National Productivity Drives Standard of Living

Source: Net Impact Study, 2002; adapted by Cisco IBSG, 2007
Global Competitiveness and Network Readiness Influence Economic Growth

Correlation Coefficient: 0.98

The big picture

Meta-trends: fibre revolution / mobile evolution

Source and Copyright Ventura Team LLP 2009
Internet Speeds and Costs Around the World
Top 20 Nations in ITIF Broadband Rankings

1. JAPAN 61mbps $0.27
2. KOREA 46mbps $0.45
3. FINLAND 22mbps $2.77
4. NORWAY 7mbps $4.04
5. SWEDEN 18mbps $0.63
6. NETHERLANDS 9mbps $4.31
7. POLAND 7.5mbps $13.00
8. CANADA 7.6mbps $6.50
9. PORTUGAL 8mbps $10.99
10. FRANCE 18mbps $1.64
11. U.S.A. 4.8mbps $3.33

Price Per Month for 1mbps

< $1 | $1-$5 | $5-$10 | $10-$20 | $20+

SOURCE: OECD and ITIF Broadband Rankings
EU Productivity Imperative

To sustain the rate of standard of living improvements, each 2050 worker will have to produce 5X more than a worker today.

Source: Cisco IBSG Analysis
What Drives Productivity?

Contribution to Long-term Productivity Growth

- **52%** Technological change and other factors
- **37%** Capital Investment
- **11%** Improved Labor Quality

Effective IT solutions drive productivity gains

Organizational issues, not technology, pose the biggest challenge to productivity

My 2 cents

Accelerated pace of development means less time to react – so the slow lose out.

Incremental Value Add

- **Winner**
  - Mobile telephone
  - Internet
  - Telephone
  - Ubiquity

- **Loser**
  - Invention
  - Electricity
  - Television

INNOVATION

- Potential for competitive advantage
- Act now
- Act later

Potential for low value add

Potential for medium value add

Potential for high value add

Time
Scandinavian experience of building open fiber networks
Example STOKAB – owned by City of Stockholm

1994:
- City of Stockholm
- Transferred infrastructure (fiber) from different organization that the City controlled
- First “InfraCorp” company
- This InfraCorp to build and own all fiber infrastructure
- Strictly neutral on the market (remember that the market is fully liberalized)
- All parties accepted this concept (because of strict neutrality)
- More that 1,200,000 km of fiber
- More than 5,500 km of cable
- Profit margin last year was 30%

Rest of Sweden:
- More then 200 other local InfraCorps
The historical telecom model: One typically state-owned company builds and operates infrastructure designed for voice and later on adopted to support first-generation Internet services.

Single value chain
Linear OpEx increase with services demand
Limited motivation for service innovation
Voice over IP: Great for Society; a Threat for Incumbents

Source: Cisco IBSG analysis based on an Emerging Markets incumbent, August 2006

Voice over IP (VoIP) Negatively Affects Incumbents’ Most Important Revenue Stream—Accelerated Deployment Is Not in Their Interests.
Telecom Evolution

**Telecom 1.0**

The historical telecom model: One typically state-owned company builds and operates infrastructure designed for voice and later on adopted to support first-generation Internet services

- Single value chain
- Linear OpEx increase with services demand
- Limited motivation for service innovation

**Telecom 2.0**

The emergence of new telecom operators (e.g., Swedish broadband company) deploying IP NGN high-bandwidth symmetrical infrastructure designed for triple-play next-generation Internet services

- Single value chain
- Innovation walled garden but limited incentive for service innovation; therefore continues downward ARPU pressure

1998
Telecom 2.0 Challenger Example

Swedish Broadband Company - Bredbandsbolaget - BBB
Startup in 1998, in 2005 27% of all Broadband Connections in Sweden
Sold to Telenor on 23 May 2005 for 600 M €
Telecom Evolution

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Telecom 3.0
The Open Services Exchange Model in which Virtual Service Providers (VSPs) offer their products over the IP NGN infrastructure on equal terms
Efficient decomposed value chain in a market economy empowering continues diverse service innovation
Continued ARPU growth with minimal turnover
Decomposed value chain example

Open Services Exchange Network (OSEN): NGN symmetrical IP infrastructure providing connectivity and quality service delivery

Passive Infrastructure Provider (PIP) taking advantage of right of way and utility economics

eBay-type open economy in which customers can offer and purchase services on equal terms

Open Services Exchange (OSE): Service innovation and governance ecosystem operated by an OSE Operator (OSEO)
Typical Telecom Financial Behavior in Single vs. Decomposed Value Chain

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The report highlights the key role of ICT as an enabler of a more economically, environmentally and socially sustainable world.

Sweden tops the rankings of The Global Information Technology Report 2009-2010, released today for the ninth consecutive year by the World Economic Forum. Sweden is followed by Singapore and Denmark, which was in the number one position for the last three years. Switzerland (4), the United States (5) and the other Nordic countries together with Canada, Hong Kong and the Netherlands complete the top 10.

With an extensive coverage of 133 economies worldwide, the report remains the world’s most comprehensive and authoritative international assessment of the impact of ICT on the development process and the competitiveness of nations.

The report is produced by the World Economic Forum in cooperation with INSEAD, the leading international business school, within the framework of the World Economic Forum’s Global Competitiveness Network and the Industry Partnership Programme for Information Technology and Telecommunications Industries.
• In the 2008–2009 World Economic Forum’s Networked Readiness Index 6 of the top 10 countries has OSEM (telecom 3.0) type of approach

• In the World Economic Forum’s Global Competitiveness Index for 2009–2010 6 of the top 10 countries has OSEM (telecom 3.0) type of approach
Open Service Exchange Model
Service Innovation Through VSP
“Don’t bother me with new ideas; I’ve got a battle to fight!”