



**Safer, Broadband, Digital >**  
*Happier Latin America Enabled by ICT*

**Qiu Heng**  
**President of Wireless Marketing Operation**

Happiness is ...

*a chocolate bar*

*free from illness*

*rain after drought*

*family together*



**1** How can we make LATAM people happier  
>>



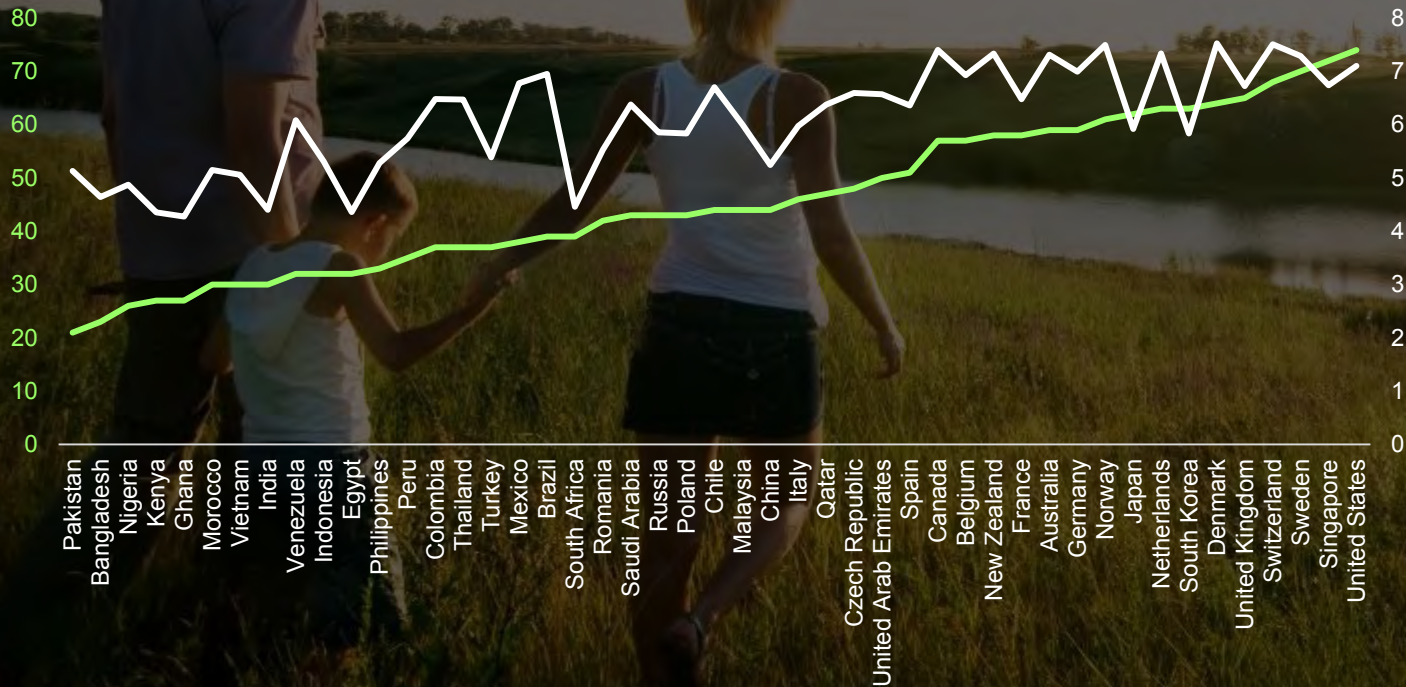
# Relation Between Happiness & Connectivity

*Reference indicators on Happiness and Connectivity*

**GCI:**  
Global Connectivity Index (ICT)

**HHI:**  
Human Happiness Index

every 10 point of GCI growth leads to



avg. **5.0%** ↑  
increase in HHI

**Source:**

*GCI: Huawei GCI Whitepaper 2016*

*HHI: World Happiness Report 2016*

*UN Sustainable Development Solutions Network  
Earth Institute (University of Columbia)*

# Happiness is About Satisfying Human Needs

## Happier LATAM

## How ICT can help

## Vision



Maslow's hierarchy of needs



Industry upgrade



More leisure time



More wealth



Digital LATAM



Higher personal experience

Enrich home entertainment

Enable SHO business



Broadband LATAM



Surveillance

Environment monitoring

e-Health



Safer LATAM

# 2 Towards a Happier Latin America



**Safer  
Latin America**



**Broadband  
Latin America**



**Digital  
Latin America**



# Safer LATAM – Free From Disaster and Criminal

*Public Safety is a Basic National Responsibility*

**BBC** Sign in News Sport Weather Shop Earth Travel

## NEWS

Home Video World US & Canada UK Business Tech Science Magazine

### Flooding 'worst in 50 years', as 150,000 flee in Paraguay, Argentina, Brazil and Uruguay



REUTERS

**TRUTHER.ORG** stay updated via RSS  
"PEACE BY REVELATION" EST. 2007

### MEXICAN TERROR ALERT (MAY 25, 2016): CIA Plotting Mass Attack in Mexico...

BB4SP

### WAITING TO STRIKE



**FOX NEWS** **IMMINENT ISIS STRIKE?** TERROR CELL MAY HAVE FORMED NEAR TEXAS BORDER **FOX & friends**

# Safer LATAM – Free From Disaster and Criminal Surveillance and Trunking Reduce Risks

## Surveillance



## Trunking: Push<sup>2</sup>Talk + Push<sup>2</sup>Video



# Safer Latin America Solution – eLTE & LiTRA

*Dedicated & Operator Network Solution*

*Dedicate Network Solution*

**eLTE**



↓ **46%**  
crime  
reduction

*Operator Network Solution*

**LiTRA**

**19%** ↓  
case  
reduction  
expected





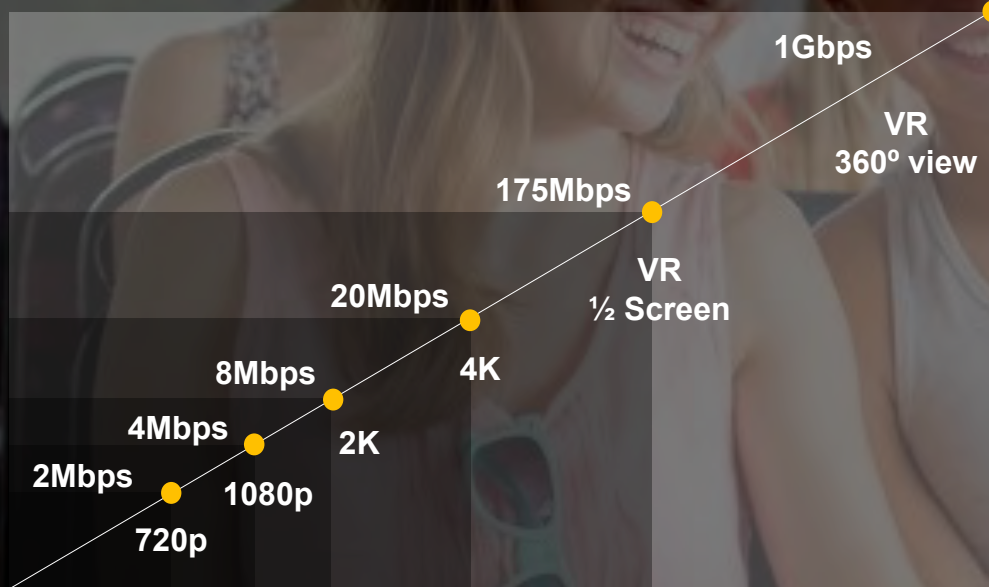
# Broadband LATAM – Better Personal Experience

## Mobile HD-Video Enriches Communication & Entertainment Experience

**Faster Broadband = Better Experience**

**Most LATAM countries' mobile speed**

**< 10Mbps**



**Uruguay**

**10.21 Mbps**



**Chile**

**8.77 Mbps**



**Guatemala**

**7.66 Mbps**



**Peru**

**9.11 Mbps**



**Mexico**

**7.93 Mbps**



**Brazil**

**7.43 Mbps**

Source: OpenSignal Q3 2016

# Broadband LATAM – Enrich Home Entertainment

## Let All Houses Connected

Fixed broadband penetration in LATAM is ~9.2%, less than world average **11.2%**

MBB will greatly shorten the 'service online' time



Source: ITU database

# Broadband LATAM – Enable SME Business

## Broadband as Basis of Business

Small & Medium-sized Enterprise (SME) is

**99%**

of all enterprises LATAM & the Caribbean (in QTY.)



E-Commerce

2015 global E-Commerce

US\$ **24** trillion **30%** of global transactions

**99.8%**  
in



Estimated E-Commerce growth rate of Latin America

**20%** from 2015~2018

Source: IDB (Inter-American Development Bank)

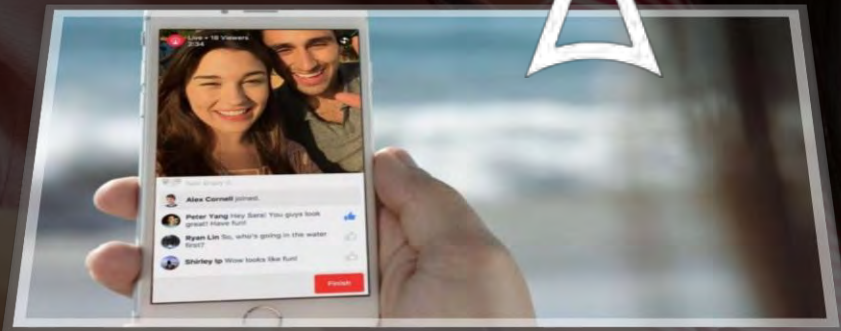
Source: mLAB, GCI report

# Broadband Latin America Solution – Gbps

*4K Video Everywhere*

## 4K video

20Mbps required



*Peak rate*

**150Mbps**

**1Gbps**

*Cell capacity*

**40Mbps**

**200Mbps**

*Cell edge*

**5Mbps**

**30Mbps**

*Improve 4K capability*

**2x 4K channel per cell**

**10x 4K channel per cell**

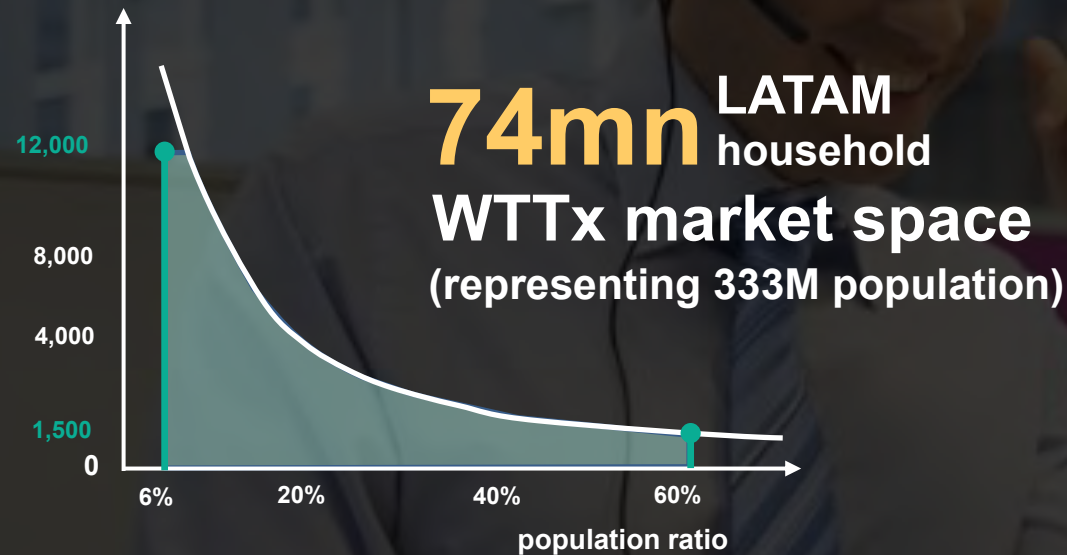
**1K@cell edge**

**4K@cell edge**

# Broadband LATAM Solution – Wireless to The X

## WTTx for Home Entertainment & SME Work Efficiency

Yearly family income\* (\$)

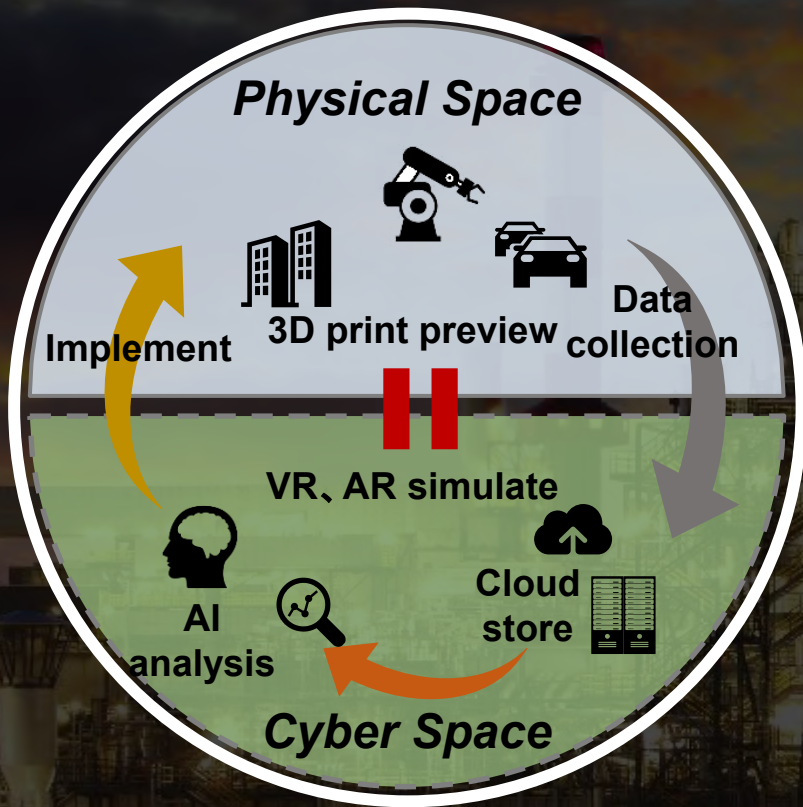


**2** Years  
Return Of Investment

Source: Huawei MI based on "Latin America Income Distribution, The World Bank"

# Digital LATAM – Intelligent Society

*Converge Cyber & Physical World*



**Smart manufacturing**



*Personalized on-demand production*

**Intelligent way of working**



*VR facilitates SOHO work style*

**Smart automotive**



*Mobile home and office*

**Smart consumption**



*Sharing economy, environment friendly*

# Digital LATAM Solution – NB-IoT to 5G

*Start with NB-IoT, Fully Achieve in 5G Era*

## NB-IoT (4.5G)



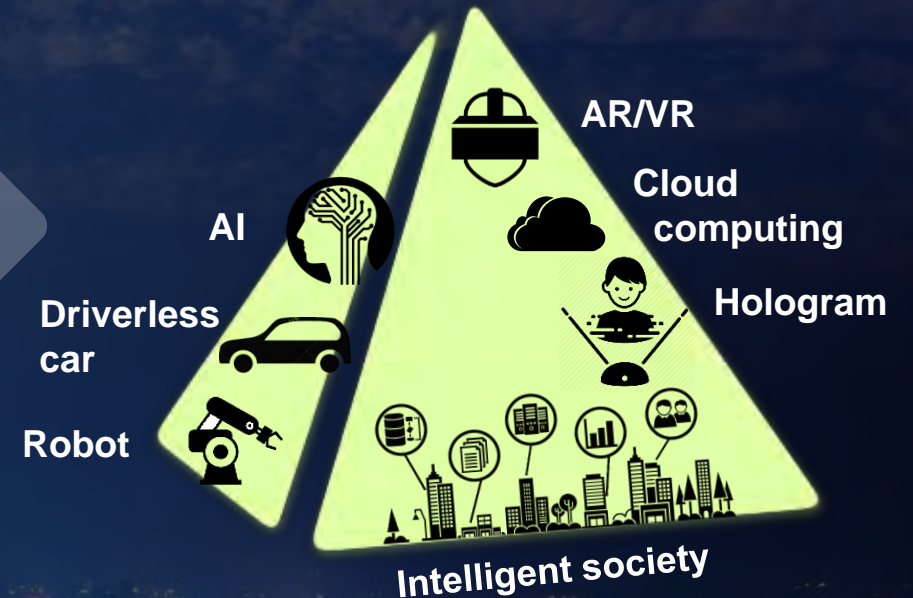
Smart Parking



Asset Tracking



Smart Metering



# Digital LATAM Drives Economy Growth

## IoT & Big Data

### IoT



by 2025 Digital LATAM direct market

**55%**

Storage  
APPs  
Data analysis

**\$23.8 bn**

Sensor  
Device  
**30%**  
Integration

**15%**

Network construction  
& operation

### Big data

by 2030 Digital LATAM big data impact to GDP

**12.6%**

Manufacturing

33%

Infrastructure

15%

Retail

14%

Health

11%

Logistics

8%

**\$778 bn**

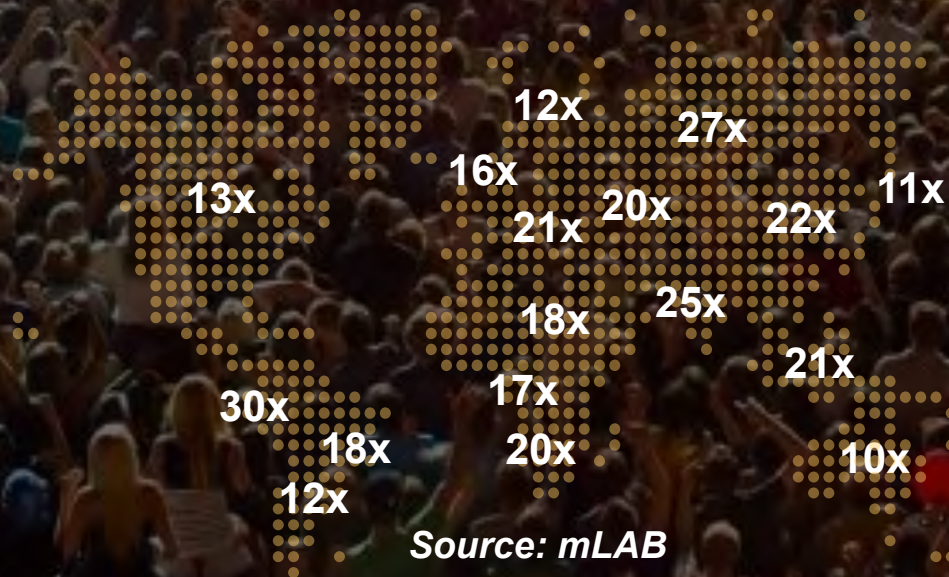
Energy saving, production increase, maintenance saving, process optimization...

Source: mLAB



# Safer, Broadband, Digital LATAM Boost MBB Traffic

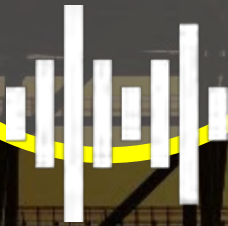
*Latin America Typical Data Traffic Model (Year 2020)*



Source: mLAB

# 3 How government can help to achieve vision >>

Release  
more  
spectrum



Policy to  
increase  
site number



# Release More Spectrum

**300MHz**  
in 2020

per mobile operator  
needed

Candidate spectrum

1.4GHz

2.6GHz

3.3GHz

3.5/3.7GHz

2.3GHz

**120MHz** LATAM mobile operator  
in 2015 average level

Source: mLAB





# LATEM Site Density is Far Behind Other Regions





	Korea/Japan	EU	AP	Mexico
Site Density (site / mn people)	1,200	1,036	892	370
Site Distance (meters)	130~250	300~500	250~500	450~1,000
Connection/ Urban Site	20~28	10~25	18~37	33~70

Source: mLAB

# Open Public Facility for ICT Infrastructure

Government can define site supply as *“mandatory”* utility for selected premises

			
Metro	Lamp Pole	Airport	Bus Station

			
Site Supply	Power	Water	Gas

*Open  
Premises*

*All Plan at The  
Same Time  
Public Utility*

Source: China Shandong case

# More Flexible Regulation, Faster Construction

*Sites in Scenic Spots*



*Street Sites*



## *Regulation Optimized*

- Allow site deployment along with the permission requesting to shorten the time span
- Reduce strictly EHS requirement to a reasonable and health level

*Source: Korea case*

*EHS: Environment Health Safety*

# Vision



**Safer  
LATAM**



**Broadband  
LATAM**



**Digital  
LATAM**

Resources

# Requirement

*WRC07/12/15*

**Spectrum release &  
upgrade plan**

*Site Facilities*

**Open public facilities  
development**

**Flexible regulations for  
site acquisition**

# Take Away

Thank you

