

# **Anatomy of a Micro-Telco**

**Connecting people to  
information and each other**

**A key to economic development  
and ending poverty**

# Outline

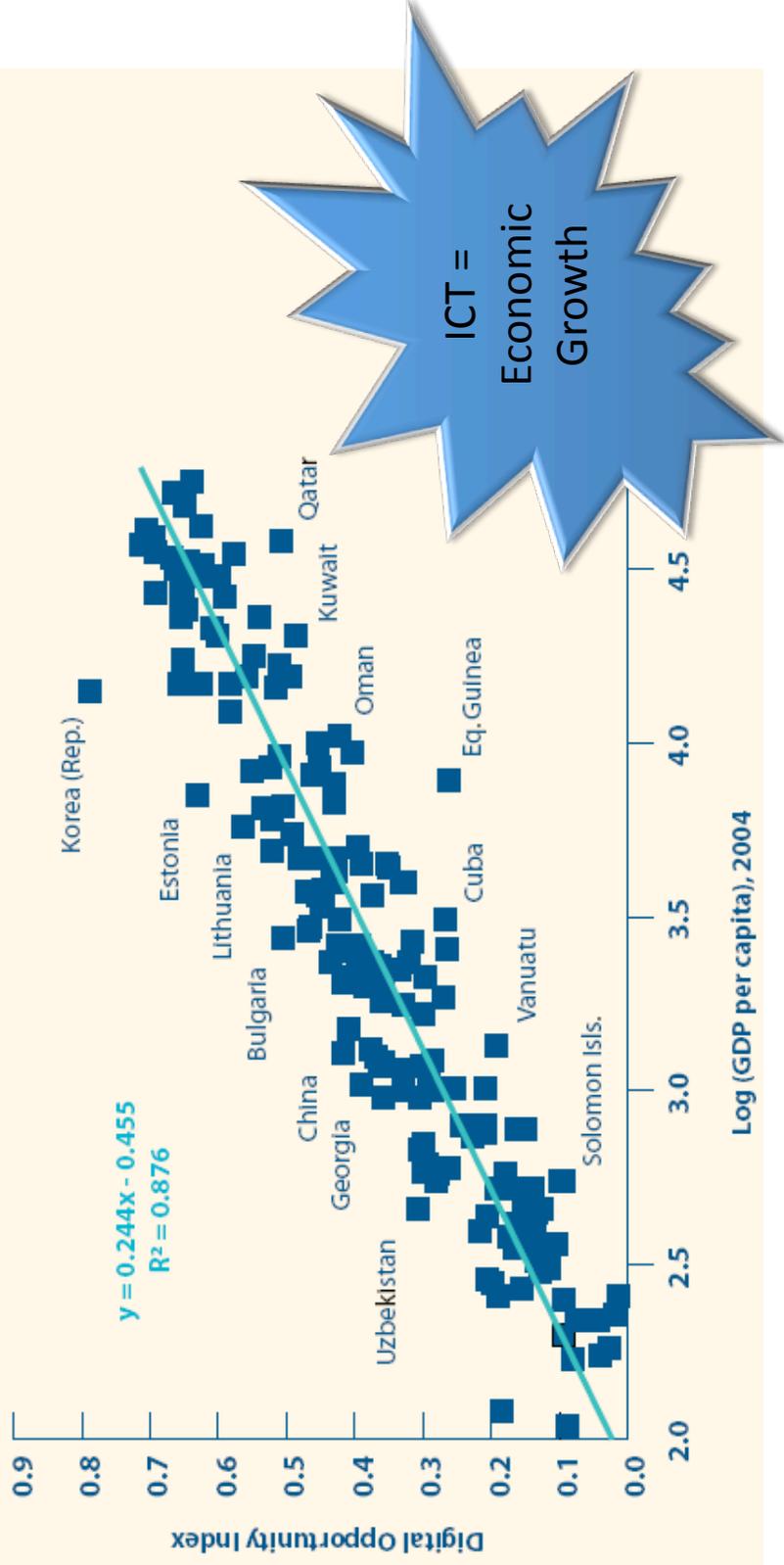
- **Why is ICT Important for Development**
  - Macro: ICT and GDP correlation
  - Micro: Value of ICT at the base of the pyramid
- **Anatomy of a Micro-Telco**
  - Business Model
  - Financing
  - Technical Architecture
  - Content and Services
  - Business Systems
- **Enabling Environment**

# ICT & GDP are Highly Correlated

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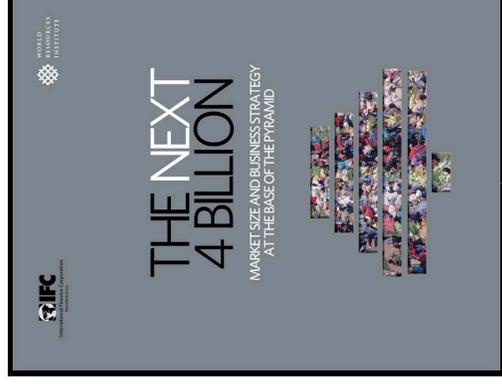
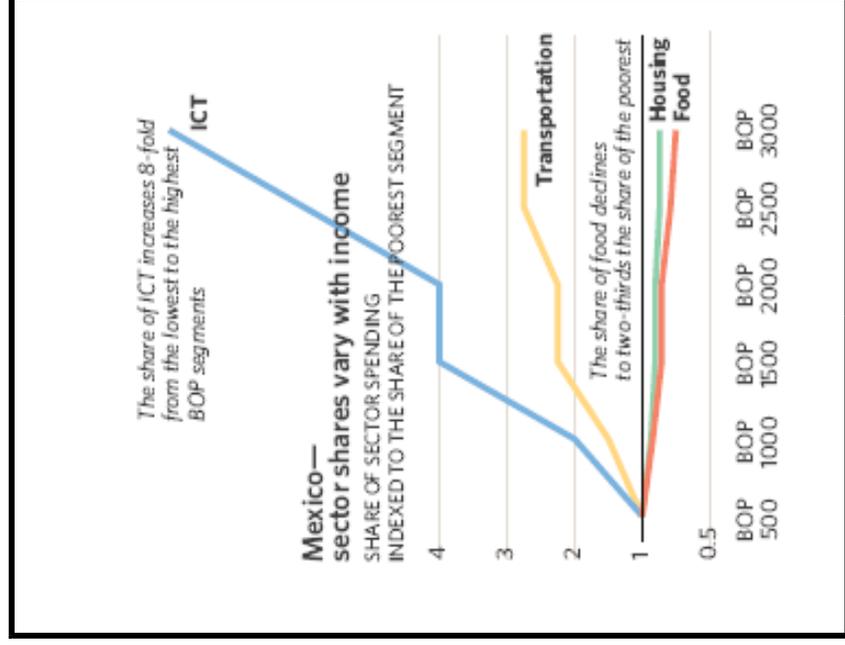
**Figure 3.1: How Digital Opportunity relates to national economic performance**

The chart shows the relationship between DOI and national wealth, as indicated by GDP per capita, using a logarithmic scale.



# People will pay to Communicate

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**There are social benefits to improved communications within a community**

# Anatomy of a Micro-Telco

- **Financial Scale** – 400 users at \$10/month or \$48,000 revenue pa.
- **Technical Choices** – WiFi Mesh, WiMAX/WiFi mix or GSM franchise/leverage model
- **Content & Services** – voice is still revenue generator but network technology enables broadband data over the same infrastructure
- **Business systems** - PREPAID, measured service, PC solution to: provisioning, collections, biz mgmt

**Sustainability means a profitable business**

# Micro-Telco Business Models

## Independent

- Unlicensed spectrum
- Open source solutions
- Co-op or Franchise
- Build on telecentre successes
- Plug and Play goal
- Interconnection , VoIP or USF support requires govt involvement
- VSAT based interconnection

## Carrier Relationship

- Franchise model
- Supports carrier expansion
- Helps carrier meet social contract
- Use USF
- GSM carriers because of low handset cost
- Plug and Play goal

# Micro-Telco Financing

- Universal Service Funds
  - Operating subsidy (typical)
  - Investment mechanism (new)
- Government as anchor customer
- Microfinance solutions
- Carrier expansion
- Franchisor
- Scale is important (frequency not size)

# Micro-Telco Technical Architecture



Technology choices continue to proliferate

- power and security required

WiFi mesh networks

- unlicensed spectrum
- mesh enables broader coverage
- regulator/incumbent telco may interfere anyway
- WiMAX mix may be optimal (licensed spectrum)

Mobile operator cooperative approach (GSM, CDMA)

- USF application
- single base station “islands of coverage”

VSAT based connectivity beyond the community

# Micro-Telco Services and Content

- Voice service over data infrastructure (VoIP)
- Local community needs
- Internet access
- Public/government services
- Financial services
- Business and Agricultural applications

# Micro-Telco Enabling Environment

## Telecom infrastructure regulation

- spectrum usage
- interconnection
- universal service funds (varies)
  - Use for broadband as well as voice
  - Investment model vs. subsidy model
- operating license, VoIP (varies)

## Business enabling environment

**Government's role is key and multi-faceted**