

Mobile Internet Connectivity Report

(April- June, 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 Internet in the Dzongkhags, the DITT/MoIC has prepared the ninth 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.

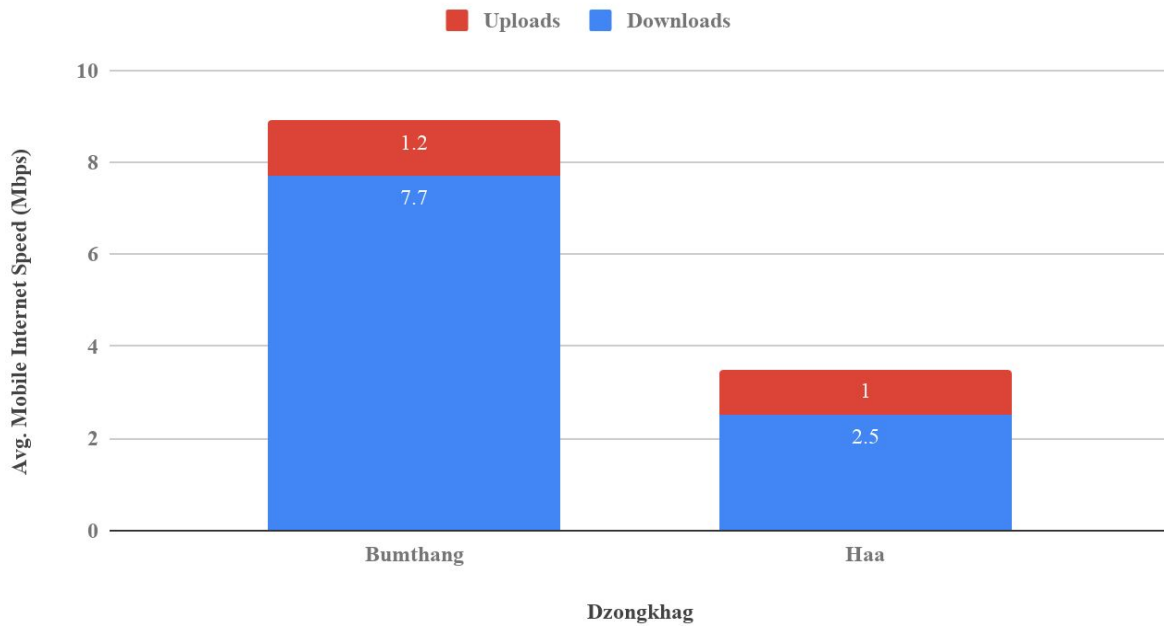
In this reports, we have displayed the lowest & highest average mobile Internet speed for twenty Dzongkhags in the form of column chart. Data has been analysed and compiled as shown below based on inputs provided by the Dzongkhag ICT Officers.

Key Findings

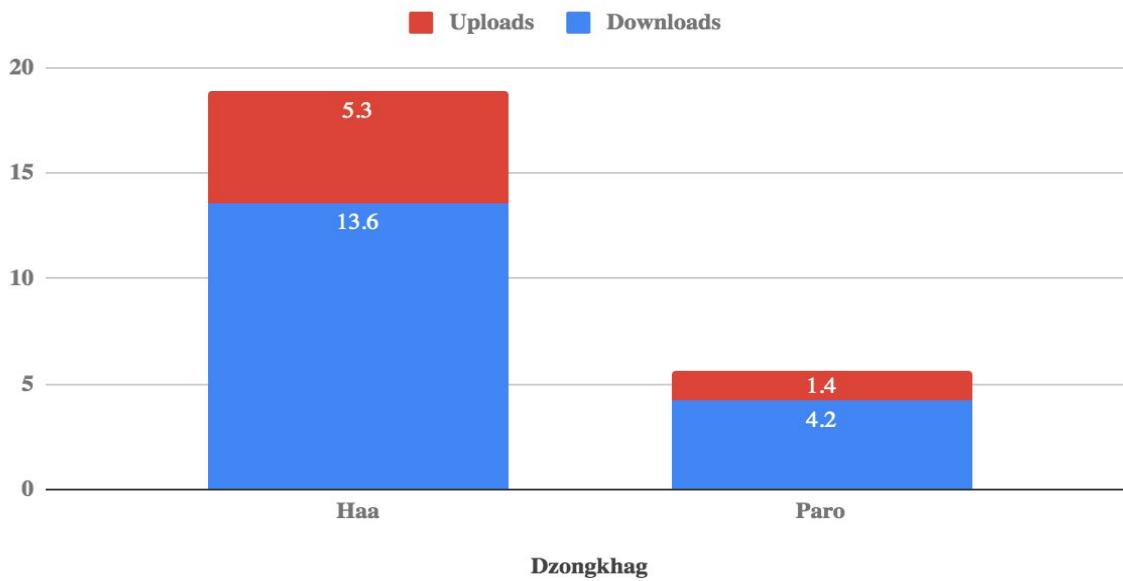
Based on the data submitted by all the twenty Dzongkhags ICT Officers (avg. mobile Internet speed for B-Mobile and TashiCell services has been compiled in the table below.

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	7.6	1.4	0	0	7.6	0.9	25.4	7.1
2	Chukha	0	0	0	0	0	0	24.5	11.9
3	Dagana	0	0	0	0	4.5	0.9	0	0
4	Gasa	0	0	0	0	6.9	1.6	0	0
5	Haa	2.5	1.0	13.6	5.3	1.1	0.8	11.9	1.2
6	Lhuntse	0	0	0	0	2.4	0.7	0	0
7	Mongar	0	0	0	0	0	0	38	11.6
8	Paro	0	0	4.2	1.4	0	0	4.2	1.4
9	P/gatshel	0	0	0	0	0	0	33	2.2
10	Punakha	0	0	0	0	1.8	0.8	0	0
11	S/Jongkhar	0	0	0	0	3.01	1.08	0	0
12	Samtse	0	0	0	0	6.6	2.2	0	0
13	Sarpang	0	0	0	0	0	0	44.2	2.2
14	T/Yangtse	0	0	0	0	0	0	34.7	11.25
15	Tashigang	0	0	0	0	0	0	40.02	20.05
16	Thimphu	0	0	0	0	0	0	30.8	25.7
17	Trongsa	0	0	0	0	3.5	2.9	0	0
18	Tsirang	0	0	0	0	3.3	1.5	42.2	14.03
19	Wangdue	0	0	0	0	0	0	12.3	4.9
20	Zhemgang	0	0	0	0	0	0	45.1	11.4

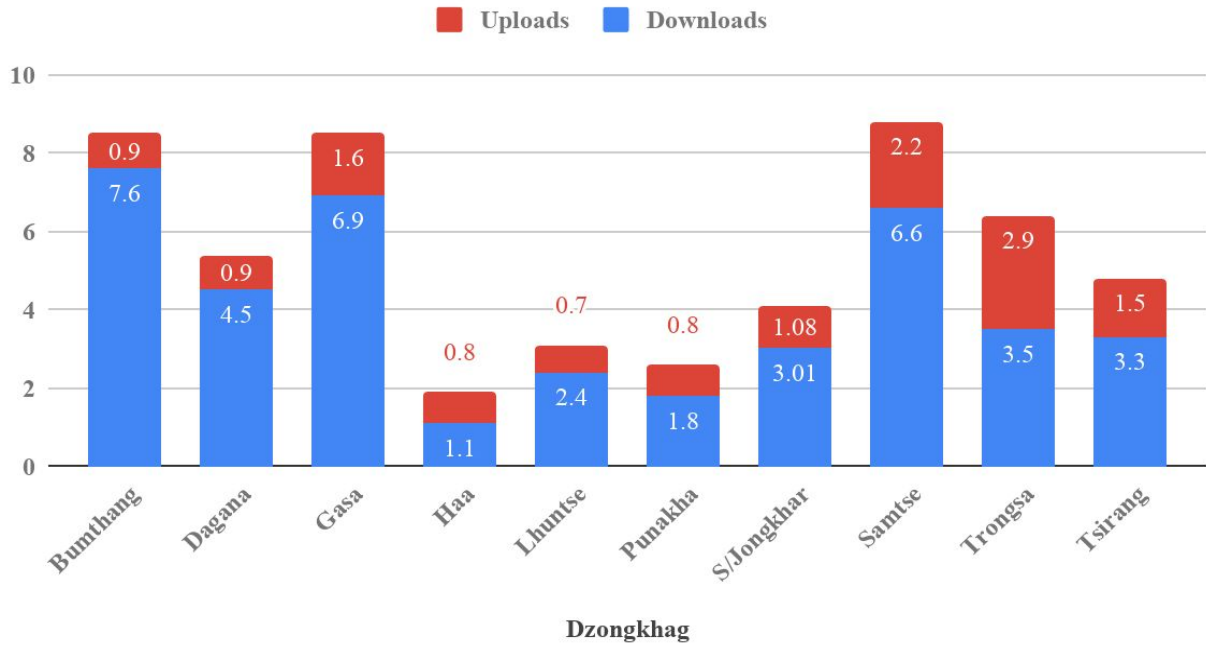
Graph 1: 3G Tashicell Services



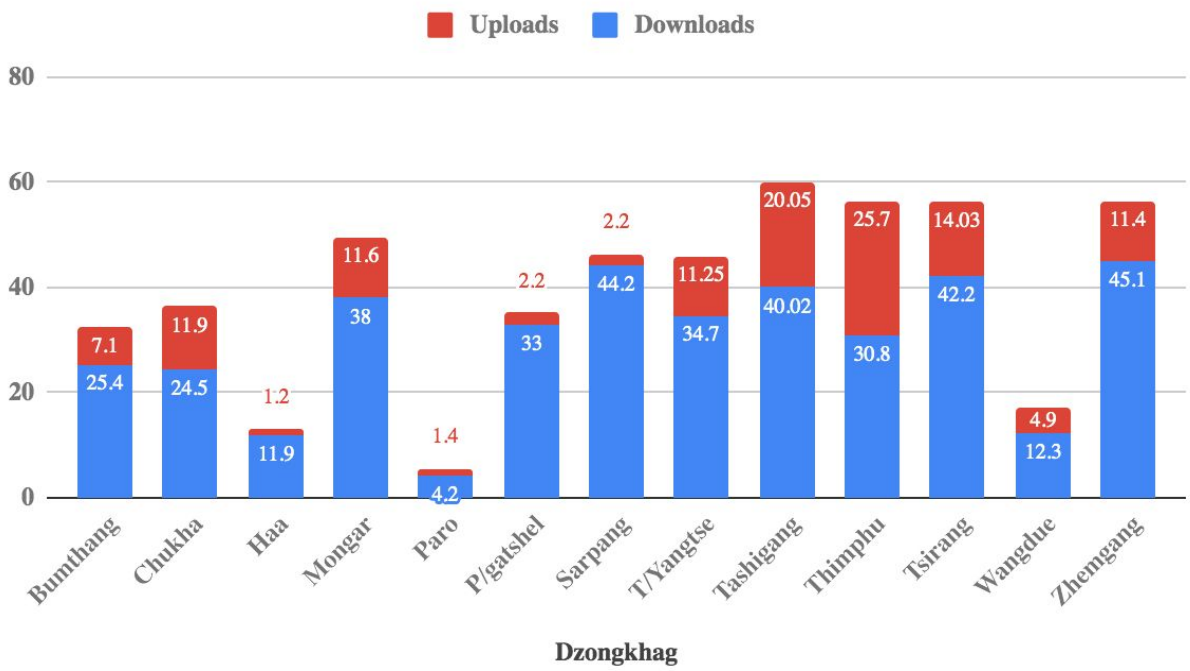
Graph 2: 4G Tashicell Services



Graph 3: 3G Bhutan Telecom Services



Graph 4: 4G Bhutan Telecom Services



The following observations were made from the above graphs:

1. Bumthang dzongkhag has observed both highest avg. uploads and downloads compared to Haa dzongkhag with 1.2 and 7.7Mbps on 3G Tashicell services.
2. Haa dzongkhag has observed both highest avg. uploads and downloads compared to Paro dzongkhag with 5.3 and 13.6 Mbps on 4G Tashicell services.
3. Trongsa dzongkhag has observed highest avg. uploads with 2.9 Mbps and lowest for Lhuntse dzongkhag with 0.7 Mbps on 3G B-Mobile Services.
4. Bumthang dzongkhag observed highest avg. downloads with 7.6 Mbps and lowest for Haa dzongkhag with 1.1Mbps on 3G B-Mobile Services.
5. Thimphu dzongkhag has observed highest avg. uploads speed with 25.7 Mbps and lowest speed for Haa dzongkhag with 1.2 Mbps on 4G B-Mobile Services.
6. Zhemgang dzongkhag has observed highest avg. downloads speed with 45.1 Mbps and lowest speed for Paro dzongkhag with 4.2 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.