

Mobile Internet Connectivity Report

(Oct- December, 2019)



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 eleventh 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.

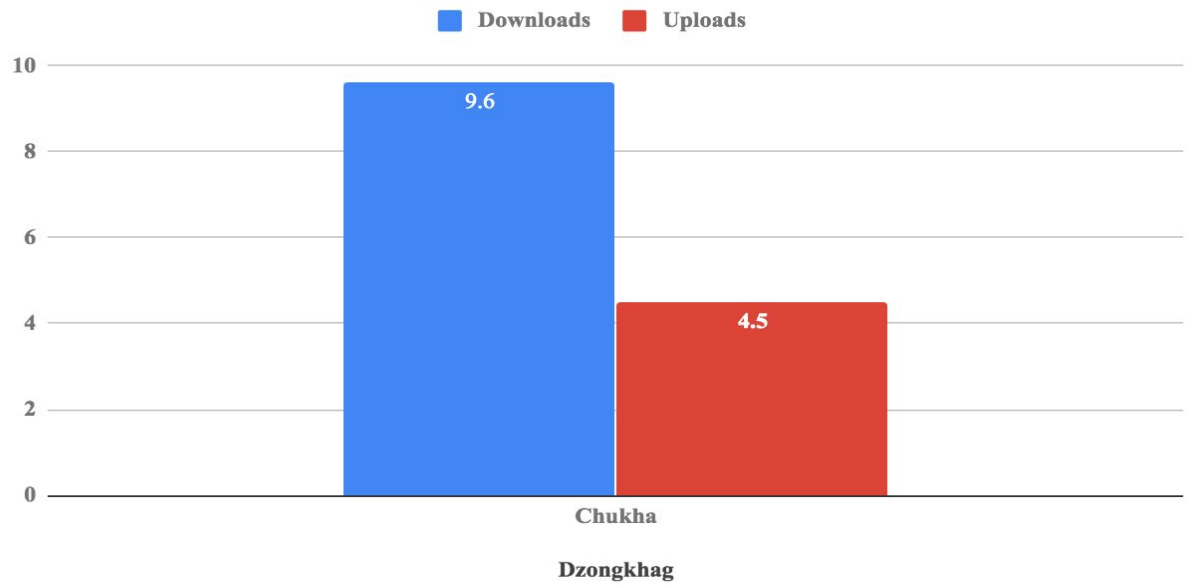
In this report, we have displayed the lowest & highest average mobile Internet speed for twenty Dzongkhags in the form of column chart. Data has been analysed and compiled as shown below based on inputs provided by the Dzongkhag ICT Officers.

Key Findings

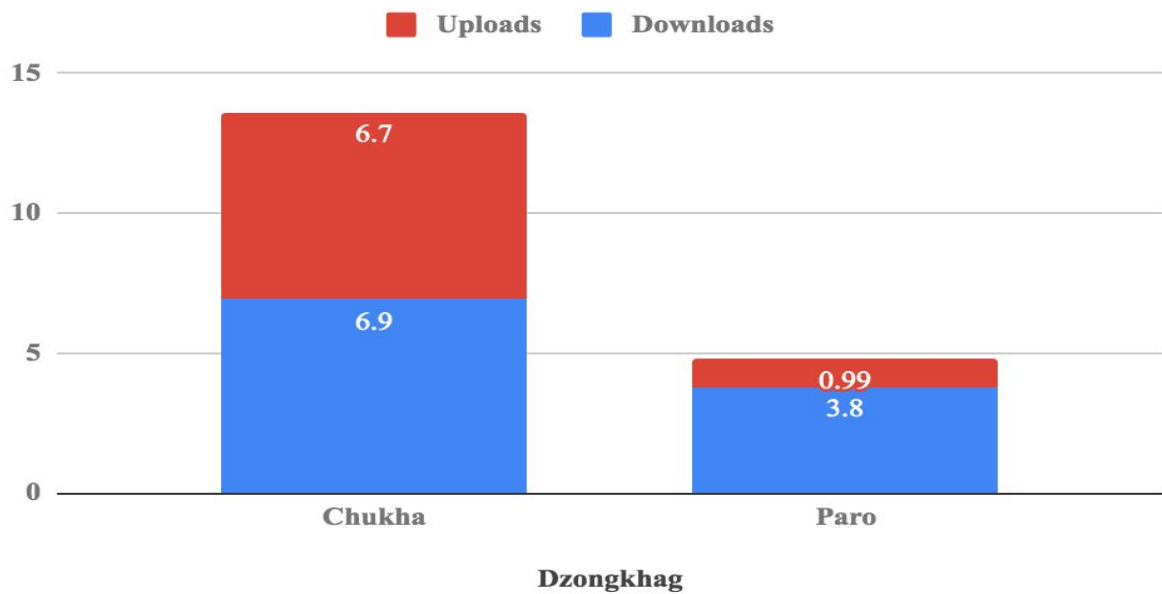
Based on the data submitted by all the twenty Dzongkhags ICT Officers (avg. mobile Internet speed for B-Mobile and TashiCell services has been compiled in the table below.

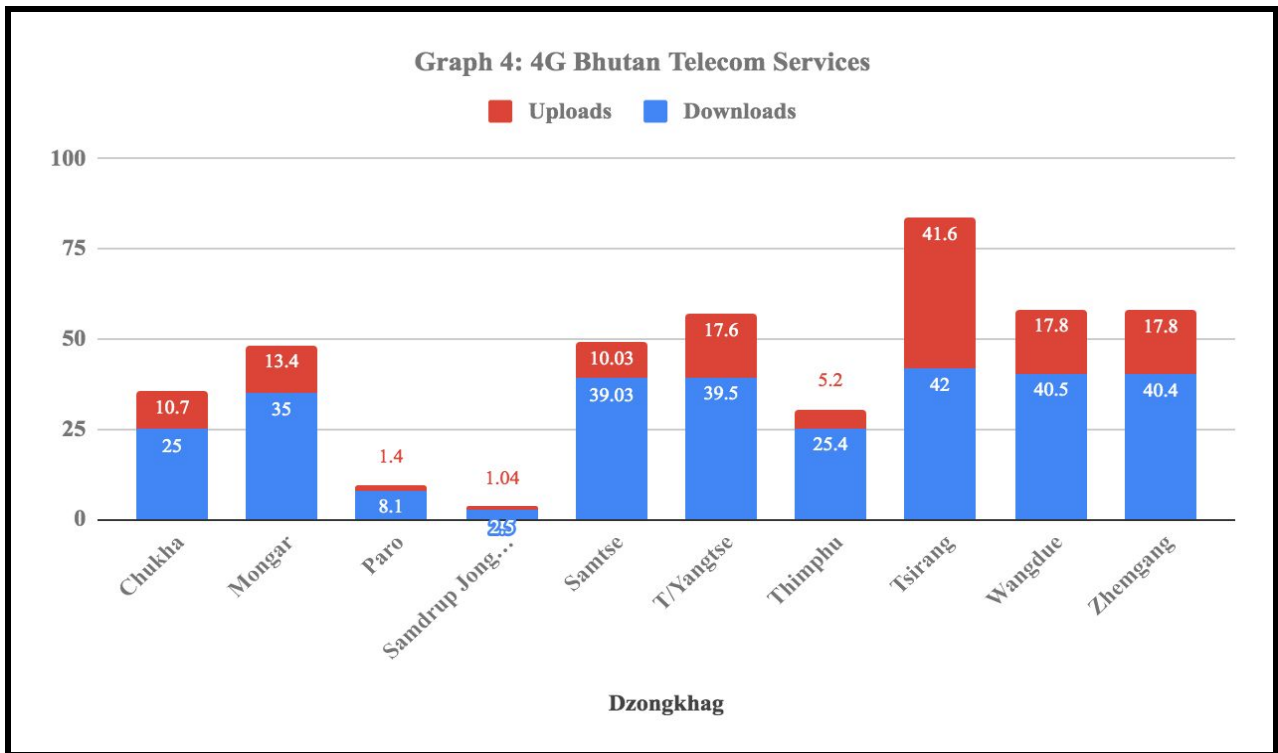
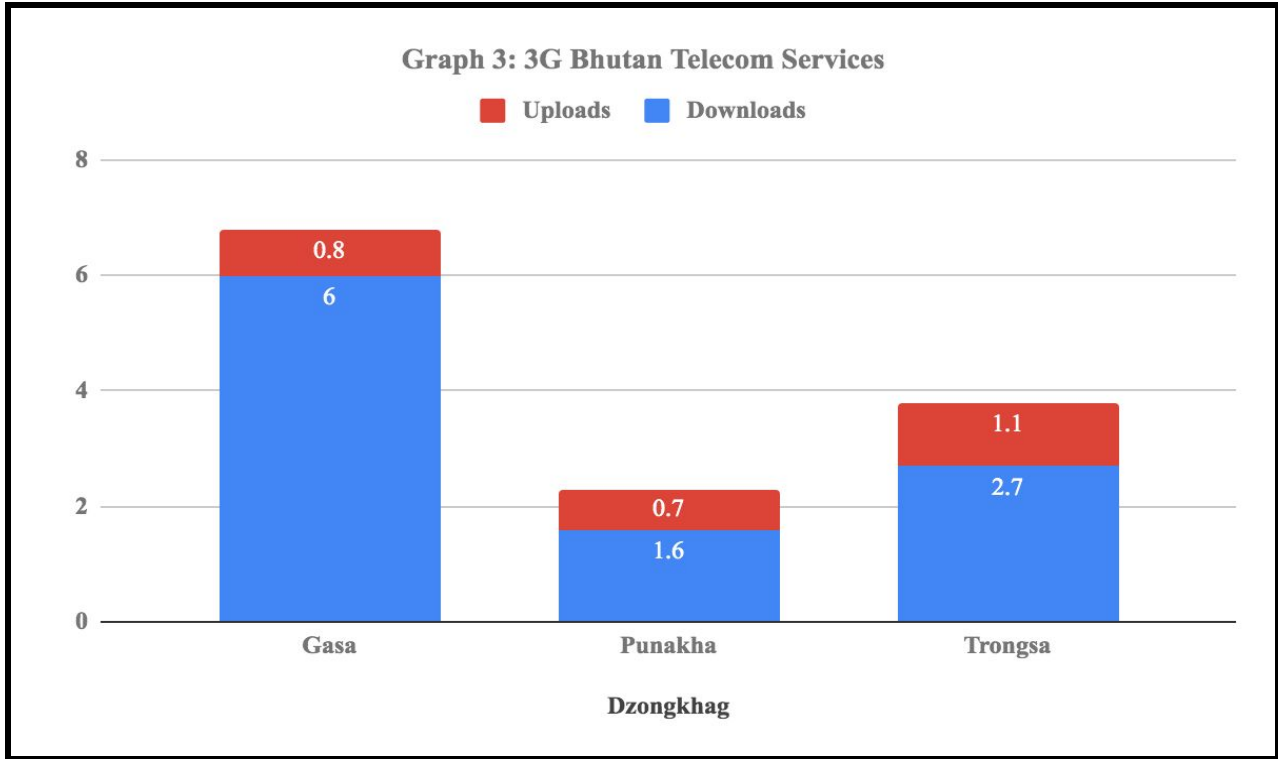
Mobile Internet speed (Avg.)									
Sl. No.	Dzongkhags	TashiCell				B-Mobile			
		3G		4G		3G		4G	
		Downloads (Mbps)	Uploads (Mbps)	Downloads (Mbps)	Uploads (Mbps)	Downloads (Mbps)	Uploads (Mbps)	Downloads (Mbps)	Uploads (Mbps)
1	Bumthang	0	0	0	0	0	0	0	0
2	Chukha	9.6	4.5	6.9	6.7	0	0	25	10.7
3	Dagana	0	0	0	0	0	0	0	0
4	Gasa	0	0	0	0	6	0.8	0	0
5	Haa	0	0	0	0	0	0	0	0
6	Lhuntse	0	0	0	0	0	0	0	0
7	Mongar	0	0	0	0	0	0	35	13.4
8	Paro	0	0	3.8	0.99	0	0	8.1	1.4
9	P/gatshel	0	0	0	0	0	0	0	0
10	Punakha	0	0	0	0	1.6	0.7	0	0
11	S/Jongkhar	0	0	0	0	0	0	2.5	1.04
12	Samtse	0	0	0	0	0	0	39.03	10.03
13	Sarpang	0	0	0	0	0	0	0	0
14	T/Yangtse	0	0	0	0	0	0	39.5	17.6
15	Tashigang	0	0	0	0	0	0	0	0
16	Thimphu	0	0	0	0	0	0	25.4	5.2
17	Trongsa	0	0	0	0	2.7	1.1	0	0
18	Tsirang	0	0	0	0	0	0	42	41.6
19	Wangdue	0	0	0	0	0	0	40.5	17.8
20	Zhemgang	0	0	0	0	0	0	40.4	17.8

Graph 1: 3G TashiCell Services



Graph 2: 4G Tashicell Services





The following observations were made from the above graphs:

1. Chukha dzongkhag has only provided information on 3G Tashicell services with avg. download speeds of 9.6 Mbps and avg. upload speeds of 4.5Mbps.
2. Trongsa dzongkhag has observed highest avg. upload speed with 1.1 Mbps and lowest for Punakha dzongkhag with 0.7 Mbps on 3G B-Mobile Services.
3. Gasa dzongkhag observed highest avg. downloads with 6 Mbps and lowest for Punakha with 1.6Mbps on 3G B-Mobile Services.
4. Chukha dzongkhag has observed both highest avg. upload and downloads speeds of 6.7 Mbps and 6.9 Mbps as compared to Paro dzongkhag with 0.99Mbps of avg. uploads and 3.8 Mbps of avg. download speeds on 4G TashiCell Services.
5. Tsirang dzongkhag has observed highest avg. uploads speed with 41.6 Mbps and lowest speed for Samdrup Jongkhar dzongkhag with 1.04 Mbps on 4G B-Mobile Services.
6. Tsirang dzongkhag has observed highest avg. downloads speed with 42 Mbps and lowest speed for Samdrup Jongkhar dzongkhag with 2.5Mbps on 4G B-Mobile Services.
7. Most of the dzongkhags has observed good voice quality except for Tsirang dzongkhag with frequent disturbances and call drop in both the telecommunication network services.
8. Dzongkhag ICTOs of Bumthang, Dagana, Haa, Lhuntse, Pemagatshel, Tashigang and Sarpang dzongkhag has not provided any information/data for October-December 2019.

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.