



WORLD BANK GROUP
Transport & ICT

ICT resilience & inclusion: How markets could help

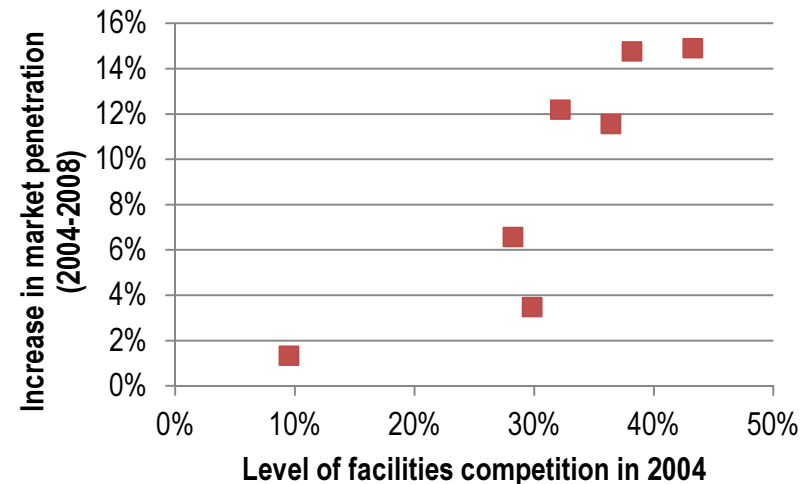
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Open markets: Good for inclusion and for resilience

- Liberalizing domestic and international connectivity markets can: improve access, create more resilient networks
- Improving access:
 - Impact of competition and private investment has been significant and positive
 - Pan-Asian fiber network will help
 - Public sector should focus on closing access gaps, supporting inclusion of the most vulnerable
- Build resilience:
 - Helps countries' networks move away from single points of failure
 - There are many countries that depend mainly on one other country
 - Often small island states, landlocked countries, e.g. Central Asia
 - Even some better-connected countries suffer from “far-off” events
- Constraints are often a policy or regulatory problem—not a problem of investment

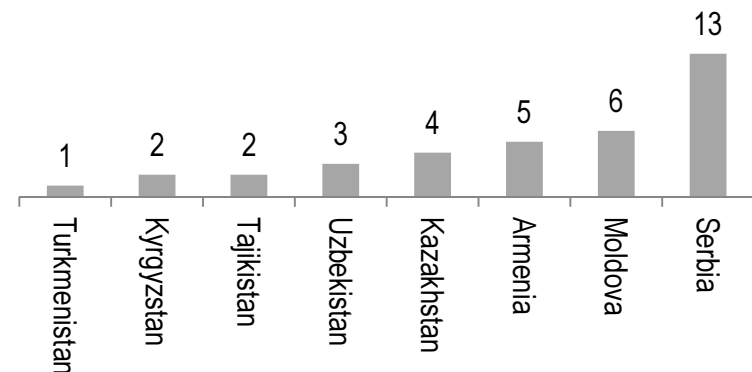
Broadband access grows with competition

World Bank analysis based on TeleGeography 2012



Central Asia can catalyze international connectivity

World Bank analysis based on TeleGeography 2013

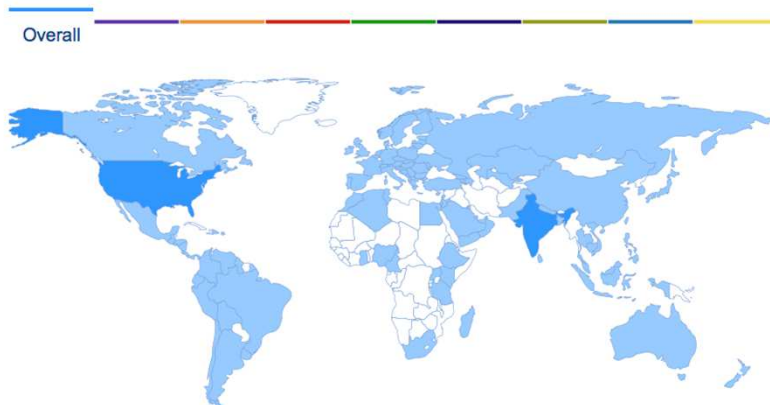


Designing for resilience is *smart* design

Mitigation

- Virtualization of the economy
 - Major growth driver—x-border
Internet traffic grows 18x since 2005
 - Makes movement of goods and people more efficient
- Global online work
 - Beyond VCs and online meetings--
opportunities for skilled people to find and do work online
 - Requires Internet, e-payment
 - Cuts need for movement of workers

Current distribution of online workers on Elance (2014)



Adaptation

- Rapid flows of information
 - Preparing for disasters
 - Mapping of assets
 - Monitoring weather/climate changes
 - Information flows and coordination
 - Responding to disasters
 - Google People Finder
 - Satellite imagery
 - Aid flows management
- Improvements in connectivity—
driven by competitive and open
markets—support both relief
efforts and economic recovery



e policy and regulatory measures

n"

ive markets and promotion of cooperation among network operators
ing (across telcos and other infrastructures)

CT access

nformation to more people

s about adaptation strategies

will impact the poorest the most, focus on the socially vulnerable—the
with disabilities, tribal populations

on accessibility for people with disabilities or who are socially vulnerable

o boost connectivity during emergencies

g?

ity, e.g. via O3B

ovations: Mesh networking (wireless and wireline), commons spectrum
band

o cut impact of ICTs on climate change

loud computing, e-waste management, promote use of renewable
king