



# Innovación para Conectar lo Desconectado

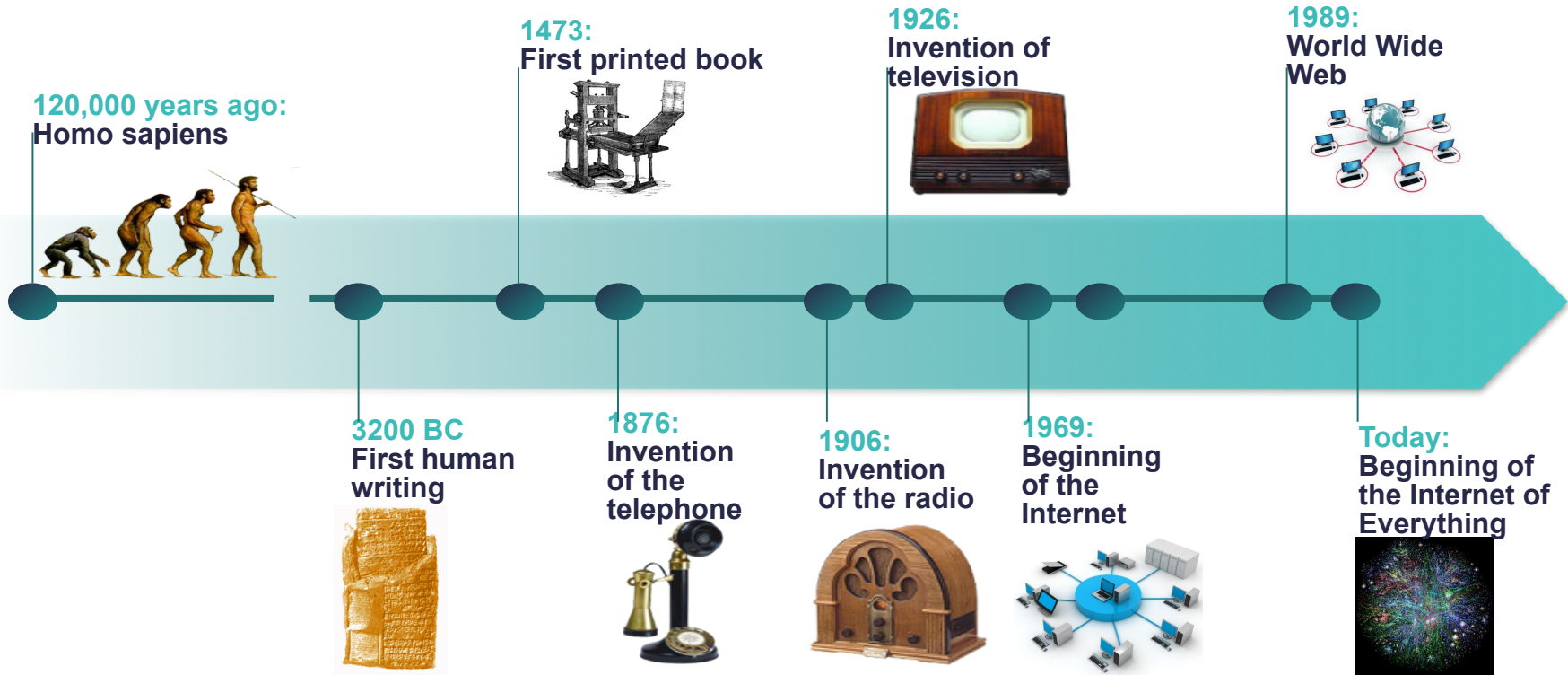
El Internet de Todo

Alvaro Retana (aretana@cisco.com)

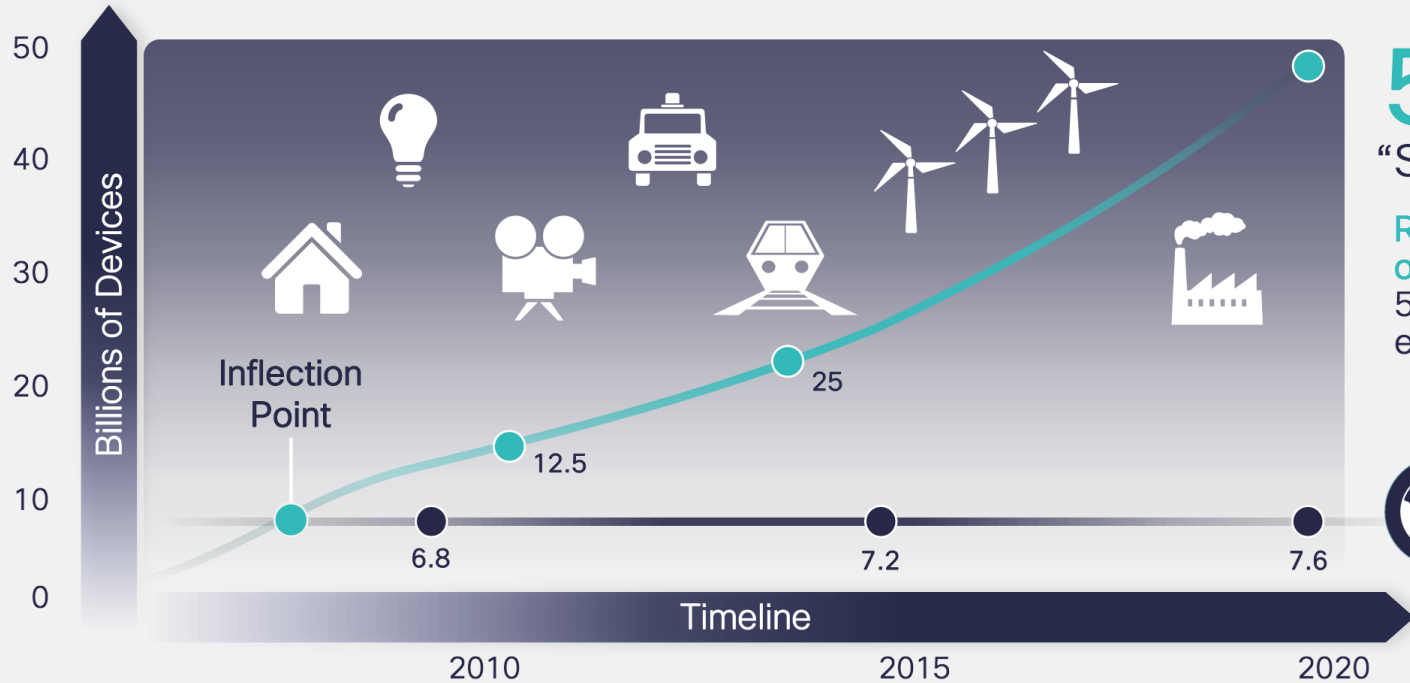
Distinguished Engineer, Cisco Services



# Innovations in Communications Have Transformed Humanity



# IoT is Here Now – and Growing!



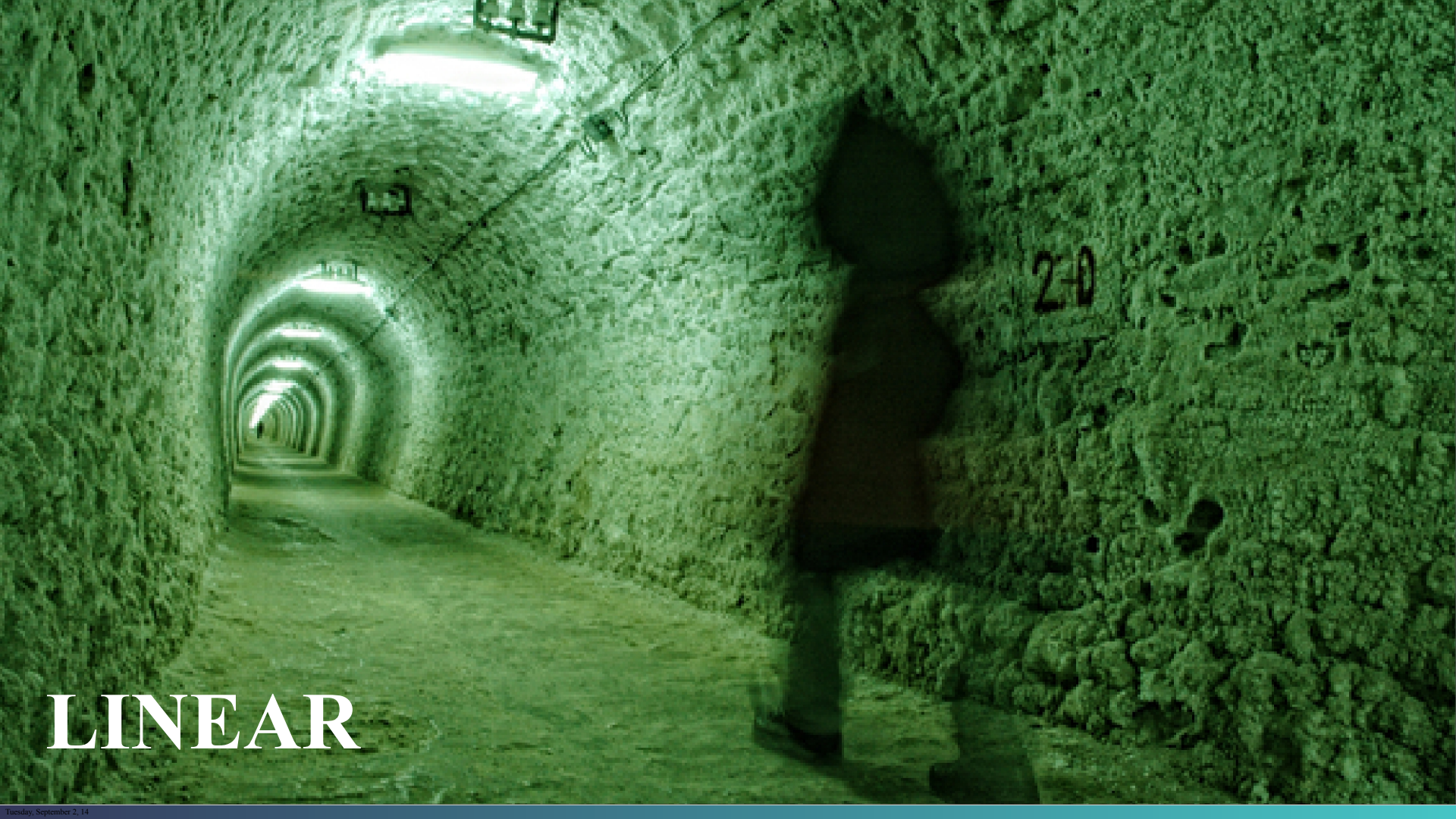
**50** Billion  
“Smart Objects”

Rapid Adoption Rate  
of Digital Infrastructure:  
5X Faster than  
electricity and telephony



World  
Population

The New Essential Infrastructure



# LINEAR



## **30 EXPONENTIAL STEPS**

**“1 billion meters away,  
which is twenty-six times  
around the planet. “**

**Peter Diamandis**

INFORMATION TECHNOLOGIES (OF ALL KINDS)  
**DOUBLE THEIR POWER ABOUT**  
(PRICE PERFORMANCE, CAPACITY, BANDWIDTH)  
**EVERY YEAR**

A photograph of a concrete wall with red graffiti. The graffiti consists of the words 'PEOPLE' and 'POWER' stacked vertically. Overlaid in the center of the image is the word 'CONNECTED' in a bold, orange, 3D-style font with a black outline. The wall shows signs of weathering, including cracks and some greenish mold or algae growth.

CONNECTED



**Distance  
Is  
Dead**







**PRESENT**

**2020 KNOWLEDGE WILL DOUBLE EVERY 73 DAYS**

**5000 BC**

\*Reported at the Teacher Education for 21st Century Conference (1992)"Norman W. Edmund



# Born Digital

Information, products, services, and supporting systems that align with expectations and behaviors of Generation C...consistently, seamlessly, across every screen in every scenario.



**TECHNOLOGY & CONNECTIVITY ARE THE DISRUPTORS & ENABLERS**

# When You Connect the Unconnected, Everything Changes.....

## People

Connecting People  
in More Relevant,  
Valuable Ways



## Process

Delivering the Right  
Information to the Right  
Person (or Machine) at  
the Right Time



## Data

Leveraging Data into  
More Useful Information  
for Decision Making



## Things

Physical Devices and  
Objects Connected to the  
Internet and Each Other for  
Intelligent Decision Making  
(IoT)



# We Call this The Internet of Everything

# Interconnected with People, Process, Data and Technology Trends...

Make IoE a reality and an opportunity



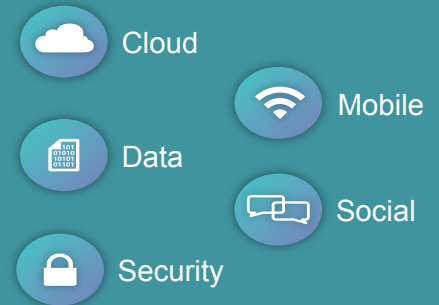
Capture new value & deliver new experiences

Internet of Things



With an opportunity to accelerate growth

Today's technology trends accelerate the path to IoE



Enable new business outcomes

# Technology Trends are Enabling Business in New Ways

*How do I cut cost and improve my business?*



Cloud

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Create a Secure, Optimized, Cloud-Enabled Infrastructure

*How do I create a more engaged and productive workforce?*



Mobile

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Enable a Secure, Mobile Workforce

*How can I create personalized customer experiences?*



Social

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Create one-to-one connections with Customers Anytime

*How do I make better decisions... faster?*



Data

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Gain Access and Insight from Distributed Data to Speed Decisions

*How do I handle a dynamic threat landscape created by increased connections?*

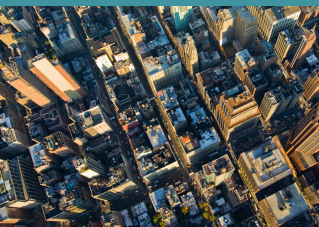


Security

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Protect Valuable Assets and Reputation in Real-Time

# Smart Cities





# Cities Have Traditionally Addressed These Issues in Silos

Every city department makes investments independently resulting in:

- No sharing of infrastructure costs and IT resources
- No sharing of intelligence/information, e.g., video feeds, data from sensors, etc.
- Waste and duplication of investment and effort
- Difficulty in scaling infrastructure management

**Traffic  
management**



**Public  
safety**



**City  
lighting**



**Pollution/  
environment**



**Waste  
management**

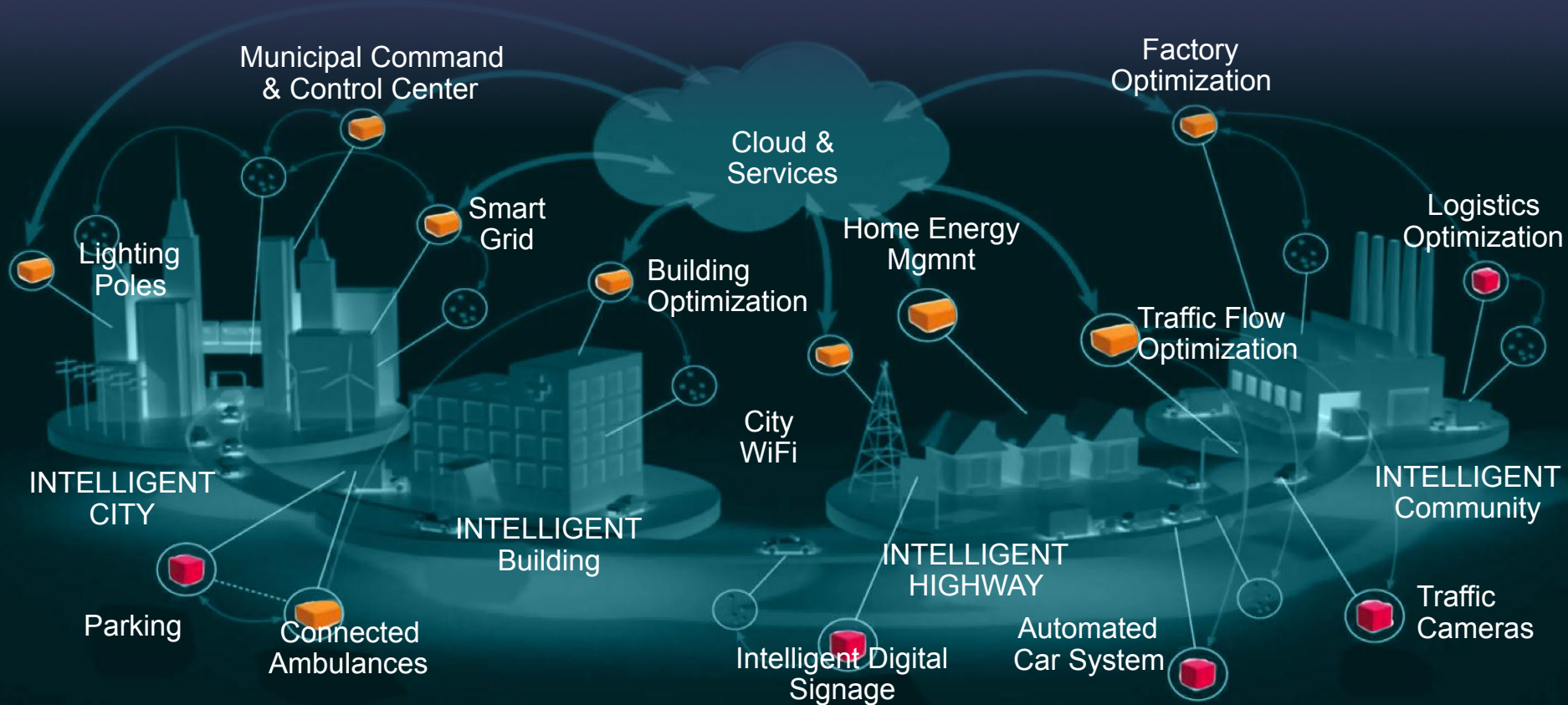


**Parking  
optimisation**



This fragmented approach is inefficient, has limited effectiveness, and is not economical

# City Infographics



# Smart Grid Project – Sites selected for the field test

## Barueri

- 62.000 Clients
- Annual consumption – 1.2 millions MWh
- 304 Km of MV overhead power grid
- Complete project
- Smart Grid concept proof



## Vargem Grande + Caucaia do Alto

- 32.289 Clients
- Annual consumption – 178.000 MWh
- 374 Km of MV overhead power grid
- Self-Healing and Fault detection functionalities



### Reasons for selecting the sites

AES Eletropaulo representative model:

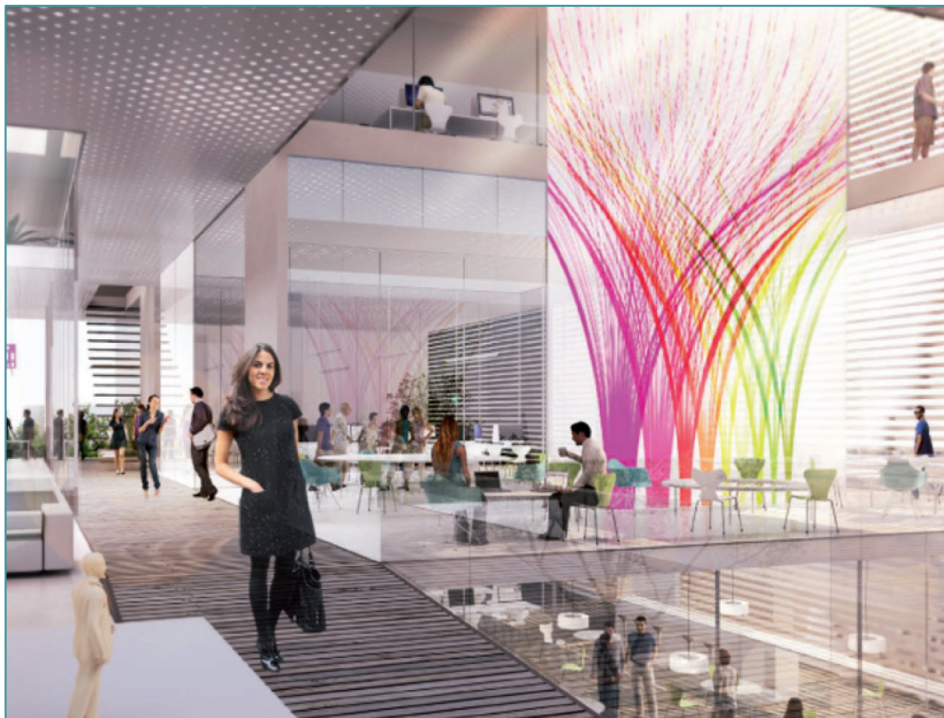
- Metropolitan area
- Similar client profile
- Consumption
- Power grid (short feeders and mesh)
- Similar performance indicators

AES Eletropaulo different characteristics:

- Rural area
- Environmental Protected Area
- Long circuits = 100 km
- Isolated feeders = 23 kV
- Bad performance indicators



CIUDAD  
CREATIVA DIGITAL.  
GUADALAJARA



## Ciudad inteligente

La ciudad como un ente que se adapta a su entorno de manera inmediata, que responde en tiempo real a las necesidades de la comunidad, a las actividades que ahí se realizan y a las condiciones ambientales gracias a una serie de sensores y dispositivos enlazados con el Centro de Datos que inciden positivamente en la economía, la productividad y sustentabilidad.

**CCD contará con sensores que medirán y controlarán el estado de las áreas verdes, el alumbrado público, la seguridad de la zona y el suministro de agua, entre otros servicios.** Habrá una serie de kioscos digitales de información, con datos relevantes y actualizados para los usuarios y contará con servicios de wi-fi accesible para todos los usuarios.

# *Bienvenidos a la ciudad inteligente*

## *Nuestra estrategia*



### *Innovación social*

La comunidad identifica problemáticas y genera soluciones.



### *Sostenibilidad*

Asegurar que recursos y soluciones perduren en el tiempo.



### *Gobierno abierto*

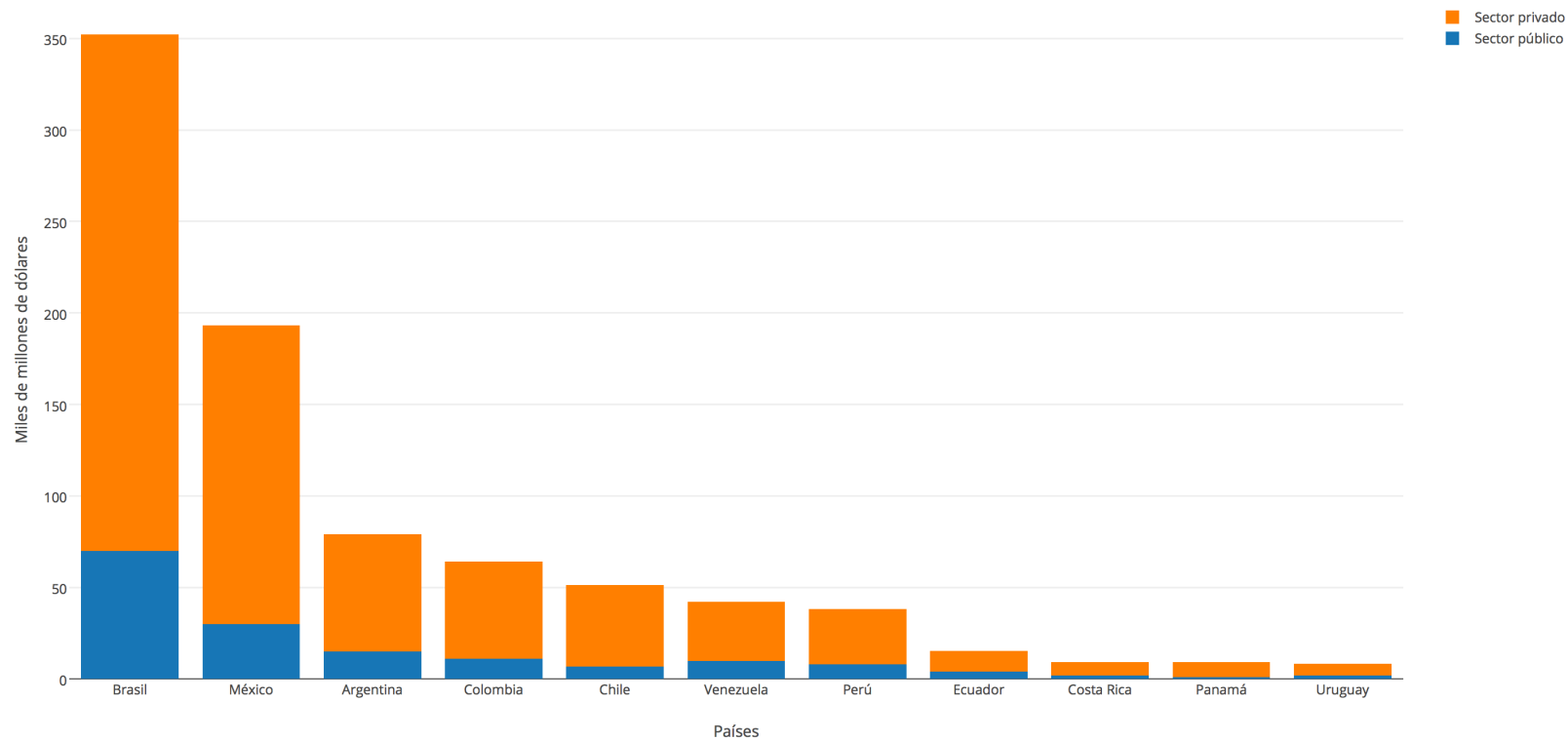
Datos abiertos de la administración local para la ciudadanía.



### *Participación ciudadana*

Permitir que la comunidad se exprese, coopere e intervenga.

Valor potencial del Internet de Todo por país y sector, 2013-2022



<http://www.mediatelecom.com.mx/index.php/agencia-informativa/noticias/item/87622-am%C3%A9rica-latina-necesita-con-urgencia-digitalizar-la-industria-cisco>

# Technology Approach: Fast IT

**SIMPLE**

**Simplify** your infrastructure and integrate across silos

**SMART**

**Create** intelligent network capabilities and services that fuel growth

**SECURE**

**Defend** against attacks and mitigate threats dynamically

If you want to go fast,  
*go alone.*

If you want to go far,  
*go together.*

- African Proverb -

## Focus on Collaboration





# Focus on Simplification



*Solving Old Problems in New Ways!*





*Focus on Adaptability*

The Internet of Everything  
Is Fueling a New Era of  
Connected Growth  
and Innovation

-

THE FUTURE IS  
NOW





**CISCO**

*TOMORROW starts here.*