ITU workshop Quality of Service and Quality of Experience

8-9 SEP 2021
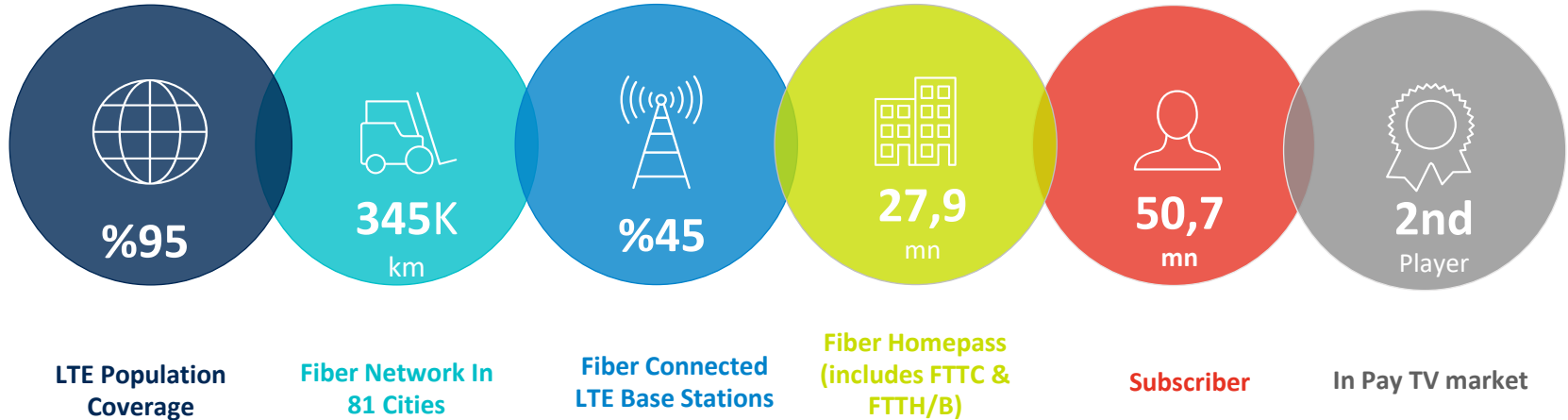
Türk Telekom Pandemic Experience

Agenda

▶ 01 Türk Telekom Highlights

▶ 02 Pandemic Period Experience

▶ 03 Data Usage Increase

▶ 04 Quality

▶ 05 Future Forsight for post Pandemic

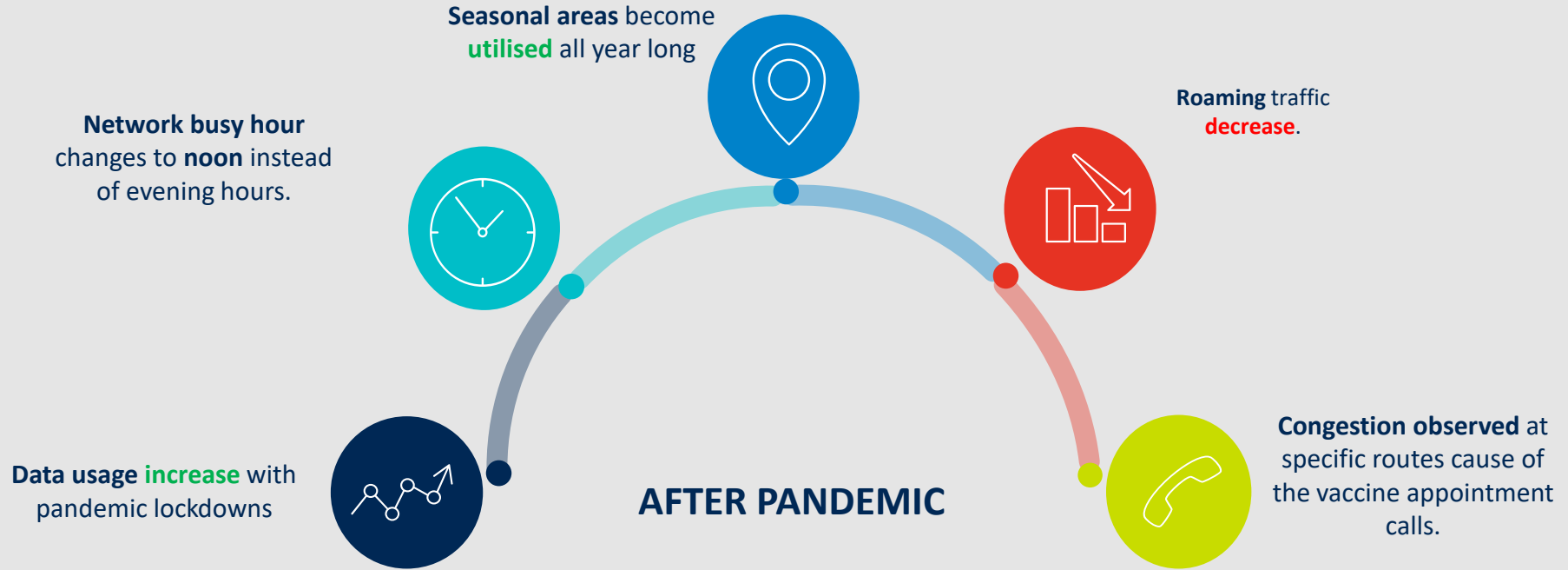# Türk Telekom Highlights:

2 M Subscriber Increase
30% Profit Increase
YoY Q2,2021

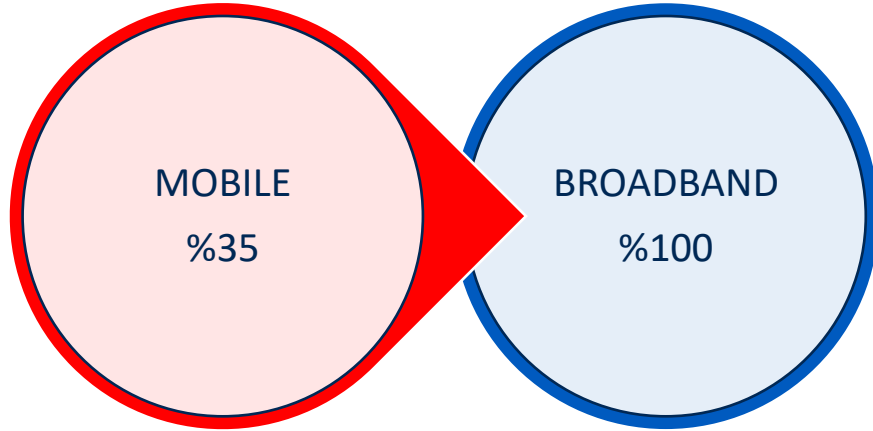|					
%95	**345K** km	**%45**	**27,9** mn	**50,7** mn	**2nd** Player
LTE Population Coverage	**Fiber Network In 81 Cities**	**Fiber Connected LTE Base Stations**	**Fiber Homepass (includes FTTC & FTTH/B)**	**Subscriber**	**In Pay TV market**

Turk Telekom as the **leader** operator in Turkey offering **integrated telecom services** have 23,4 mn mobile, 13,8mn broadband, 10,5mn Fixed Voice and 3 mn Pay TV subscriber.

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Pandemic Period Experience

Seasonal areas become **utilised** all year long

Network busy hour changes to **noon** instead of evening hours.

Roaming traffic **decrease**.

Data usage increase with pandemic lockdowns

AFTER PANDEMIC

Congestion observed at specific routes cause of the vaccine appointment calls.

Data Usage Increase

MOBILE
%35

BROADBAND
%100

Data capacity extend plans implemented earlier than the annually plans cause of the usage increase both at Fixed and Mobile network.

Data Usage Increase

➢ **Data usage controls** at different levels of network to assure none of them creates a bottleneck. (DPI,GPON,Switch,CGNAT,DNS,etc.)

➢ Caching OTT applications fastened to decrease international data usage and host traffic inside country. Caching mechanism also helps to improve quality of the applications , we observe better values at RTT and retransmission values.

OTT Quality

➢ Cause of the **online application usage** (Education,meeting,gaming..etc) **increase**,

➢ We begin to **monitor application based quality at different levels**.

➢ We **add subscriber and Dslam based follow ups to protocol** (TCP, UDP, QUIC, HTTP, HTTPS,etc.) based KPI's

➢ **Upload speed increased 100%** to avoid latency which will cause of the dense of Education and Meeting applications usage

Quality

➤ **All capacity metrics** begin to **observe hourly ,** especially cause of the fast data increase.

➤ **Basic network KPI's observed quarter hourly** instead of hourly.
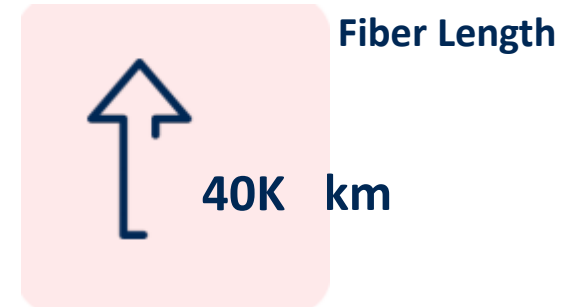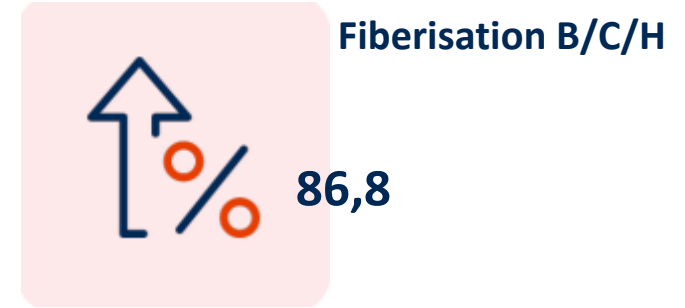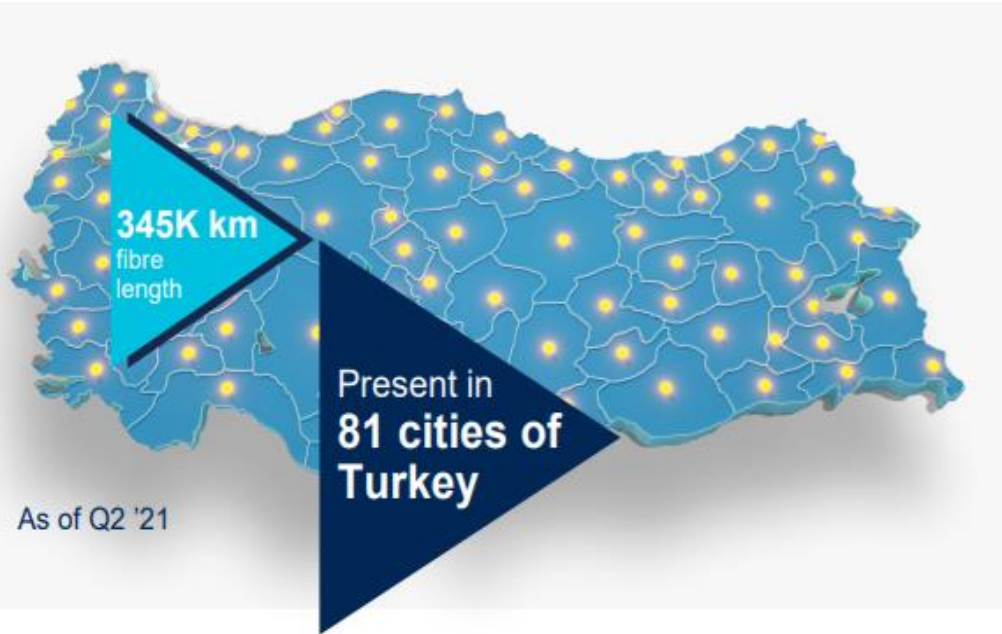(CSR, Location update, pan & pbn & interconnection utilisation)

Benchmark Test

➢ Benchmark **test utility increased** and focus on **highways** due to usage of personal automobiles instead of planes and trains.

➢ Investment plans reorganised cause of the traffic increase at **seasonal areas** and **highways**.

Fiberisation

Fiber length and Fiberisation Rate

345K km fibre length

Present in **81 cities of Turkey**

As of Q2 '21

Fiberisation B/C/H

86,8

Fiber Length

40K km

Changes at the # of Homepass

According to FTTH Council Europe September 2020 report, Turkey is the fifth country within 39 European countries by 1.2M homepass increase.And also sixth at homepass number.

**FTTH/B Home Pass Number Change**
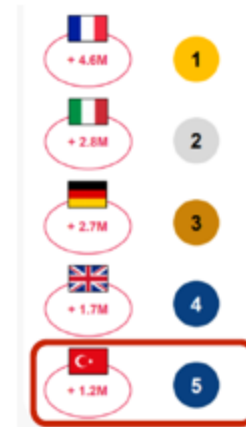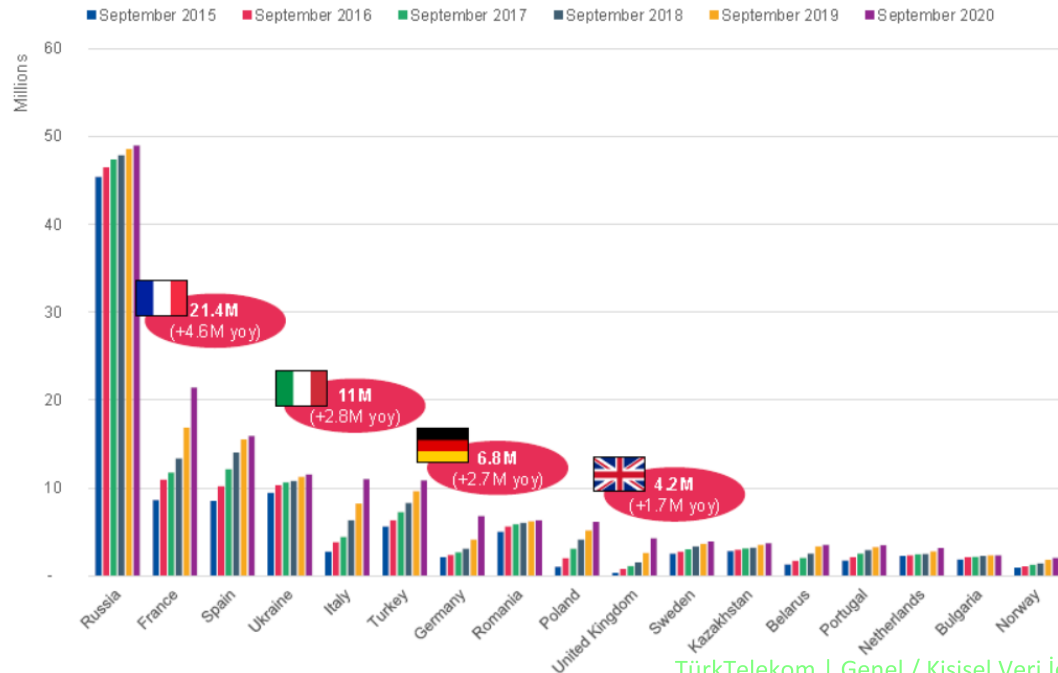
Source: FTTH Council Europe Report – Sept'20

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Subscriber Change

According to FTTH Council Europe September 2020 report , Turkey is the fourth country within 39 European countries by 718K subscriber increase,And also fourth at subscriber number.

FTTH/B subscriber change

Source: FTTH Council Europe Report – Sept'20

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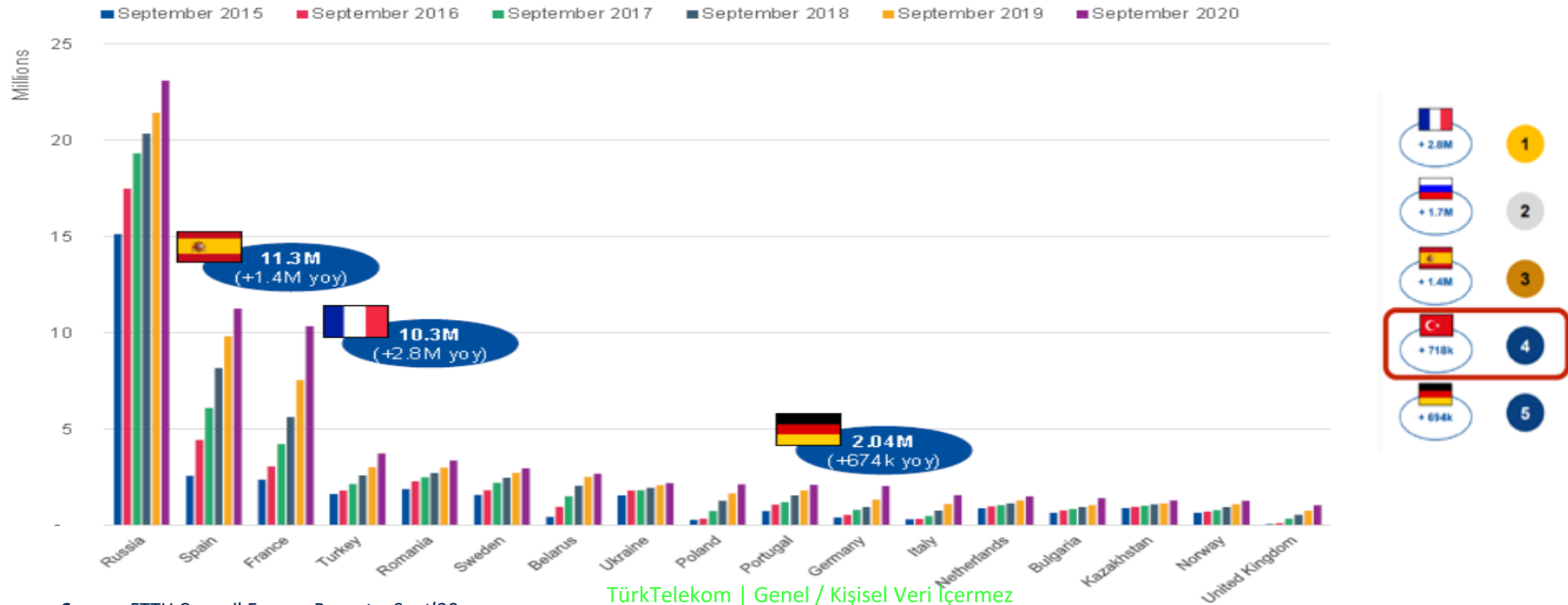
TT ONLINE Application

▶ Continuous expansion of digital services for **best in class customer experience**

▶ **One login** - accessing all Türk Telekom products from mobile and broadband to fixed voice and TV

▶ **Online Transactions Application** - a wide range of services: invoice payments, TL uploads, recontracting, upselling and application for new subscriptions

16 mn	52 mn	80%	40% YoY increase
Unique users in Q2 '21[1]	Downloads as of Q2 '21	The share of collections through digital channels[2]	TL uploads and invoice payments via online channels in Q2 '21

[1] Online Transaction Application 3-Month active user
[2] Share in the consumer segment

Türk Telekom
Değeri Hissettir

Future Forsight

➢ 48% believe that they will primarily work remotely.

➢ 46% think that all their entertainment activities will happen online.

➢ 57% will turn to e-learning and online educational programs when looking to get a degree or practicing up-skilling.

➢ 73% will pay more attention to online security and privacy.

*This research is based on an online survey conducted between October 16, 2020– January 20, 2021, with respondents aged 15–79 years old and published by Ericcson as the Future Urban Reality

Thank you!