

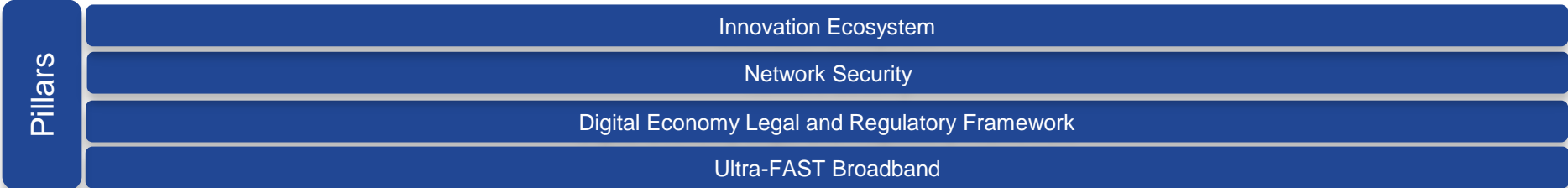
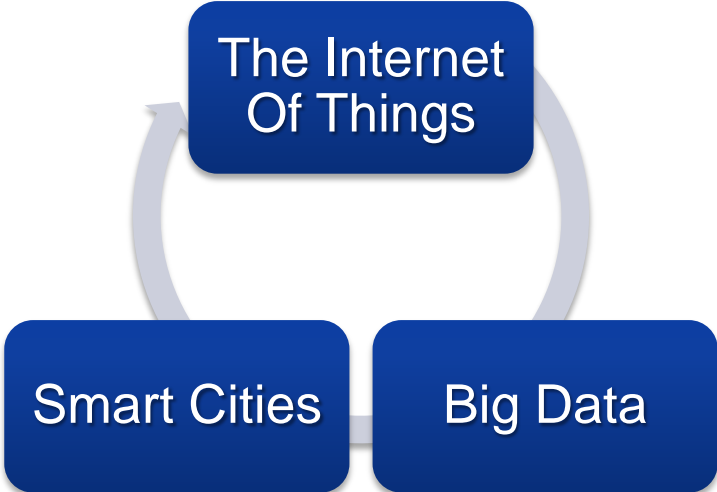


# De la Internet del Consumo a la Internet de la Producción

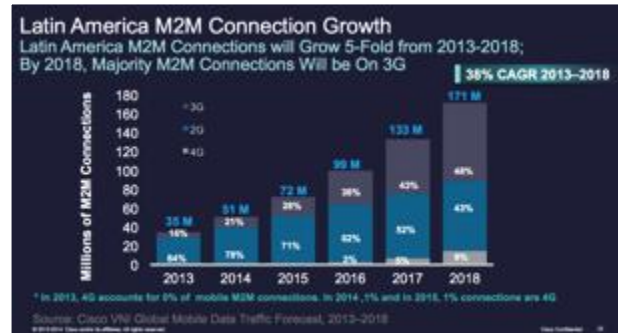
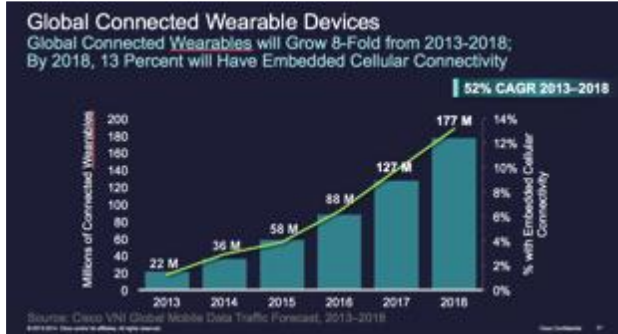
Innovación para el cambio estructural sostenible

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Executive Director, Technology Policy  
Noviembre 16, 2015

# Ejes del Internet de la Producción



# Internet of Things



- More Connected Devices that People
- By 2020, the total number of connected devices will range from around 20 billion to 50 billion
- Most applications do not exist today

# BENEFITS Private & Public Sectors

\$**19.0\*** Trillion

VALUE AT STAKE

## 14.4 Trillion PRIVATE SECTOR









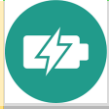

Includes Both Industry-specific and Horizontal Use Cases:

- Customer experience
- Innovation
- Employee productivity
- Supply chain
- Asset utilization

## 4.6 Trillion PUBLIC SECTOR

Includes Cities, Agencies, and Verticals Such as Healthcare, Education, Defense:

- Increased revenue
- Reduced cost
- Employee productivity
- Connected militarized defense
- Citizen experience

 <p>Connected Home</p>	 <p>Connected Work</p>	 <p>Utilities</p>	 <p>Connected Car</p>	 <p>Connected Health</p>
<ul style="list-style-type: none"> <li>• Home automation</li> <li>• Building security</li> <li>• Network equipment – printers +</li> <li>• Network infrastructure – routers +</li> <li>• White goods</li> <li>• Tracking applications</li> <li>• Household information devices</li> </ul>	<ul style="list-style-type: none"> <li>• Office building automation</li> <li>• Building security</li> <li>• Office equipment – printers +</li> <li>• Routers +</li> <li>• Commercial appliances</li> </ul>	<ul style="list-style-type: none"> <li>• Electric vehicle charging</li> <li>• Smart metering</li> </ul>	<ul style="list-style-type: none"> <li>• Fleet management</li> <li>• In-vehicle entertainment systems, emergency calling, Internet</li> <li>• Vehicle diagnostics, navigation</li> <li>• Stolen vehicle recovery</li> <li>• Lease, rental, insurance management</li> </ul>	<ul style="list-style-type: none"> <li>• Health monitors</li> <li>• Assisted living – medicine dispensers +</li> <li>• Clinical trials</li> <li>• First responder connectivity</li> <li>• Telemedicine</li> </ul>
 <p>Connected Cities</p>	 <p>Retail</p>	 <p>Manufacturing &amp; Supply Chain</p>	 <p>Energy</p>	 <p>Other</p>
<ul style="list-style-type: none"> <li>• Environment and public safety – closed-circuit TV, street lighting, waste removal, information +</li> <li>• Public space advertising</li> <li>• Public transport</li> <li>• Road traffic management</li> </ul>	<ul style="list-style-type: none"> <li>• Retail goods monitoring and payment</li> <li>• Retail venue access and control</li> <li>• Slot machines, vending machines</li> </ul>	<ul style="list-style-type: none"> <li>• Mining and extraction</li> <li>• Manufacturing and processing</li> <li>• Supply chain</li> <li>• Warehousing and storage</li> </ul>	<ul style="list-style-type: none"> <li>• New energy sources – monitoring and power generation support apps</li> <li>• Smart grid and distribution</li> <li>• Micro-generation– generation of power, by residential, commercial and community users on their own property</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture – livestock, soil monitoring, water and resource conservation, temperature control for milk tanks +</li> <li>• Construction: Site and equipment monitoring</li> <li>• Emergency services and national security</li> </ul>

# IoE Reduces Congestion Improves Citizen Security in Hamburg, Germany

- Manage 12,000 ships, 83 railroads, 1800 workers, thousands of vehicles
- Reduced congestion by 15%
- Doubling throughput in next 10 years
- 75% Opex savings
- Reduced servers from 242 to 48 for 20% reduction in capital costs



# Barcelona: Smart City

## \$3.6B Value Creation



Smart Lighting

Smart Buses

Smart Water

Smart Bus Stop

Smart Parking

Smart Waste



“ We are obsessed with building quality of life for our citizens. We needed to break through organizational siloes and Cisco became our IoE backbone. That is our present and the future of our city.”

**Antoni Vives**  
Deputy Vice Mayor  
City of Barcelona, Spain

- 1,500 New Companies
- 56,000 New Jobs
- Mobile Collaboration: \$1.6B
- Telework: \$199M
- Smart Parking: \$67M
- Smart Water: \$58M
- Smart Lighting: \$47M



Revenue

Citizen Experiences

Jobs

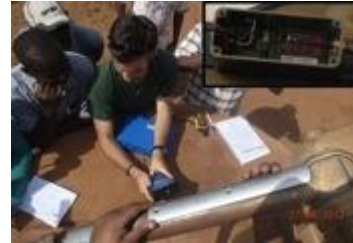
Productivity

Cost Avoidance

# IoT & Global Development



# E.g. Water/Sanitation: Water Pump Monitoring



# E.g. Healthcare: Vaccine Cold-Chain Monitoring



## Cold-Chain Monitor



- Cellular enabled temperature sensor
- Remotely monitors vaccine and drug storage temperatures
- Measures temperature & location

## SmartConnect (by PATH, Inveneo)

- Facility based communications device
- Transmits external sensor data (incl. temperature)
- Additionally runs applications (ERM, barcode scanner, printer)



# E.g. Agriculture

## Sri Lanka: Tea Plantation



- WSN to monitor soil conditions
- Moisture, Temperature, PH, %C, %N, %K, %P, %Ca, %Mg
- Solar powered

## Livestock Monitoring (RFID)

Botswana:  
Livestock Trace-back System monitor and track livestock migration with RFID chips.

Senegal:  
Daral project - 2,000 farmers to monitor cattle, prevent theft and provide vaccination reminders.

Namibia:  
Namibian Livestock Identification and Traceability System tracks cattle by RFID chips in ear tags.

## Others:

Syngenta/ Kilimo Salama:  
Distributed Weather Stations (for Crop Insurance)

Sensors/ Actuators for irrigation systems

# E.g. Natural Resource Management



# Sustainable Innovation in Latin America

# Industrial Policy or Innovation Ecosystem

Policy and Technical  
Issues Facing Big  
Data and the IoT

