**Point Topic Take Up**

2 Jan 2023

This methodology is for estimating the number of broadband subscribers at the postcode level in the UK, based on various data sources. It involves grouping postcodes into intersections, calculating market share percentages, and estimating the number of subscribers based on these percentages. The goal is to provide an estimate of the distribution of broadband subscribers in the UK.

We calculate infrastructure operator lines and ISP lines separately, following the same procedure. For the full list of infrastructure operators and ISPs specifically targeted, [click here](https://github.com/Point-Topic/take_up#infrastructure-operators--isps).

**Definitions**

**Intersection**: In the context of this methodology, an intersection refers to a group of postcodes that have a specific combination of operators present. Intersections are used to calculate market share percentages and to estimate the number of subscribers for each operator in each postcode.

**Line**: A line refers to one paying customer with a broadband subscription. In the context of this methodology, the goal is to estimate the number of lines for each operator at the postcode level.

**Benchmark**: The "benchmark" approach is one of the two approaches used in this methodology for estimating the number of broadband subscribers at the postcode level in the UK. The "benchmark" approach uses only availability data and is useful for distributing country-wide metrics.

**Exchange**: An exchange is a physical location where telephone calls and broadband data are switched between different networks. In the context of this methodology, the "speed test" approach groups postcodes into intersections at the exchange level for ISPs. This allows for the calculation of market share percentages based on the ratio of speed tests carried out by customers of each operator in the exchange area.

**Infrastructure operator**: These are companies that own and operate the physical infrastructure (e.g., cables, switches, and routers) used to provide broadband services. Examples of infrastructure operators in the UK include Openreach and Virgin Media.

**ISP**: These are companies that provide broadband Internet access to customers. They may use their own infrastructure or lease it from an infrastructure operator. Examples of ISPs in the UK include BT, Sky, and TalkTalk.

**Resellers**: These are companies that purchase communication services from another company and resell them to their own customers. They do not own their own infrastructure. Examples of resellers in the UK include Plusnet and EE.

**Altnets**: These are companies that provide communication services using their own infrastructure rather than relying on traditional telecom companies. Examples of altnets in the UK include Hyperoptic and Gigaclear.

**Method**

The goal of this methodology is to estimate the number of broadband subscribers at the postcode level in the UK, using data on demographics, broadband availability, and speed test results. There are two approaches that are used: the "benchmark" approach, which uses only availability data, and the "speed test" approach, which uses both availability and speed test data.

The first step in both approaches is to group postcodes into intersections based on the combination of operators present in each location. For the "speed test" approach, postcodes are grouped into intersections within geographical regions, with the infrastructure operators being grouped at the MSOA level and the ISPs being grouped at the exchange level. For the "benchmark" approach, postcodes are grouped into intersections irrespective of geography, with each postcode being assigned an isp\_intersection\_id to indicate which operators are present in the intersection.

Once the intersections have been defined, the next step is to calculate the market share percentage for each operator in each postcode. For the "benchmark" approach, the market share percentage is calculated by applying the UK-wide market share in proportion to the other operators present in the postcode.

The UK-wide market share for each operator is calculated as the proportion of each operator's subscribers to the total number of subscribers in the UK. For the "speed test" approach, the market share is calculated from the number of speed tests carried out by customers of each operator in proportion to the number of speed tests carried out by other network providers in the exchange/MSOA intersection.

Once the market share percentages have been calculated, the next step is to estimate the number of subscribers for each operator in each postcode. For both approaches, this is done by first distributing the total number of subscribers in the UK to the intersections, using the proportion of premises in each intersection to the total number of premises in the UK as a weight. Then, the number of subscribers for each operator in each postcode is calculated by multiplying the estimated total number of subscribers in the postcode by the market share percentage for that operator in the postcode.

Overall, this methodology aims to provide a comprehensive and indicative estimate of the distribution of broadband subscribers at the postcode level in the UK, using a combination of demographic, availability, and speed test data. The "benchmark" approach uses only availability data and is useful for distributing country-wide metrics, while the "speed test" approach uses both availability and speed test data and is useful for providing more detailed and geographically-accurate estimates of subscriber numbers.

**The inputs**

These models are powered by the Point Topic UPC database, along with subscribers figures from Point Topic research.

There are four sources:

* PT subscriber figures from research and reported by operators
* upc\_output unit postcode demographic dataset
* fact\_operator operator availability footprints
* Speed test proprietary data set from ThinkBroadband

**Infrastructure Operators & ISPs**

Full list of infrastructure operators + tech covered

* openreach\_adsl
* openreach\_fttc
* openreach\_fttp
* openreach\_gfast
* altnet\_fttp
* kcom\_fttp
* virgin\_cable

Full list of ISPs + tech covered

BT

* bt\_adsl
* bt\_fttc
* bt\_fttp
* bt\_gfast

Sky

* sky\_adsl
* sky\_fttc
* sky\_fttp
* sky\_gfast

TalkTalk

* talktalk\_adsl
* talktalk\_fttc
* talktalk\_fttp
* talktalk\_gfast

Reseller

* reseller\_adsl
* reseller\_fttc
* reseller\_fttp
* reseller\_gfast

Other

* altnet\_fttp
* virgin\_cable
* kcom\_fttp

**Developer Instructions**

**Project Structure**

* core
* speed\_test
  + infrastructure
  + isp
* benchmark

There is a yml file documenting the models and columns inside each of the schema folders.

**Run order**

dbt clean

dbt deps

dbt seed

dbt run

There is a run.sh file which will execute the above commands in sequence