

# **Mobile Internet Connectivity Report**

## **(Jan- Mar, 2020)**



**Division of Telecom & Space (DoTS)**  
**Department of IT and Telecom**

## **Executive Summary**

In compliance to the instruction of the Hon'ble Prime Minister to check and monitor the quality of the Internet in the Dzongkhags, the DITT/MoIC has prepared the twelfth report for this fiscal year based on data inputs collected by the Dzongkhags.

## **Objective of the study**

To study the quality of mobile Internet connectivity in Bhutan

## **Methodology**

A dashboard was prepared for monitoring/measuring the quality of telecom services based on different parameters listed as follows:

- Internet speed using the OpenSignal app.
- Call blocking rate
- Call dropping rate
- Voice Quality
- SMS received/sent failure rate
- Signal coverage
- Switchover

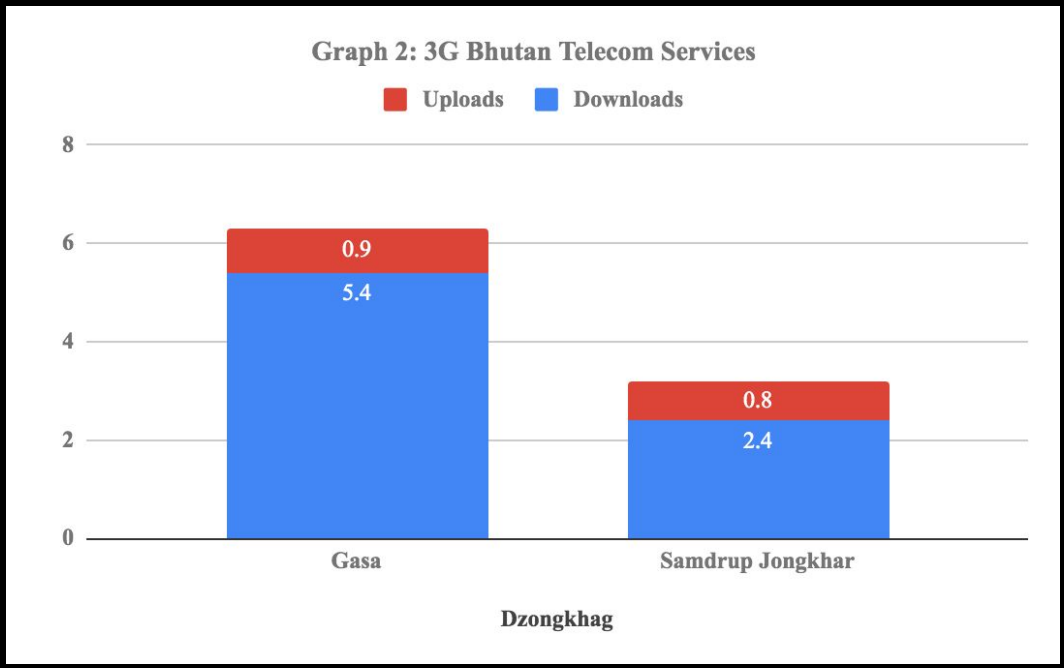
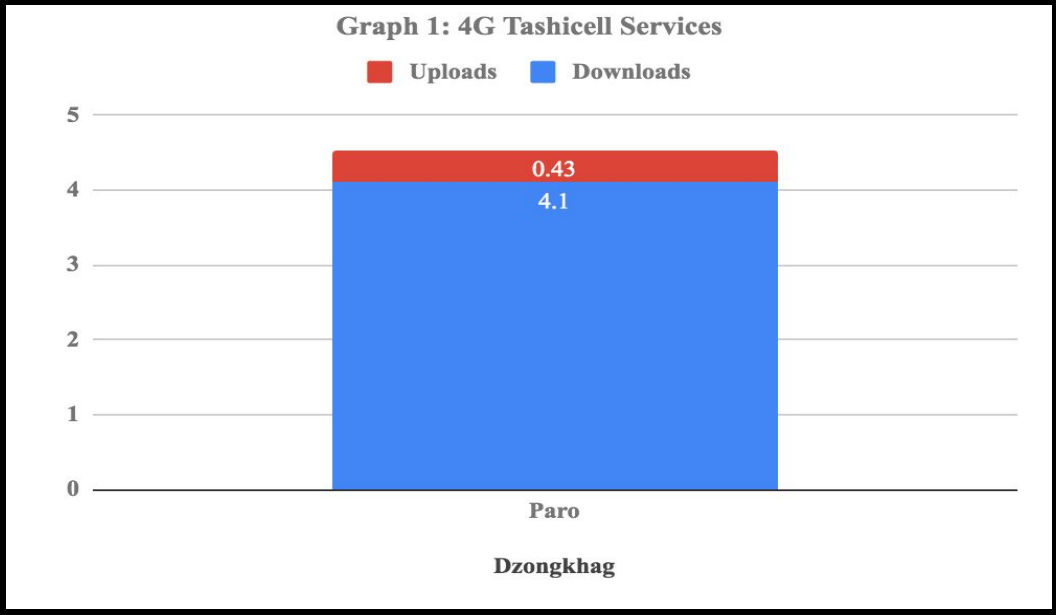
This dashboard is being shared with the Dzongkhag ICT Officers. The ICT officers were given instructions on the usage of the dashboard via email, letter and telephone after which they were asked to carry out and record measurements on above parameters from time to time on a monthly basis starting July, 2016. This data collection is an ongoing process and will be refined from time to time.

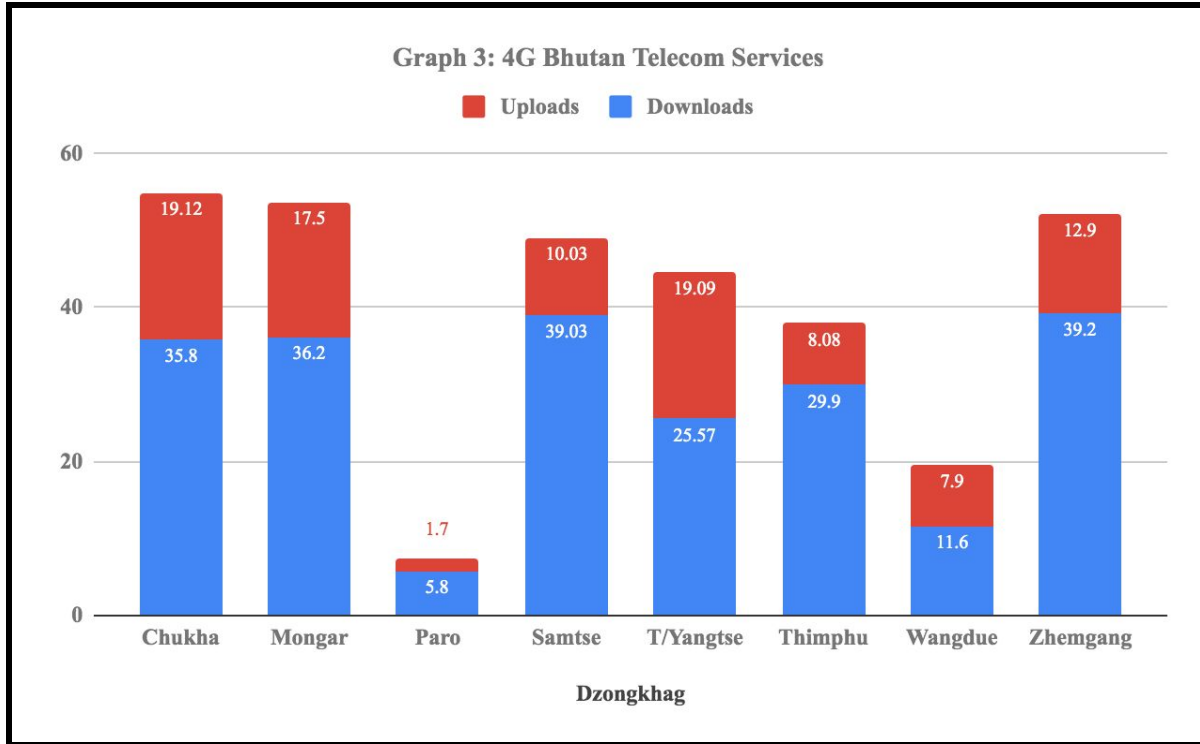
In this report, we have displayed the lowest & highest average mobile Internet speed for twenty Dzongkhags in the form of a column chart. Data has been analysed and compiled as shown below based on inputs provided by the Dzongkhag ICT Officers.

## Key Findings

Based on the data submitted by all the twenty Dzongkhags ICT Officers (avg. mobile Internet speed for B-Mobile and TashiCell services has been compiled in the table below.

| Mobile Internet speed (Avg.) |                   |                  |                |                  |                |                  |                |                  |                |
|------------------------------|-------------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|
| Sl. No.                      | Dzongkhags        | TashiCell        |                |                  |                | B-Mobile         |                |                  |                |
|                              |                   | 3G               |                | 4G               |                | 3G               |                | 4G               |                |
|                              |                   | Downloads (Mbps) | Uploads (Mbps) | Downloads (Mbps) | Uploads (Mbps) | Downloads (Mbps) | Uploads (Mbps) | Downloads (Mbps) | Uploads (Mbps) |
| 1                            | <b>Bumthang</b>   | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 2                            | <b>Chukha</b>     | 0                | 0              | 0                | 0              | 0                | 0              | 35.8             | 19.12          |
| 3                            | <b>Dagana</b>     | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 4                            | <b>Gasa</b>       | 0                | 0              | 0                | 0              | 5.4              | 0.9            | 0                | 0              |
| 5                            | <b>Haa</b>        | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 6                            | <b>Lhuntse</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 7                            | <b>Mongar</b>     | 0                | 0              | 0                | 0              | 0                | 0              | 36.2             | 17.5           |
| 8                            | <b>Paro</b>       | 0                | 0              | 4.1              | 0.43           | 0                | 0              | 5.8              | 1.7            |
| 9                            | <b>P/gatshel</b>  | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 10                           | <b>Punakha</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 11                           | <b>S/Jongkhar</b> | 0                | 0              | 0                | 0              | 2.4              | 0.8            | 0                | 0              |
| 12                           | <b>Samtse</b>     | 0                | 0              | 0                | 0              | 0                | 0              | 39.03            | 10.03          |
| 13                           | <b>Sarpang</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 14                           | <b>T/Yangtse</b>  | 0                | 0              | 0                | 0              | 0                | 0              | 25.57            | 19.09          |
| 15                           | <b>Tashigang</b>  | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 16                           | <b>Thimphu</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 29.9             | 8.08           |
| 17                           | <b>Trongsa</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 18                           | <b>Tsirang</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 0                | 0              |
| 19                           | <b>Wangdue</b>    | 0                | 0              | 0                | 0              | 0                | 0              | 11.6             | 7.9            |
| 20                           | <b>Zhemgang</b>   | 0                | 0              | 0                | 0              | 0                | 0              | 39.2             | 12.9           |





The following observations were made from the above graphs:

1. Paro dzongkhag has only provided information on 4G Tashicell services with avg. upload speed of 0.43Mbps and 4.1 Mbps of avg. download speed.
2. Gasa dzongkhag has observed both highest avg. download and upload speeds of 5.4 Mbps and 0.9Mbps on 3G B-Mobile services.
3. Samdrup Jongkhar has observed both lowest avg. download and avg. upload speed of 2.4Mbps and 0.8Mbps on 3G B-Mobile Services.
4. Zhemgang dzongkhag has observed highest avg. download speed with 39.2 Mbps and lowest avg. download speeds of 5.8Mbps by Paro dzongkhag for 4G B-Mobile Services.
5. Chukha dzongkhag has observed highest avg. upload speed with 19.12 Mbps and lowest speed for paro dzongkhag with 1.7Mbps on 4G B-Mobile Services.
6. Most of the dzongkhags has observed good voice quality except for Mongar dzongkhag with poor voice quality on Bhutan Telecom network services.
7. None of the dzongkhag has provided information on 3G Tashicell services

8. Dzongkhag ICTOs of Bumthang, Dagana, Haa, Lhuntse, Pemagatshel, Tashigang, Tsirang, Trongsa, Samtse and Sarpang dzongkhag has not provided any information/data for January-March 2020.

### **Conclusion**

From this report, it has been observed that the download speed is higher than the upload speed in most of the dzongkhags, as would be preferred by the end users. An inconsistency is observed in the data rates which could be due to network issues or events like higher access at certain times.