Raja Ampat, Papua Island, Indonesia

# Building a Fiber Rich Gigabit Society

**Puneet Garg**
**CTO Smartfren. Enterprise**
**Puneet.garg@smartfren.com**

Mount Bromo, East Java, Indonesia

275 Million Population

17,506 Islands

5-6% Steady GDP Growth

T12 Cities ↓ 34% Pop Java Island 58% Pop

156 Million Affluent Middle Class

Jokowi, President of Indonesia and First Lady, Iriana

## AMONGST THE MOST INTERENT AWARE ...

- **US$ 2** monthly ARPU
- **135%** SIM penetration
- **5 players**, very competitive
- **Free** → among top FB/Twitter users

# Indonesia key digital transformation overview for I4.0



**AVERAGE DOWNLOAD SPEED OF MOBILE INTERNET CONNECTIONS**
17.26 MBPS

**YEAR-ON-YEAR CHANGE IN AVERAGE SPEED OF MOBILE INTERNET CONNECTIONS**
+24.8%

**AVERAGE DOWNLOAD SPEED OF FIXED INTERNET CONNECTIONS**
23.32 MBPS

**YEAR-ON-YEAR CHANGE IN AVERAGE SPEED OF FIXED INTERNET CONNECTIONS**
+16.0%
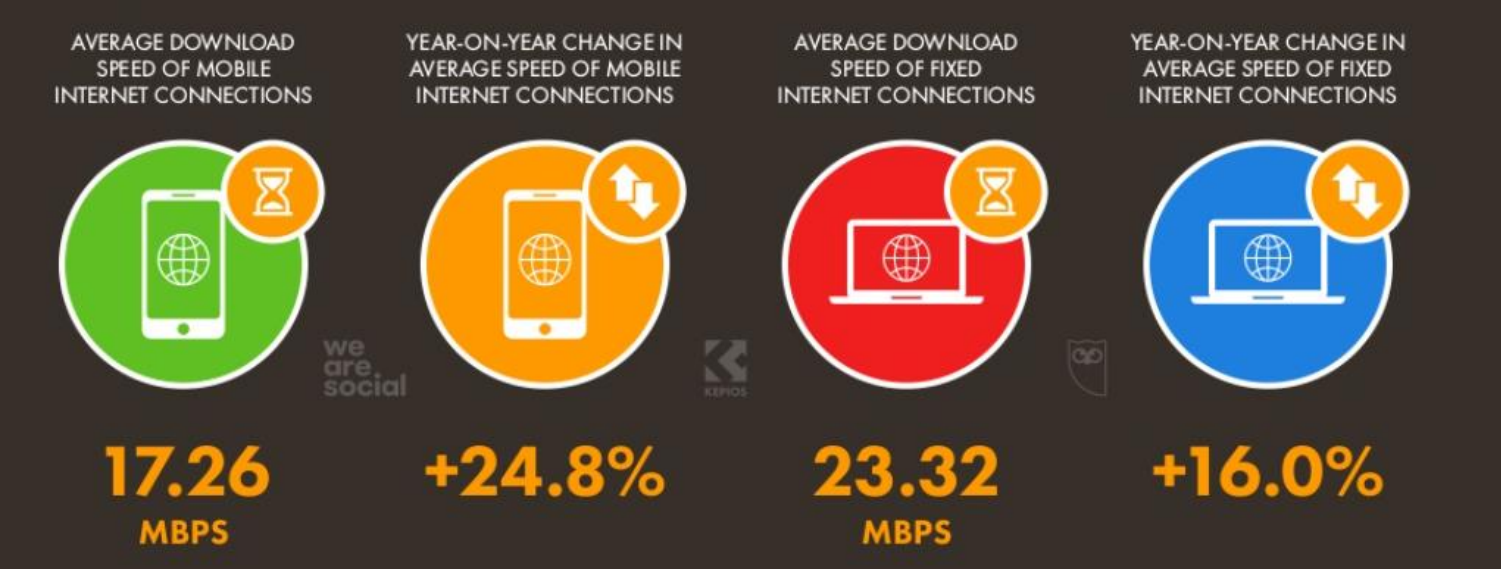
## Homes & Broadband

- Median Age of Indo : 29,9 Years
- 57% Urbanization of Population
- Fixed Broadband is limited to big towns
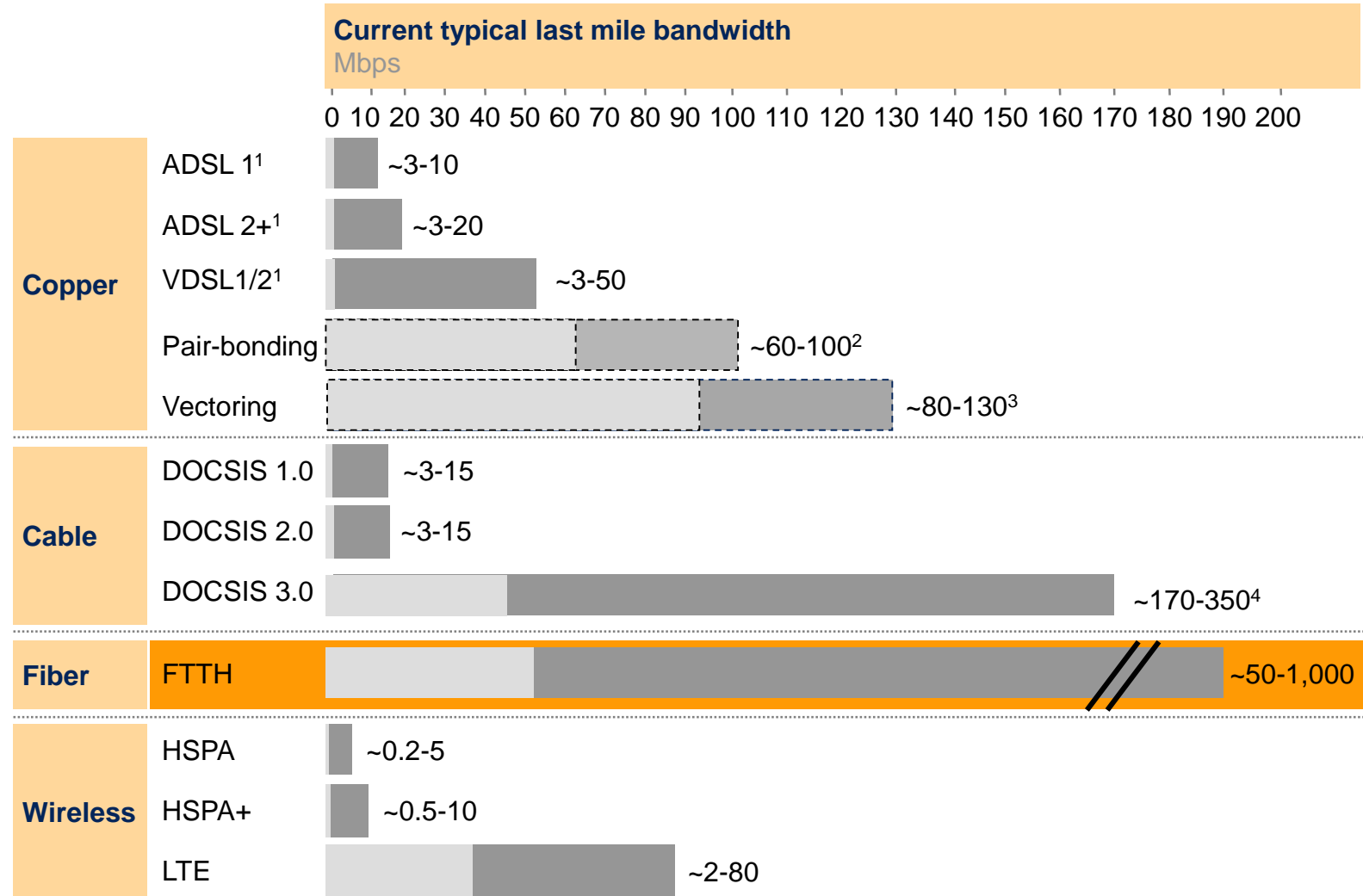- 60 Mn Homes out of which 6,35 Mn Homes have Smart Home Devices

## Internet Users Activities

- Video is the killer application
- Gaming is next big thing on Internet
- E-Commerce is getting traction

**WATCH ONLINE VIDEOS**
98.5%

**WATCH VLOGS**
74.3%

**LISTEN TO MUSIC STREAMING SERVICES**
84.0%

**LISTEN TO ONLINE RADIO STATIONS**
52.1%

**LISTEN TO OR WATCH PODCASTS**
58.0%

# Tsunami of Video & Data Traffic : FTTX only technology to meet the challenge

**Fiber is the only deployment option able to handle high bandwidth needs of the future (>~350Mbps)**

**Current typical last mile bandwidth**
Mbps

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

**Copper**
- ADSL 1[1]  ~3-10
- ADSL 2+[1]  ~3-20
- VDSL1/2[1]  ~3-50
- Pair-bonding  ~60-100[2]
- Vectoring  ~80-130[3]

**Cable**
- DOCSIS 1.0  ~3-15
- DOCSIS 2.0  ~3-15
- DOCSIS 3.0  ~170-350[4]

**Fiber**
- FTTH  ~50-1,000

**Wireless**
- HSPA  ~0.2-5
- HSPA+  ~0.5-10
- LTE  ~2-80

**42% YoY Internet Traffic Increase**

**On an average ~50% is Youtube traffic**

**UHD needs 24 Mbps Bandwidth per channel**

**Future proof – FTTX 10/100Gbps**

**MUCH DEBATE on Broadband Penetration**

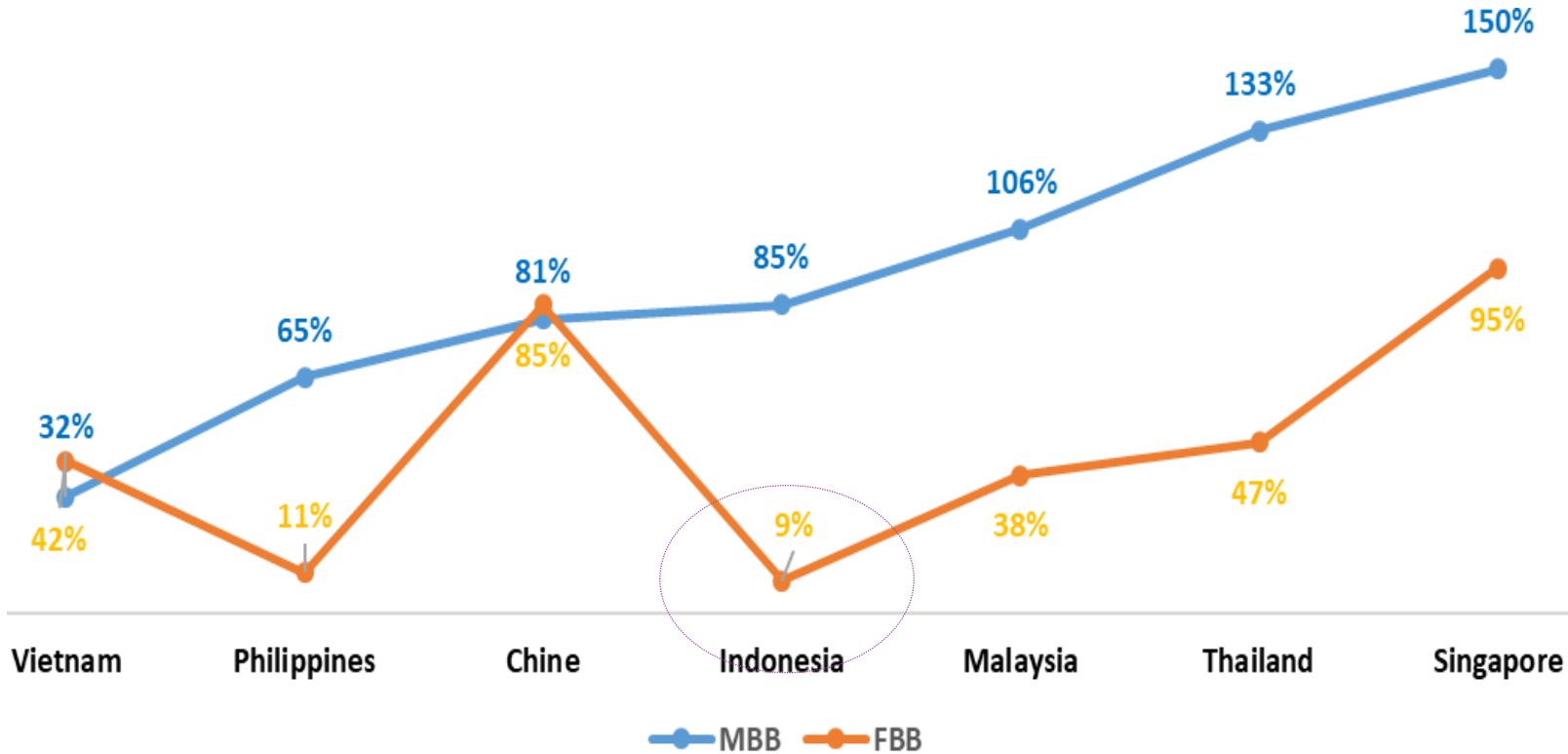**… CHOICE OF TWO OPTIONS**

- **Mobile Broadband**

⬇

- **Fixed Broadband for quality**

# Fixed Broadband deployments in South East Asia



**Mobile (MBB) and Fixed (FBB) Broadband Penetration in 7 SEA Countries**

MBB values: Vietnam 32%, Philippines 65%, Chine 81%, Indonesia 85%, Malaysia 106%, Thailand 133%, Singapore 150%

FBB values: Vietnam 42%, Philippines 11%, Chine 85%, Indonesia 9%, Malaysia 38%, Thailand 47%, Singapore 95%

*Source: Wearesocial, OVUM and Industry*

**Indonesia 2018 Stats & Govt. Targets**

- Penetration rate
  - 9.38% FBB
  - 5% FTTH
  - vs 85% MBB

- 71% FBB target for Urban & 49% for Rural Household

# Current Market Dynamics of Fixed Broadband
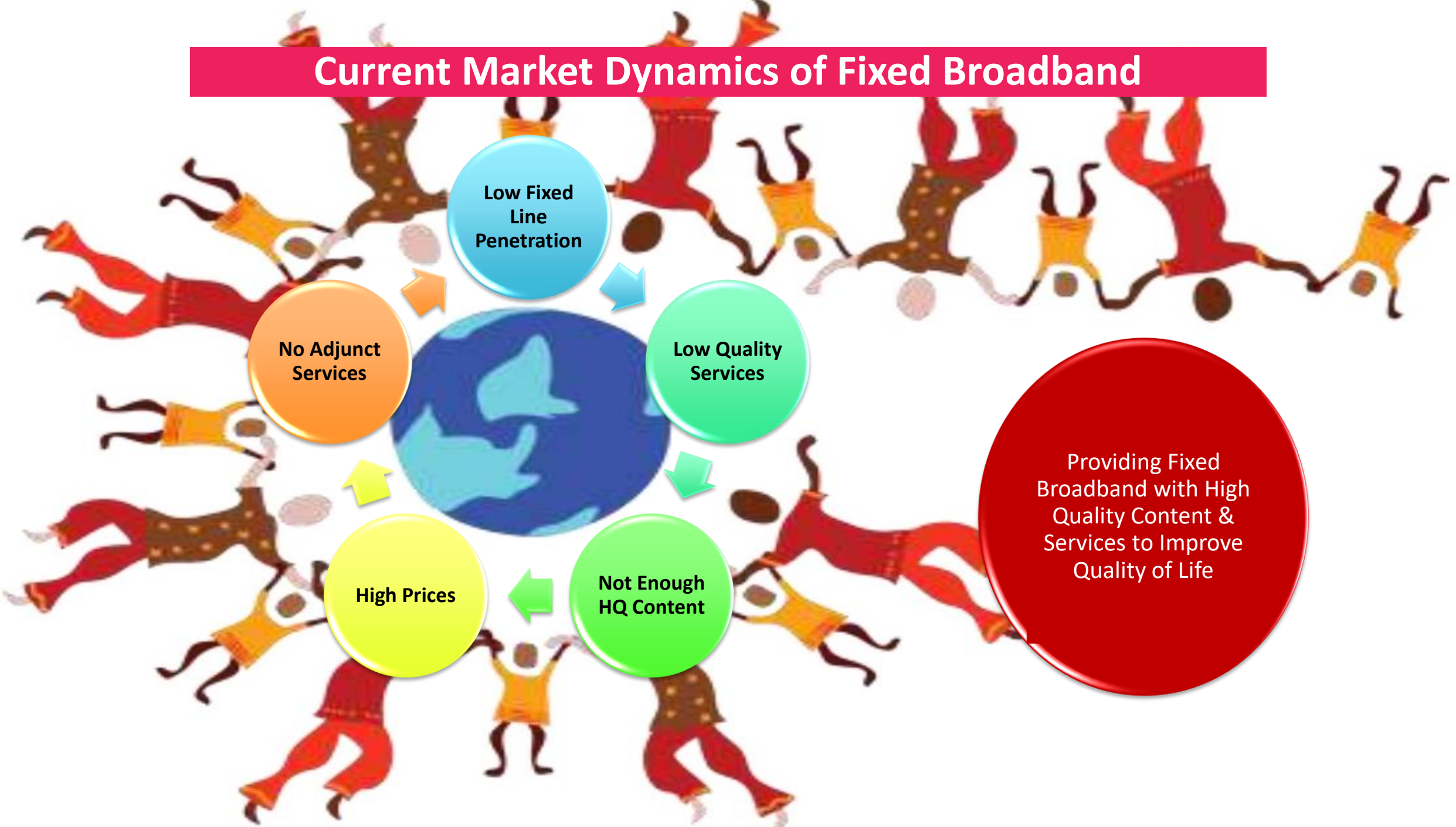
Low Fixed Line Penetration

Low Quality Services

No Adjunct Services

Not Enough HQ Content

High Prices

Providing Fixed Broadband with High Quality Content & Services to Improve Quality of Life

# WHY FIBER?
## … LOW QUALITY, HIGH PRICE → NASCENT MARKET

- **Different quality game: 10x better**
- **Affordable price: 2x better**
- **Customer service: 1+**

Speed

User Experience

Longevity

Content
HD
UHD

Source: imgkid.com

**Challenges & Issues... for creating fiber broadband infra**

Skilled Manpower Availability

Incentive for Fiber Rollout

RoW
- Coordination
- Cost
- Time

High Quality Content

# 5G vision and mapping

**Expectations**

**Services**

- Ubiquitous ultra broadband
- FTTH like fixed wireless service
- Massive IOT
- Smart Cities
- Self Driving Cars
- Seamless Cloud access

- Everywhere connectivity
- High throughput > 100 Mbps
- High Capacity to support large # of users
- Low Latency (1 to 10 ms)
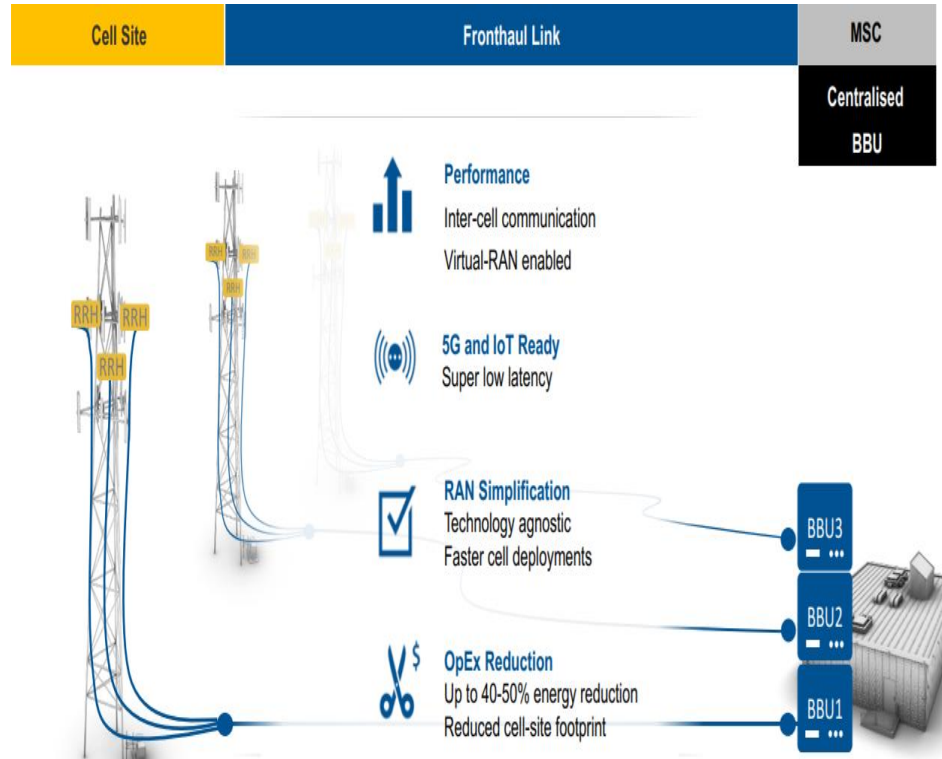- High energy efficiency to support IoT like services

**Backhaul Requirement**

- High Reliability – 6 Nines
- Ultra Low Latency
- Bandwidth on Demand
- Deep and Wide Fiber coverage
- High Capacity

# 5G and fiber broadband are complementary

## 5G Requirement

- **Front Haul (Fiber CIPRI):**
  - Super High Data Rate with
  - very Low Latency

- BBU to RRH may need **12 x P2P Core** for a Macro Site



## FTTH an Enabler for 5G

1. FTTH network is present in Data Hotspots
2. Availability of abundant fiber in and around Data Hotspots
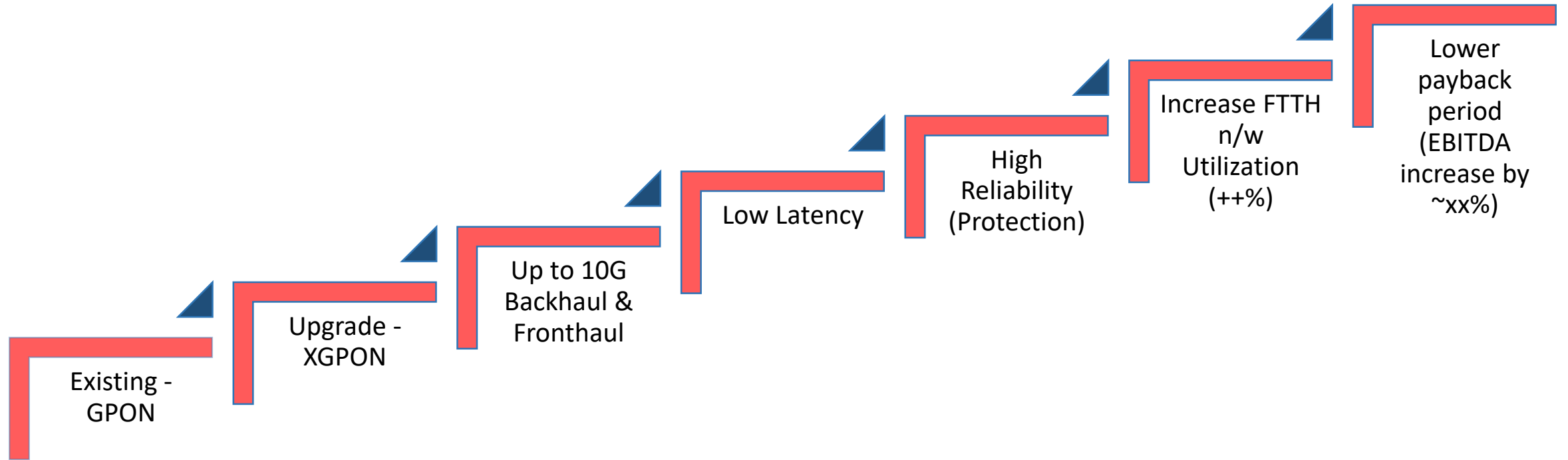3. Cost Effective Devices – ONTs and ONUs

## Improvement Needs

1. Cost Effective ONTs/ONUs
2. Reliable Power Arrangement
3. Redundancies
4. Safety of Equipment

**FTTH compliments to Fronthaul plus backhaul solution for 5G**

# Fiber broadband business case
## *Impact of Backhaul and Fronthaul*

Existing - GPON

Upgrade - XGPON

Up to 10G Backhaul & Fronthaul

Low Latency

High Reliability (Protection)

Increase FTTH n/w Utilization (++%)

Lower payback period (EBITDA increase by ~xx%)

**Using FTTH as backhaul & front haul has a positive impact on the Business case of 5G (4G) and also FTTH**

- Low cost and high BW links available to 5G as compared to fiber core or traditional transport

- Higher utilization and lower payback period for FTTH due to increased revenue

# Conclusion

- Digital Drive and New Norm is driving the Growth of Fixed Broadband

- Video is the killer Application and its "quality video experience" need Fixed Broadband as base line

- Government policy support to incentivize Fixed Broadband operator shall help deploying more fiber

- Fixed Broadband Infra sharing is the need of the hour

- 5G backhauling could be new killer application for Fixed Broadband

Thank You