

Mobile Internet Connectivity Report

(January - March, 2018)



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 Internet in the Dzongkhags, the DITT/MoIC has prepared the seventh report for this fiscal year based on data input 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 reports, we have displayed the five lowest & five highest average mobile Internet speed from the twenty Dzongkhags in the form of column chart. Based on inputs provided by the Dzongkhag ICT Officers, data has been analysed and compiled as shown below.

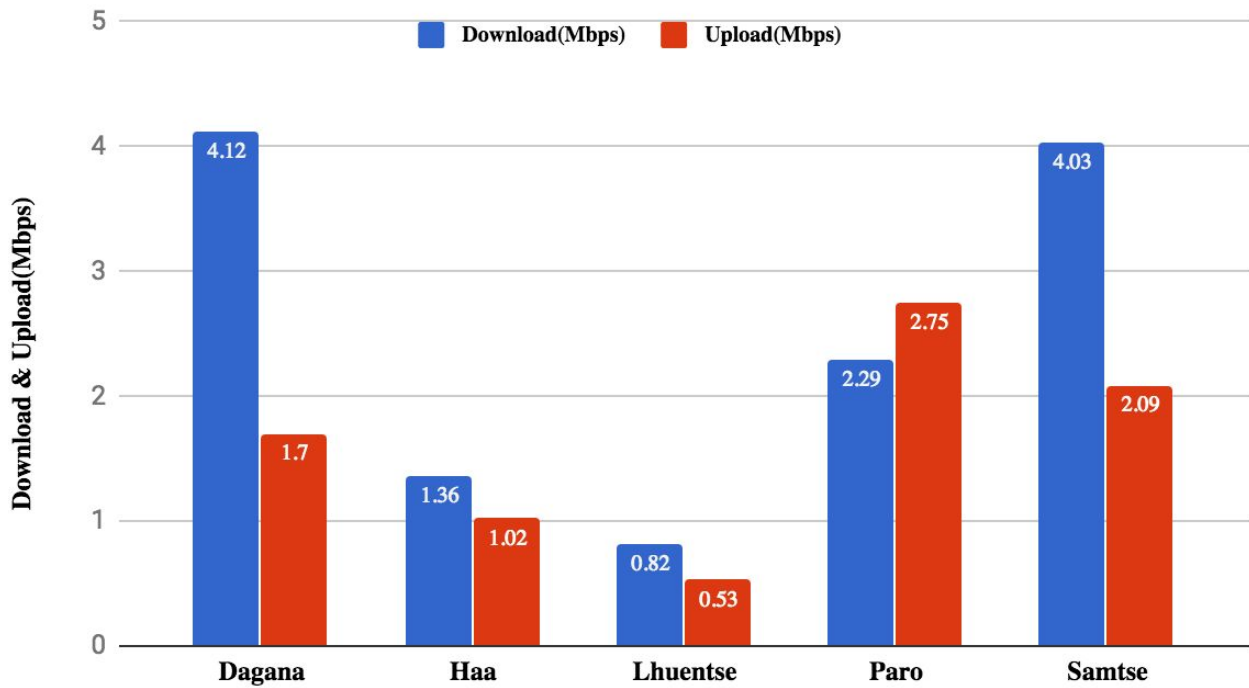
Key Findings

Based on the data submitted by all the twenty Dzongkhags (average mobile Internet speed (upload speed and download speed)of each dzongkhag has been compiled in Table 1 below.

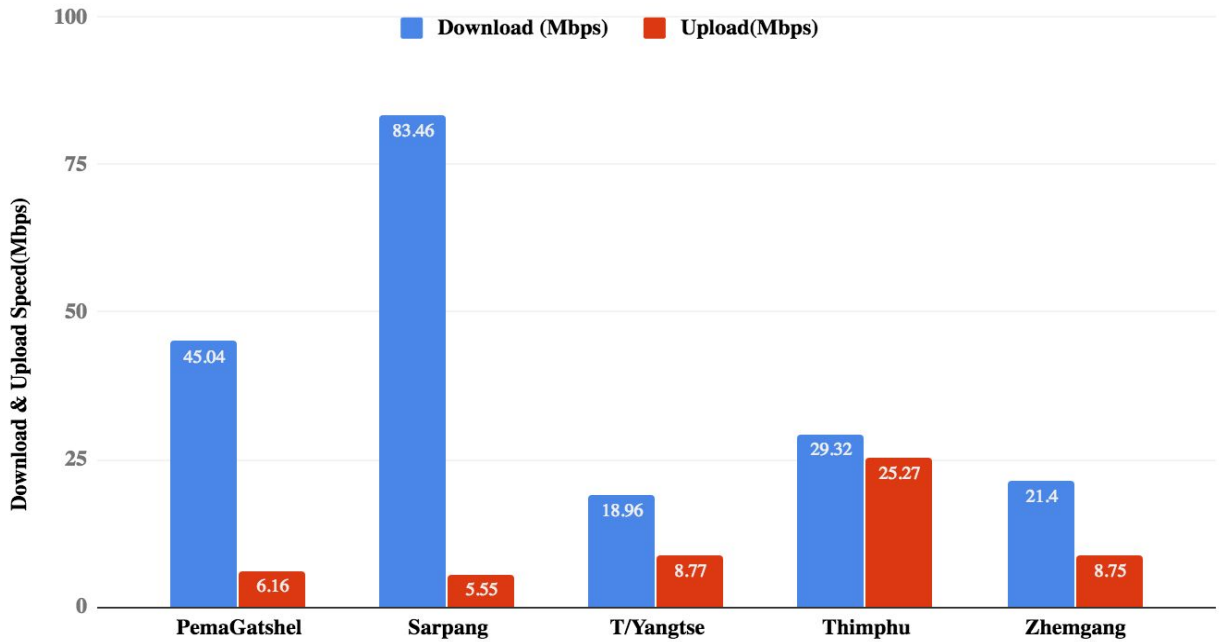
Dzongkhag	Mobile Internet speed (Avg.)	
	Download (Mbps)	Upload(Mbps)
Bumthang	4.95	5.59
Chhukha	17.44	3.55
Dagana	4.12	1.70
Gasa	6.20	9.51
Haa	1.36	1.02
Lhuentse	0.82	0.53
Mongar	8.33	19.03
Paro	2.29	2.75
PemaGatshel	45.04	6.16
Punakha	2.72	4.07
Samdrup Jongkhar	4.92	1.22
Samtse	4.03	2.09
Sarpang	83.46	5.55
T/Yangtse	18.96	8.77
Tashigang	14.31	8.55

Thimphu	29.32	25.27
Trongsa	Data Not Provided	Data Not Provided
Tsirang	12.78	2.65
Wangdue Phodrang	4.24	9.17
Zhemgang	21.40	8.75

Table 1: Average upload and download speed in Mbps per Dzongkhag



Graph 1: Five Dzongkhags with lowest average speeds



Graph 2: Five Dzongkhags with the Highest Average Speeds

The following observations were made from the above graphs:

1. The overall voice quality services is good in every Dzongkhags
2. A highest average upload speed of 25.27Mbps has been observed in Thimphu and a lowest average upload speed of 0.53 Mbps has been observed in Lhuentse.
3. A highest average download speed of 83.46Mbps has been observed in Sarpang and a lowest average download speed of 0.83 has been observed in Lhuentse.
4. The download speed is noted to be higher than the upload speed in most of the dzongkhags.

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 issue or events like higher access at certain times.

Constraints

This study has been limited by following constraints:

- Inconsistent and irregular internet speed measurements.
- Some concerned Dzongkhags ICT Officers failed to input the measurements.