

# Internet for the Next Billion

## Buenos Aires, November 26<sup>th</sup>, 2009



# Nokia Siemens Networks Connecting the Next Billion



The next billion vision

Solutions for the next billion

Services for the next billion

A complex ecosystem

# Our market vision 2015 – the World connected

Applications  
predominantly  
in internet

Multitude of  
business  
models

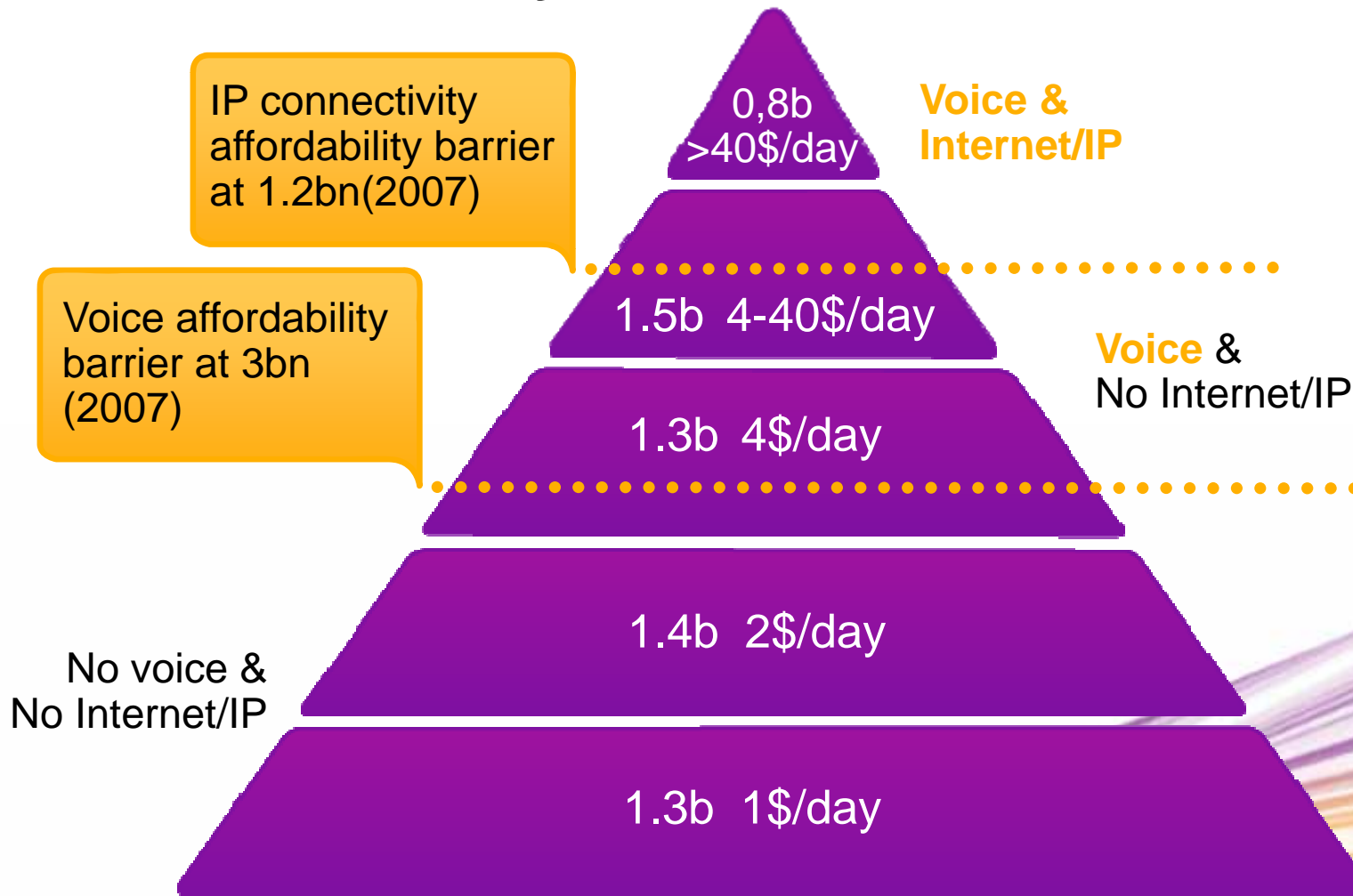


5 billion people  
connected

Broadband  
everywhere

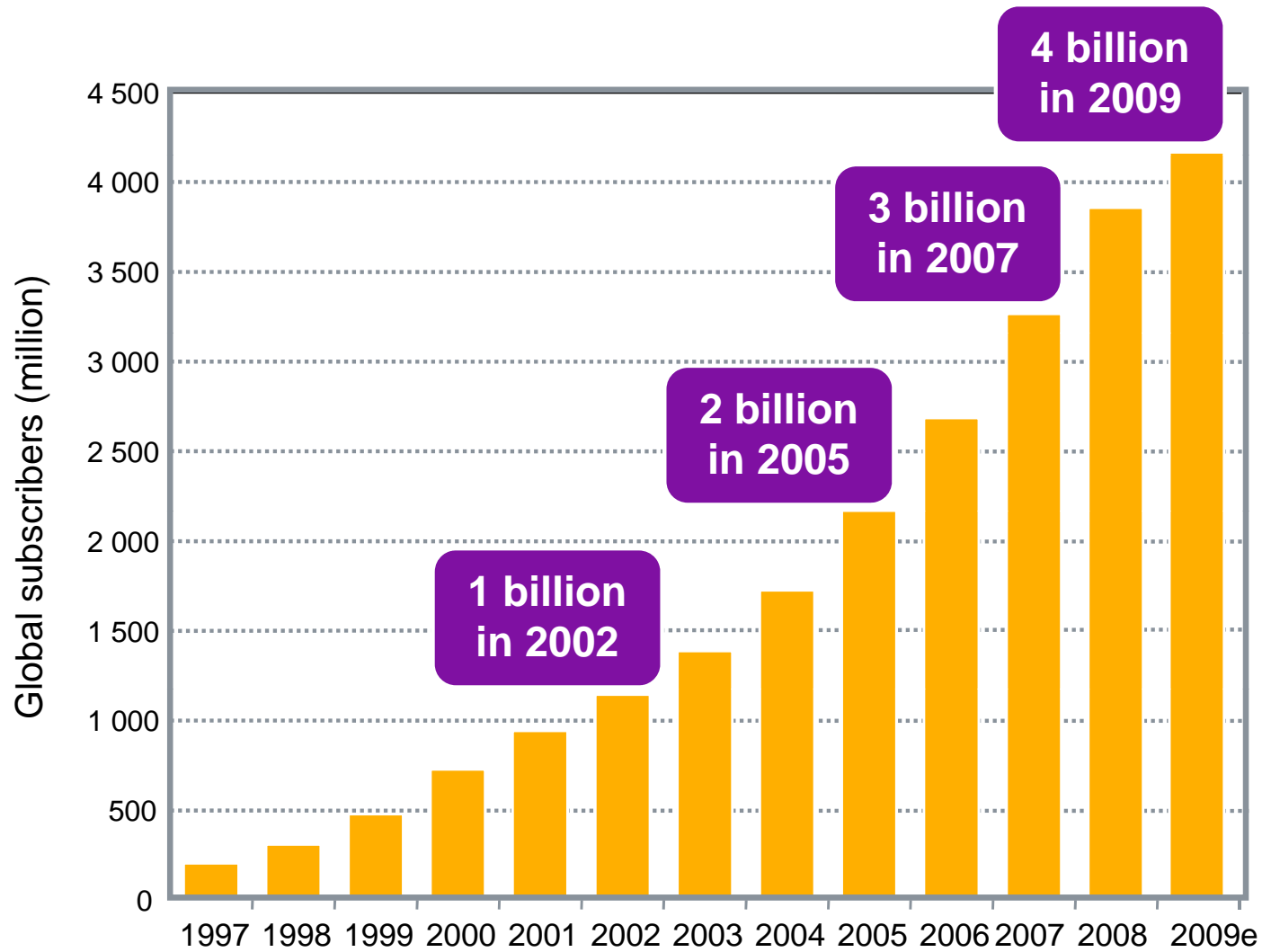
# The challenge of connectivity: Affordability

## Global Income Pyramid



Source: Nokia Worldmap 2006, NET Strategy & Technology

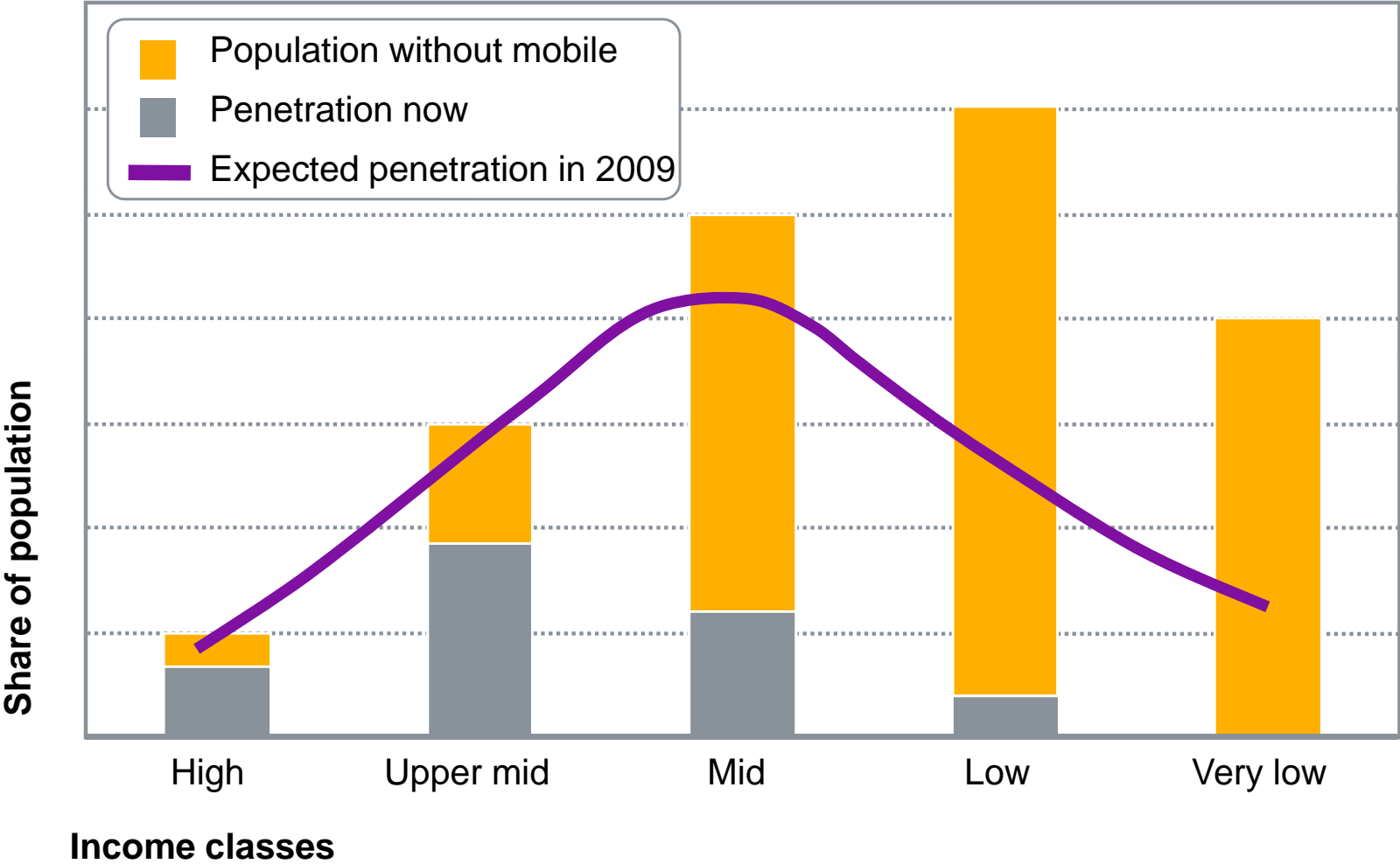
# Towards universal access



Over 1,5 million mobile subscribers every day, mostly coming from emerging markets

# New growth will come primarily from lower income segments

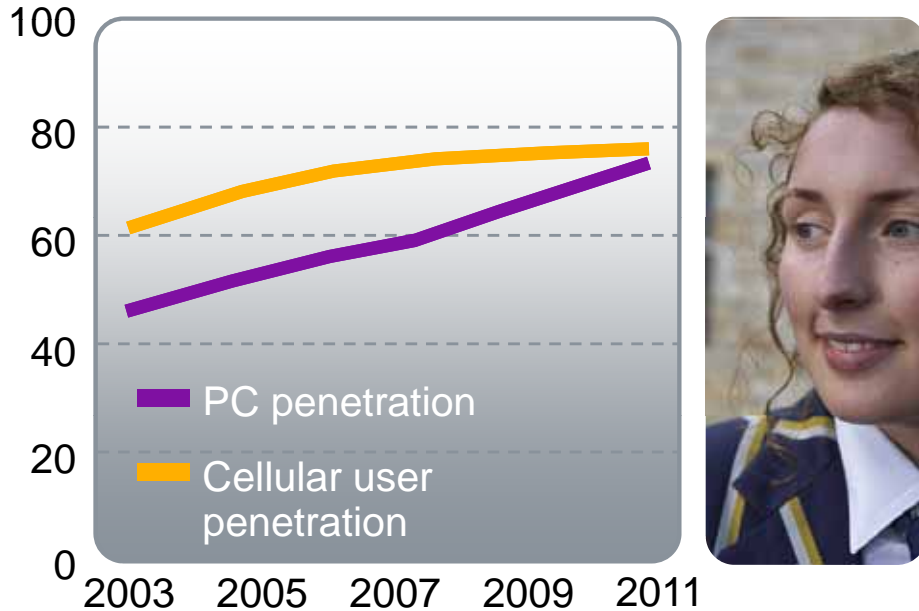
## Example income distribution



# The opportunity in New Growth Markets

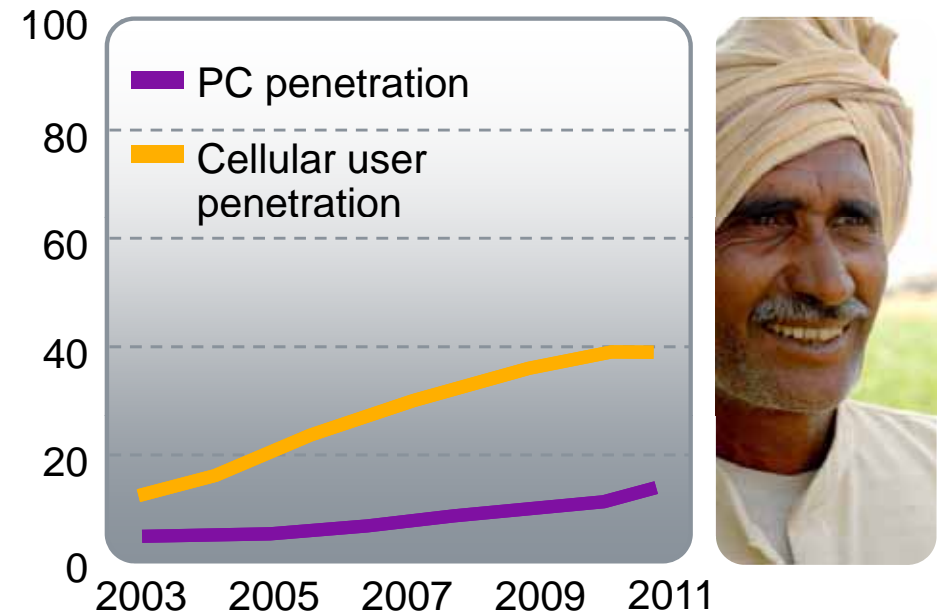
## Mature markets

User penetration (%)



## Emerging markets

User penetration (%)



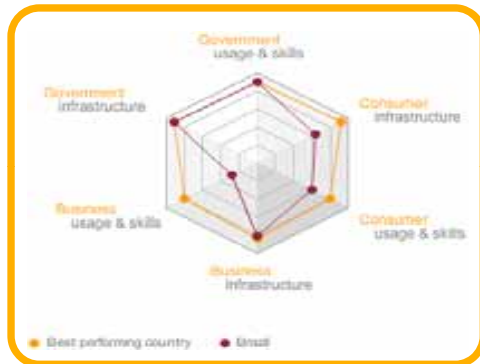
- Overall high growth opportunity in emerging markets
- The cellular penetration supersedes the PC penetration by far, which drives our believe that mobile owners will drive the growth
- Internet in emerging markets will be fixed and mobile

# The Connectivity Scorecard study

Groundbreaking study that ranks countries on approximately 30 indicators of connectivity contributing to social and economic prosperity

Created by Leonard Waverman, professor of economics at London Business School

Conducted under his direction by global economic consulting firm LECG and commissioned by Nokia Siemens Networks



## Key findings:

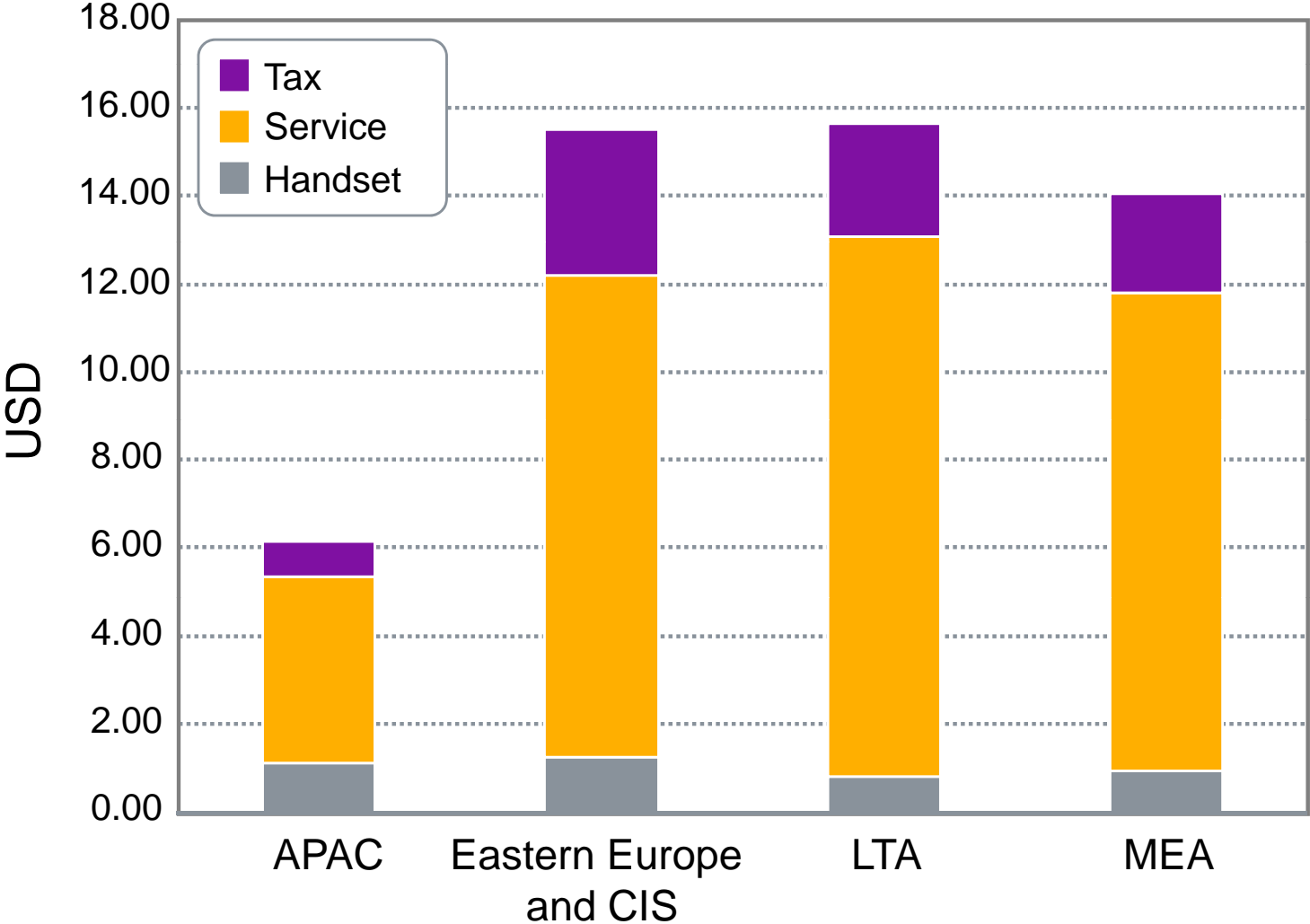
- Not even the world's richest countries can afford to become complacent about their current telecom and computing profile
- Every nation has substantial scope for re-organizing government, business and consumer activity to more fully reap the benefits of technology

Innovation driven economies	Connectivity score
United States	6.97
Sweden	6.83
Japan	6.68
Canada	6.56
UK	6.13
Finland	6.10
Australia	5.90
Germany	5.52
France	5.07
Korea	4.73
Hong Kong SAR	4.46
Italy	3.85
Spain	3.56
Hungary	3.18
Czech Republic	3.10
Poland	2.33

Efficiency and resource driven economies	Connectivity score
Malaysia	7.59
Russia	6.60
Mexico	5.54
Brazil	5.28
South Africa	5.26
China	4.45
Philippines	3.00
India	1.83
Nigeria	1.07



# Latin-America TCO facing large differences with other emerging economies

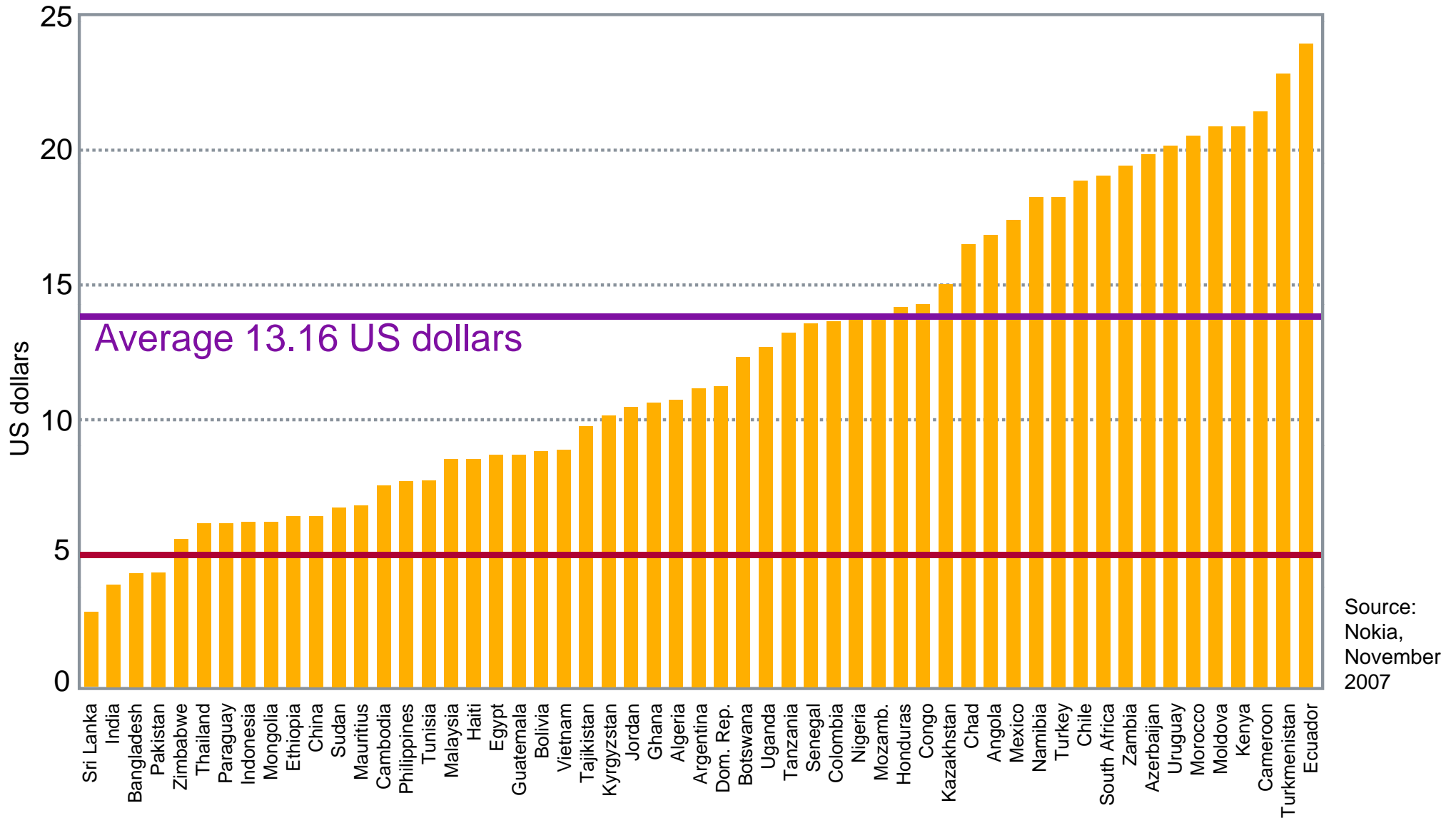


Source: Nokia, November 2007

APAC has clearly the lowest TCO across regions

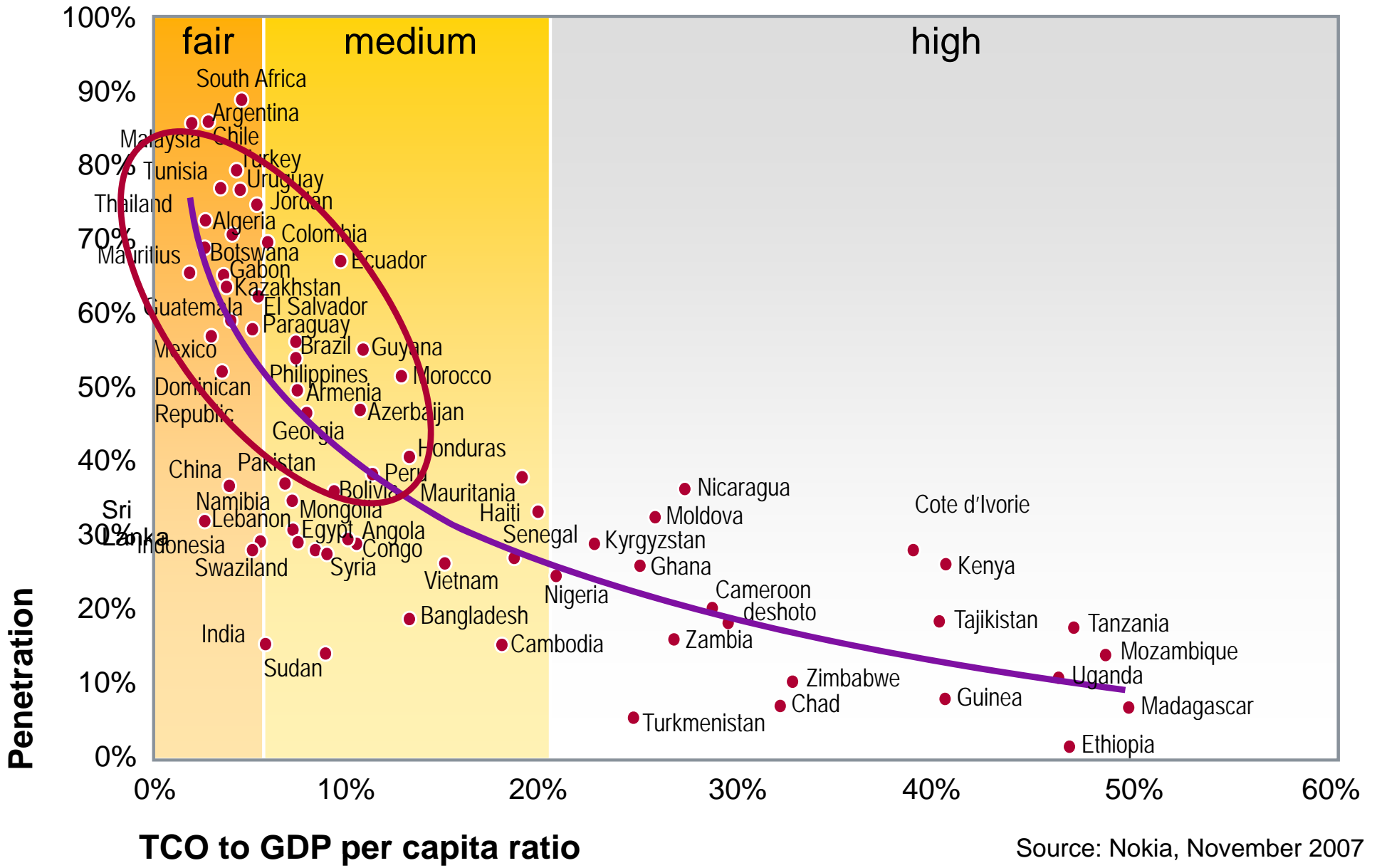


# Monthly TCO per country



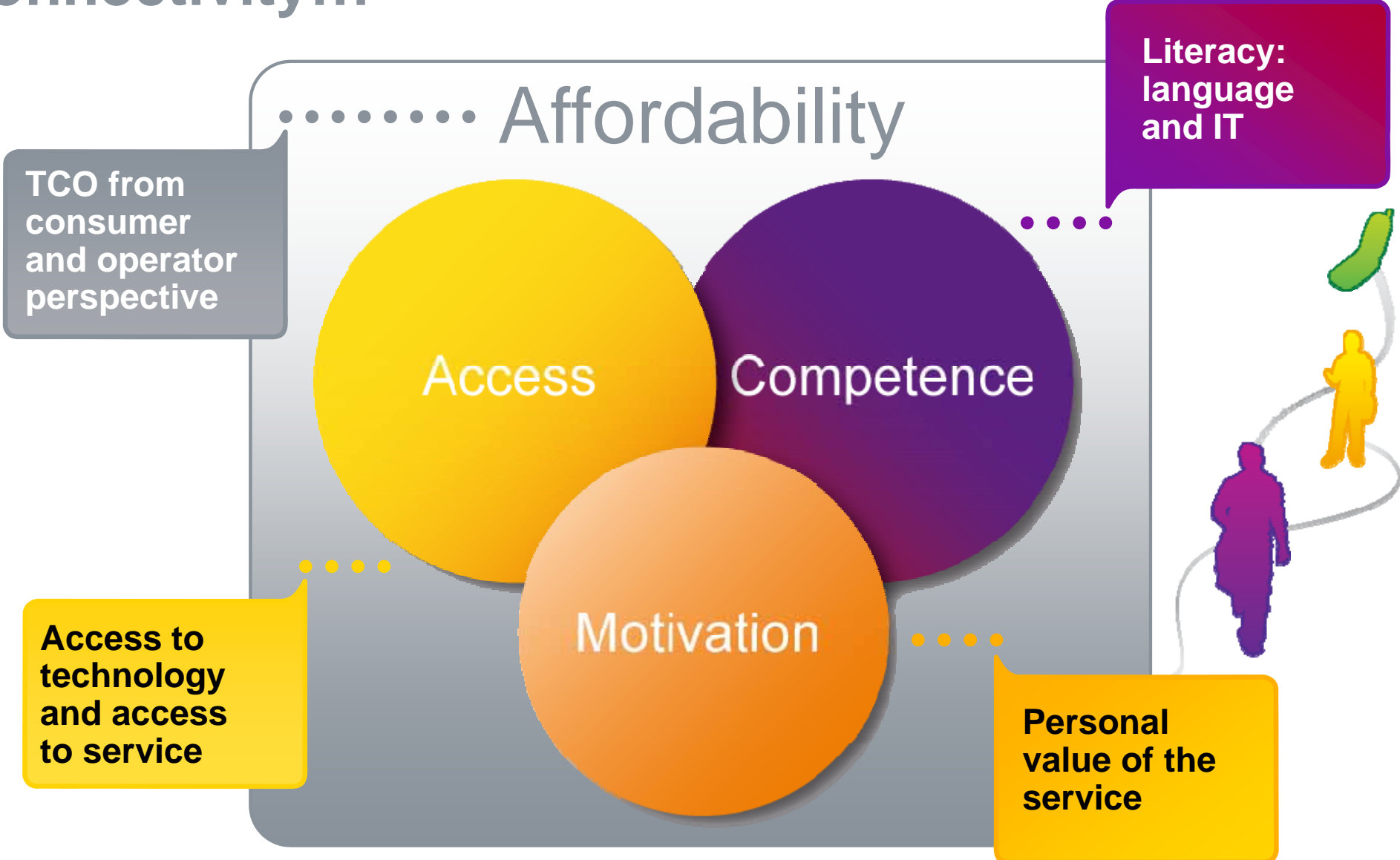
Only four countries meet the monthly TCO target of USD 5, all of them in APAC

# High TCO/GDP per capita ratio = low penetration



Latin American Countries position

# Digital inclusion requires much more than just connectivity...



Source: Marja-Liisa Viherä 1999 (adapted)



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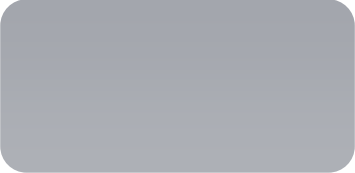
The next billion vision



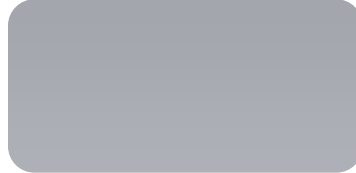
Solutions for the next billion



Services for the next billion

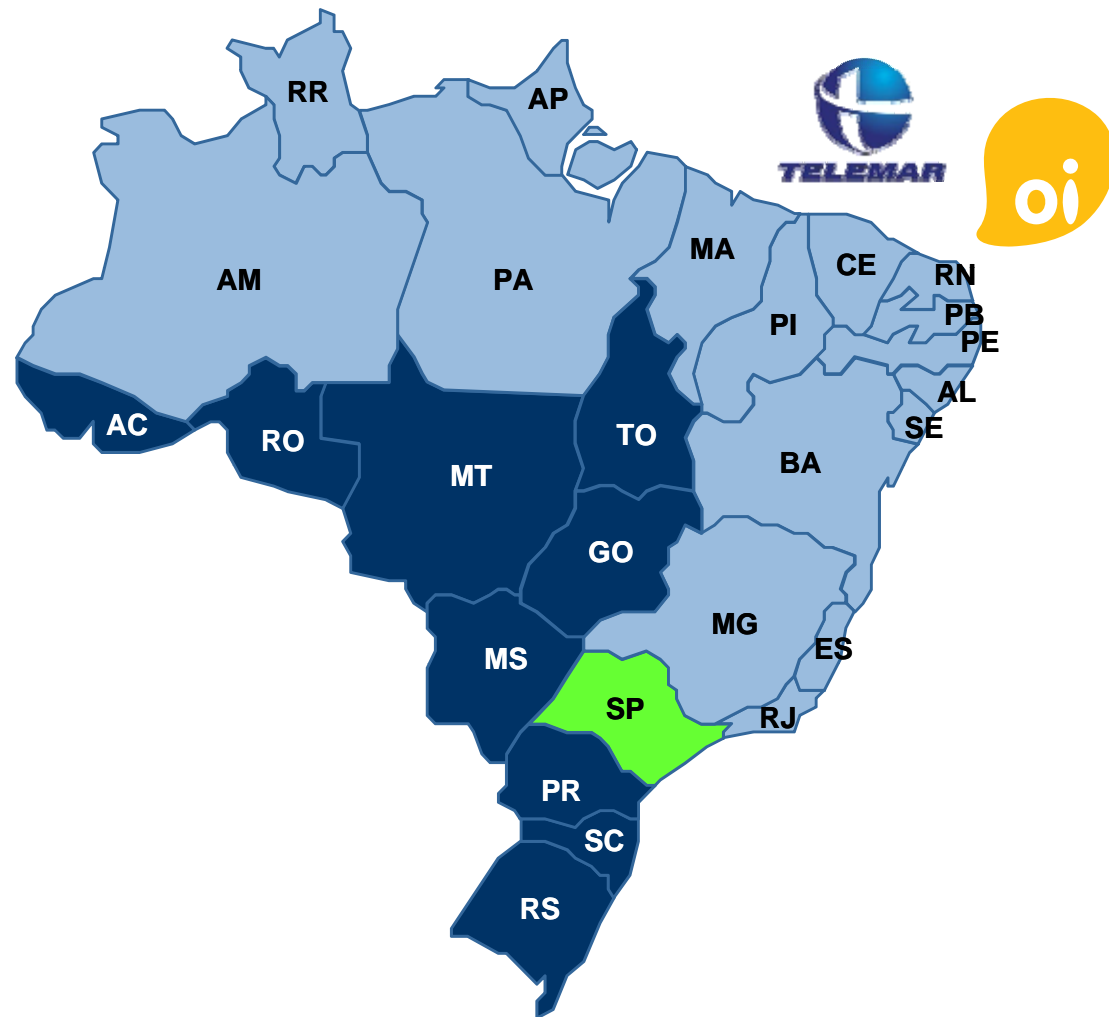


A complex ecosystem



# A customized solution for a challenging environment:

## Nokia Siemens Networks RLU project at Oi, Brazil



Transmission not available to PGMU locations

Deployment of terrestrial Tx capability only possible to connect 1 public payphone to almost all locations with between 100 – 300 inhabitants (2569 locations)

Other locations – 300 thru 600 inhabitants – called for 1. an access device able to offer telephone, fax and Internet and 2. digital transmission to connect these services to Oi's network. (1935 locations)

**Total 4500 rural sites, voice and broadband data services, public and private users**

# A solution matching Latin-American environmental conditions:

Nokia Siemens Networks RLU



RLU site at a school

Solar power supply

Satellite feeding

RLU



# Nokia Siemens Networks Village Connection

meeting the challenge of connecting the next billion

## The challenge:

- Profitable mobile connectivity for rural subscribers who typically can afford US\$ 3 per month

## The solution: Village Connection

- Significantly reduced TCO through novel network architecture and slim site solution
- New business model enabled by local subscriber management

## Ready for roll-out:

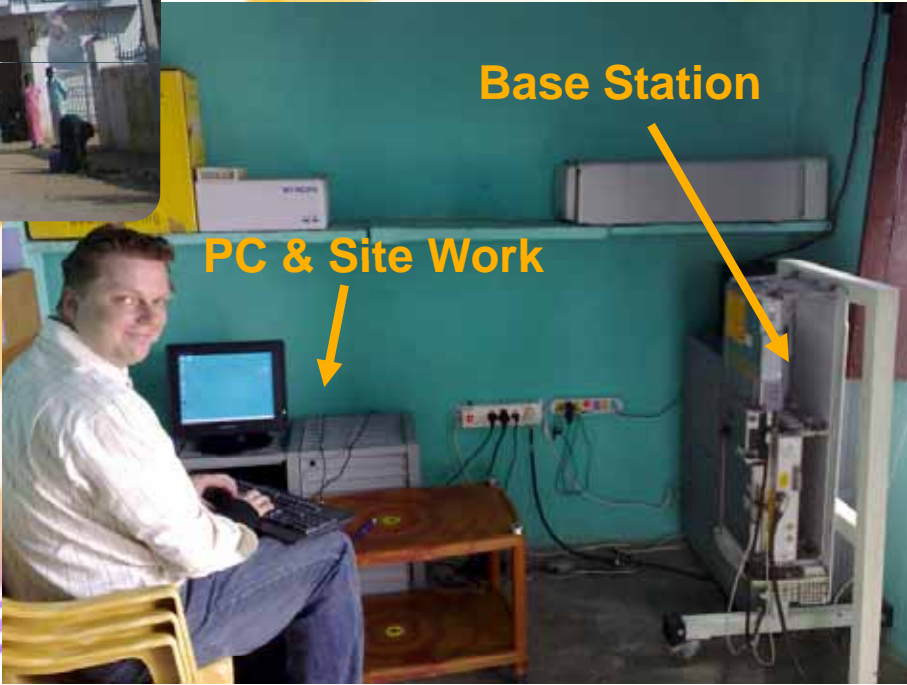
- Connecting communities in India now
- Global roll-out starting 1Q2008



Optional  
Solar Panel



# Nokia Siemens Networks Village Connection



# Evolution from affordable voice to Internet

## Phase 1: Voice services



Personal GSM Voice + SMS



Shared GSM phone

Village Connection

## Phase 2: Shared internet

Consumers will want to try out the benefits that internet will bring and understand the value

Internet kiosk to access Internet with assistance



Village Connection + Internet kiosk

## Phase 3: Personal internet

Shared mobile with internet



Personal mobile with internet



Personal PC



Shared PC



Broadband services

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# Services to match with end-users needs



## E-Government

- Documentation
- Job Searching
- Taxes Collection



## Health Care

- Alerts / Reminders
- Patient Surveillance
- Prevention Campaigns



## Mobile Banking

- Payment / Cashing
- Stock Exchange
- Money / Credit transfers



## Small Business

- Local Advertising
- Payment / Financing
- Marketplace Integration



## Education

- Distance Learning
- Content Distribution
- Technical Training (troubleshoot)



## Agriculture

- Weather
- Market Information
- Commodities Prices



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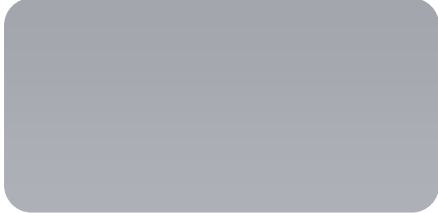
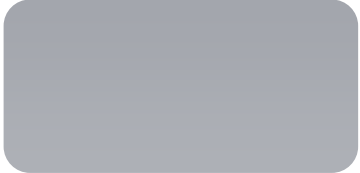


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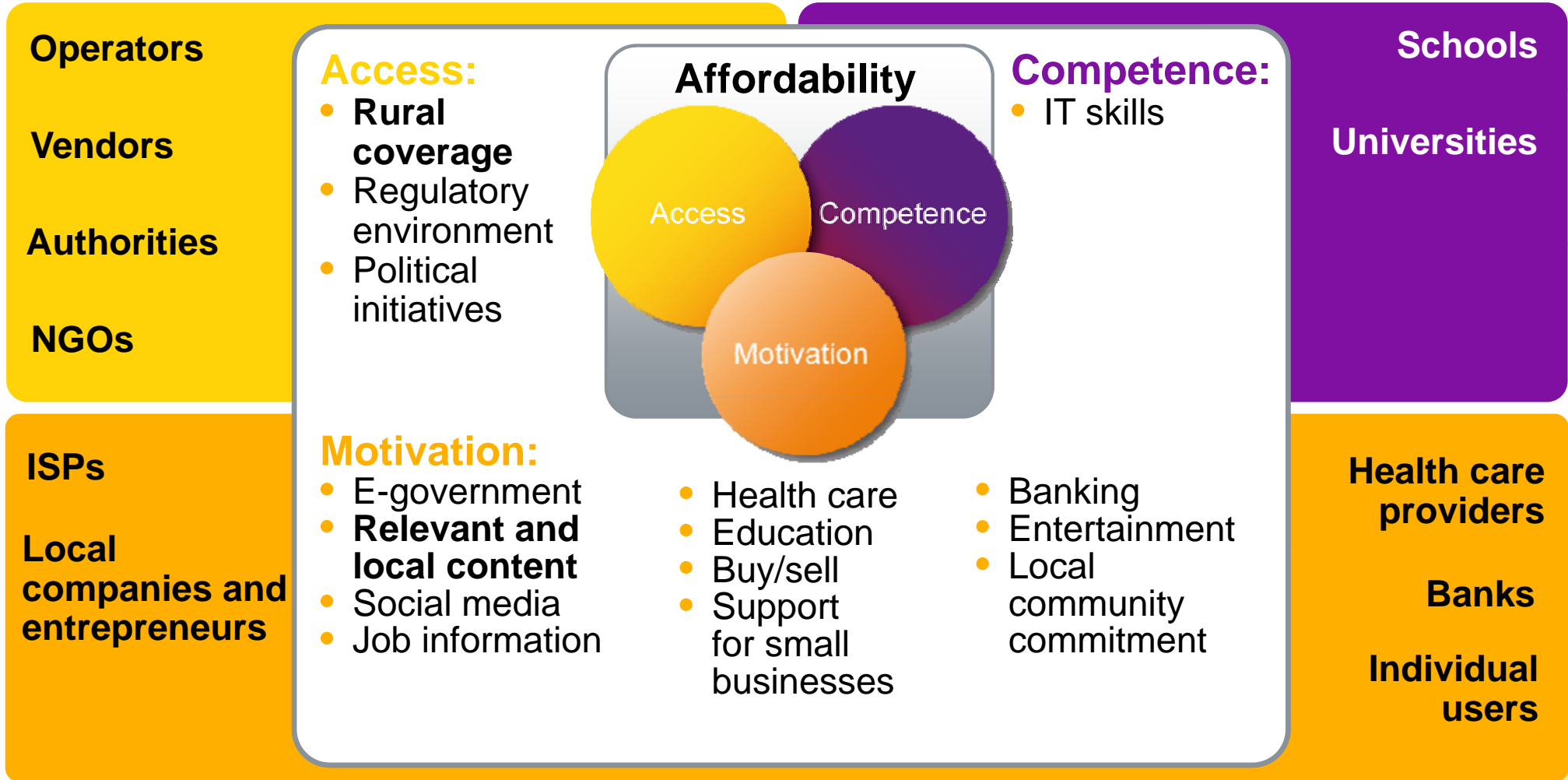
Solutions  
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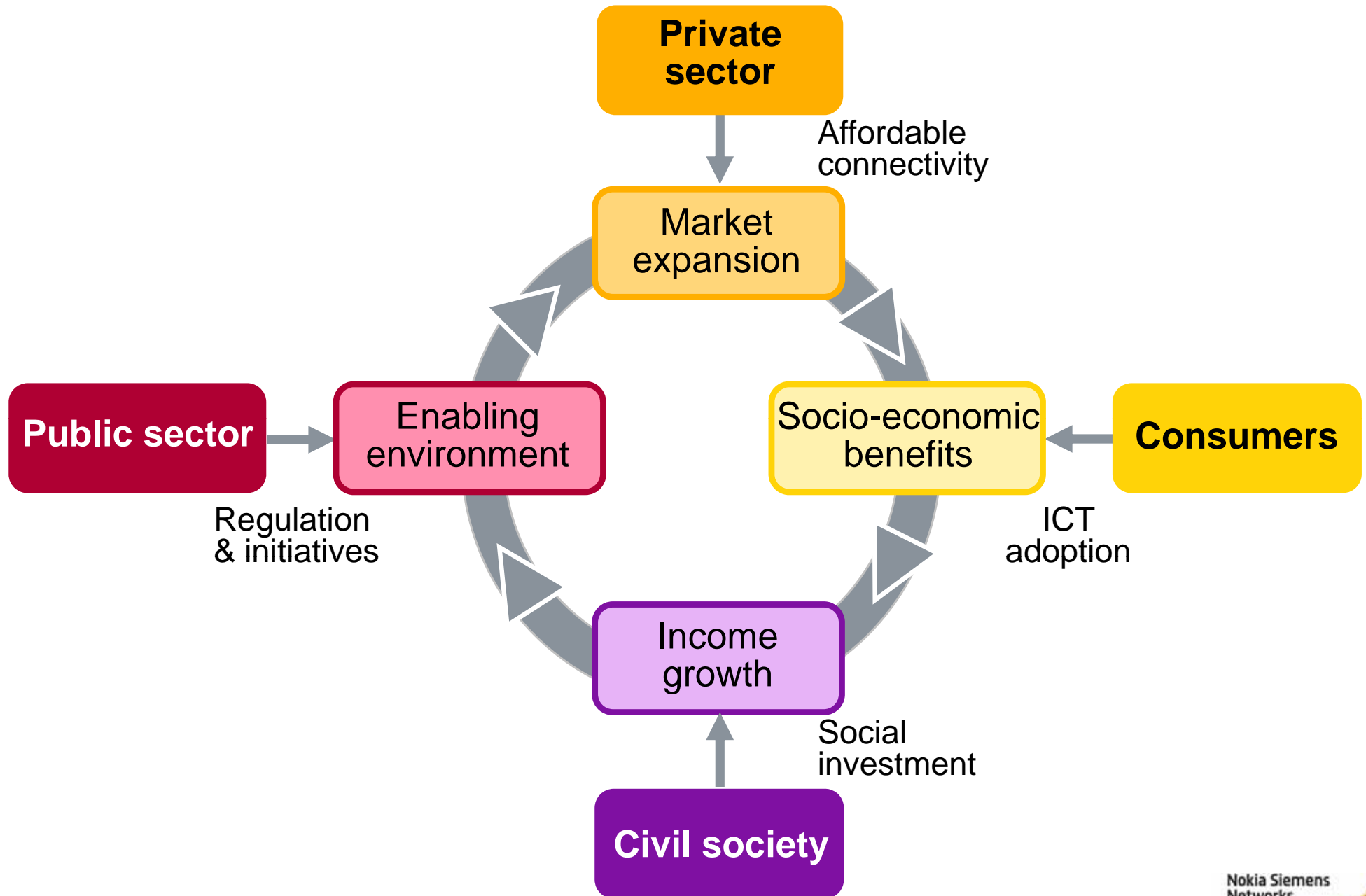
A complex  
ecosystem



# Find your new role in the complex ecosystem



# The vital role of multi-stakeholder cooperation



# Cooperation is needed to bring digital inclusion

## What can the private sector do?

- Focus on the total cost of ownership
- Cost-effective end-to-end solutions
- Affordable and innovative devices and services



## What can governments and regulators do?

- Independent regulator to foster healthy competition
- Compliance with global technological standards
- Imposing low or eliminating all taxes and duties on mobile devices, network infrastructure equipment and services
- Delivering a regulatory framework that facilitates convergence





# Conclusion: Nokia Siemens Networks and the digital inclusion challenge



5 billion people  
connected

- Innovate
- Address  
commu
- Adapt t
- Make s
- Work w

**Gracias!**



# Nokia Siemens Networks



## **Presenter**

Nokia Siemens Networks  
Guillermo Wichmann