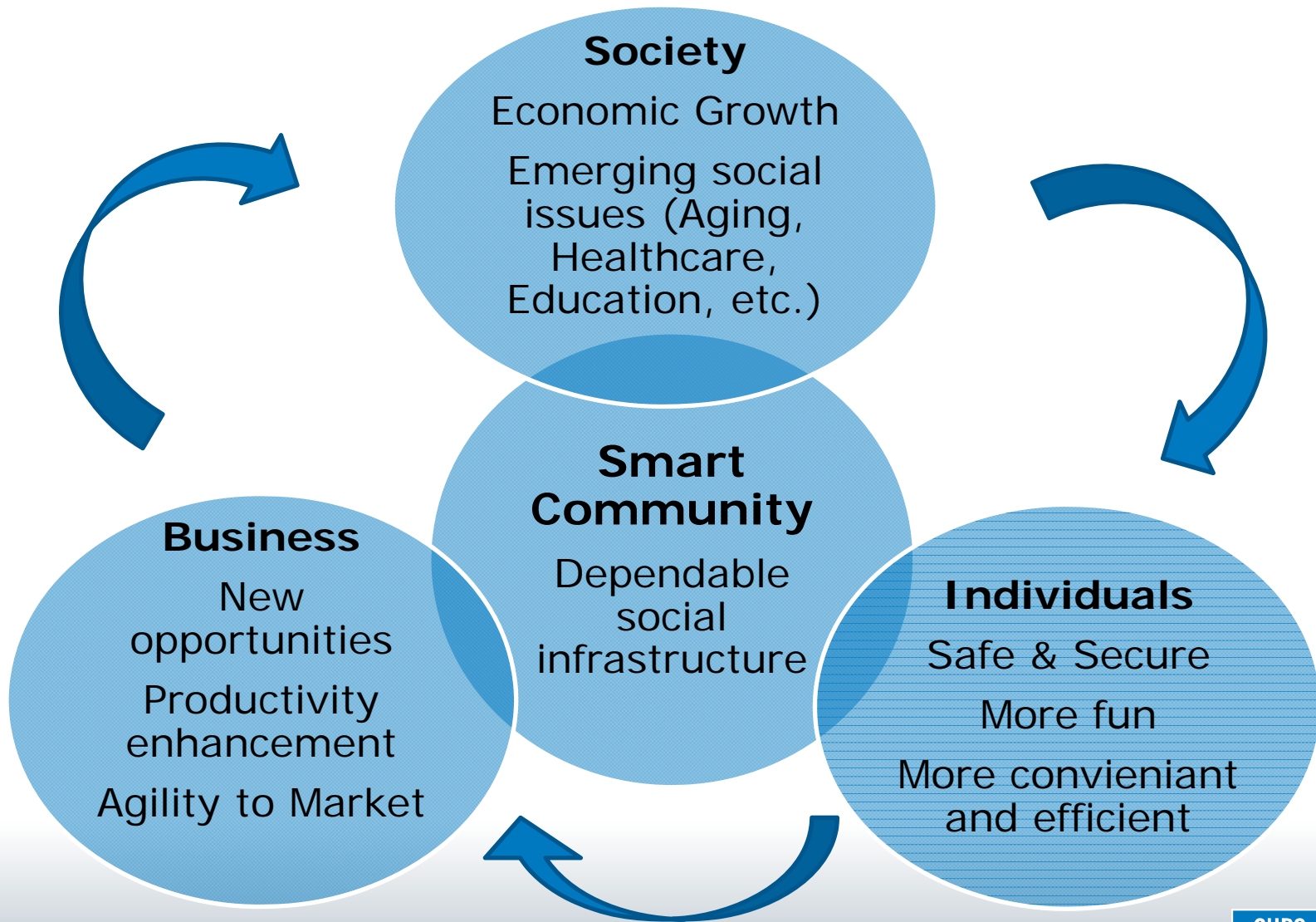
What is Driving the Smart Community?

With coordinated, conscientious leadership, these new communication technologies will not only continue to fuel growth, but if harnessed properly will enable a **Services Revolution** that can provide local communities with access to the latest advances in Education, Medicine and Entertainment.

Smart Communities can play a vital role in the pathway to an **economic recovery**, with the services revolution forming the foundation of a sustainable local economy.

Several recent studies have examined the effects of broadband investments on economic performance in varying regions throughout the world. One recent study, "Socio-economic Impact of Internet in Emerging and Developing Economies" estimates that when **Internet penetration** rises by 10% in emerging economies, it correlates with an incremental GDP increase of 2%.

Source: World Economic Forum, July 2009

Smart Community Social Infrastructure

Society

Economic Growth

Emerging social issues (Aging, Healthcare, Education, etc.)

Smart Community

Dependable social infrastructure

Business

New opportunities

Productivity enhancement

Agility to Market

Individuals

Safe & Secure

More fun

More convieniant and efficient

Source: NTT, July 2009
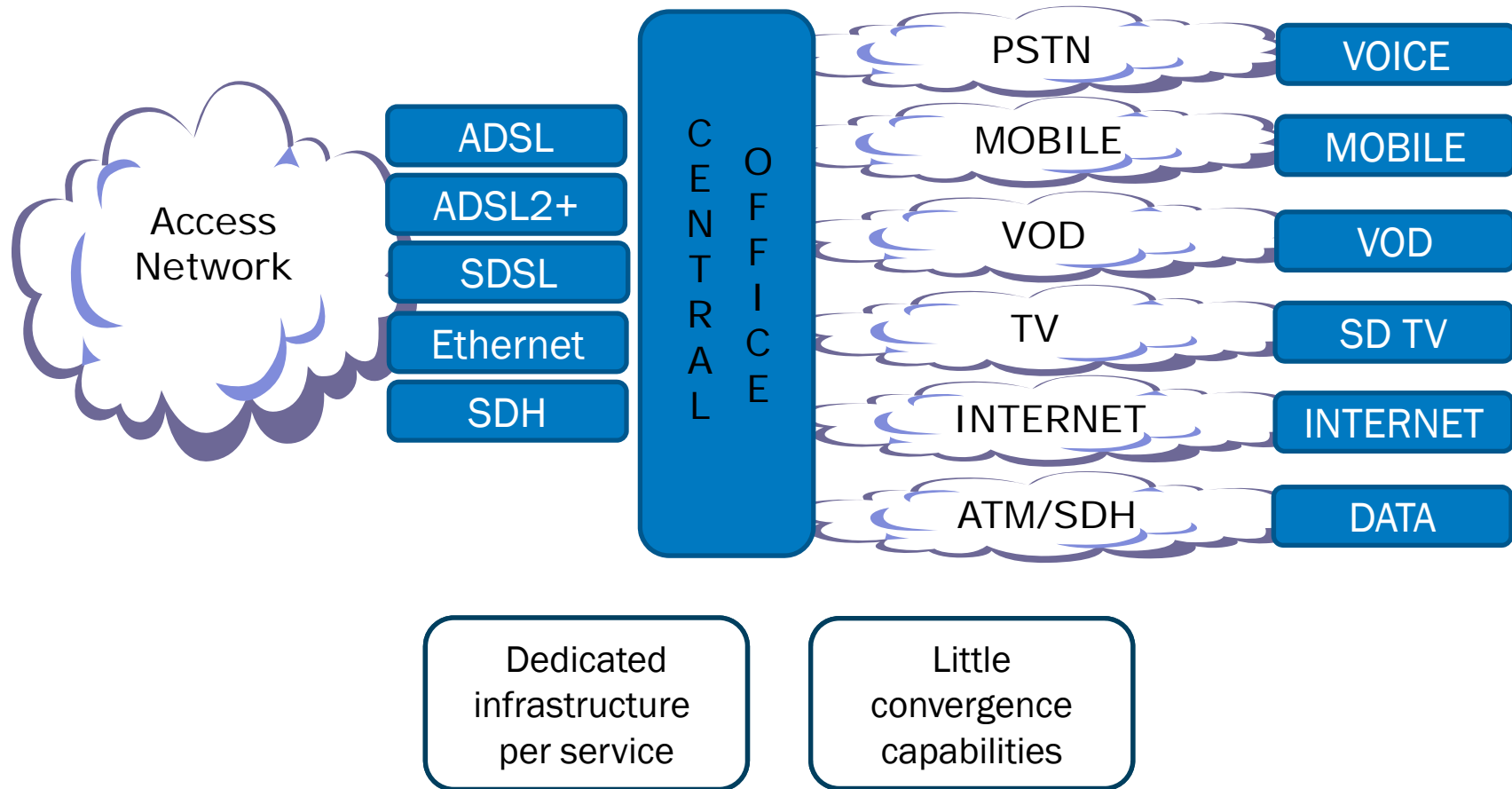
Smart Community Stakeholders

The Smart Community must ensure end-to-end security, and deliver value to **all** stakeholders:

- Consumers
- Enterprises
- Service providers
- Government
- Investor Groups
- Civil society
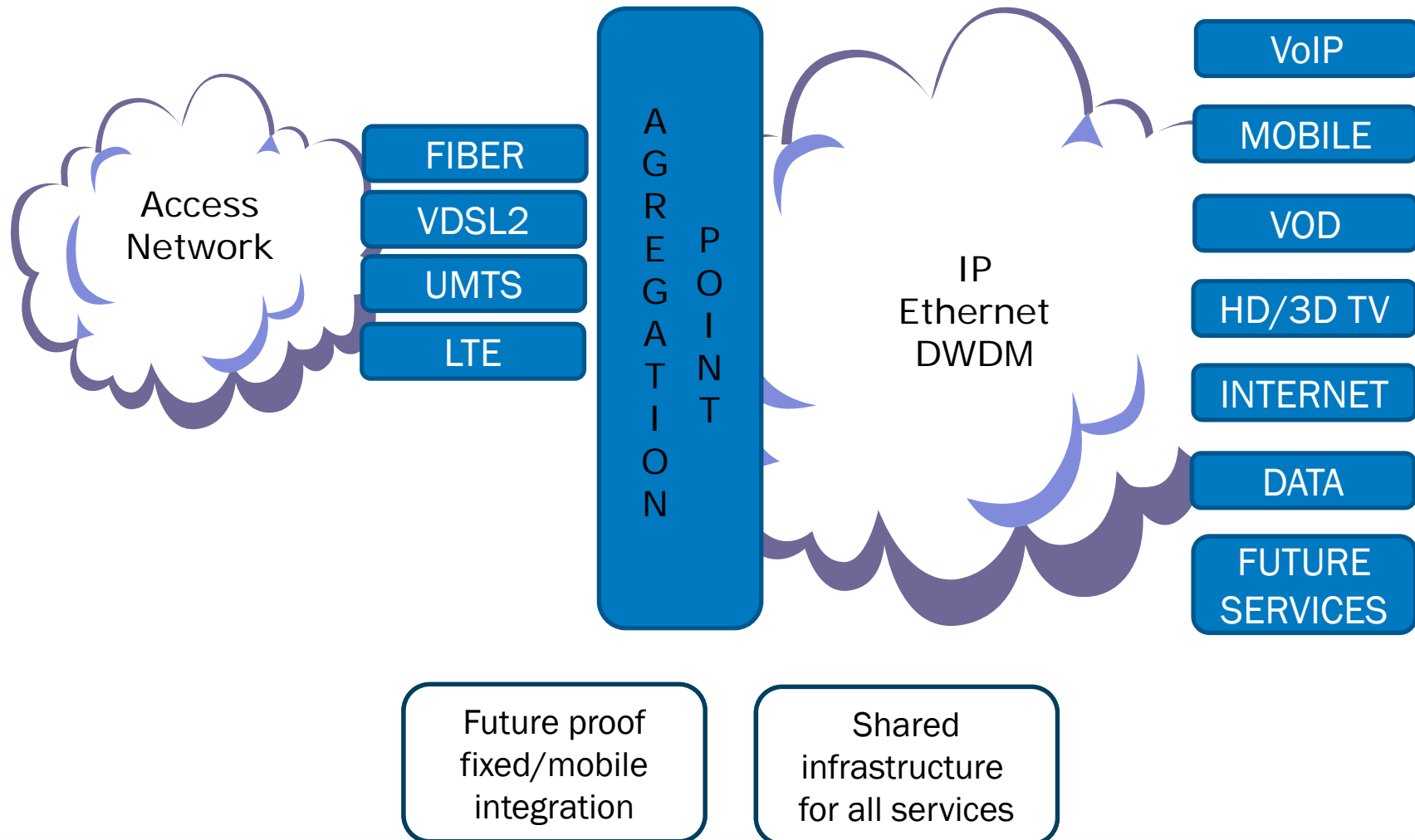

Standards will make this possible. Without these standards, the Smart Community Networks development and deployment would be slow and inefficient.

Source: World Economic Forum, July 2009

Many Community Networks May be Inefficient

Access Network

ADSL

ADSL2+

SDSL

Ethernet

SDH

CENTRAL OFFICE

PSTN — VOICE

MOBILE — MOBILE

VOD — VOD

TV — SD TV

INTERNET — INTERNET

ATM/SDH — DATA

Dedicated infrastructure per service

Little convergence capabilities

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Converged Community Networks Offer Simplicity

Smart Community Transparency

Anyone

Anytime

Anywhere

Anything

FTTx Metro Core

Voice Data Video

CATV

Core Service

Application

Broadcast

Web 2.0

Web Service

Data Info

Access Service

Application Service

Rural Smart Community
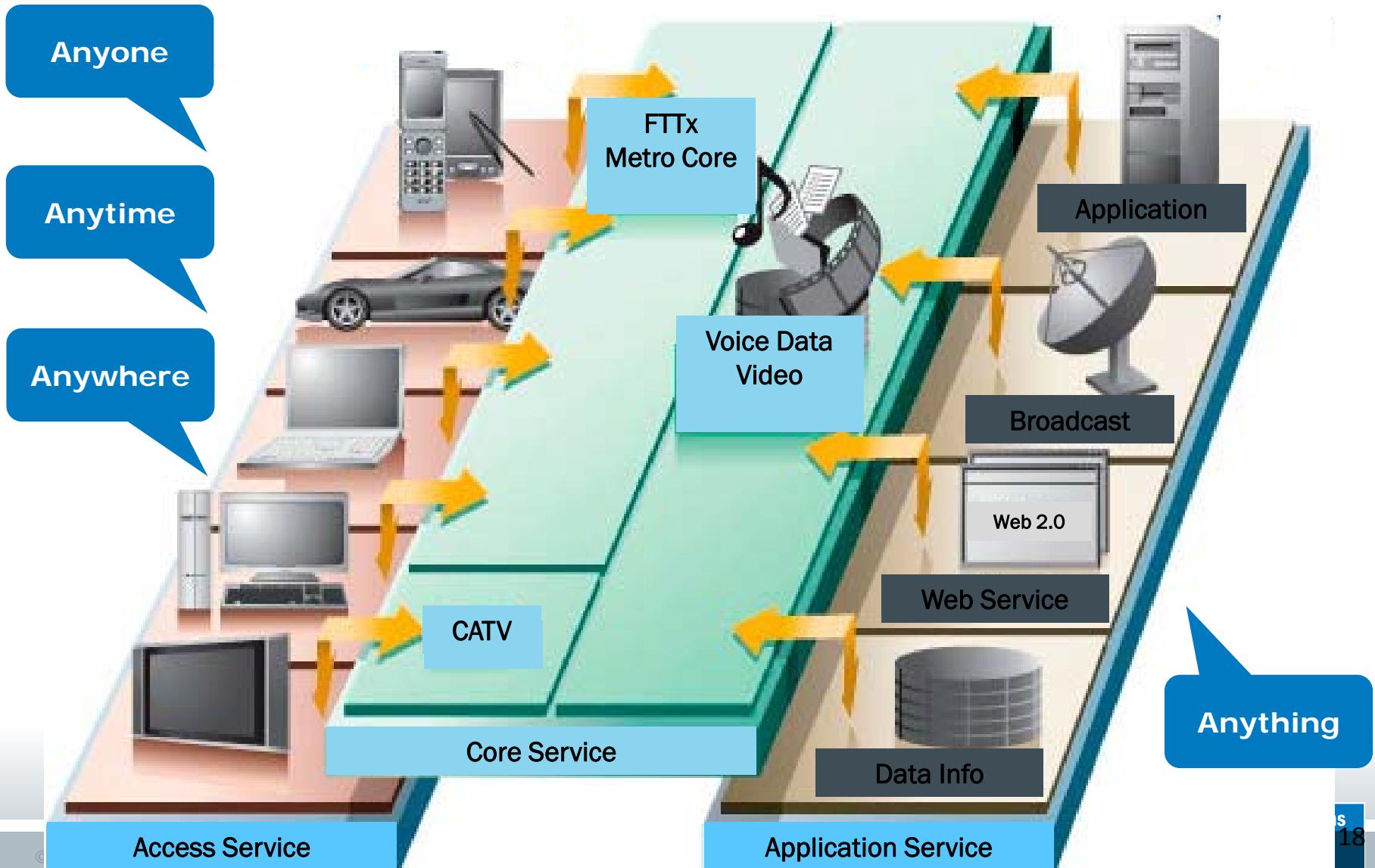
How can Communities utilize the network?

- Business
- Residential

- Education
- Healthcare

- Safety
- Security

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Business Solutions

Now the infrastructure is in place, what do we do with it?

Network & Apps

Business Case

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Monetizing The Network

Resale Partner Opportunities

- Apps

- Storage

- Backup and Recovery

- Web Hosting

- Hosted Servers

- Virtual Desktop Infrastructure

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Economic Development

- Asset Tracking
- Digital Signage
- Fleet Management
- Mobile Point of Sale
- Smart Vending
- Cloud Services
- Energy Management
- Healthcare Monitoring
- Self-Service Kiosks
- Remote Monitoring
- Wireless Surveillance
- Mobile Device Management

Smart Community and the Smart Home

Entertainment

Smart Home

Games

Voice

News

Smart Grid

Energy

Internet

Communication

Commerce

Rural Development

Present and Future

- Maintain Technical Relevance
- Increase Productivity
- Economic Stimulation
- Encourage Collaboration
- New Possibilities
- Staying Relevant in Revenue Stream

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