




world development report

2016 

DIGITAL DIVIDENDS

#wdr2016

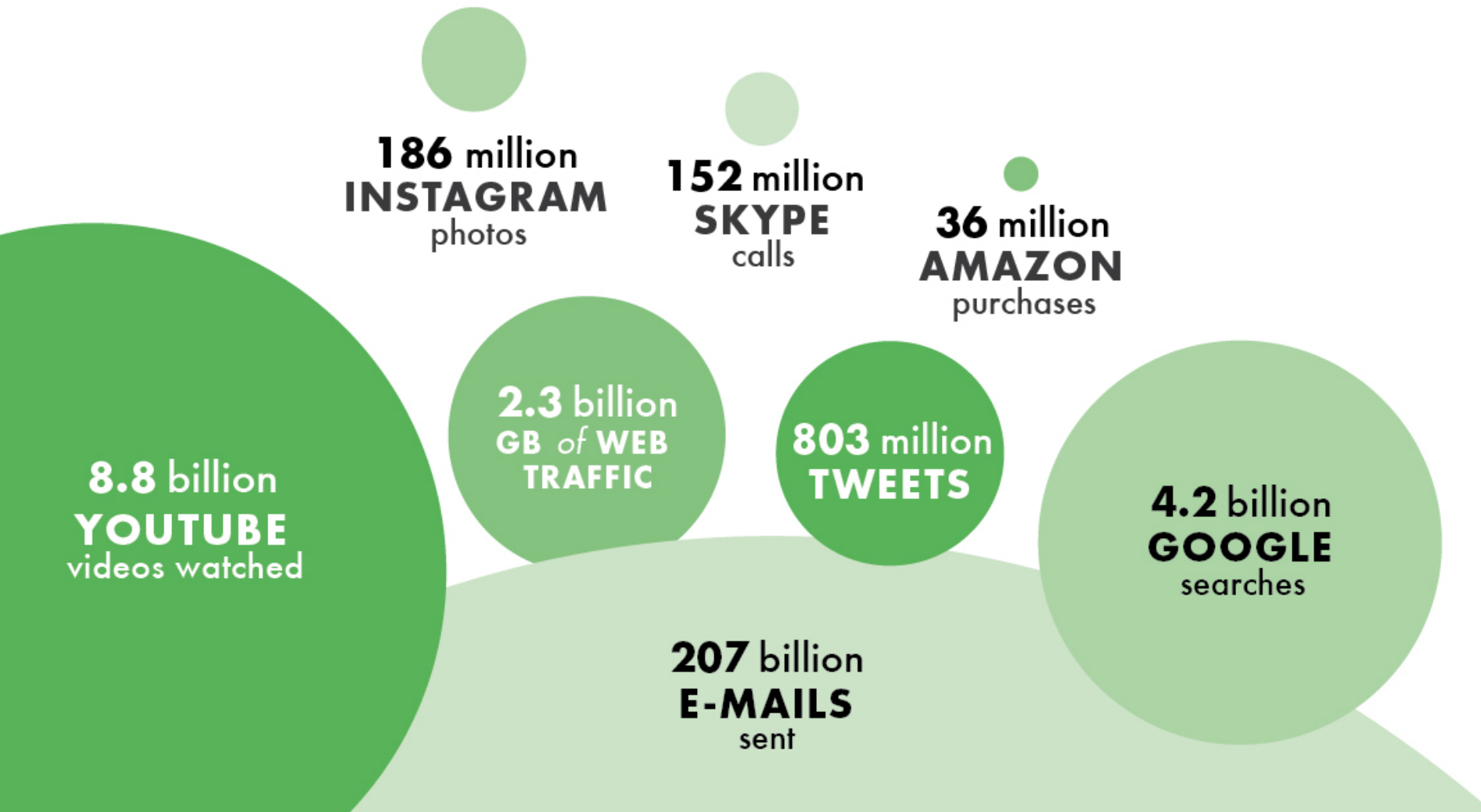
www.worldbank.org/wdr2016



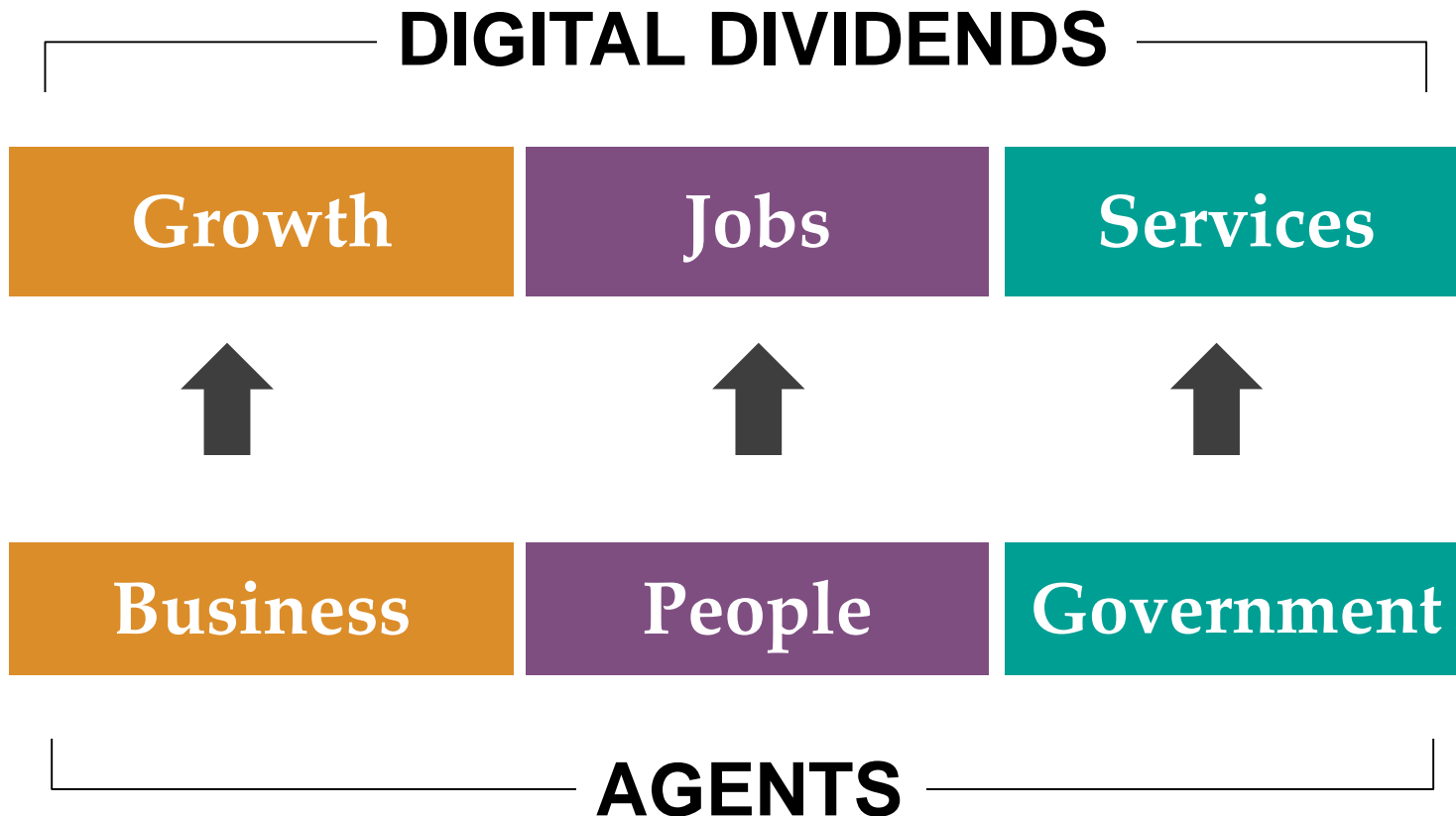
WORLD BANK GROUP

Digital revolution has brought many private benefits

A typical day in the life of the internet



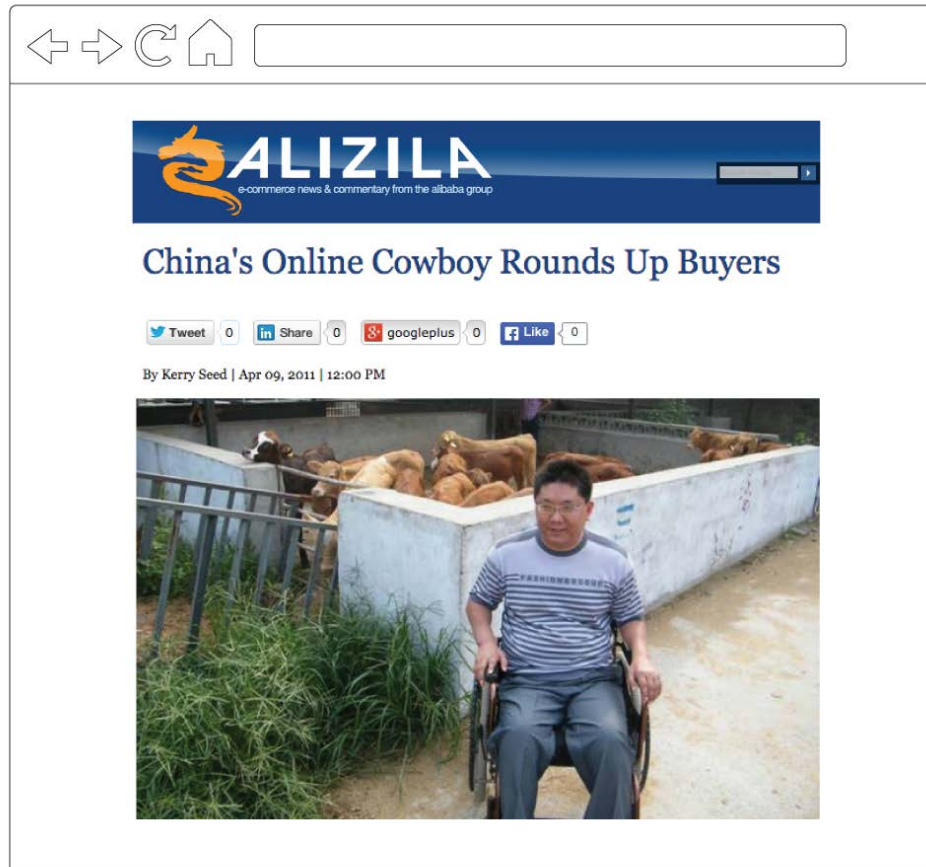
But are countries reaping sizable digital dividends?



Are the benefits reaching everyone, everywhere?

Digital technologies are transforming **BUSINESS**

DIGITAL **MARKETPLACE**

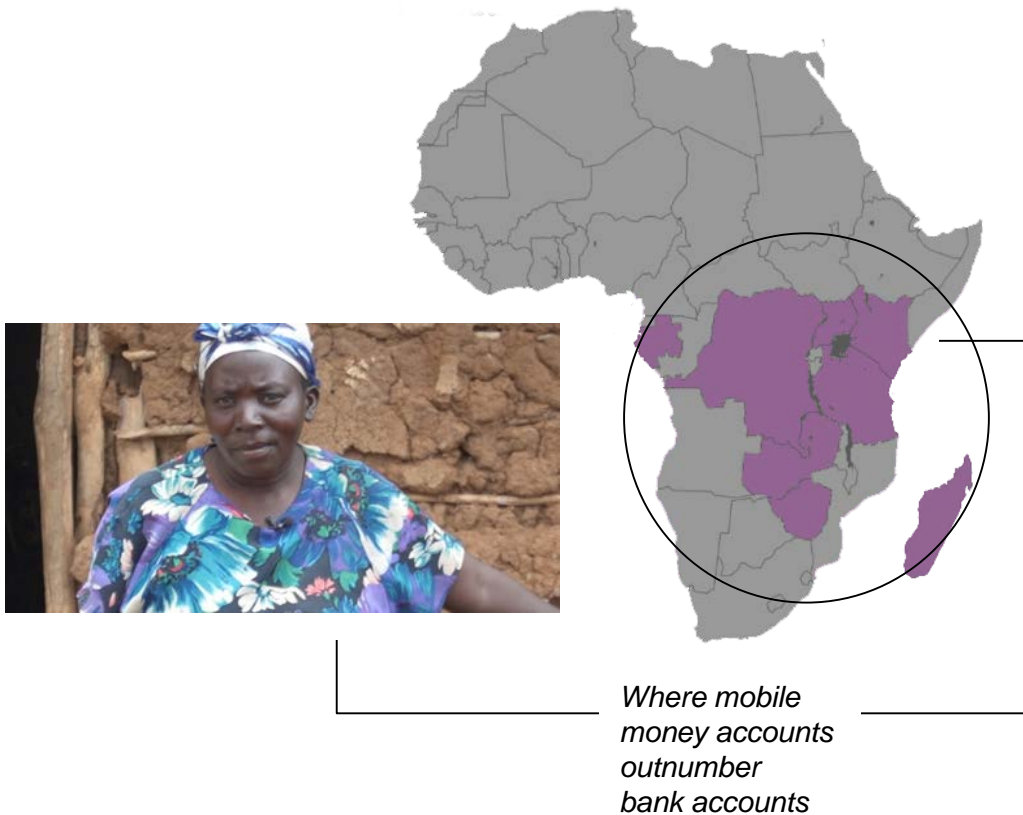


Number of small & medium enterprises on Taobao (Alibaba):

**5 MILLION
& COUNTING**

Digital technologies are transforming **PEOPLE'S LIVES**

DIGITAL PAYMENTS



Number of mobile money accounts worldwide:

**300 MILLION
& COUNTING**

(end of 2014)

Digital technologies are transforming **GOVERNMENT**

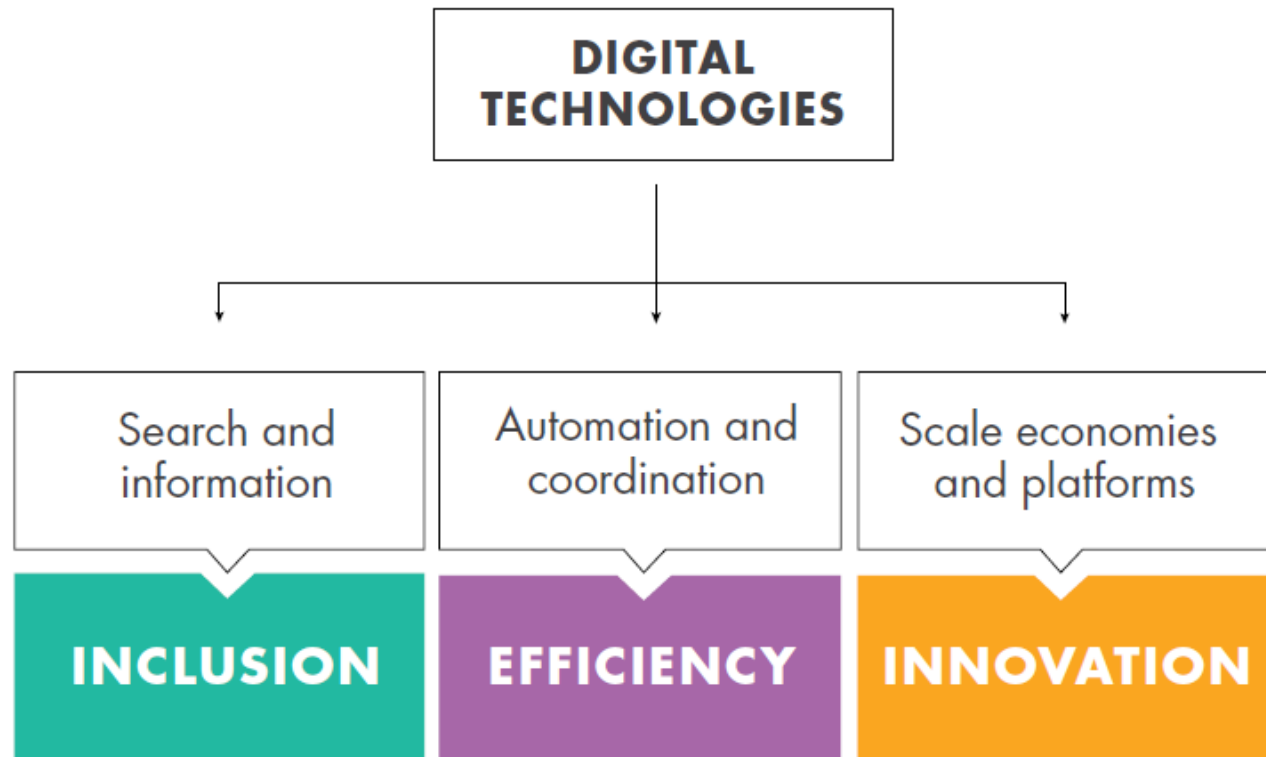
DIGITAL **IDENTITY**



Indians with digital identity:

**950 MILLION
& COUNTING**

The main mechanisms to promote development

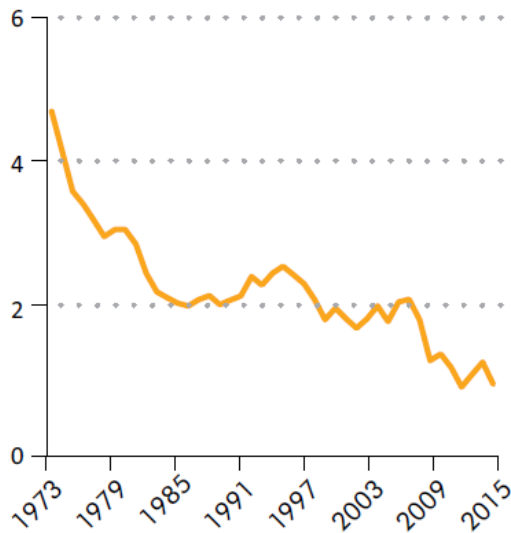


Expand the information base, lower information costs and create information goods

Then why the deep pessimism surrounding the global economy?

a. Global productivity

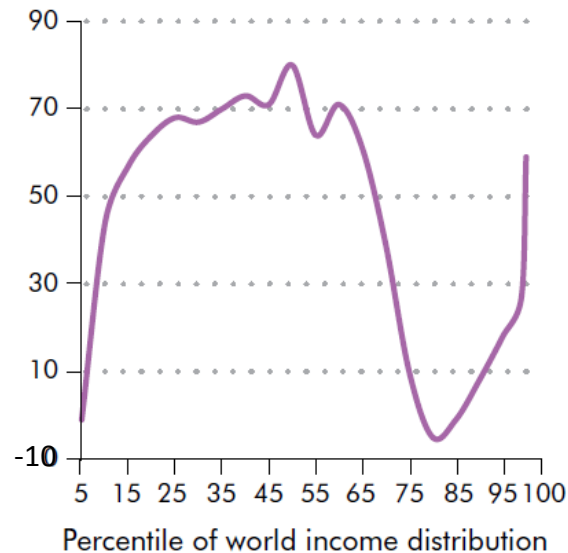
Five-year moving average of median growth of labor productivity per hour worked, in percent, in 87 countries.



Business

b. Global inequality

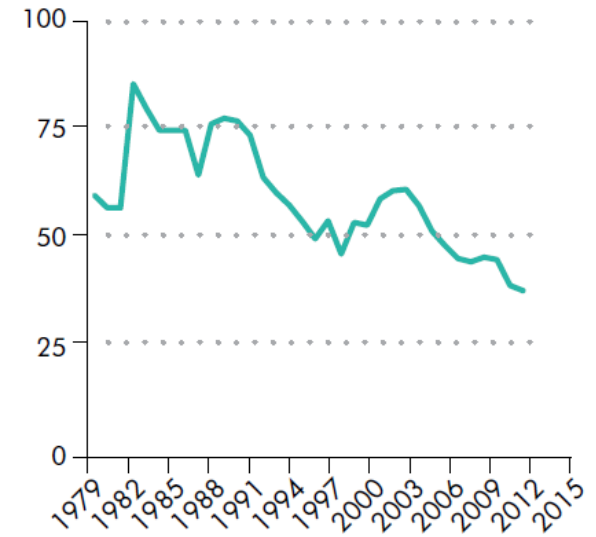
Percentage change in real income between 1998 and 2008 at different levels of world income distribution in 2003 prices



People

c. Global governance

Share of elections that are free and fair (%)



Governments

Not because of digital technologies, but in spite of them

1. A significant digital divide remains



6 BILLION *without* BROADBAND



4 BILLION *without* INTERNET



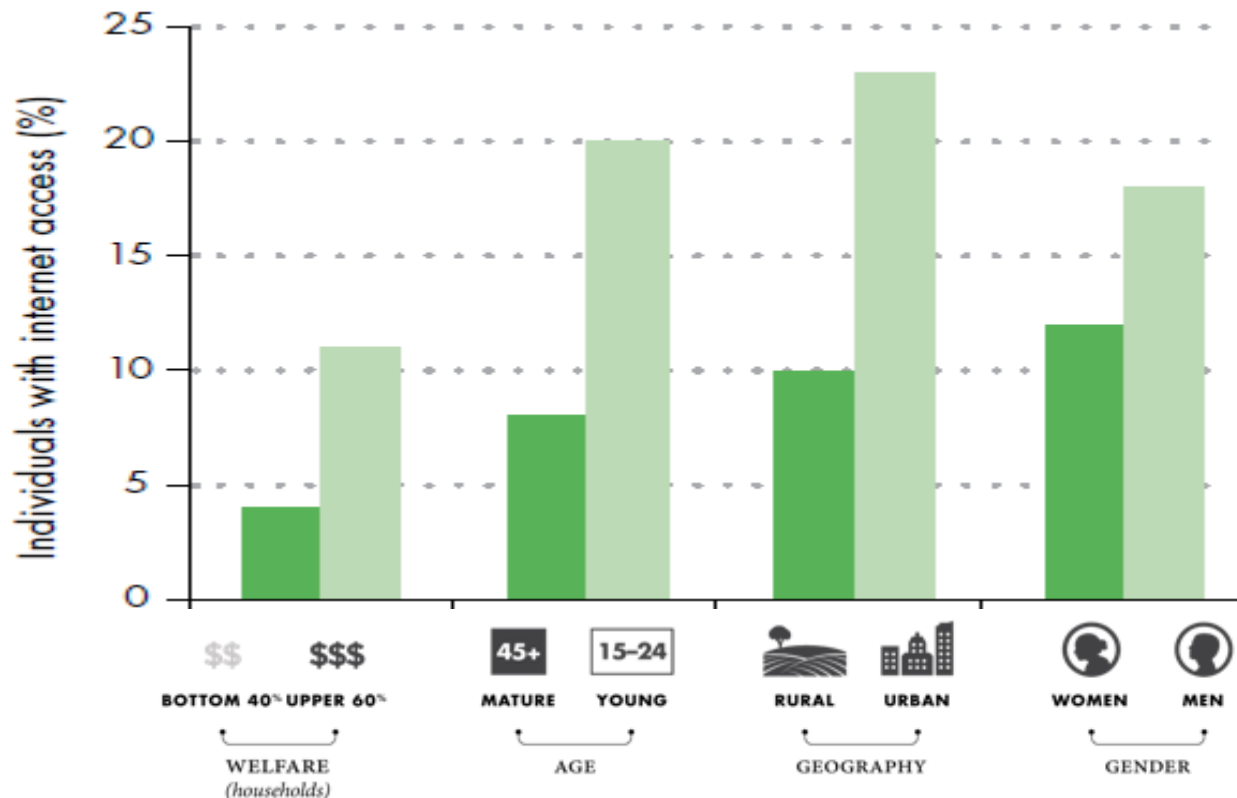
2 BILLION *without* MOBILE PHONES



0.4 BILLION *without* A DIGITAL SIGNAL

Divides persist between and within countries—in access and capability

... between and within countries—in access and capability

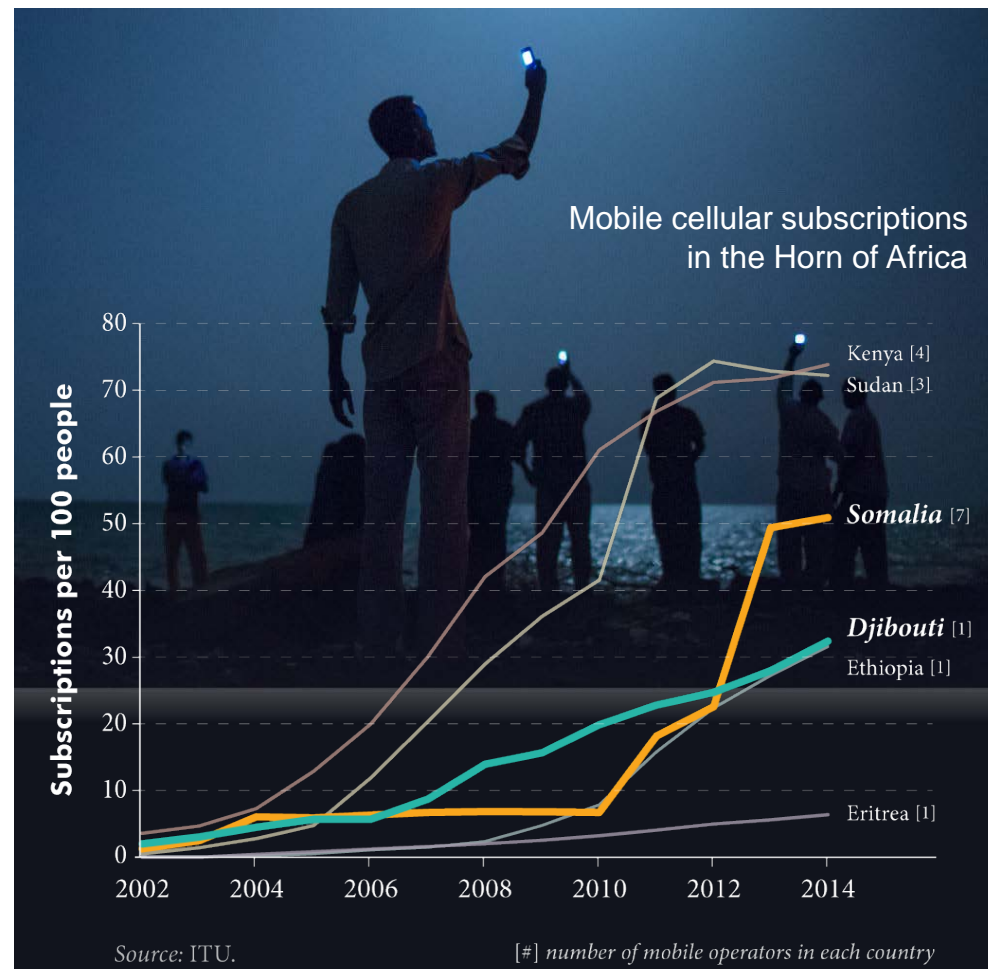


SECTORAL POLICIES

Making internet access
universal, affordable, open and safe

SUPPLY SIDE ISSUES

- Competition policy
- Public-private partnerships
- Effective telecom & internet regulation



SECTORAL POLICIES

A Framework for considering policy interventions

INVISIBLE MILE

HIDDEN ELEMENTS THAT ARE VITAL TO ENSURING THE INTEGRITY OF THE VALUE CHAIN

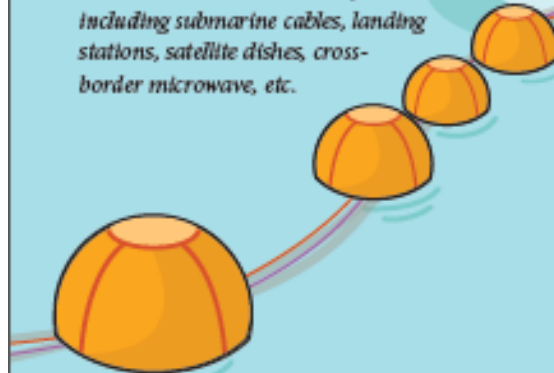
Nonvisible network components include the spectrum, network databases, cybersecurity, etc., but can also include potential bottlenecks, like international frontiers.



FIRST MILE

WHERE THE INTERNET ENTERS A COUNTRY

International Internet access, including submarine cables, landing stations, satellite dishes, cross-border microwave, etc.



MIDDLE MILE

WHERE THE INTERNET PASSES THROUGH THAT COUNTRY

National backbone and intercity network, including fiber backbone, microwave, internet exchange points (IXPs), local hosting of content, etc.



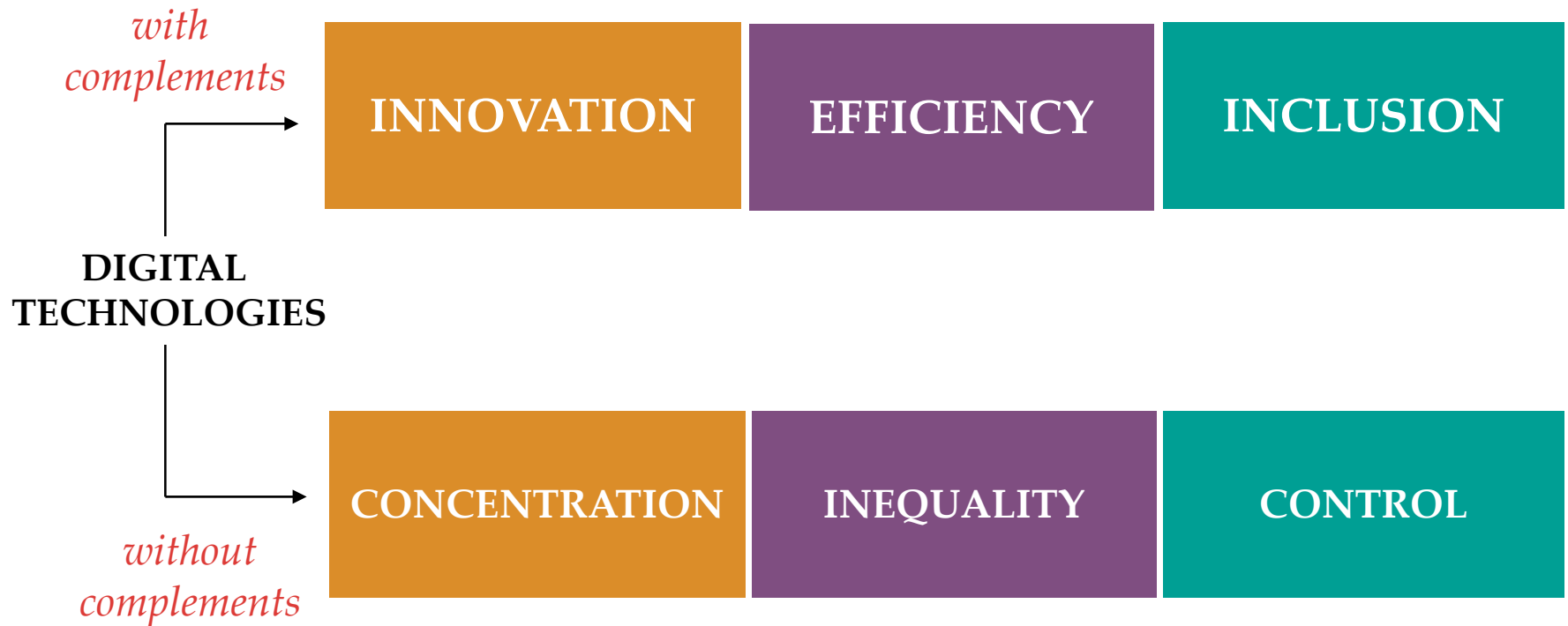
LAST MILE

WHERE THE INTERNET REACHES THE END USER

Local access network, including local loop, central office exchanges, wireless masts



2. Digital technologies hold benefits as well as risks

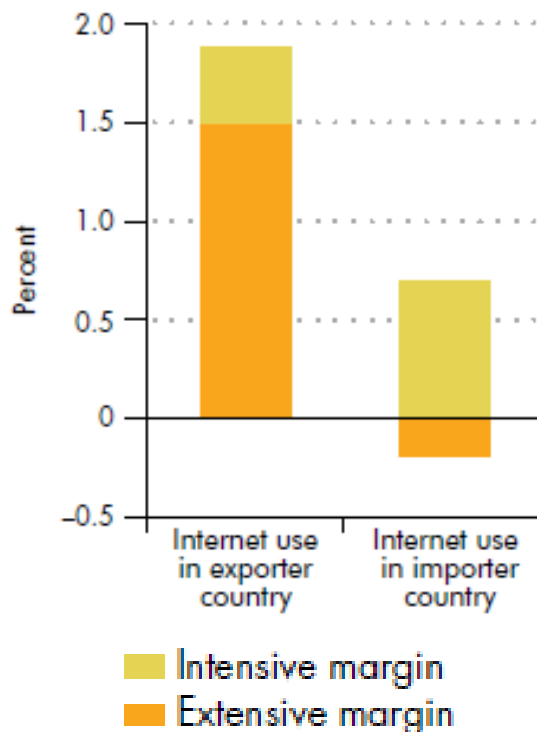


What are those complements?

Digital technology can accelerate growth ...

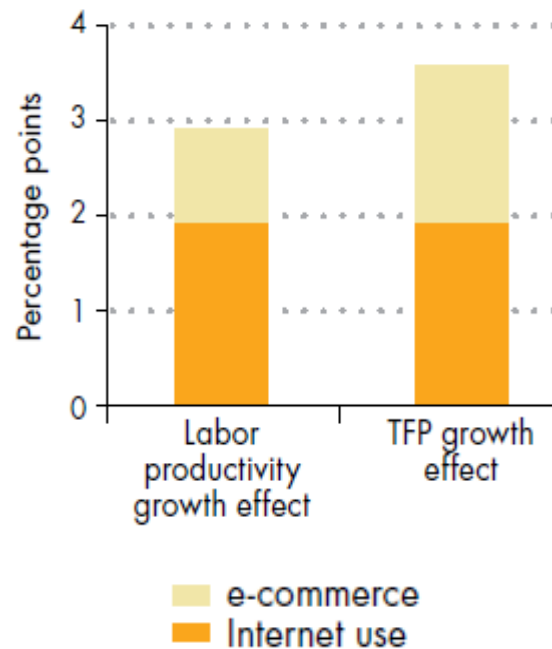
TRADE

The internet enables more firms to reach new markets, 2001-12



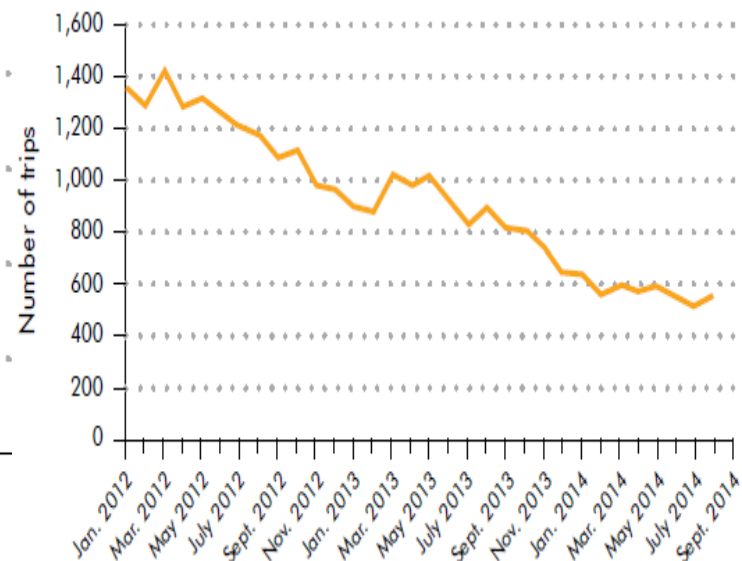
PRODUCTIVITY

Vietnamese firms using e-commerce have higher total factor productivity growth, 2007-12



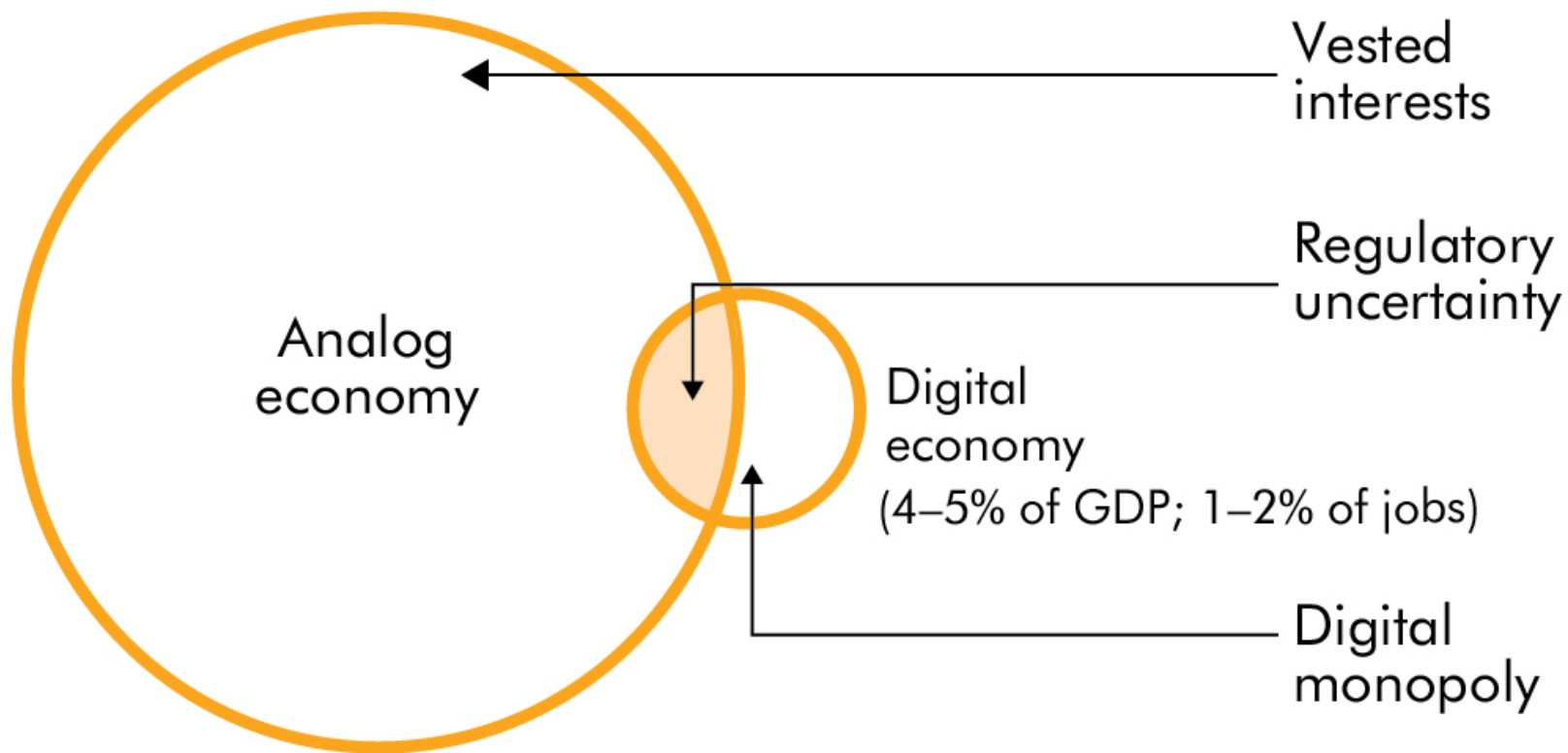
COMPETITION

Average monthly trips per traditional taxi in San Francisco after Uber started operation



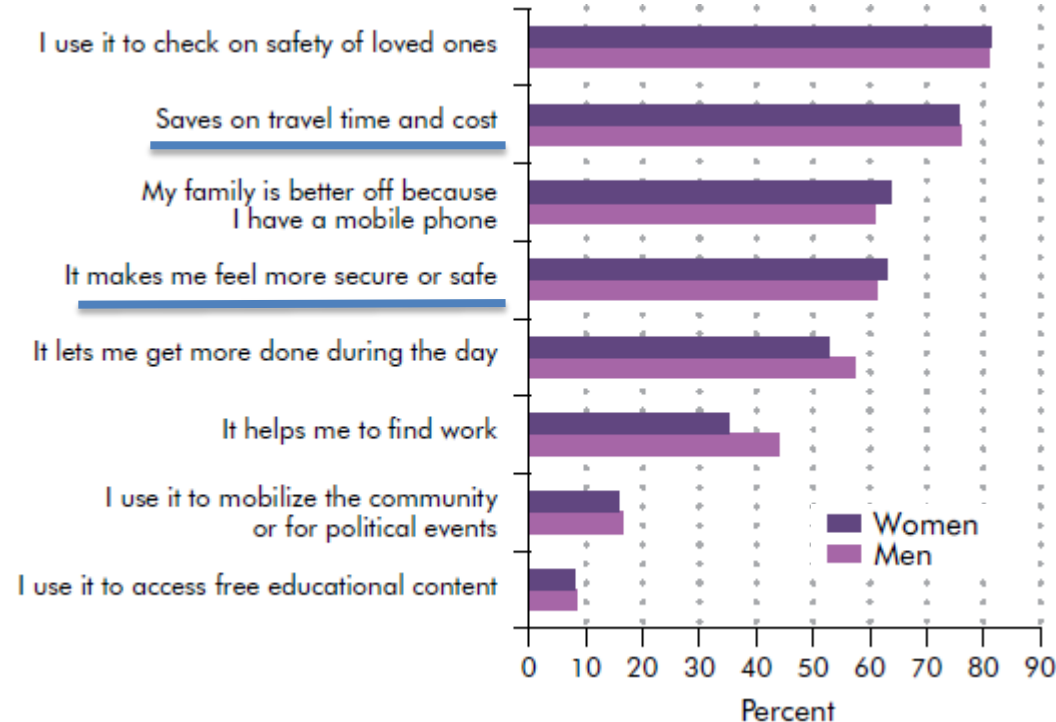
...but scale without **COMPETITION**

→ *risks of lower digital adoption and growing divergence*



CONSUMER SURPLUS

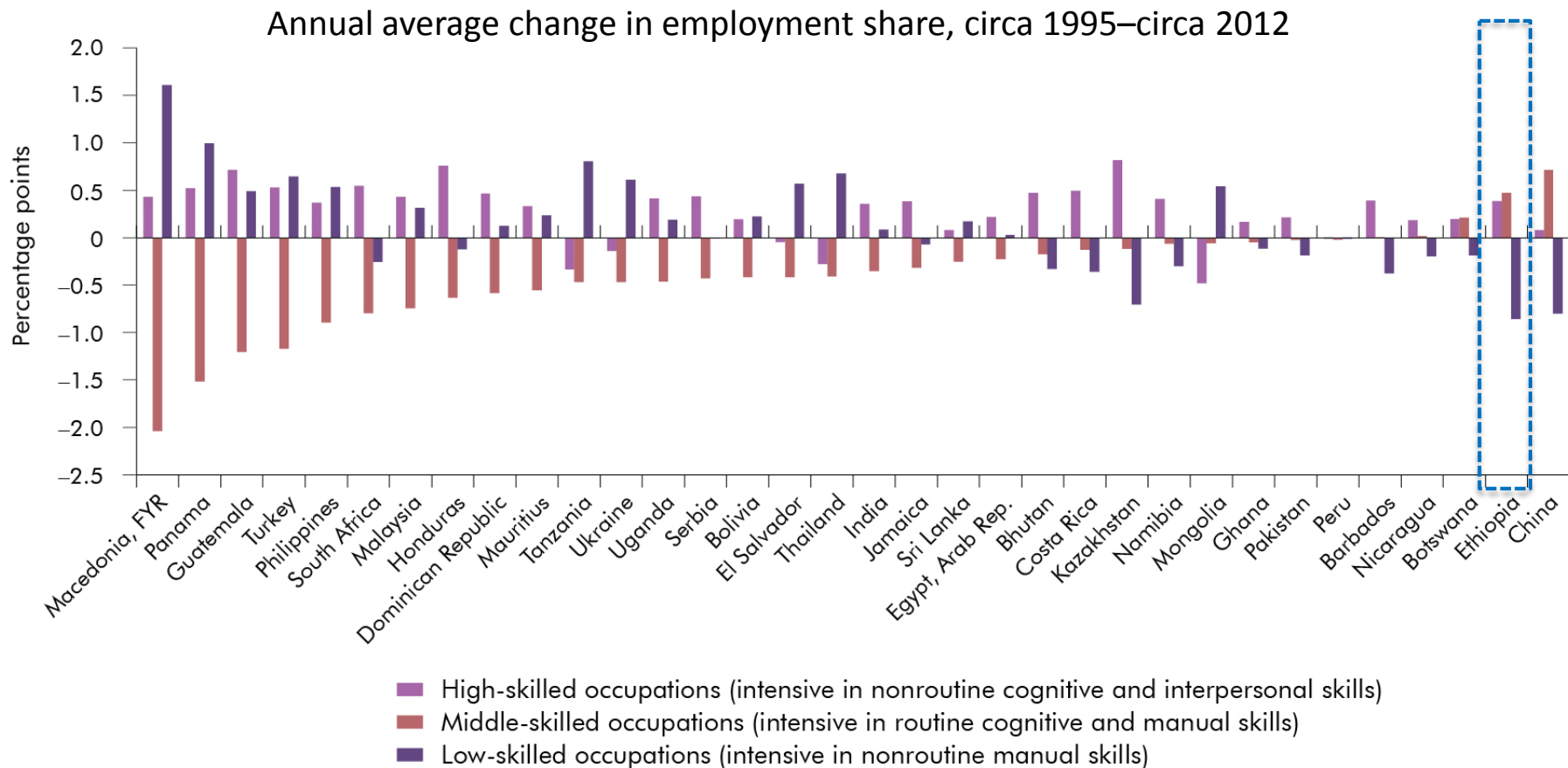
Africa: Respondents that agree with each statement on benefits and use of mobile phones, 2011–12



SOURCE: WDR16 team, Osnago and Tan 2015, Nguyen and Schiffbauer 2015 for the 2016 WDR, Eurostat, circa 2014 (EU, various years).

...but automation without **SKILLS**

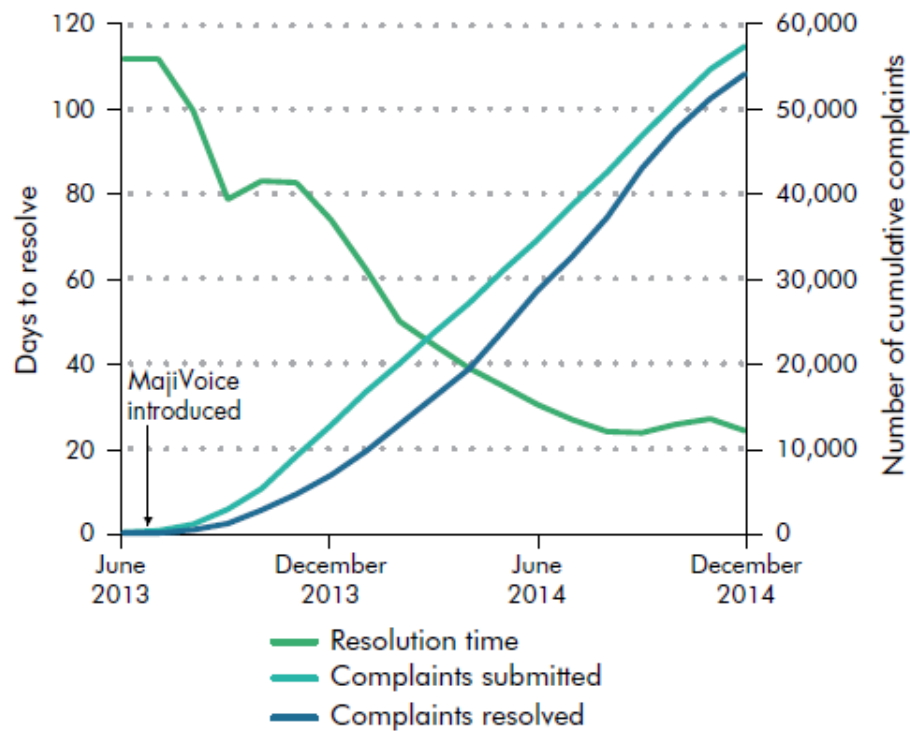
→ *risks of polarized labor markets and greater inequality*



Digital technology can improve service delivery...

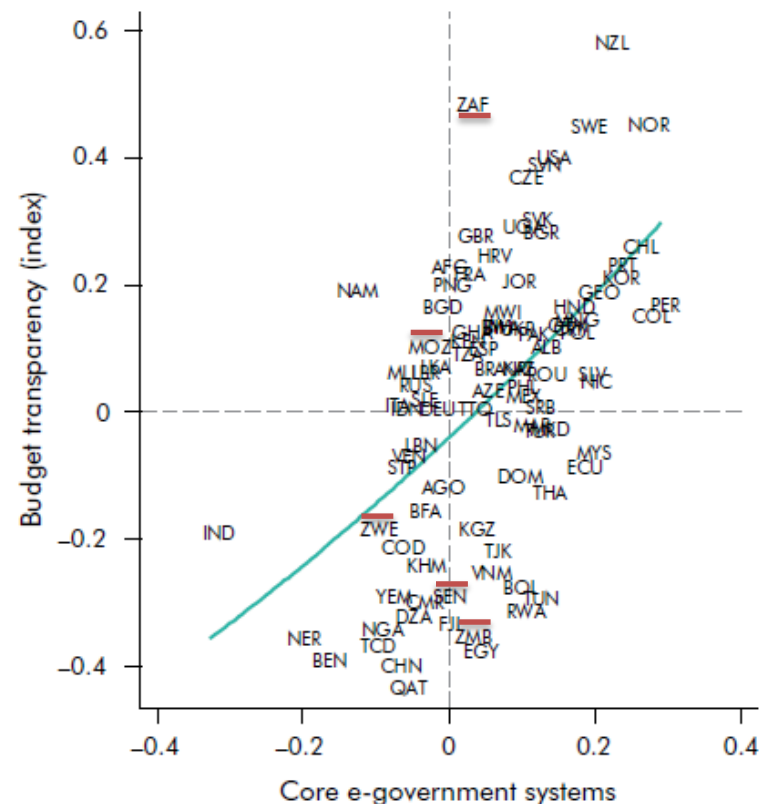
CAPACITY

Complaints were resolved quickly in the Nairobi water utility after the introduction of digital customer feedback



TRANSPARENCY

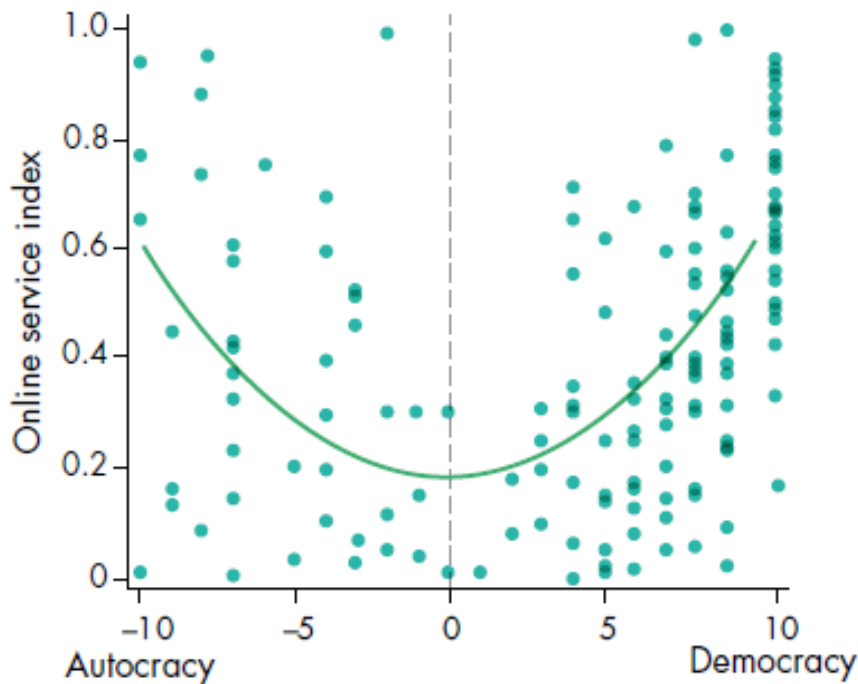
e-government systems increase the transparency of government budgets, 2014



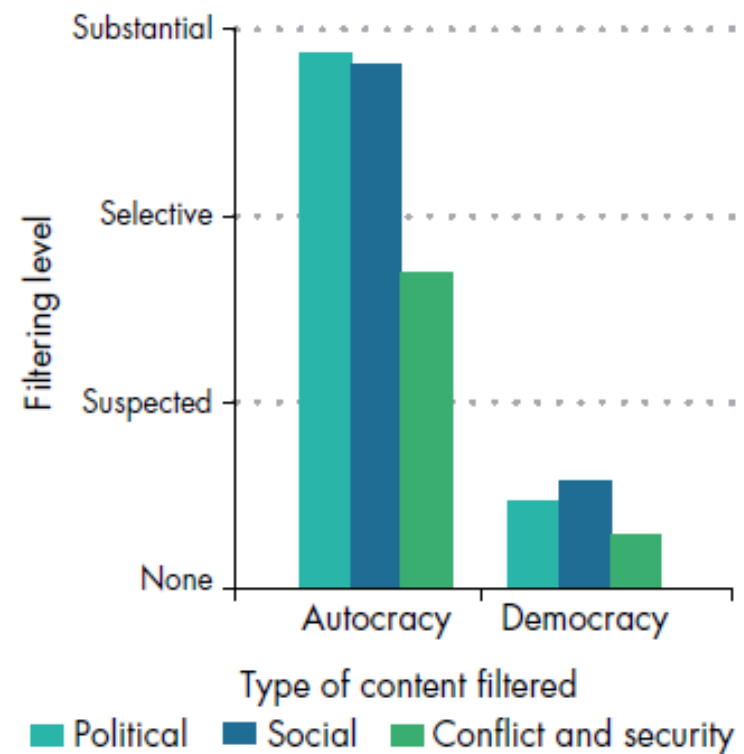
...but information without **ACCOUNTABILITY**

→ risks of greater state control and elite capture

a. e-government provision, by government type



b. Internet filtering, by government type



Complements

Race between technology and complements

- High-income
- Upper-middle-income
- Lower-middle-income
- Low-income

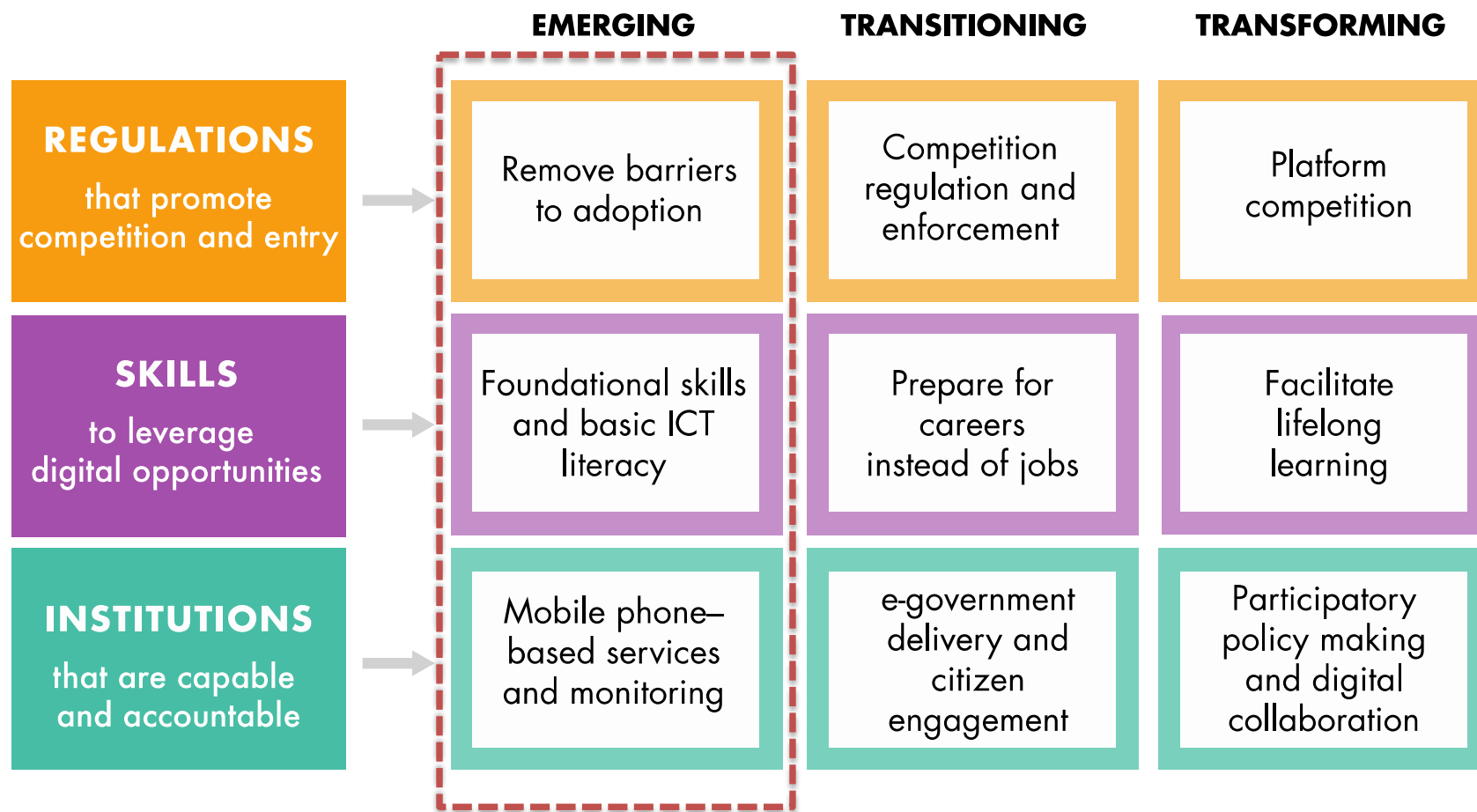
Complements: *Index of quality of institutions, skills and regulations.*

Technology: *Digital adoption index - businesses, people and governments.*

Technology

NATIONAL PRIORITIES

Analog foundations for a digital economy



SOURCE: WDR 2016 team.

Digital development strategies need to be broader than ICT strategies

Connectivity + Complements → Digital Dividends

- Regulations that allow firms to connect and compete
- Skills that leverage technology
- Institutions that are accountable and capable

Match policies to the level of digital development

- Emerging: Lay the foundations by promoting digital adoption
- Transitioning: Enable everyone to take advantage of new technologies
- Transforming: Deal with the wicked problems faced in the new economy

The payoff

- Increasing digital dividends:
Faster growth, more jobs and better services

The image shows a group of people silhouetted against a dark night sky. They are standing on a beach or rocky shore, holding up their smartphones to capture a bright, glowing light source in the sky. The scene is dimly lit, with the primary light coming from the device in the sky and the screens of the phones. The overall mood is one of wonder and technological use in a natural setting.

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