ITIF | INFORMATION TECHNOLOGY & INNOVATION FOUNDATION

August 6, 2015

# Growth and Innovation in the Digital Era

## Fifth Ministerial Conference on the Information Society in Latin America and the Caribbean


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President, ITIF

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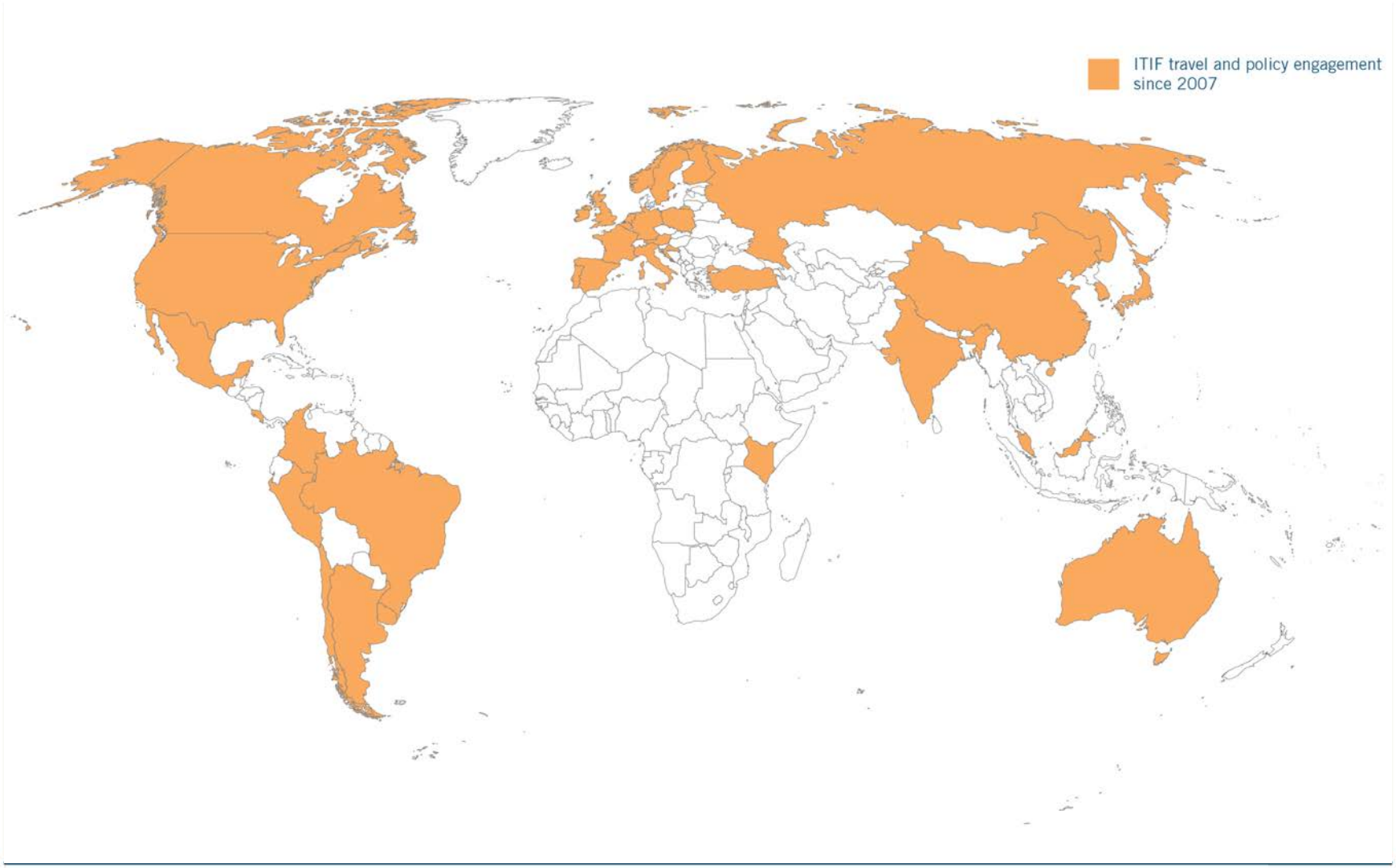
# ITIF: Who We Are

The Information Technology and Innovation Foundation is a think tank at the cutting edge of designing innovation policies and exploring how innovation drives boost growth and competitiveness. ITIF focuses on:

- Innovation processes, policy, and metrics,
- Internet, big data and ICT policy,
- ICT and economic productivity,
- Science and tech policy, and
- Innovation and trade policy.

# ITIF Global Engagement



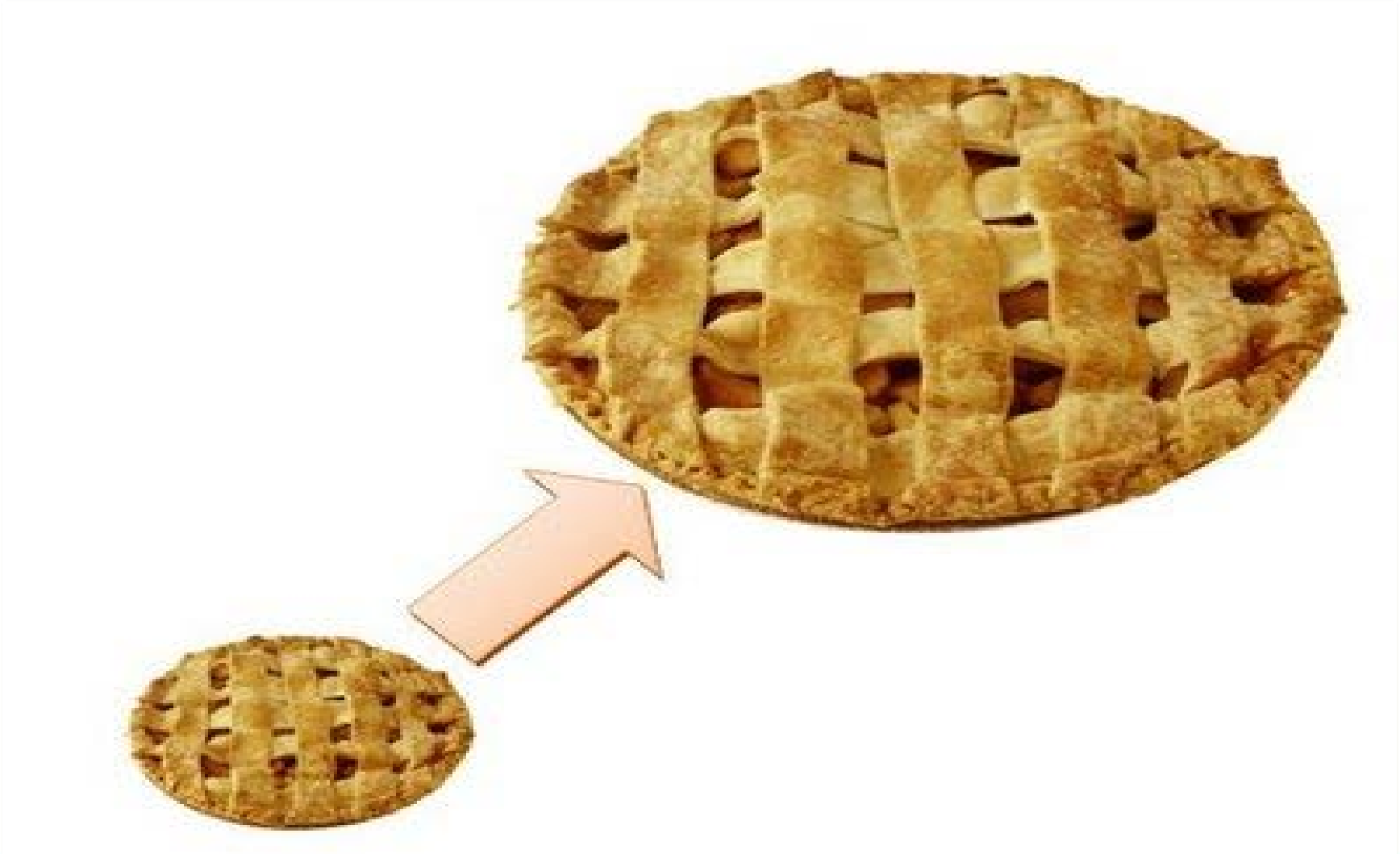
# Today's Presentation

1 **ICT and Growth**

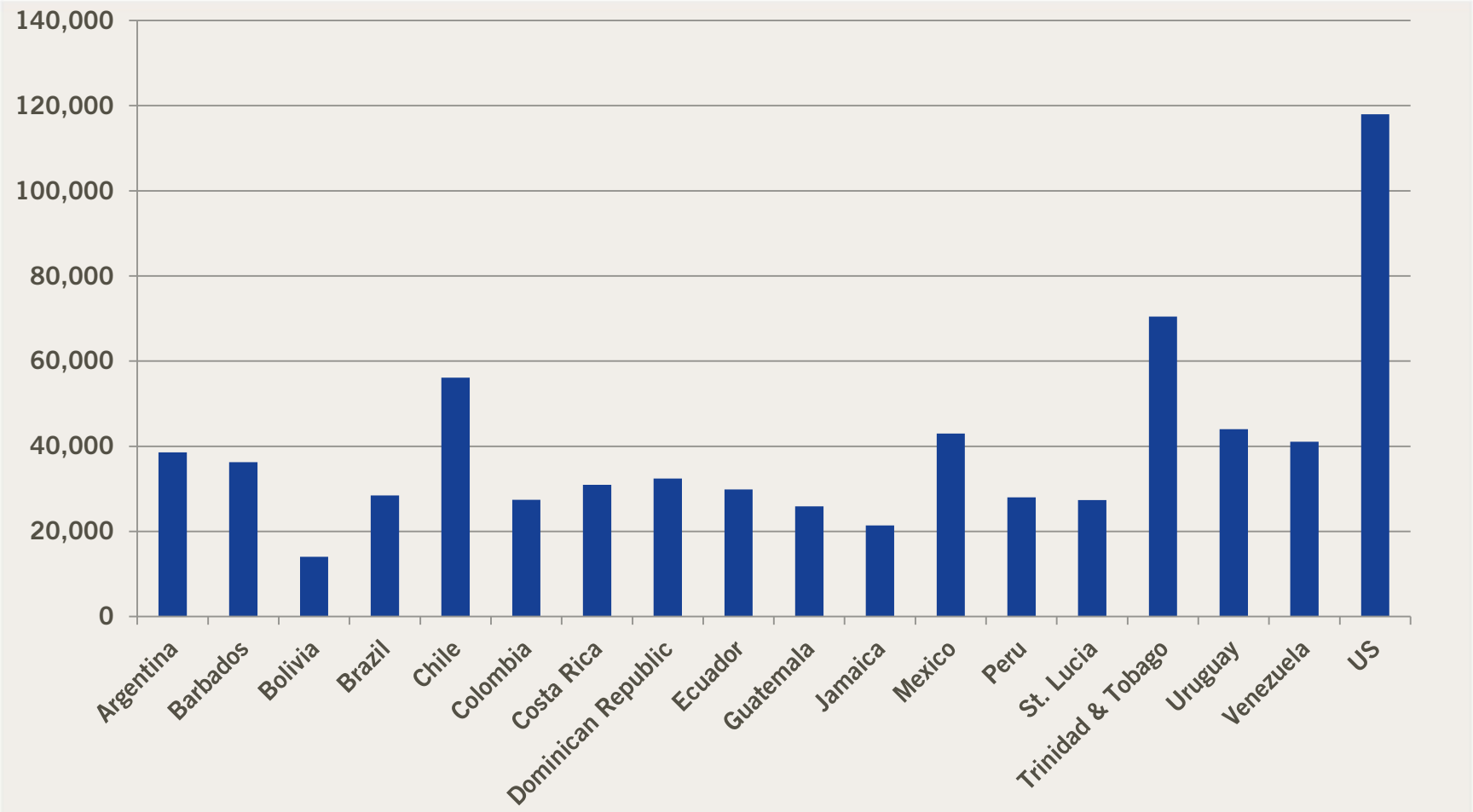
2 "Silicon Valley" or ICT-Enabled Economy?

3 ICT Policy: Fairness or Growth?

# Productivity Grows the "Pie"



# Productivity Differs by Nation




Productivity Per Person Employed, 2015 (PPP, US$) (Conference Board, *Total Economy Data Base*)

# Where Does Productivity Come From?: Better Tools

# Today's Better Tools Are ICT Tools

# Moore's Law Drives ICT Tool Progress

- **1,215,500,000,000,000,000,000 transistors in 2014**

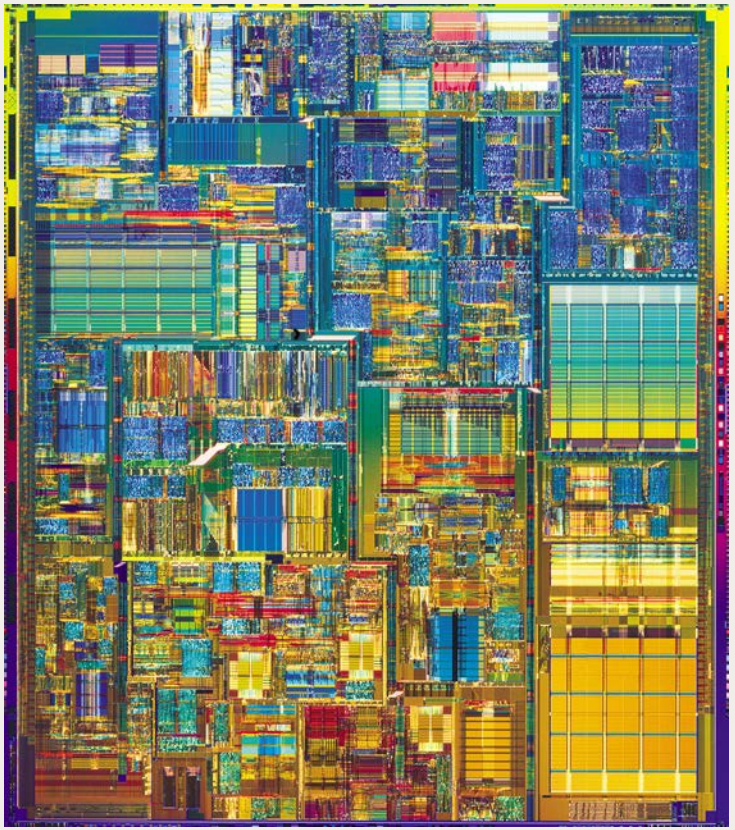
# ?: Transistor Growth Since 2000

A) 14.3 times

B) 143 times

C) 1,430 times

D) 14,300 times



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# ?: Today's Cost of 32GB of Storage Using 1995 Technology

1) $35.20

2) $352

3) $3,520

4) $35,200


5 GBs cost $1.5 billion in 1960

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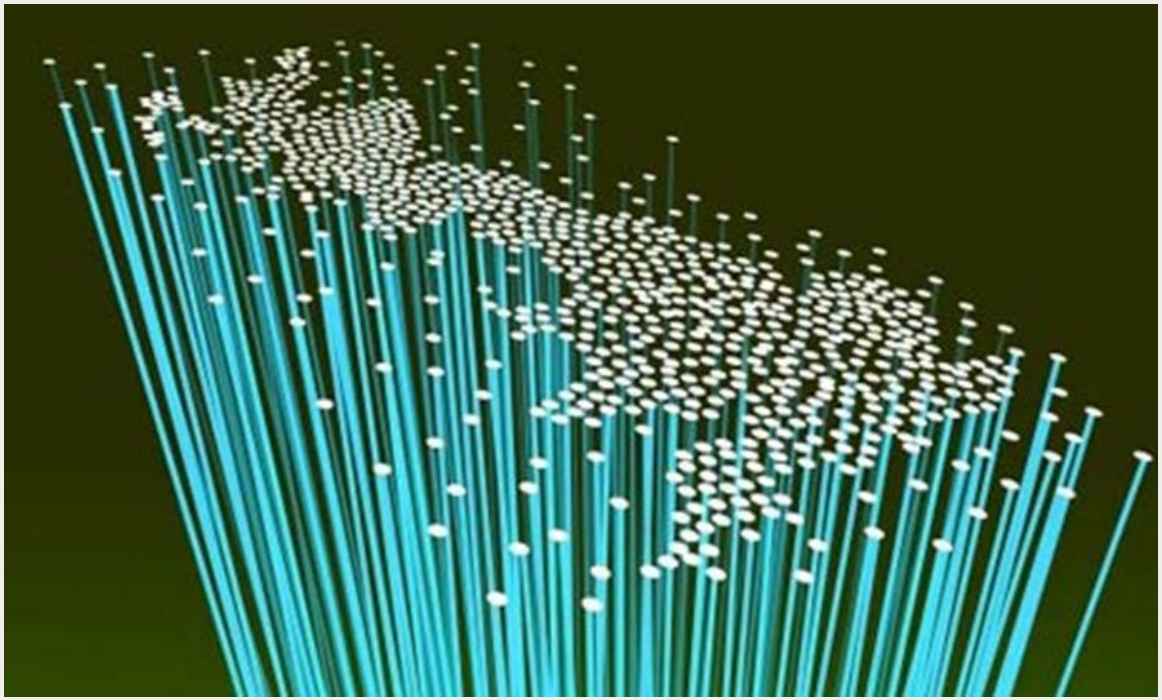
# ?: Monthly Cost of 1 Gig. Broadband in U.S. With 1999 Technology (in 2015$)

A) $95

B) $950

C) $9,560

D) $95,600



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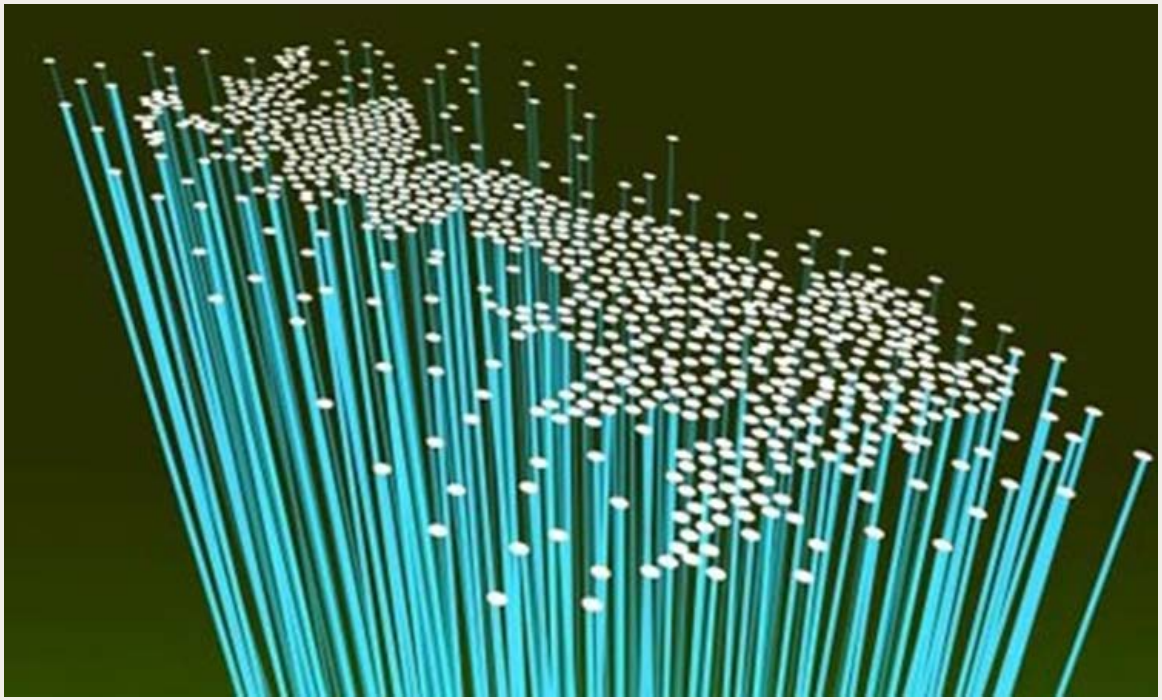

| Past-Current | | Current-Future |
| --- | --- | --- |
| • Slow copper | ⟶ | Fast fiber/DOCSIS3.1 |

| Past-Current | | Current-Future |
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| • Slow copper | → | Fast fiber/DOCSIS3.1 |
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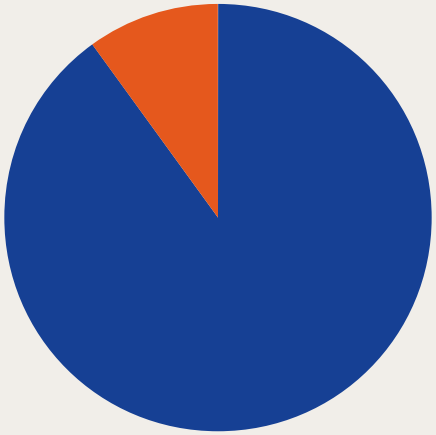
| • Few sensors | → | Internet of Things |
| • Limited data | → | Big data/powerful analytics |

# Current/Future System Enables Software To "Eat the World"

# Using ICT Tools is Much More Important Than Making Them

- Over 80% of benefits from ICT in the U.S. are related to its use by organizations, rather than its production by the ICT industry.



# ICT Drives Enterprise Growth

- In large U.S. firms, $1 dollar of IT capital is associated with $25 of market value. $1 of non-IT capital associated with $1 of value.
- Between 2006 and 2010, U.S. corporations that invested more in IT increased productivity three times faster.
- IT has 3 to 7 times more impact on productivity.
- IT was responsible for 75% of U.S. productivity growth from 1995 to 2002, and 44% from 2000 to 2006.
- A 10% increase in a country's IT capital stock adds approximately 0.45 percentage points to GDP.

# Today's Presentation

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3 ICT Policy: Fairness or Growth?

# ICT Development vs. Deployment Policy Matrix

| | Supports "Silicon Valley" | Hurts "Silicon Valley" |
|---|---|---|
| **Supports ICT Economy** | • Tax incentives for ICT adoption<br>• ICT skills development<br>• Open data policies<br>• Tax incentives for ICT adoption<br>• Broadband deployment support<br>• More spectrum<br>• Digital literacy policies<br>• E-government, including e-procurment<br>• Digital transformation strategies (transportation, health care, etc.)<br>• Support ICT platforms (mobile payments, digital signatures, etc.)<br>• Latin American Digital Single Market | |
| **Hurts ICT Economy** | • ICT Tariffs<br>• Data center localization requirements<br>• Local content requirements<br>• Procurement preferences for domestic companies | • ICT Taxes<br>• Cross Border Data Flow Limits<br>• Labor market regulations<br>• Product market regulations (e.g., ban on Uber)<br>• Strict privacy regulations<br>• Limits on FDI<br>• Small business preferences |

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# MOOCs as an Opportunity

Massachusetts Institute of Technology

MITx

**Entrepreneurship 102: ¿Que puedes hacer por tu cliente?**
Apúntante a la versión "Verified" de nuestro curso, consigue el certificado, y gana un año de subscripción gratis a AWS Activate, con 1000$ de crédito y otras muchas ventajas.

**Introduction to Computer Science & Programming Using Python**
6.00.1x is an introduction to computer science as a tool to solve real-world analytical problems.

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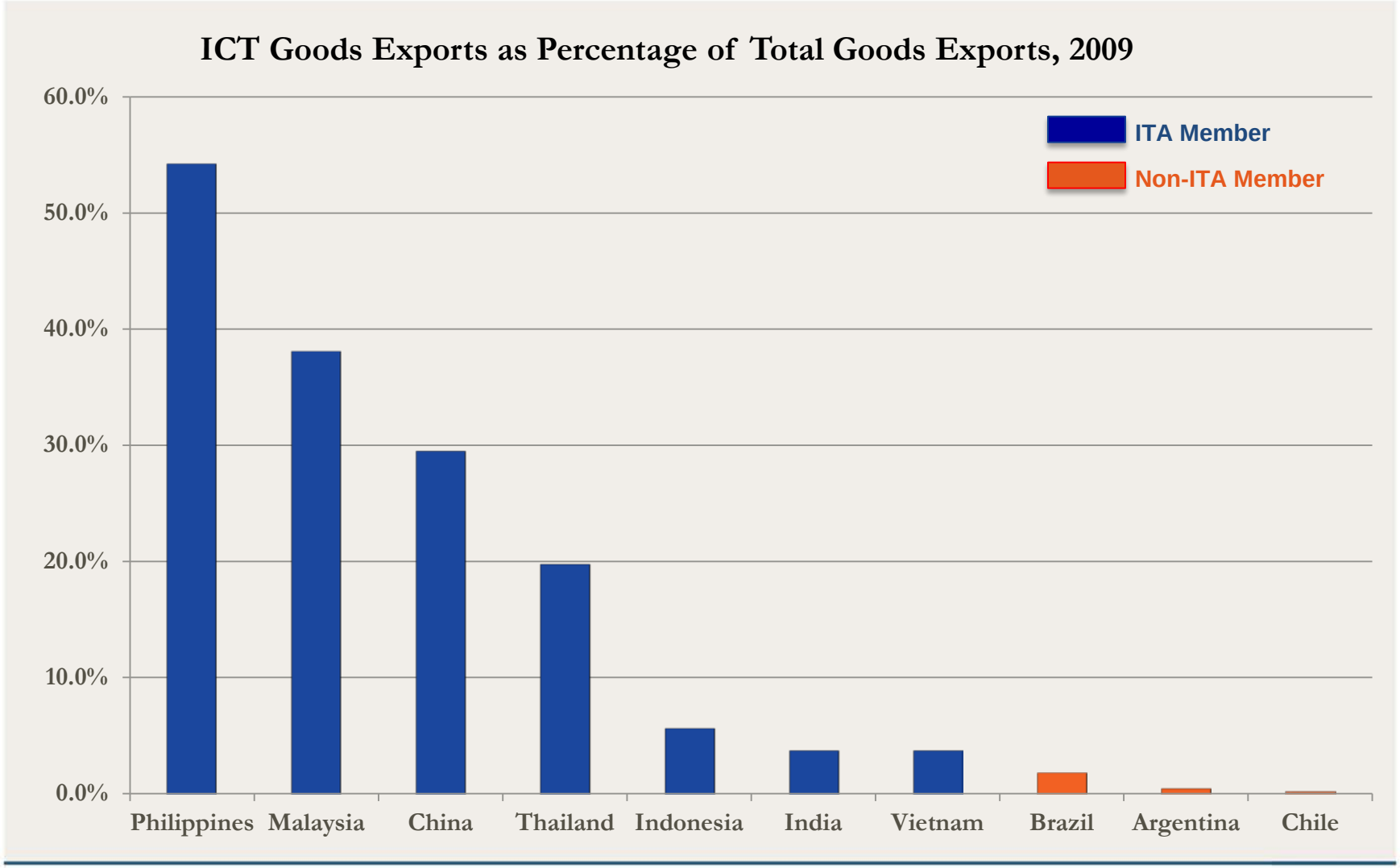
# Lower ICT Tariffs Drive ICT Exports



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# ICT Development vs. Deployment Policy Matrix

| | Hurts "Silicon Valley" |
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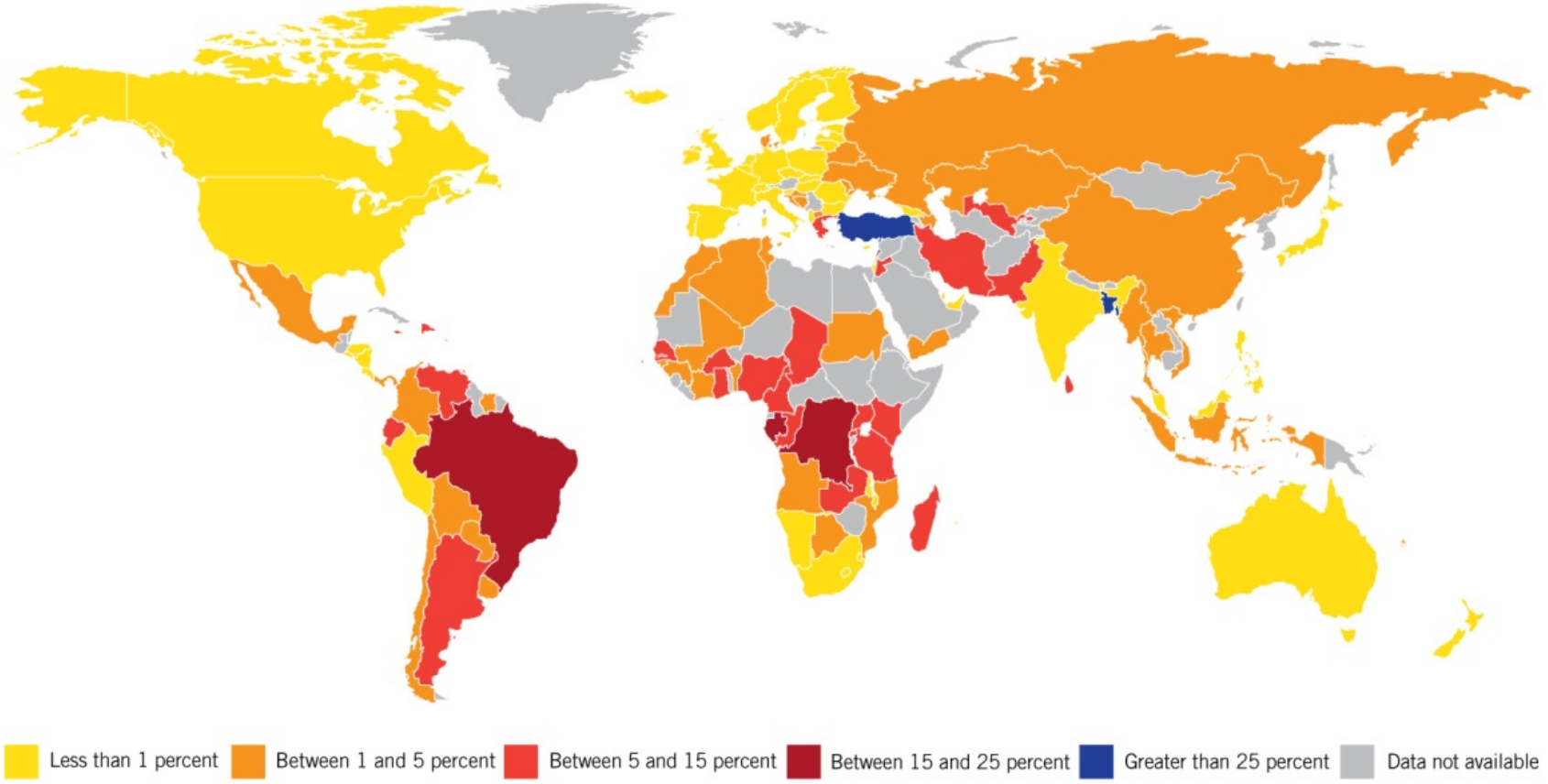
# Keeping IT Prices Low is Key to Growth

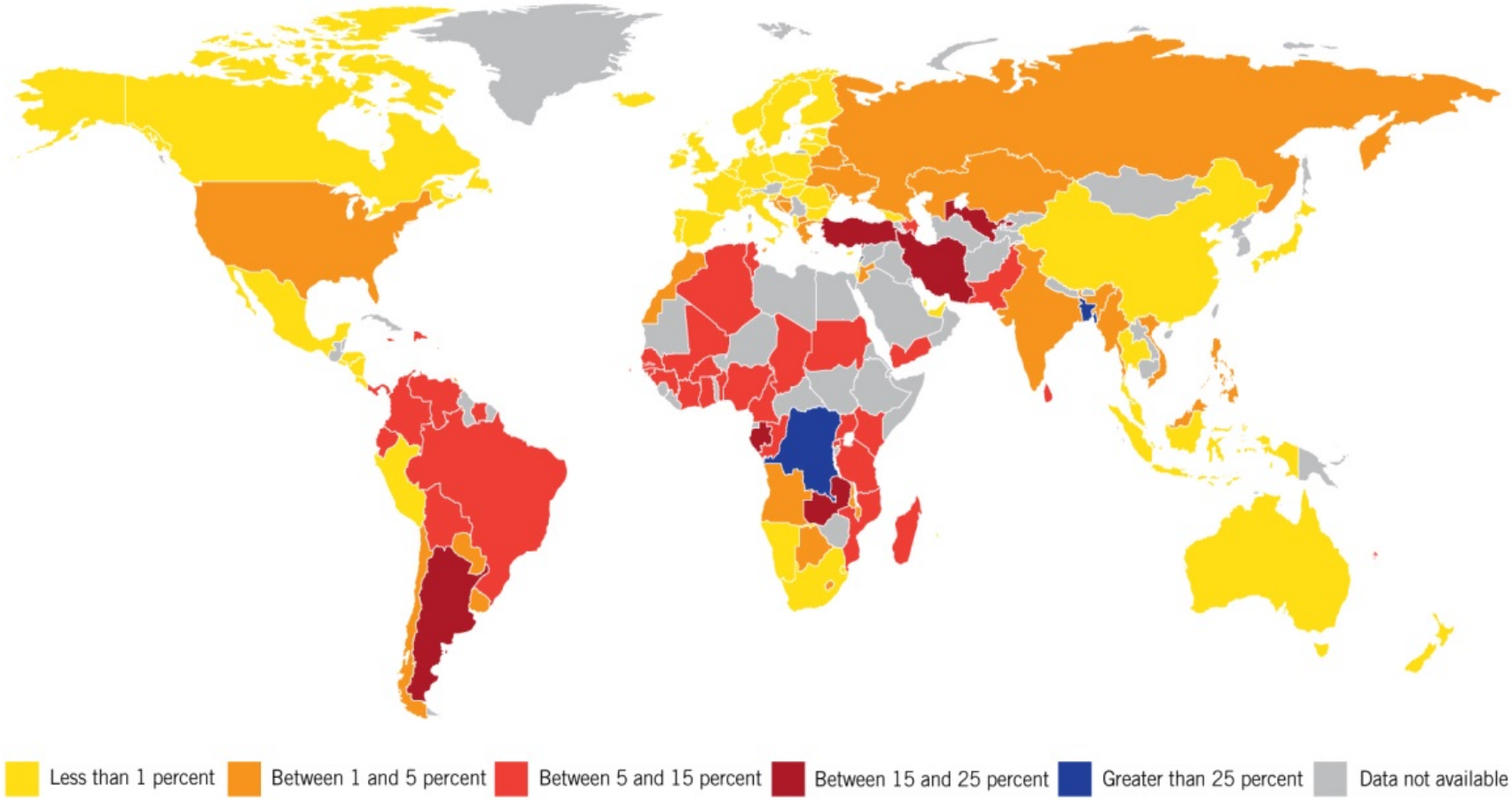
- IT tariffs and discriminatory taxes sectors mean consumers/firms have to pay more while often receiving inferior products/services.
- This makes downstream IT-using firms/sectors less competitive.
- Diminishes productivity of financial, transportation, etc. sectors.
- For every $1 of tariffs India applied to imported computers, the country lost $1.30 due to lost spillover effects. (Kaushik and Singh, 2004).
- For every 1 percent drop in price in ICT products, there is a 1.5 percent increase in demand. (Gurbaxani, 2003).
- Tariffs on IT products do not create a competitive domestic hardware industry, but they do limit adoption of ICT by keeping prices high.

# Taxes and Tariffs for Consumer ICT Products and Services




Ben Miller and Robert D. Atkinson, "Digital Drag: Ranking 125 Nations on Taxes and Tariffs on ICT Goods and Services," (Information Technology and Innovation Foundation, October 2014), http://www.itif.org/publications/2014/10/24/digital-drag-ranking-125-nations-taxes-and-tariffs-ict-goods-and-services.

# Taxes and Tariffs for Business-Use ICT Products and Services

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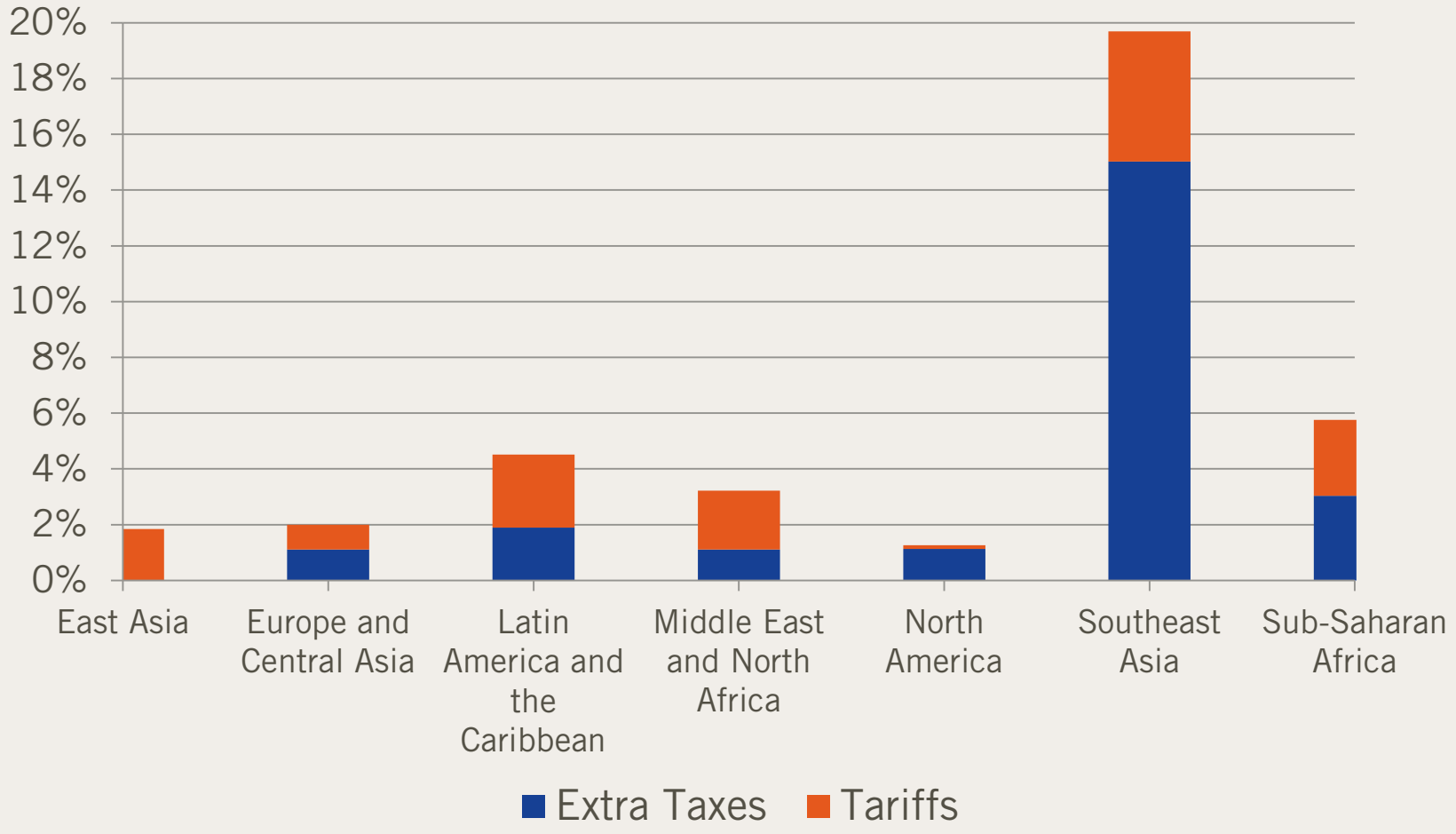
# Latin America and Caribbean Nations Impose Higher ICT Taxes/Tariffs Than N. America

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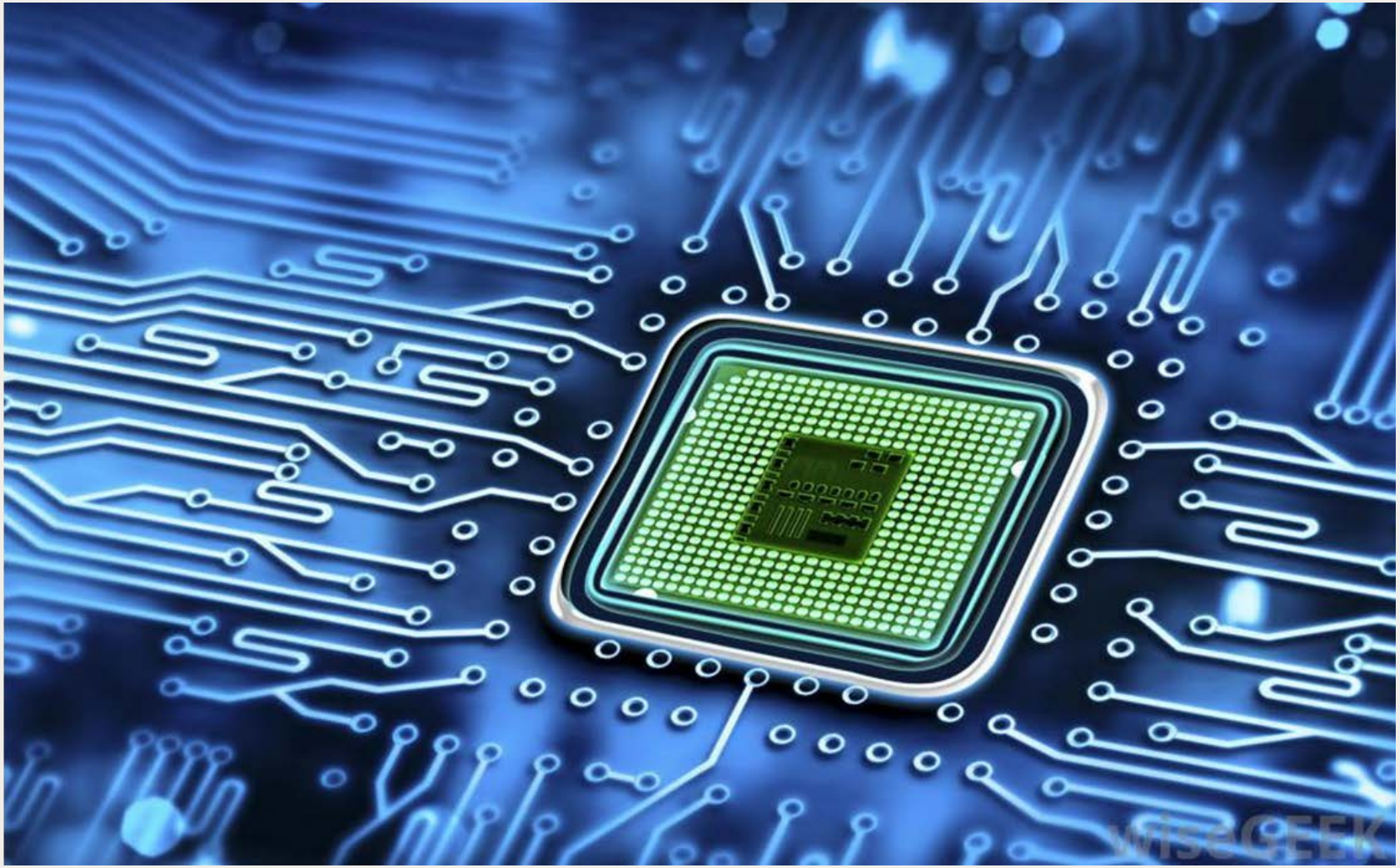
# Competing Visions for ICT Policy: Fairness or Growth?



# Digital Fairness...

- Internet is principally a tool for *communications* by individuals
- Priority on digital adoption by *individuals*
- Regulation to protect *consumers*
- Weak content protection to make it *more affordable*
- To extent focus is on enterprises, it's on *SMEs*
- Telecom *competition* to keep prices low

# Digital Growth…

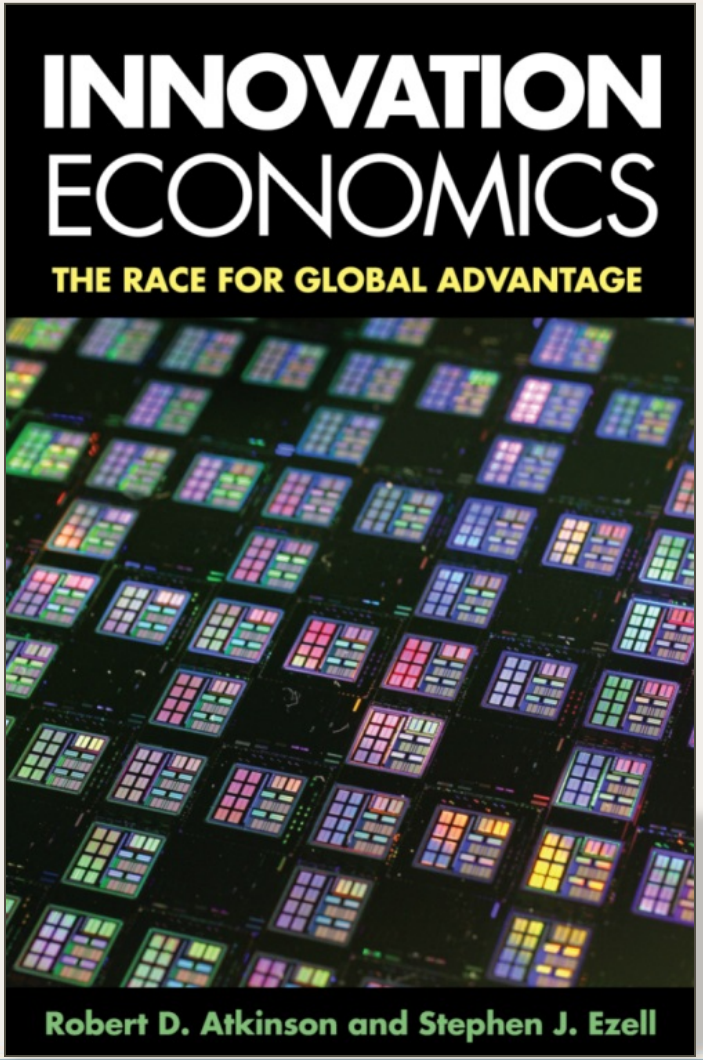
- Internet is principally a tool for *commerce* by enterprises
- Priority on digital adoption by *enterprises,*
- Policies to support *enterprise innovation*
- Stronger content protection for *incentive to produce*
- Support ICT use by the *most productive enterprises*, regardless of size
- Focus on enabling telecom capital *investment*

# Won't Fewer SME's and More Productivity Cost Jobs?

- Higher productivity leads to more, not fewer jobs
- United National Industrial Development Organization finds "productivity is the key to employment growth"[1]
- World Bank finds businesses in low-middle income countries using more IT have higher productivity but also faster sales and employment growth.

[1] Anders Isaksson, Thiam Hee Ng, and Ghislain Robyn, *Productivity in Developing Countries: Trends and Policies* (Vienna: UNIDO, 2005), 139

# www.globalinnovationrace.com



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# Thank You


Rob Atkinson

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