

# 1. Overview

This will be the second year that Cable.co.uk, along with data providers BDRC Continental, have teamed up to cast an eye on global broadband pricing. To understand the data, one must first understand both how they were gathered and calculated, and what specific rules were applied in deciding which packages and providers contributed to the average.

## 1.1 Rules applied to our data gathering

1. All prices gathered were for fixed-line broadband packages: Dial-up, ADSL, or some form of fibre (FTTP or FTTC). 4G, WiMAX, satellite and other wireless technologies were excluded from the study to avoid apples to oranges comparisons
2. Researchers first established the fixed-line providers in each country before selecting one package from each speed-level offered. A country with eight providers, for example, each offering three different speeds will have 24 packages recorded
3. If a provider offers broadband packages with various add-ons at different prices, or there is price differentiation across different regions of the country, the cheapest package at each speed level was recorded
4. Only consumer broadband packages were included. Business/enterprise broadband deals were excluded as they commonly cost magnitudes of their consumer versions on account of the additional services they offer such as 24/7 IT support
5. Packages were only recorded if they were either broadband-only or, more commonly, broadband and phone. Packages including subscription TV or other add-on services were avoided. However, exceptions were made here in countries where it is only possible to get a fixed-line broadband deal with a TV box – a handful of Caribbean countries fit this description
6. Many providers around the world do not show prices on their websites, instead relying on personal enquiry via phone or email, or the submission of an application form of some kind. In these cases our researchers have emailed, called and filled in the respective forms to obtain pricing, informing providers they are undertaking research and are not an actual customer

7. A handful of providers ask for payment for the full term of the contract (12, 24, 36 months and so on) up front. Where this has been the case the researcher has recorded the 12-month package pricing
8. Qualifying countries must offer its citizens at least three qualifying packages
9. Packages were recorded up to a maximum of 41 per country – records beyond this number were found to have negligible impact on the average
10. Package prices were recorded in their advertised currency, then converted to US Dollars (USD) in order to form a basis for comparison
11. International exchange rates were obtained from Google Finance and frozen on the final day of fieldwork. Any changes in exchange rate between USD and local currencies occurring after 28/09/2018 are not factored into the presented data
12. The 'Sample date' column is very important as it represents the day the data was collected for that particular country. It is a snapshot. Prices change all the time and therefore may be different by the time you go about viewing and/or utilising our data

## 1.2 How the data is calculated

1. There are four ways to sort the data, each answering a specific question: By average cost of a broadband package per month, by the cost of the cheapest package in each country per month, by the cost per megabit per month, and by the most expensive package available
2. The average monthly cost of each package factors up-front costs, offer periods (where, for example, the first six months cost less than the second six months), local taxes and, where applicable, equipment rental and other layered monthly or up-front costs vital to functionality. This is achieved by calculating the cost of the first year, including any and all of these factors, then dividing that total by 12
3. The average monthly cost for the country as a whole is calculated by totalling the cost per month of each package recorded (as described above) and dividing that number by the number of packages recorded
4. The cost of the cheapest package in each country is exactly that. A small but important point to consider, however, is that it represents the cheapest fixed-line broadband deal our researchers **could find**, meaning there is possibility, though very small, that there exists a cheaper

package that somehow evaded our search. The same goes for the most expensive package

5. The cost per megabit per month is calculated by dividing the average cost for the country by the average package speed offered. The average package speed is calculated by adding all advertised speeds together and dividing by their number – it is not a direct speed measurement. Cable also runs a [yearly audit of worldwide broadband speeds](#), but the number used to calculate this average is not drawn from it

## 2. The data table explained

### 2.1 This year's data (2018)

Here's a brief overview, column by column, of this year's pricing data.

- A. **Rank:** This a simple count order from 1 to 196. Note that should you choose to sort the data by something other than **Column N** (Average cost of broadband per month in USD), the rank order will not change
- B. **Country code:** The internationally recognised two-letter abbreviation for the country
- C. **Name:** The name of the country in English
- D. **Continental region:** The region the country occupies. You can use the filters in this column to produce regionalised league tables
- E. **Packages measured:** This number will always be between 3 and 41. This number reflects how many qualifying internet packages our researchers were able to find. Countries with fewer than three qualifying packages were omitted from the results
- F. **Average package cost per month (local currency):** This is a simple average of all qualifying packages sampled in that country, either in that country's own currency or in the currency in which providers advertise their prices (sometimes these differ). It is represented as a number with no currency symbol. The currency of this number is represented in the next column
- G. **Currency:** This is the currency in which qualifying package prices were originally recorded. Note that this may not always match the native currency for that country as some providers choose to sell in more stable

currencies such as US dollars or Euros

- H. **Cost per megabit, per month (local currency):** This is calculated from a simple average of the speeds offered, divided by the average package price, here again in the country's preferred currency
- I. **Cheapest broadband package measured (local currency):** The cheapest single qualifying package discovered by our researchers in that country, represented in the local or advertised currency
- J. **Cheapest broadband package measured (USD):** The cheapest single qualifying package discovered by our researchers in that country, converted to US dollars
- K. **Most expensive broadband package measured (local currency):** The most expensive single qualifying package discovered by our researchers in that country, represented in the local or advertised currency
- L. **Most expensive broadband package measured (USD):** The most expensive single qualifying package discovered by our researchers in that country, converted to US dollars
- M. **Conversion rate (USD) (Frozen 28/09/2018):** The conversion rate between the local or advertised currency and US dollars. This is used to calculate all currency conversions on a per country/currency basis
- N. **Average cost of broadband (Per month in USD):** When you download the spreadsheet and open it for the first time, this is the column by which the sheet will be sorted. It represents, in US dollars, the average cost of a broadband package in each country using the sampling and calculation methods previously described
- O. **Average cost of broadband (Per megabit per month in USD):** This is calculated from a simple average of the speeds offered, divided by the average package price, before converting the sum to US dollars
- P. **Sample date:** The date on which the prices were recorded in each country. This can be important as prices change frequently

## 2.2 Comparing last year's data (2017)

We've gathered up the important elements of the data from last year and placed them side-by-side with this year's data set for easy comparison.

- Q. **Last year's average monthly cost:** In US dollars, the average cost of a broadband package in each country using the sampling and calculation methods previously described, from the previous year's results

- R. **Last year's average cost per megabit:** This is calculated from a simple average of the speeds offered, divided by the average package price, before converting the sum to US dollars, from the previous year's results
- S. **Year-on-year cost difference:** A negative number in this column represents a downward shift in cost (broadband has, on average, become cheaper), while an upwards shift represents broadband, on average, having become more expensive. Figures are represented in US dollars
- T. **Last year's rank (by average cost of broadband per month in USD):** The place each country ranked in the previous year's league table. Note that this rank will not change if you choose to sort the list by some other criteria

## 3. Four ways to sort the data

### 3.1 Average monthly cost of a package (default)

When downloading the data, this is the order the table will arrive sorted by **(Column N)**, and could best be described as the average price a person would be likely to pay if they were to arrive in that country and need a broadband deal.

#### **Pros of sorting by average price:**

- Representative of the mean average of the price of broadband deals offered in that country – a good starting point for assessing relative expense across the globe
- Since countries tend to differ greatly in terms of the speeds offered, by taking no account of these speeds this is perhaps the best like-for-like measure

#### **Cons of sorting by average price:**

- This figure is not modified by the typical income of an average

household or by purchase power parity (PPP), meaning relative expense (proportionate to income/wealth) to broadband users between countries can differ to the averages presented. The numbers output when factoring PPP will often become unrecognisable to a general audience as well as to those living in each country. We invite those wishing to view the data weighted by PPP for purposes beyond straightforward dollar-to-dollar comparison to perform these calculations themselves

- Fluctuations in exchange rate between the local or advertised currency and the US dollar can be responsible for this average becoming cheaper or more expensive between this data and that sampled 12 months previously, while the actual cost may not have changed to the typical internet user in that country
- This figure does not factor subscriber rates: It is the average of offered prices not weighted proportionally by which packages the population subscribes to

## 3.2 Average monthly cost per megabit

You will need to change the sort order using the filter at the top of **Column O**. Cost per megabit per month is the sum of the average cost of a broadband package divided by the average advertised speed in that country.

Cost per megabit per month weights countries offering the fastest speeds to the top (cheapest end) of the table and those offering the slowest further towards the bottom. Countries where the broadband is slow and expensive (Niger, Somalia and so on), therefore, will suffer worst, whereas countries where the broadband offered is fast and cheap (Singapore, Ukraine and so on) will fare best.

This method of sorting the data offers results which mix cost and speed to provide a snapshot not only of relative expense, but also the recency and efficacy of its broadband infrastructure.

### **Pros of sorting by cost per megabit per month:**

- There are vast disparities between the speeds offered in different countries around the world. Cost per megabit per month factors not only

the price you pay, but also the efficacy of the service you're getting

#### **Cons of sorting by cost per megabit per month:**

- Similarly to average price of a broadband package, this figure is not modified by the typical income of an average household or by purchase power parity (PPP), meaning relative expense to broadband users between countries can differ to the averages presented
- Fluctuations in exchange rate between the local or advertised currency and the US dollar can be responsible for changes year-on-year
- This figure does not factor subscriber rates: It is the average of offered prices not weighted proportionally by which packages the population subscribes to

### **3.3 Cheapest available package**

You will need to change the sort order using the filter at the top of **Column J**. The amount recorded in this column reflects the cheapest fixed-line broadband package we found in that country, converted to US dollars.

#### **Pros of sorting by cheapest available package:**

- This method of sorting comes closest to identifying 'the cost of getting online' in any particular country, accepting of course that in some countries there may be cheaper methods that do not involve a fixed line

#### **Cons of sorting by cheapest available package:**

- Similarly to average price of a broadband package, this figure is not modified by the typical income of an average household or by purchase power parity (PPP), meaning relative expense to broadband users between countries can differ to the averages presented
- The need to use the US dollar and therefore exchange rates means this figure, like others, is subject to the vagaries of both exchange rate and inflation
- This figure does not factor subscriber rates: It is simply the cheapest package our researchers could find and has nothing to say about proportion of subscribers

## 3.4 Most expensive available package

You will need to change the sort order using the filter at the top of **Column L**. The amount recorded in this column reflects the most expensive fixed-line broadband package we found in that country, converted to US dollars.

### **Pros of sorting by most expensive available package:**

- This method of sorting is perhaps the least useful, but can be helpful when understanding the range from which the average prices were calculated
- It can be useful identifying where extremely expensive packages are significantly altering the average. Some countries offer a good range of low-cost packages, but the most expensive are so many magnitudes higher, this will not be reflected in the country average. The highest recorded package price can provide insight in this regard

### **Cons of sorting by most expensive available package:**

- Similarly to average price of a broadband package, this figure is not modified by the typical income of an average household or by purchase power parity (PPP), meaning relative expense to broadband users between countries can differ to the averages presented
- The need to use the US dollar and therefore exchange rates means this figure, like others, is subject to the vagaries of both exchange rate and inflation
- This figure does not factor subscriber rates: It is simply the cheapest package our researchers could find and has nothing to say about proportion of subscribers

## 4. Limitations of the study

### 4.1 Fixed line only

In an ideal world, countries whose primary means of getting online does not involve fixed lines would be compared alongside those which do. However, the connectivity and uptake situation tends to be vastly different in the handful of

countries that rely on LTE/WiMAX that it becomes an apples to oranges comparison.

For example, a country such as Chad, which has <1% uptake and no fixed line broadband packages could be measured based on its WiMAX provision. But it would not be reasonable to compare pricing in Chad where almost no one is online and packages are prohibitively expensive, to Sweden, say, where you can get a 10Gbit (10,000Mbps) connection for around \$50 per month.

Having tested their inclusion, we found they could not sit within the data without an explanation of the alternative technology being used. Fundamentally, the provision of wireless infrastructure has a significant cost differential to fixed line and uptake tends to be low.

## **4.2 Conversion to single currency**

In order to generate comparable numbers, a single currency had to be chosen for purposes of conversion and with the US dollar considered the go-to safe-haven currency and the United States the world's largest economy, the choice was an obvious one.

However, conversion to a single currency does not come without its problems. Exchange rates can and do fluctuate, which can affect how prices move up and down throughout the year compared to the dollar. It may be that in some cases significant movement in exchange rate between the local currency and US dollar explains, in part or in full, apparent price changes year on year.

Changes such as these – reflecting conversion rate changes rather than (or in addition to) pricing changes – mean that the year-on-year data should be viewed as how prices have changed from the perspective of a foreign visitor (I.E. you traveled to the country and needed a broadband deal, converting your money from USD to do so, then repeating this the following year), rather from the perspective of a resident, from whose perspective the prices may not have changed by the same amount.

## 4.3 Focus on global picture

Some time after publishing last year's data, we received a number of requests for deep insight into the pricing of a wide gamut of telecoms products available in both specific countries and across groups of countries either occupying the same region or related economically.

Our aim in producing this data is to demonstrate the state of broadband pricing across as much of the globe as is possible. It is designed to offer a big-picture view. Last year our data was used:

- As news of the day – many countries and their news agencies were interested to see and report how and where they ranked
- By educational resources – across the year various universities and other educational bodies included the data either for reference or as the main focus of a published piece
- By government bodies and lobbyists – there were instances where our data was used to demonstrate the need for change
- By NGOs and other international stakeholder bodies – NGOs such as the World Economic Forum wrote both coverage and critique of the research, the latter providing us useful insights as to how we can add greater value to our data this time round

We invite any organisation or person interested in our data to use it as they please upon release. However, if you require detailed, qualitative insight into a specific country or countries, that is not a service we are able to provide, and ask that you undertake such work yourselves, using our data as a foundation or launching point.

## 4.4 Excluded countries

There were a number of countries not included in this study. Here is a list of those countries where research was undertaken, but were excluded from the data, and why:

- **Aruba:** Only two qualifying packages available on this small island nation, provided by SETAR
- **Bhutan:** Only one qualifying package exists in Bhutan, provided by

Bhutan Telecom

- **Cocos (Keeling) Islands:** Indian Territories Telecom is the only ISP operating on the Coco Islands and was unable to provide us with the required pricing details
- **Central African Republic:** Main providers Telecel, Orange and Moov offer only WiMAX or 3G technology
- **Cuba:** No qualifying broadband packages – internet usage limited by state and is pay-as-you-go
- **Christmas Island:** Broadband provided to this Australian territory via LTE/4G wireless
- **Western Sahara:** There are no broadband providers in this disputed region of north-west Africa
- **Eritrea:** Eritrea has the lowest rate of internet connectivity in Africa with <1% of its population able to get online – the country has no advertised or qualifying broadband packages
- **Gambia:** No qualifying packages – consumer packages are WiMAX, with fibre provided only to commercial operations
- **Guinea:** Afribone is the only provider in Guinea that claims to provide fixed-line broadband packages. However, it was unable to supply our researchers with sufficient details on pricing, technology or availability to qualify for the study
- **Equatorial Guinea:** There are no qualifying fixed-line packages in Equatorial Guinea, with internet provision relying on WiMAX technologies
- **British Indian Ocean Territory:** The only residents of this collection of 58 islands are British military personnel, and as such no commercial/qualifying packages exist
- **Kiribati:** Telekom Services Kiribati is the only provider in the country and provides access only via 4G LTE
- **North Korea:** Access to the internet in North Korea (DPRK) remains tightly controlled – only attainable via special authorisation. There are no qualifying fixed-line packages available anywhere in the country
- **Liberia:** Providers include Lonestar, Novafone and Cellcom, but none provide qualifying fixed-line broadband packages
- **Northern Mariana Islands:** This group of 15 islands tailing north-west from Guam is not supplied by any fixed-line broadband provider
- **Malawi:** Globe Internet and Skyband offer 4G Internet for home. Telecom Networks Malawi offers 3.5G, while Malawi Telecom offers prepaid data, and Softek provides broadband only for businesses. There are no

qualifying fixed-line packages

- **Nauru:** Internet access is provided primarily by Cenpac Net on Nauru. However, this takes the form of a satellite uplink
- **Palau:** Palaunet offers the only qualifying package in Palau, putting it below the minimum sample size required for inclusion
- **Rwanda:** Olleh RWANDA Networks, MTN, Airtel, Tigo, Popcorn, Artel, Terracom and Rwandatel all operate in Rwanda, but offer only 4G or satellite connections
- **Solomon Islands:** Connectivity in the Solomon Islands is provided by Satsol and Solomon Telekom, both of which deliver via satellite
- **Senegal:** Only one package from Orange could be found – it comes with a mandatory TV subscription
- **Suriname:** In Suriname, Telesur offers fixed-line ADSL, but only has two packages available, putting it below the minimum sample criteria. Digicel also operates in Suriname, but offers connectivity via LTE only
- **South Sudan:** No qualifying fixed-line packages. Iptec and Wafanet offer satellite; Zain is a commerce provider, while MTN offers 4G
- **Chad:** Incumbent providers Sao Net, Sotel, Tchad Telecom Plus and Albideylnet offer only satellite and wireless connectivity
- **Togo:** Togo Telecom is the only provider to offer residential ADSL packages, but it offers only two, falling short of the minimum sample size
- **Timor-Leste:** Timor Telecom offers a single ADSL package with various data caps. Telkomcell, meanwhile provides mobile 2G and 3G connectivity
- **Tonga:** Tonga Communications is effectively a government-backed monopoly. The internet services it offers are WiMAX/mobile, with no fixed-line services currently available
- **Tuvalu:** Tuvalu Telecom Services and Kacific are the only ISPs our researchers found available in Tuvalu – both deliver connectivity via satellite
- **Uganda:** Uganda Telecom charges on a one-off basis (for money transfers and so on). Smile offers 4G, while Africell, MTN and Airtel fibre networks are available only to businesses
- **Vatican:** Vatican city is covered by Italian mobile providers, while fixed-line connectivity is provided residentially but not advertised/sold
- **Saint Vincent and the Grenadines:** No fixed line internet services. Cable & Wireless have merged with other companies to form the main ISP: Flow, which advertises only wireless internet. Digicel Barbados offers mobile internet only

- **Samoa:** Bluesky offers home broadband via a fixed line in Samoa. However, it does so on a prepayment 'Falenet card' basis. There are no recurring monthly fees making it unsuitable for comparison
- **Zambia:** Zambia has a plethora of providers: MTN, Zamet Communications, Uunet, HAI and more. All of them, however, deliver connectivity via LTE, WiMAX and satellite