

# Evolution of Internet: Journey of ISPs and Internet In Pakistan

Maroof Ali Shahani  
Chief Operating Officer



# Speaker Profile

- Doctor or an Engineer
- Aspire to do Civil Services, but then witnessed the “start of internet revolution”
- Kick started career from Supernet as a Trainee Network Engineer and then joined DANCOS online to lead ISP business/
- Working in Cybernet since Jan 2006
- CEO of TVNation
- Career spanning over more than twenty years in IT industry
- Board Member of PKIX and PKNOG
- Life's vision of educating masses and improving the society we live in

Pakistan's Journey to the internet is a Journey from:

9 kbps to 500 Mbps

# Evolution of Internet in Pakistan

Internet the form of international USENET newsgroups, was introduced in Pakistan in 1993.

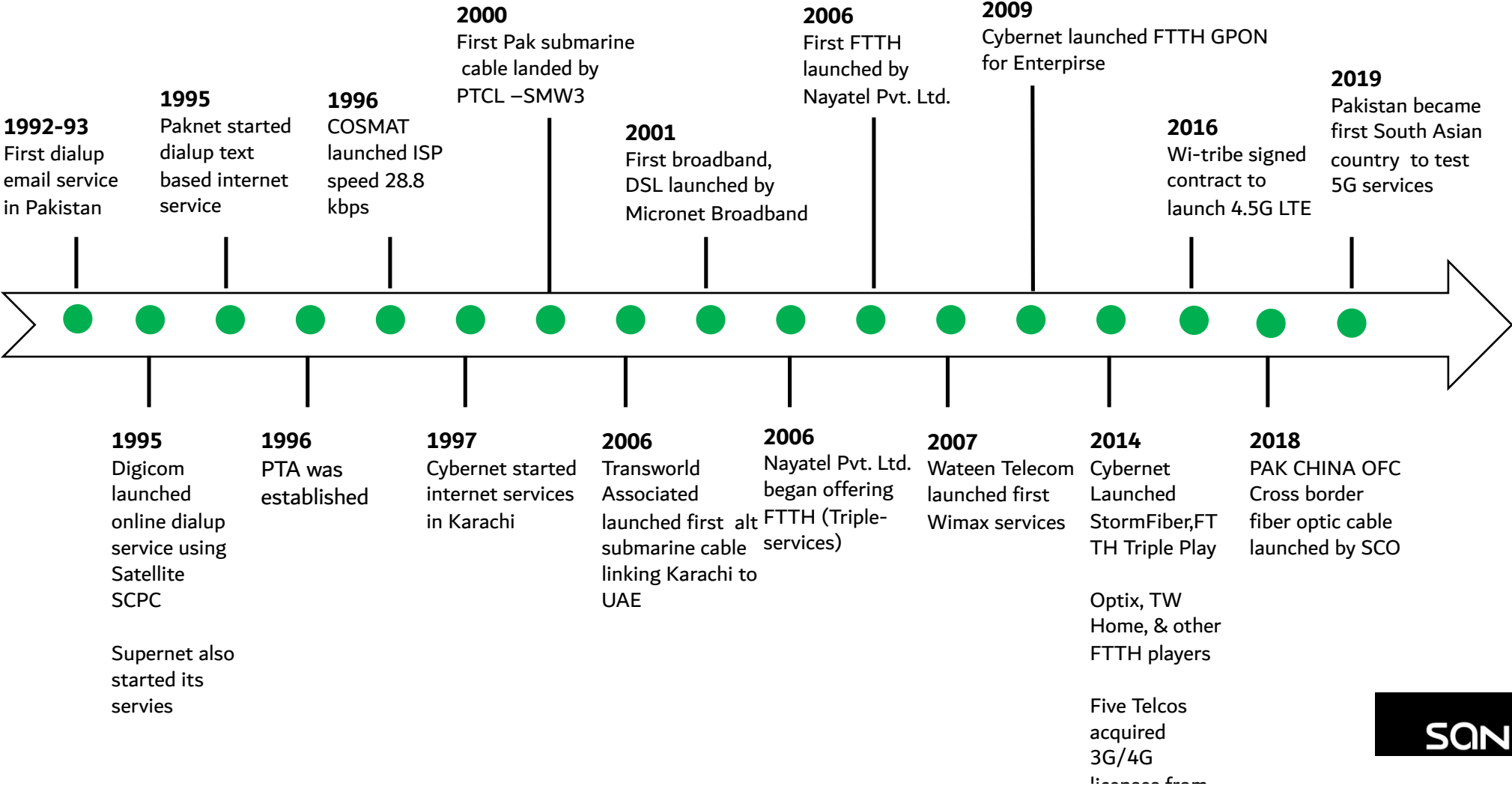
- It was meant to provide dial up and e-mail service to general public and support to projects related to education and other areas. These store and forward email services were charged by the service providers on bytes size.
- The project received funding for a few more years, and established holds in other cities such as Karachi, Lahore and Peshawar. Eventually the emergence of many more ISPs caused this program to closed down.

# Evolution of Internet in Pakistan

First Dialup Email Service was launched by Imran-Net in 1992 – 1993 from Lahore

- First dialup internet service started in Karachi in 1994, by Digicom Pakistan through direct satellite SCPC backbone link of 64 kbps.
- Engineer Nasser Khan Ghazi, was the first engineer who installed and commissioned the first-ever internet link and became the first person in Pakistan to experience online internet browsing.

# Evolution of Internet in Pakistan



# Evolution of Internet in Pakistan

**Mobile Broadband  
Played a catalyst role in  
internet penetration**

- Mobile service in Pakistan was introduced by Paktel with 1st Generation technology in 1990 followed by Instaphone. The evolution of technology, however, was fast as Mobilink entered the market carrying 2G technology in 1993.
- The 2G market got extended with the entry of other firms in the industry over the years. By 2005, a number of these companies upgraded their infrastructure to the so-called 2.5 G that contained internet connectivity through General Packet Radio Service (GPRS) on mobile phones.

# Evolution of Internet in Pakistan

## 3G & 4G Revolution in Pakistan

- 3G services launched in May 2014 in Pakistan by Ufone and then other telecom operators followed enabling the Mobile subscribers able to get higher bandwidths.
- All of the mobile operators in Pakistan now offers 4G services enabling an enormous ecosystem of mobile applications and content development in Pakistan



# Evolution of Internet in Pakistan

## 5G horizon is Pakistan

- Pakistani Mobile phone users and service providers are always on the lookout for higher data rates in mobile networks.
- The next generation of technology which is currently in the development phase is the fifth generation of cell phone technology, or simply 5G.
- It is the next major advancement in mobile telecommunication standards which will supersede 4G standards.
- Couple of 4G telco operator in Pakistan are currently working on testing 5G services in Pakistan

# Pakistan Internet Backbone

Submarine Cable	Operator	Capacity (Tbps)
SEA-ME-WE-3	PTCL	0.48
TWA-1	Transworld Associates	3.6
SEA-ME-WE-4	PTCL	1.28
IMEWE	PTCL	3.86
SEA-ME-WE-5	Transworld Associates	32
AAE-1	PTCL	40
PEACE (Pakistan & East Africa Connecting Europe) <i>in progress</i> Bridging three largest continents with the most population of Asia, Africa and Europe	Cybernet	96

Extracted from publicly available information



# Evolution of Internet in Pakistan

## So in a Nutshell

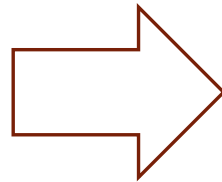
- Availability since early 1990's.
- Currently, several undersea telecommunications cables are deployed by Pakistan.
- Pakistan's existing submarine cables have the ability to provide 60 Tbps capacity, with PEACE expected to add additional 96Tbps capacity.
- Total consumption as of today is around 2.0 Tbps
- FTTH players aggressively targeting consumers with triple play services while mobile broadband offering internet with data caps

Lets look at the  
global horizon

**The world is creating a digital replica of its own faster than we all can imagine!**

## **Today**

- Smartphones
- Enterprise Applications
  - P2P



## **Tomorrow**

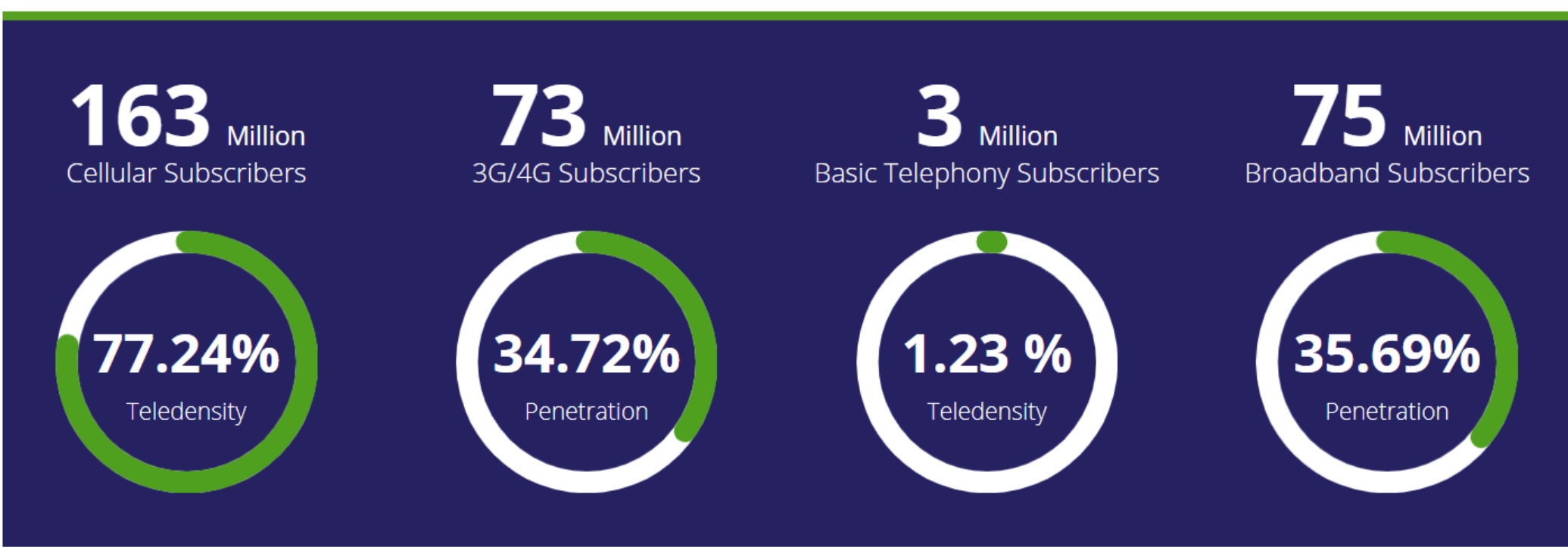
- Smart Machines
- Internet of Everything
  - Wearables
- Automated Composition Engines

## How are we placed ...

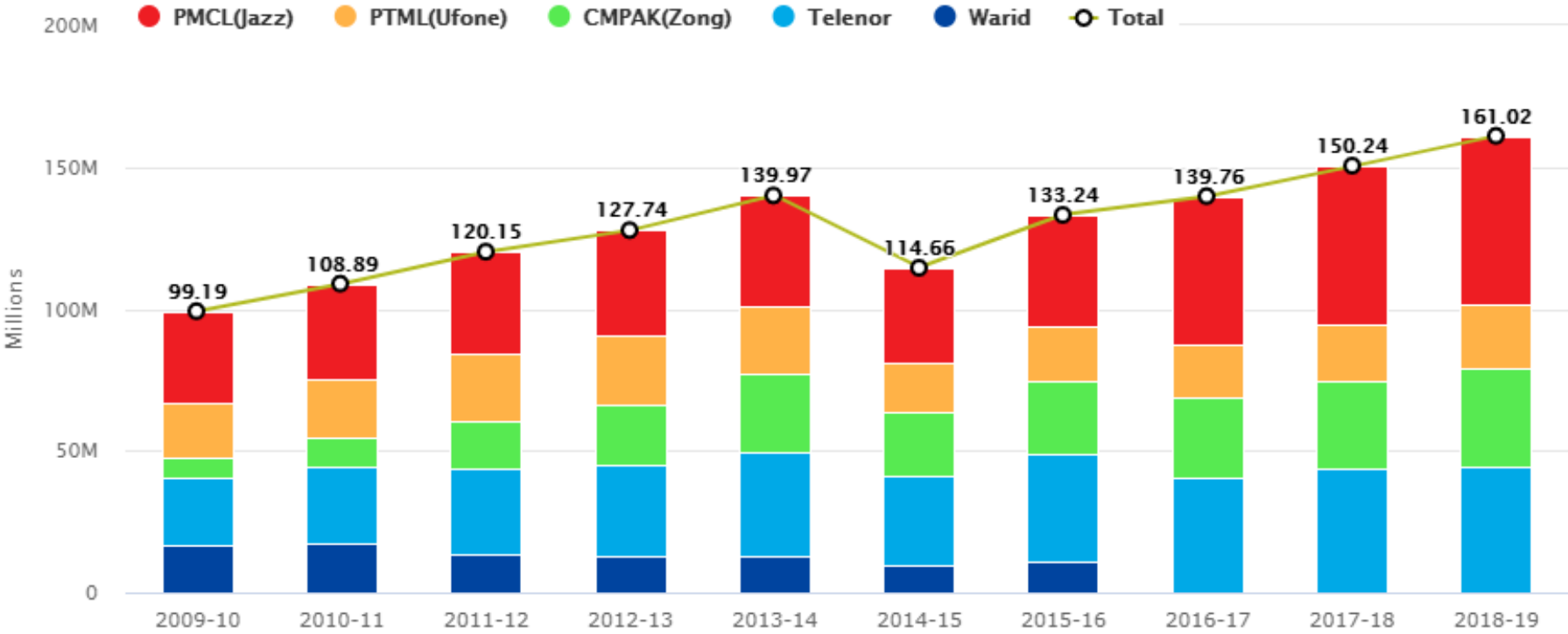
**Highest Mobile Phone  
Penetration in South Asia with  
90% Geographical Coverage  
and over 163 Millions  
Subscribers**

**The cost of Telco & Internet  
service is amongst the lowest  
in the World**

# Current Snapshot of Telecom In Pakistan

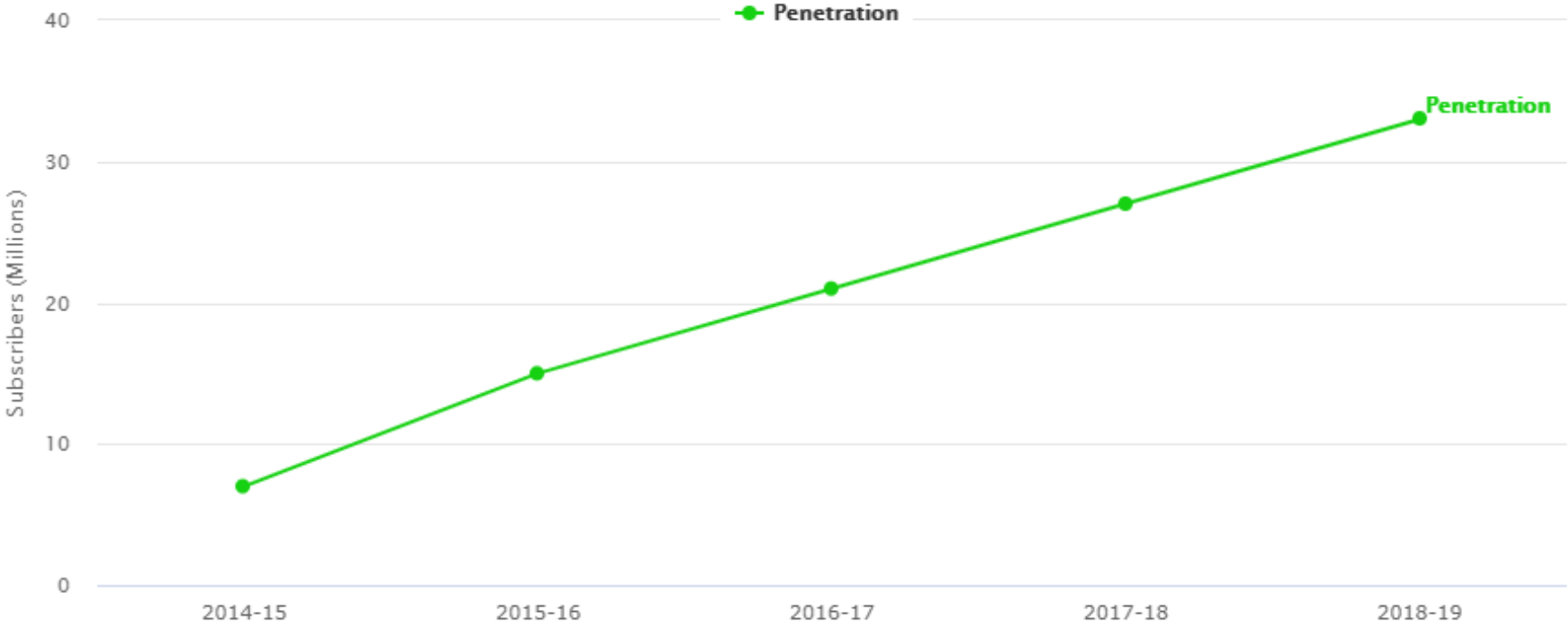


# Mobile Penetration

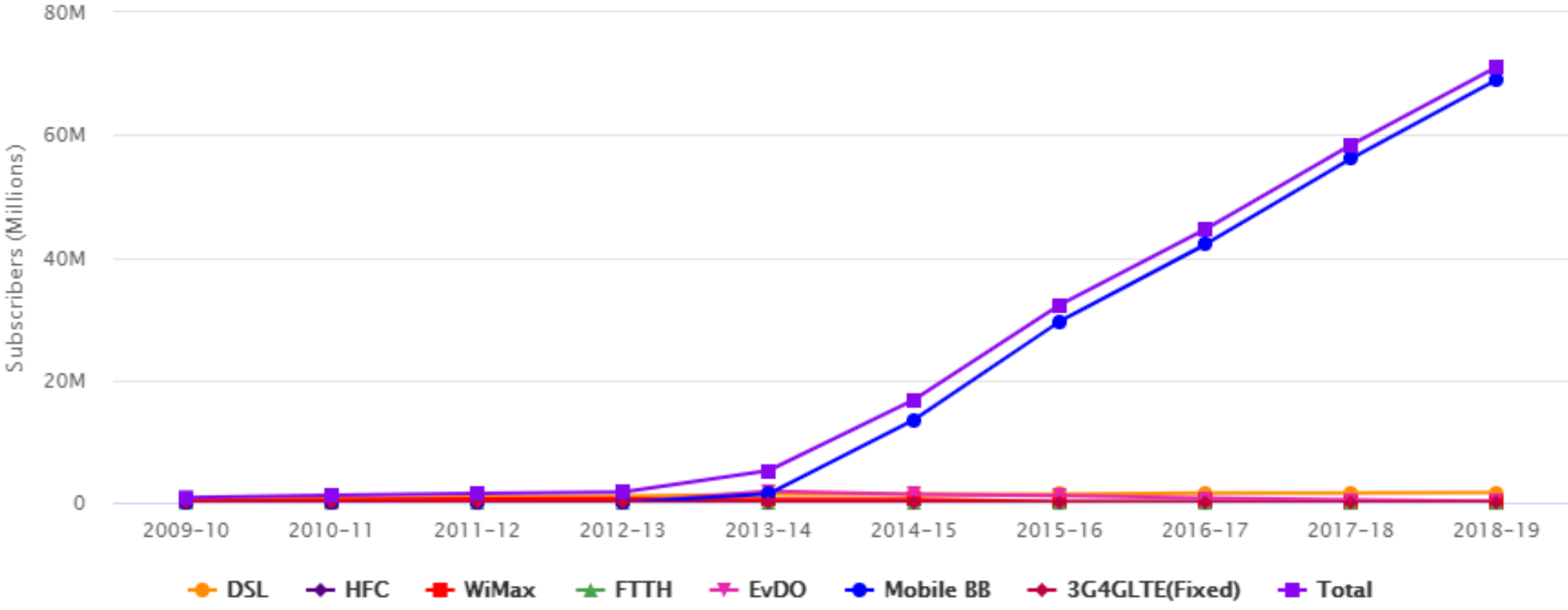




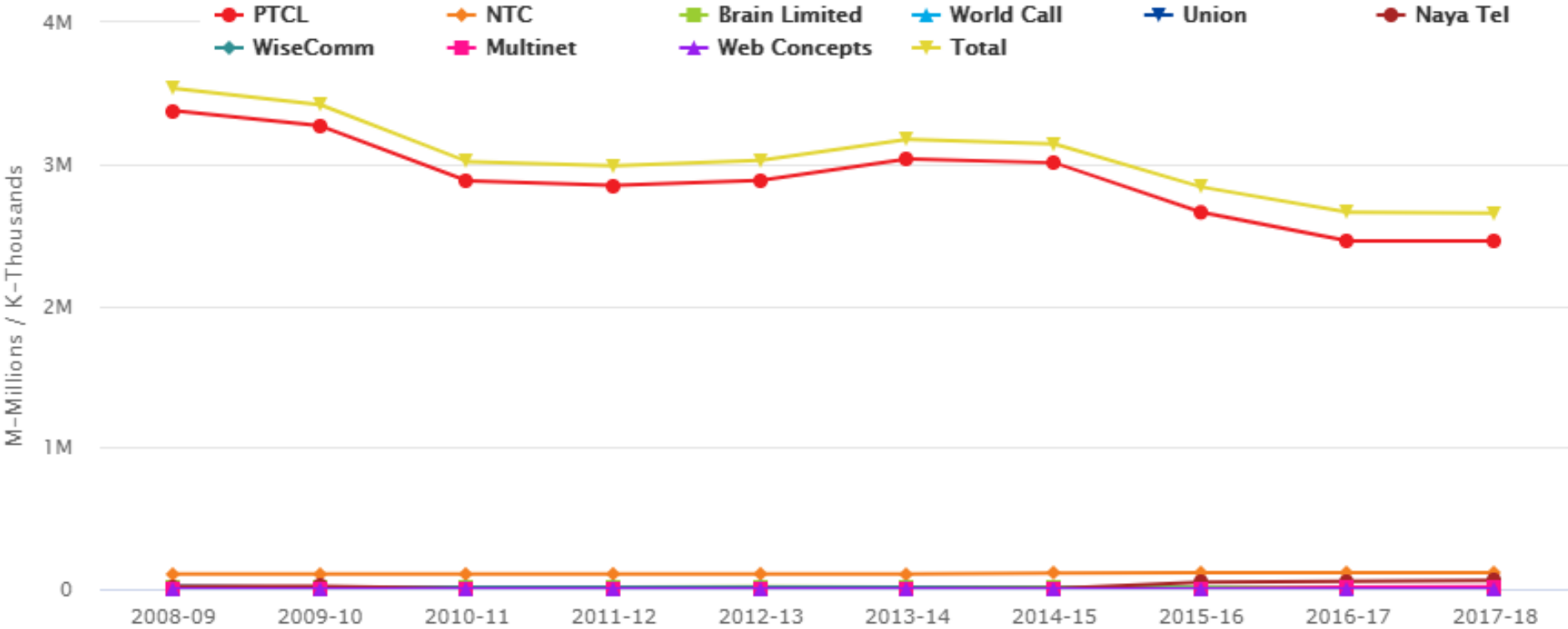
# Broadband subscribers by penetration



# Broadband subscribers by penetration



# Fixed line Subscribers



# Pakistan Government - MoITT

Pakistan Telecommunication  
Authority (PTA)

National IT Board

Universal Service Fund

National Telecom  
Corporation

Special Communication  
Organization

Ignite National  
Technology Fund

Pakistan Software  
Export Board

Telecom Foundation

Virtual University  
of Pakistan

# What is needed

Advancement in  
Innovation and R & D

- Forums like SANOG can help developing the culture
- Local NOGs/ Community Development
- Private Public partnership
- Advancement in curriculum

Improvement in laws of  
Intellectual Property  
Protection

- Focus groups needs to be created
- Involvement of industry and academia

Government regulations &  
Taxation

- Complete revamp in Taxation for operators and application service providers
- Classify telecom as an industry
- Uniform ROW policies to enable FTTH and MBB

More technology parks  
and incubator

- Need to have more Freezones, tech parks and foreign direct investment to coup up with technology advancements in the world.
- Promote Internet exchanges (PKIX) for exchange of local traffic and hosting international CDNs.

# Taxation – Areas to work upon

- State Bank of Pakistan acknowledged that taxation on ICT industry is heavy.
- Taxation is high compared to region, and also compared to other industries within Pakistan.
- Income tax holiday for Venture Capital companies
- Extension of zero-rated tax regime on IT/ITeS exports till 2025.
- 5% cash reward on IT export remittances.
- Reduction of sales tax to 5% on domestic revenues
- Interbank exchange rate to be regulated for IT industry
- Easy import/export of H/W equipment and technology –reduced import duties on electronics

**Today Internet Impacts Everything**





Thank You Note ..