

Response of Bharti Airtel Limited's to Consultation Paper on "Bandwidth required for ISPs for better connectivity and improved quality of service"

Q. 3.1

In order to ensure sufficient bandwidth for good quality broadband service, should some "Thumb Rule" for maximum contention ratio be fixed for dial up, broadband, high bandwidth services & leased line internet access? If so, what should be the values for different Internet services:-

Bharti's Response:

Services	Max. Contention Ratio for Home users	Max. Contention Ratio for Business users
Dialup	100:1	64:1 (POT's) 20:1 (ISDN)
Broadband	50:1	30:1
High Bandwidth Services (like IPTV etc.)	1 :1 for BTV	1 :1 for BTV
Leased Line	NA	1:1 to 4:1

Q. 3.2

Will defining contention ratio likely to impact prevailing Internet / Broadband packages to access Internet? Give your suggestions with Justification?

Bharti's Response:

Although we have provided the above details in the required format, however we are of the view that the concurrency ratio is the key factor for providing improved quality of service to customers. The above ratios are in line with the above argument which is further elaborated as below:-

1. The contention is nothing but concurrency ratio of the subscribers which is defined as total online subscribers at a particular instant (time T0) out of the total provisioned subscribers in the Broadband POP.
2. Over and above, among the online subscribers at a particular instant it is the usage pattern of the subscriber which influences this ratio.(RRRRW phenomenon) e.g. reading the web page, some are watching already buffered video, some are downloading and some are chatting while some are multitasking. This usage again adds to the concurrency factor. These concurrency ratios keep on changing with changing user behavior & new developed applications becoming popular. The service providers should keep monitoring these patterns/ trends and engineer the Network accordingly.
3. However the average utilization levels at the PoP should be kept under 80 % so as to ensure the minimal impact of the concurrency mentioned above on the service quality.

Q 3.3

Any other suggestion to improve quality of internet / Broadband access to end users?

Bharti's Response:

1. The regulator should enable the following:
 - a. Local Loop unbundling for enhancing the broadband access penetration
 - b. Easy access to ROW for accelerating the access network growth
 2. Internet across the world is a best effort based services as the whole network is managed by various Carriers / ISPs / ASPs and datacenters. The network itself is highly unpredictable and is influenced by various events, usages, existing performance levels and failures across the world. However analyzing it closely Internet means connecting the user to the content and vice versa. The quality of services depends on transferring IP packets with predictable network availability and quality parameters. To make the network more predictable and to bring sanity, it is as mandatory to bring the content closer to the user as much as possible.
 3. A joint effort by the regulator and various/content providers is required for localizing the content within the country. The same can be facilitated by moving to higher level of Internet exchange on domestic level and datacenters in the country. The traffic between the service providers within the country should get switched with in the country and should not loop back through international route and other transit provider. More and more datacenters should be built up in the country which should facilitate the co-location of most popular content with in the country and even to regional levels.
 4. Also the service providers should be free to implement fair usage policy and restrict the few bandwidth huggers' from the pack who deteriorate the experience of the majority normal users.
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