

Mobile Internet Connectivity Report

(October- December, 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 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.

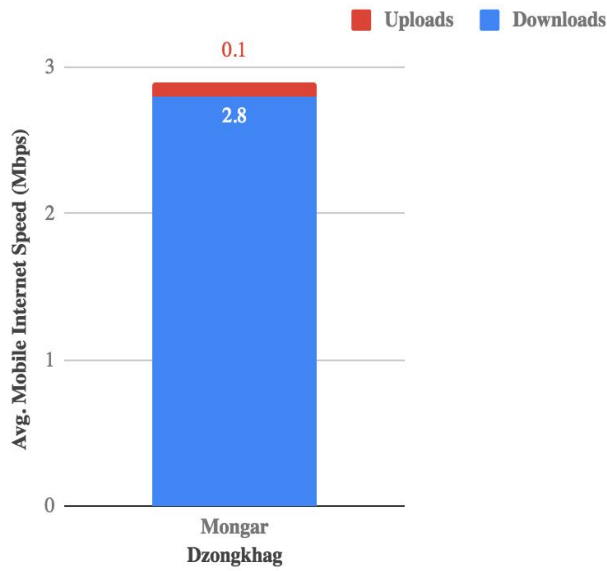
In this reports, we have displayed the lowest & highest average mobile Internet speed for twenty Dzongkhags in the form of column chart. Data has been analysed and compiled as shown below based on inputs provided by the Dzongkhag ICT Officers, .

Key Findings

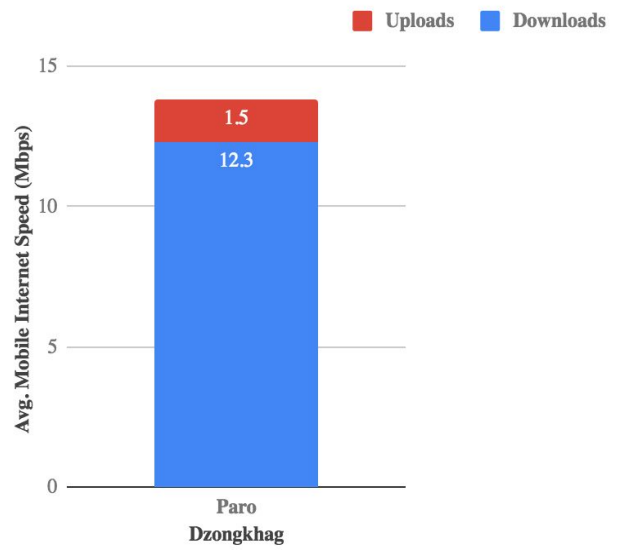
Based on the data submitted by all the twenty Dzongkhags ICT Officers (avg. mobile Internet speed for B-Mobile and TashiCell services has been compiled in the table below.

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	3.23	0.51	13.7	6.57
2	Chukha	0	0	0	0	0	0	15.04	6.19
3	Dagana	0	0	0	0	3.6	0.83	0	
4	Gasa	0	0	0	0	3.7	0.95	0	
5	Haa	0	0	0	0	1.01	1.11	23.09	18.19
6	Lhuntse	0	0	0	0	0.79	0.71	0	
7	Mongar	2.8	0.1	0	0	0	0	42.3	17.98
8	Paro	0	0	12.3	1.5	0	0	7.6	1.8
9	P/gatshel	0	0	0	0	0	0	34.12	6.7
10	Punakha	0	0	0	0	2.5	1.4	0	0
11	S/Jongkhar	0	0	0	0	4.01	1.6	0	0
12	Samtse	0	0	0	0	0	0	5.5	12.2
13	Sarpang	0	0	0	0	0	0	44.3	1.3
14	T/Yangtse	0	0	0	0	0	0	37.8	13.5
15	Tashigang	0	0	0	0	1.96	2.34	32.43	15.9
16	Thimphu	0	0	0	0	0	0	17.7	8.9
17	Trongsa	0	0	0	0	0	0	16.7	6.8
18	Tsirang	0	0	0	0	2.11	1.07	31.89	11.44
19	Wangdue	0	0	0	0	0	0	10.12	14.2
20	Zhemgang	0	0	0	0	0	0	43.9	12.6

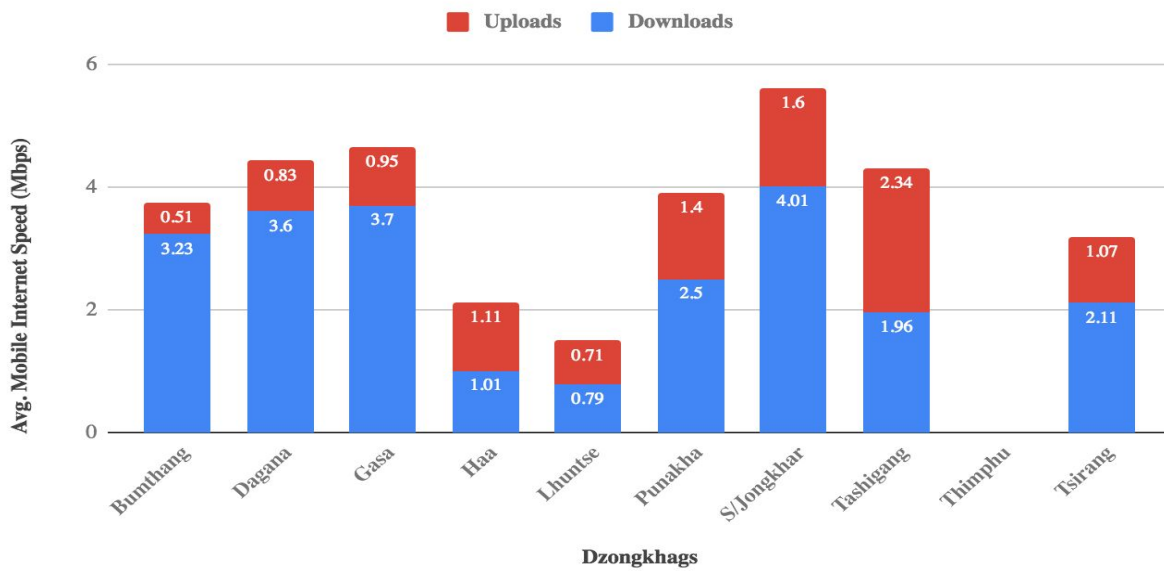
Graph 1: 3G TashiCell Services



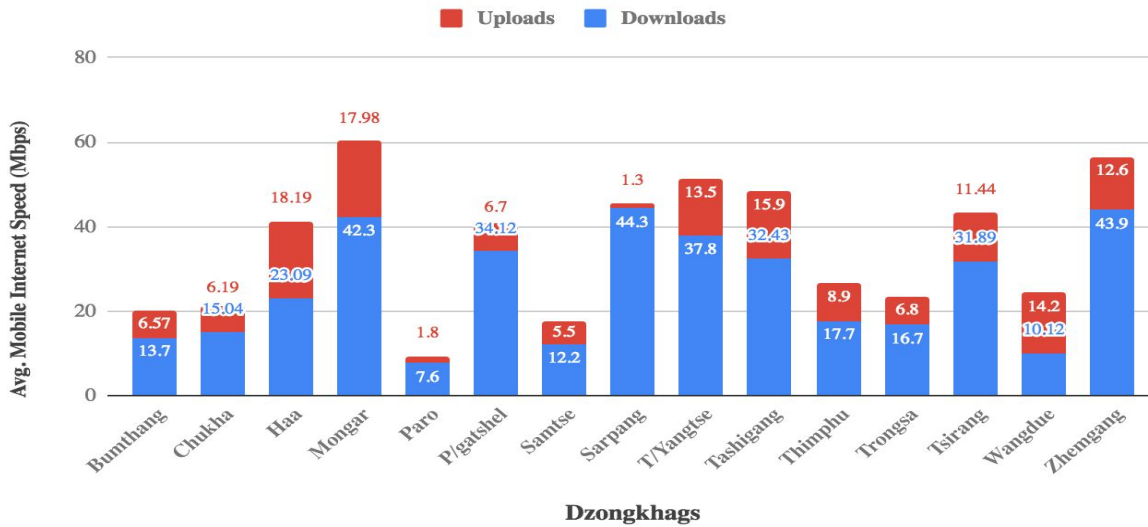
Graph 1: 4G TashiCell Services



Graph 3: 3G B-Mobile Services



Graph 4: 4G B-Mobile Services



The following observations were made from the above graphs:

1. Mongar dzongkhag ICTO had only provided the data for 3G TashiCell services with 2.8 Mbps avg. downloads speed and 0.1Mbps avg. uploads speed.
2. Paro dzongkhag ICTO has only provided the data for 4G TashiCell with 12.3 Mbps avg. downloads speed and 1.5Mbps avg. uploads speed.
3. Samdrup Jongkhar dzongkhag has observed highest avg. downloads speed with 4.01Mbps and Lhuntse dzongkhag observed lowest speed with 0.79 Mbps on 3G B-Mobile Services.
4. Trashigang dzongkhag has observed highest avg. uploads speed with 2.34 Mbps and Bumthang dzongkhag observed lowest speed with 0.51 Mbps on 3G B-Mobile Services.
5. Sarpang dzongkhag has observed highest avg. downloads speed with 44.3Mbps and lowest speed for Paro dzongkhag with 7.6 Mbps on 4G B-Mobile Services.
6. Haa dzongkhag has observed highest avg. uploads speed with 18.19 Mbps and lowest speed for Sarpang dzongkhag with 1.3 Mbps on 4G B-Mobile Services.
7. The overall voice quality for every dzongkhags has observed good in both the telecommunication network services.
8. Most of the dzongkhag ICTOs had provided the data using the B-Mobile service.

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.