Bandwidth forecast model – descriptive notes

This note provides some descriptive comments to facilitate use of the BSG domestic bandwidth demand forecast model developed by Communications Chambers. The model and this note should be used in conjunction with the report on the model's approach and results. All are available at http://www.broadbanduk.org/forecastingdomesticdemand .

General comments

- The same structure is used to generate both upstream and downstream demand – these are effectively treated as two scenarios. (See the 'data tables' tab to switch between them)
- The model has appreciable calc time. We recommend turning off automatic calculation of data tables, and recalcing these only when required
- In most cases we have labeled assumptions in the model with the relevant source. The report also provides detailed information on sources
- 'Key inputs' and 'Results summary' are, for most purposes, the useful tabs
- 'Key inputs' is set up for printing

Tab description

Tab type / names	Comment
Index	
Key inputs	- Assumptions are entered on this sheet – blue text represents an input cell. (A red cell is where 'override' assumptions feed through if the data tables are being run) - This tab also: - Generates figures over time from the input assumptions - Analyses required web bandwidth based on overlapping pages loads - Calculates implied traffic levels
Secondary apps combinations 2nd apps combi (SD) 2nd apps combi (HD) 2nd apps combi (4K)	- These tabs use the assumptions about usage of individual secondary apps to build up the profile of combined secondary app usage for different individuals - This is a complex calculation, since all possible combinations of secondary apps, their required bandwidth and their likely duration need to be considered (since there is no restriction on possible overlaps)

Tab type / names	Comment
Years • 2013 • 2018 • 2023	• By year, these tabs build up to a total household usage profile, for each of 156 household types • They first build twelve profiles of individual usage, by combining the profiles of primary and secondary app usage • These are then combined (depending on household make-up) into total household usage of primary and secondary apps • The household demand for first web surfing and then low bandwidth applications is then layered on top, to give 156 profiles of total household usage • Finally, these figures are used to calculate the cross-household picture of 'X minutes excluded' demand
Results summary	• Pulls in from other tabs a range of key results (and provides graphs)
Assumption summary	• Pulls together key assumptions in a format suitable for export to the report document
Data tables	• This tab contains definitions of 29 different scenarios, and data tables to generate the results of each of them • 'Scenario in use' on this tab should be set to 2 to run the base case downstream, and to 16 to run the base case upstream
Workings	• Generates the bandwidth 'buckets' depending on whether the model is in downstream or upstream mode. (For the former, 1 Mbps increments are used, for the latter 0.2 Mbps)
Ranked usage distr'n	• This tab aggregates the 2023 usage profiles for all household types, and then ranks them by peak demand, in order to create the 3D 'cliff face' chart of usage by household by time
Error checks	• Used to check for errors in the model structure by confirming that usage distributions add to 100%. – if so this sheet will show all zeros. This sheet can be ignored unless structural changes are being made to the model

If you have questions regarding the model, or have identified ways in which it can be improved, please email rob@commcham.com

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