

Bureau Telecommunicatie en Post  
Telecommunications Regulatory Authority of Curaçao

## **Statistical Publication 2014**

Telecommunication, Broadband and Television Indicators

2009-2013

Willemstad, Curaçao

## **DISCLAIMER**

The Information and Statistics contained in this report are derived from a variety of sources, but are mainly reliant on data obtained from Service Providers. In case of incomplete data, estimates are used based on extrapolation and market intelligence. In future publications, these estimates are replaced with official data when received from Service Providers and trusted sources. This report does not constitute commercial or other advice. No warranty, representation or undertaking of any kind, express or implied, is given in relation to the information and statistics contained in this report.

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## 1 ABOUT THIS REPORT

This report offers an overview of the trends in the telephony market (fixed and mobile), broadband market (fixed and wireless) and television market. It is the second report that is based on data that Bureau Telecommunicatie en Post (BT&P) collected through an internationally standardized questionnaire from the International Telecommunication Union (ITU). The questionnaire was sent to operators in the first half of 2014, and requests to provide the values on the point-in-time date of 31 December 2013 (from here on: EOY 2013).

Prices are collected two times a year, first from operators in this standardized questionnaire in the first half of the year, and secondly end-of-year prices are collected by BT&P for submitting them to the ITU for its 'ICT Price Basket' analysis. Prices used in this report are from the latter collection.

Telecommunication authorities of almost 200 countries collect the standardized questionnaire and ICT Price Basket information. They then deliver their data to the ITU, as BT&P does this for Curaçao. In its policy for delivering data to the ITU, BT&P does not share what is considered to be market sensitive information belonging to operators.

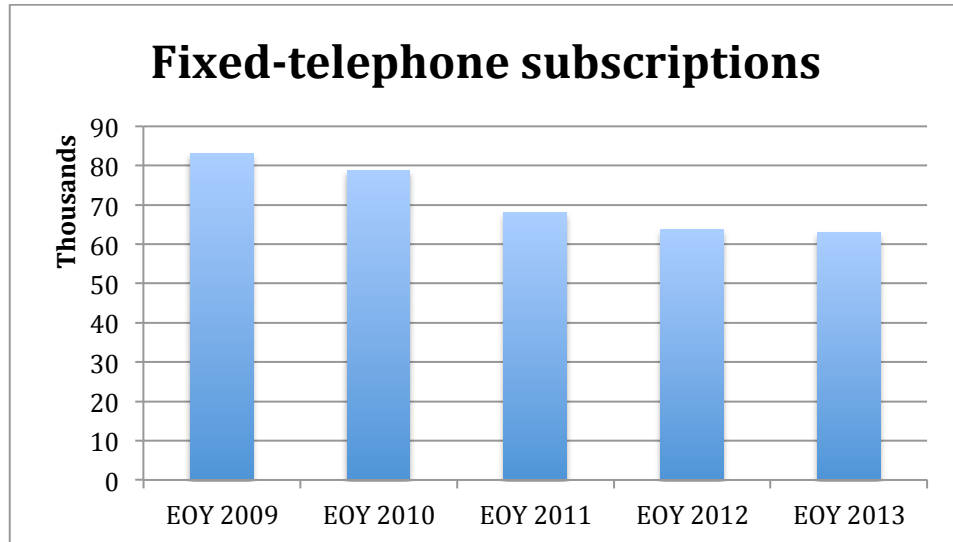
All data is published by ITU in the 'ITU Yearbook of Statistics 2014' (published beginning of 2015). Together with another ITU publication called 'Measuring the Information Society 2014', BT&P was able to benchmark the Curaçao data against peers in the Caribbean region, South and Central America and World averages.

In addition, BT&P uses international studies and datasets from recognized bodies like the Central Bureau of Statistics and Ookla Speedtest data to add interesting market information to this report. This is how BT&P keeps an eye on trends in various markets and is able to develop fact-based policy.

## 2 FIXED TELEPHONE NETWORK

### 2.1 Fixed-telephone subscriptions

Similar to the last five years, the number of subscriptions in the fixed voice market continued its downward trend in 2013 as illustrated in Figure 1. In 2013, total subscriptions recorded approximately 63.0 thousand compared to 63.8 thousand in 2012. This represented an overall 1.3 per cent or 0.85 thousand fall in subscriptions from the last period.

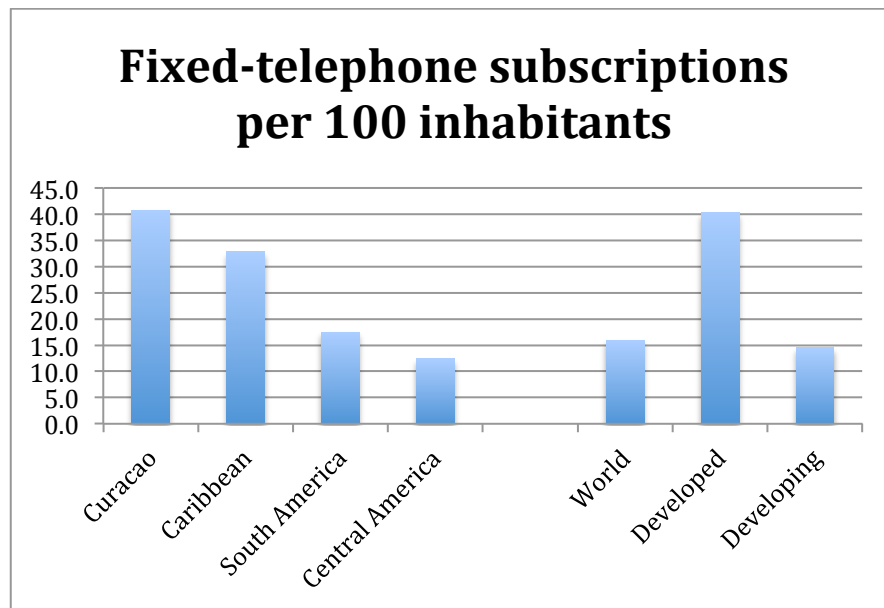


*Figure 1: Fixed-telephone subscriptions, EOY 2009 - EOY 2013*

## 2.2 Fixed-telephone subscriptions per 100 inhabitants

As the standard metric recognized internationally to measure the adoption of fixed voice services, fixed voice penetration is calculated based on the number of fixed voice subscriptions per 100 of the population. In December 2013 fixed voice penetration was calculated at 40.7. This means that in 2012 there were approximately 41 fixed voice subscriptions available to every 100 persons in Curaçao.

If compared to the region as shown in figure 2, Curaçao has a high fixed-telephone subscription penetration rate. Curaçao scores evenly compared to developed countries. See Appendix D1 for list of countries and source data.



*Figure 2: Fixed-telephone subscriptions per 100 inhabitants, EOY 2013  
Compared to the region and the World<sup>1</sup>*

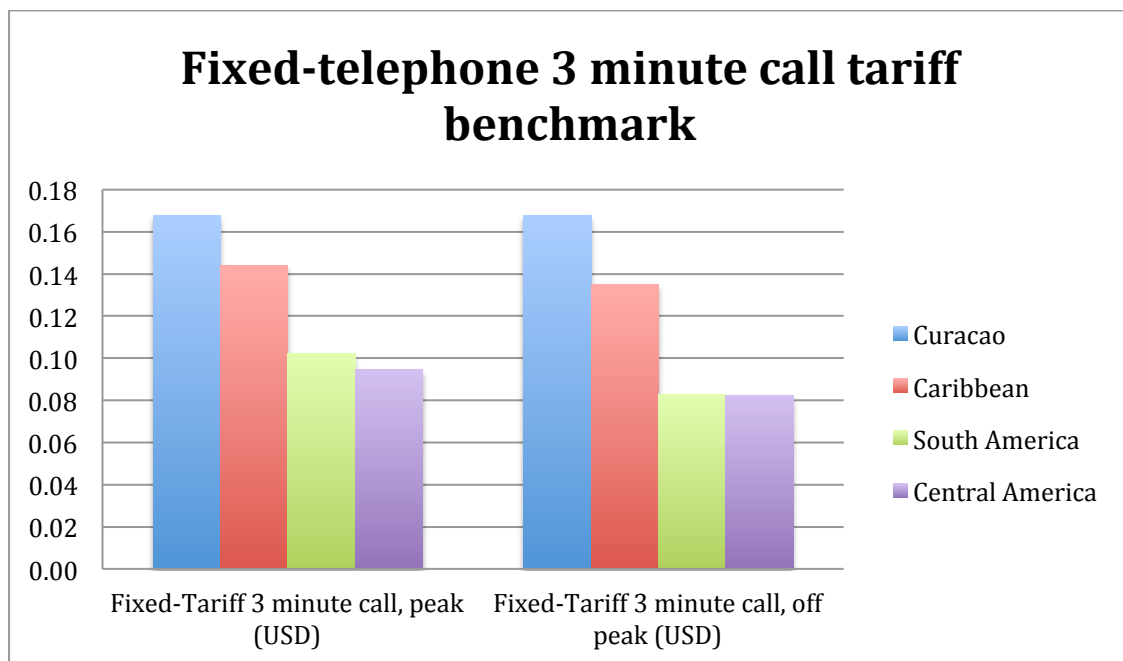
<sup>1</sup> The classification used for developed/developing countries is according to the UN M49. The M49 is a standard for area codes used by the United Nations for statistical purposes, developed and maintained by the United Nations Statistics Division. Based on the M49, countries are classified according to macro geographical regions and sub-regions, and selected economic and other groupings, see: <http://unstats.un.org/unsd/methods/m49/m49regin.htm>.

## 2.3 Fixed telephone tariff benchmark

Fixed telephone tariffs are internationally benchmarked by ITU through comparison of USD costs a 3 minute call, including any call set-up charges and taxes. Both peak and off-peak calls are compared. See Appendix D2 for list of countries and source data.

A 3 minute fixed-telephone peak call would cost 0.30 ANG/ 0.17 USD including taxes of 6% on Curaçao. This is calculated with the largest market share operator per-minute rate of 0.04 ANG and 0.16 ANG completion charges. The largest market share operator makes no distinction between peak and off-peak prices.

As shown in figure 3, both the price of peak and off-peak is higher if compared to the average costs in the Caribbean region and South and Central America. Notable difference with last year is that the price gap between the Caribbean region and Curacao price has become smaller due to higher costs in the Caribbean region. The average price of a 3 minute call in the Caribbean would costs around 0.14 USD both peak and off-peak.

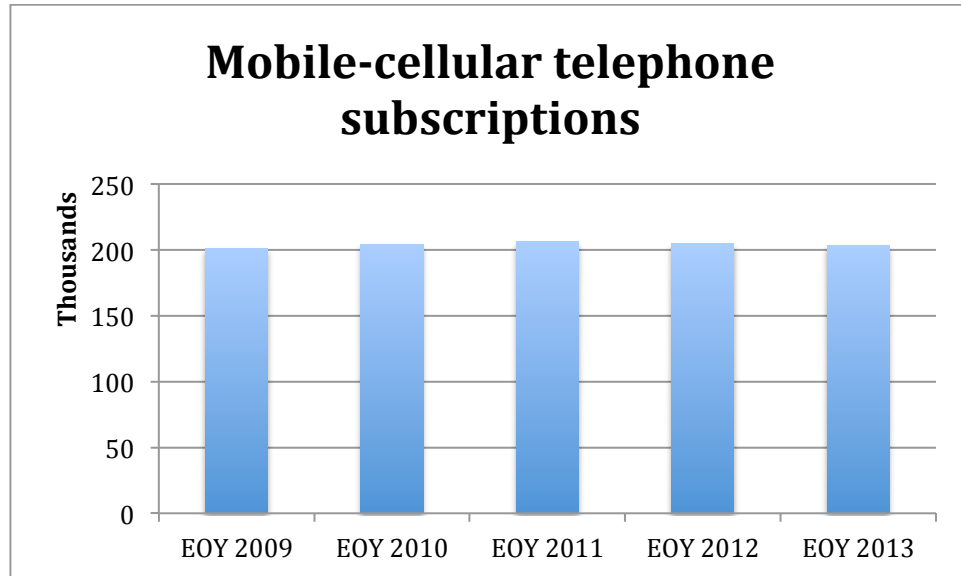


*Figure 3: Fixed-telephone 3 minute call tariffs compared with the region in USD, EOY 2013*

### 3 MOBILE-CELLULAR NETWORK

#### 3.1 Mobile-cellular telephone subscriptions

The mobile market seems to continue the stable trend of the last five years in 2013. Recording a total of 203.5 thousand subscriptions as at December 2013, the mobile market experienced a small 0.6 per cent or 1.2 thousand decrease in the number of subscriptions when compared to 2011. As Figure 4 below highlights, the mobile voice market has been relatively flat.



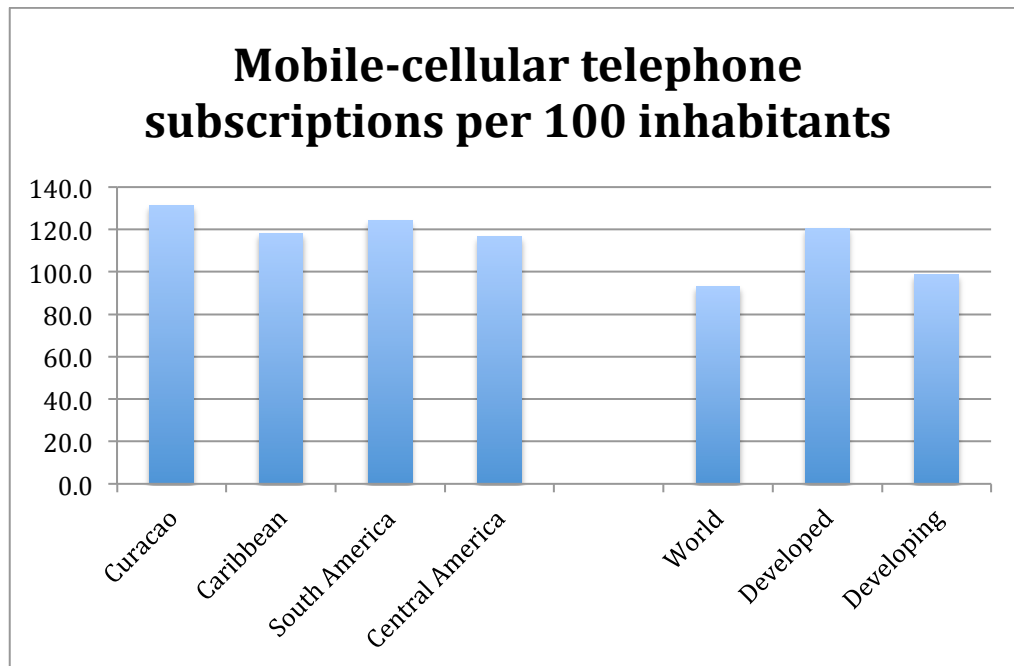
*Figure 4: Mobile-cellular telephone subscriptions, EOY 2009 – EOY 2013*



### 3.2 Mobile-cellular subscriptions per 100 inhabitants

As at December 2013, mobile penetration stood at 131.4. This implies that there were approximately 131 mobile subscriptions per 100 inhabitants in Curaçao at the end of 2013.

As shown in figure 5, the mobile penetration rates in Curaçao are slightly higher compared to region averages of the Caribbean, South American and Central American countries. Also the mobile-cellular penetration is slightly higher compared to the developed countries, but much higher than developing countries and the world average. See Appendix D1 for list of countries and source data.



*Figure 5: Mobile-cellular telephone subscriptions per 100 inhabitants, EOY 2013*

### 3.3 Mobile-cellular telephone tariff benchmark

Mobile-cellular telephone tariffs are internationally benchmarked by ITU through comparison of USD costs of a 1 minute call, including taxes. Both peak and off-peak calls are compared, both on-net and off-net. See Appendix D2 for list of countries and source data.

For example, a 1 minute mobile-cellular telephone peak call, off-net would cost 0,74 ANG/ 0.41 USD including taxes of 6% in Curaçao, in the tariff plan of the largest market share operator end of year 2013.

As shown in figure 6, both peak and off-peak, on-net and off-net prices are higher, if compared to the average costs in the Caribbean region and South and Central America. For example, the average price of a 1 minute peak call, off-net, would be around 0,30 USD in the Caribbean. Further research must show how these price differences can be explained.

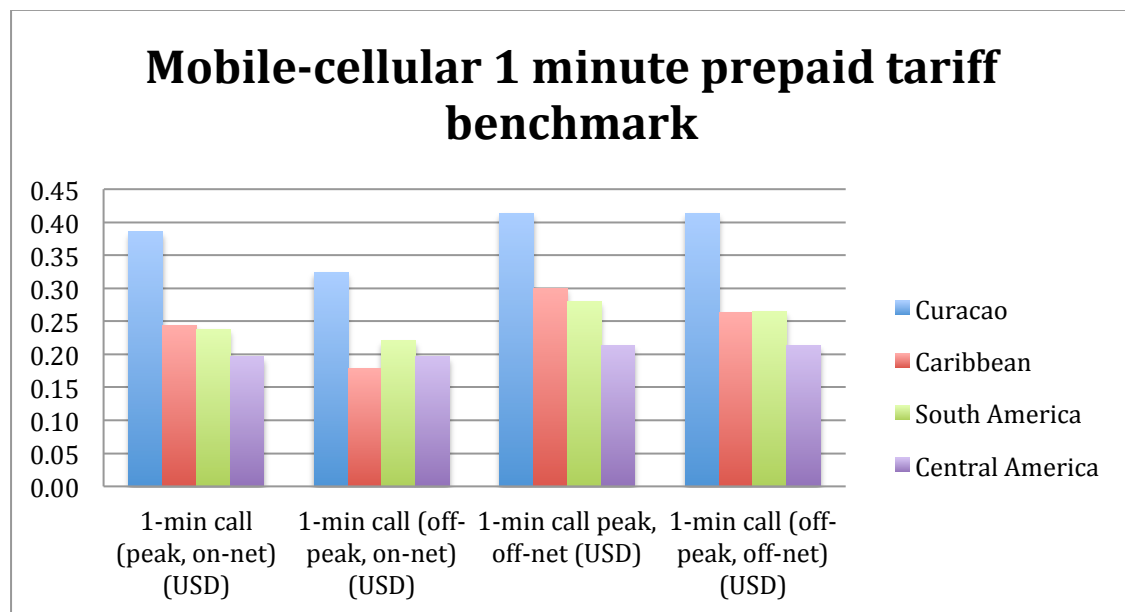


Figure 6: Mobile-cellular price of 1-minute call, compared to the region, EOY 2013

## 4 FIXED (WIRED) BROADBAND

### 4.1 International Bandwidth

The International Internet bandwidth is estimated at 8200 Mbit/s in December 2013. This figure refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s). This figure is an estimation based on data from the ITU Questionnaire combined with data from the AMS-IX Caribbean.

### 4.2 Fixed (wired) broadband subscriptions (estimated)

The market for fixed (wired) broadband<sup>2</sup> subscriptions is estimated to have significantly grown in 2013. Figure 7 illustrates the figures for fixed (wired) broadband subscriptions in 2011 and 2012, and shows the estimation for 2013 of 40 thousand subscriptions. This represents an increase of 13 percent or 6.4 thousand subscriptions. The 2010 and 2011 are not recorded. The 2013 figure is an estimation as not all data was received by BTP following the ITU questionnaire.

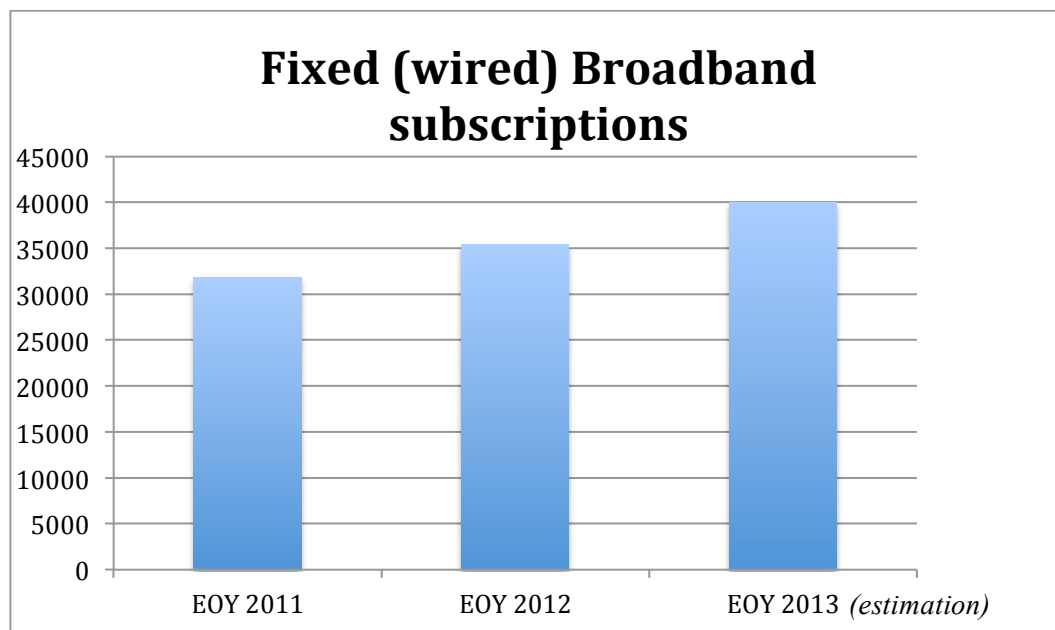


Figure 7: Fixed (wired) broadband subscriptions, EOY 2011 - EOY 2013

<sup>2</sup> To be able to compare to other countries and the region, this report defines broadband by the following international definition. Fixed (wired)-broadband subscriptions refers to subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the- home/building and other fixed (wired)-broadband subscriptions.

#### 4.3 Fixed (wired) Broadband subscriptions per 100 inhabitants (estimated)

For 2013, Curaçao estimated a fixed (wired) Broadband penetration of 25.8. This implies that there were approximately 26 fixed (wired) Internet subscriptions for every 100 inhabitants in Curaçao at the end of 2013.

If compared to the region as shown in figure 8, Curaçao has a high fixed (wired)-broadband subscription penetration rate. Curaçao scores only just below developed countries (average 27.2). See Appendix D1 for list of countries and source data.

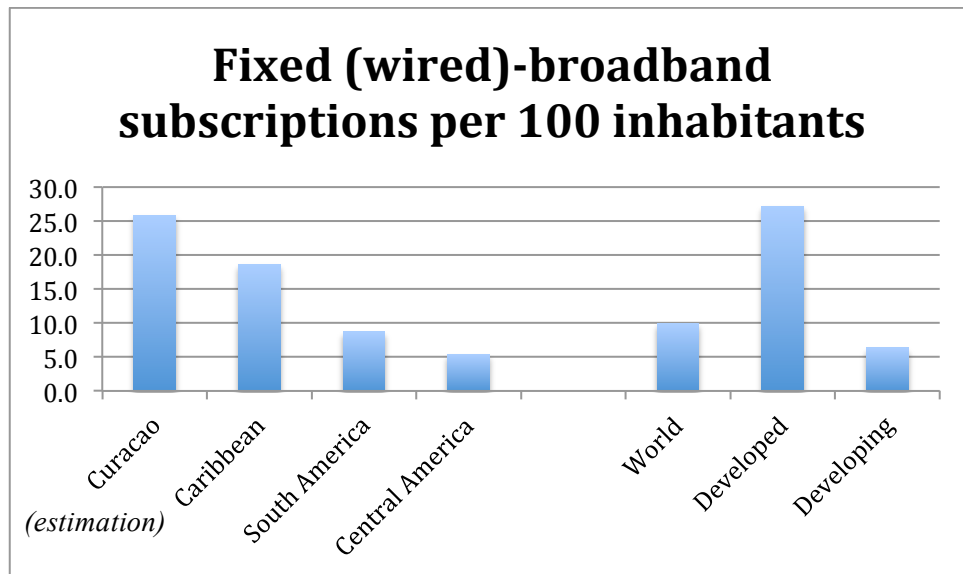


Figure 8: Fixed (wired) Broadband subscriptions per 100 inhabitants, EOY 2013

#### 4.4 List of broadband penetration in the Caribbean region

Compared to the top list of broadband subscription per 100 inhabitants of the Caribbean region, Curaçao ranks 4<sup>th</sup> in a ranking list of islands in the Caribbean region of which data is available, coming from a 5<sup>th</sup> place in 2012. It must be said that the Curacao figure is an estimation as not all data was received, BTP made an estimation.

Rank	Economy	Fixed (wired) Broadband subscriptions per 100 inhabitants
1	Bermuda	61.37
2	Cayman Islands	34.80
3	Anguilla	30.07
4	<b>Curaçao</b>	<b>* 25.83</b>
5	Saint Kitts and Nevis	24.54
6	Barbados	23.82
7	Montserrat	23.57
8	British Virgin Islands	21.81
9	Aruba	18.66
10	Grenada	17.00
11	Puerto Rico	16.30
12	Dominica	14.81
13	Trinidad and Tobago	14.56
14	Saint Lucia	13.72
15	St. Vincent and Grenadines	13.35
16	Jamaica	5.06
17	Dominican Republic	4.65
18	Antigua and Barbuda	4.61
19	Bahamas	4.11
20	Cuba	0.05

\* estimation

*Table 1 - List of broadband penetration in the Caribbean region*

## 4.5 Download speeds

Similar to the last four years, the year average download speed<sup>3</sup> continued its upward trend in 2013 as illustrated in Figure 9. In 2013, the average download speed recorded was approximately 12.9 Mbit/s compared to 6.7 Mbit/s in 2012. This represents a very significant 92.5 per cent increase in download speed in the last period. The upward trend of download speed is expected to continue in 2014, when the average download speed was measured around 14.7 Mbit/s.

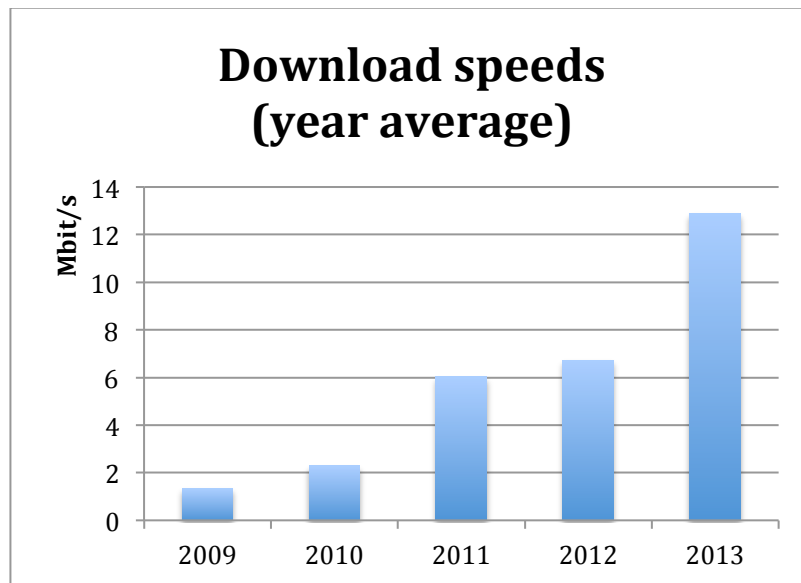


Figure 9: Download speeds (year average), 2009 – 2013

## 4.6 Affordability entry-level broadband plans compared with the region

Fixed-broadband prices have been collected by BT&P and compared with available ITU data regarding broadband prices. To be able to compare affordability and prices of Curaçao with the region, ITU has chosen the entry-level broadband plan as comparison statistic. This fixed-broadband plan chosen represents an entry-level postpaid fixed-broadband plan, with a minimum speed of 256 kbit/s and a monthly usage of (a minimum of) 1 Gigabyte (GB). The prices of the operator with the largest market share (measured by the number of subscriptions) are used. For plans that are limited in terms of data allowance (below 1 GB), the cost per additional byte is added to the monthly subscription price up to 1 GB.

For Curaçao, this plan would be the 49 ANG data plan of the largest market share operator with a speed of 6 Mbit/s offered end of 2013. Plus taxes of 6% this plan would cost 51.94 ANG/29.02 USD. The Gross National Income (GNI) per capita is collected through the Central Bureau of Statistiek with a value of 35'565 ANG/19'869 USD (2009 figure).

Prices are presented in USD and also calculated as a percentage of the GNI per capita, to provide an insight into the affordability of fixed broadband. Countries are ranked according to the price of fixed broadband as a percentage of GNI p.c. The lower the percentage, the lower the relative cost of the service. Curaçao dropped 3 places in comparison with last year, ranking 8<sup>th</sup> in terms of affordability compared to countries in the Caribbean region, South- and Central America. From a world perspective, Curaçao would rank place 59<sup>th</sup> (last year 47<sup>th</sup>) in terms of affordability in a list of 169 countries.

<sup>3</sup> Average yearly download speed data is calculated from the yearly average of monthly results in a year, see Appendix E. Country code used is 'Netherlands Antilles' which is the only available country code until EOY 2012 in the Ookla speedindex data. As from April 2013, Curaçao is recorded separately, so as of 2013 measurements can more precise and are likely to go up.

Rank	Economy	% of GNI	USD	Speed in Mbit/s	GNI p.c., USD, 2011 (or latest available)
1	Trinidad and Tobago	0.9	12.28	0.3	15'760
2	Venezuela	1.0	10.91	1	12'550
3	Uruguay	1.1	14.06	5	15'180
4	Panama	1.2	10.69	1	10'700
5	Brazil	1.4	13.82	1	11'690
6	Mexico	1.6	13.23	1	9'940
7	Bahamas	1.7	29.99	1.0	20'806
<b>8</b>	<b>Curaçao</b>	<b>1.8</b>	<b>29.00</b>	<b>6.0</b>	<b>19'869</b>
9	Costa Rica	2.0	15.90	0.5	9'550
10	Chile	3.0	38.34	4	15'230
11	Colombia	3.1	19.80	1	7'560
12	Saint Kitts and Nevis	3.3	36.67	2.0	13'460
13	Barbados	3.4	42.50	6.0	15'231
14	Peru	4.1	22.05	1	6'390
15	Ecuador	4.4	20.16	2	5'510
16	Dominican Republic	4.5	21.28	1.0	5'620
17	Grenada	4.7	29.39	2.0	7'460
18	El Salvador	5.1	15.81	0.5	3'720
19	Antigua and Barbuda	5.1	54.94	1.0	12'910
20	Suriname	5.38	41.48	6.14	9'220
21	Jamaica	5.9	25.57	1.0	5'220
22	Saint Lucia	6.1	36.20	2.0	7'090
23	St. Vincent and Grenadines	6.1	33.65	1.0	6'580
24	Paraguay	6.29	21.19	0.75	4'040
25	Dominica	6.7	37.91	2.0	6'760
26	Guyana	7.79	24.54	0.25	3'750
27	Honduras	8.63	15.68	0.25	2'180
28	Guatemala	9.83	27.36	0.5	3'340
29	Bolivia	11.78	25.04	0.42	2'550
30	Belize	12.88	50.00	0.26	4'660
31	Nicaragua	13.96	20.70	0.5	1'780
32	Haiti	66.1	44.60	0.3	810
33	Cuba	85.8	430.00	0.3	6'014

*Table 2 - Affordability entry-level broadband plan*

## 4.7 Benchmark prices of entry-level broadband package per 1 Mbit/s

In the affordability benchmark in paragraph 4.6, the fact that entry-level broadband packages vary speed significantly in each country is ignored. The affordability benchmark checks if the speed is broadband (more than 256 Kbit/s), and if yes, the price value is valid.

However it is also interesting when prices of entry-level broadband prices are normalized to the speed of 1 Mbit/s. For example, in Curaçao the entry-level broadband subscription prices 29,02 USD for 6 Mbit/s. In Trinidad and Tobago, the price offered is 12,28 USD for 256 Kbit/s. To compare these prices with speed value incorporated, we normalize all values to 1 Mbit/s. For Curaçao, this means we may divide the price by 6, for Trinidad and Tobago we multiply it by 4. The normalized ranking to 1 Mbit/s is as follows (see table). Curaçao is ranked 2<sup>nd</sup> after Uruguay.

Rank	Economy	Price (normalized) per 1 Mb/s
1	Uruguay	2.81
<b>2</b>	<b>Curaçao</b>	<b>4.83</b>
3	Suriname	6.76
4	Barbados	7.08
5	Chile	9.59
6	Ecuador	10.08
7	Panama	10.69
8	Venezuela	10.91
9	Mexico	13.23
10	Brazil	13.82
11	Grenada	14.70
12	Saint Lucia	18.10
13	Saint Kitts and Nevis	18.34
14	Dominica	18.96
15	Colombia	19.80
16	Dominican Republic	21.28
17	Peru	22.05
18	Jamaica	25.57
19	Paraguay	28.25
20	Bahamas	29.99
21	El Salvador	31.62
22	Costa Rica	31.80
23	St. Vincent and Grenadines	33.65
24	Nicaragua	41.40
25	Trinidad and Tobago	49.12
26	Guatemala	54.72
27	Antigua and Barbuda	54.94
28	Bolivia	59.62
29	Honduras	62.72
30	Guyana	98.16
31	Haiti	178.40
32	Belize	192.31
33	Cuba	1720.00

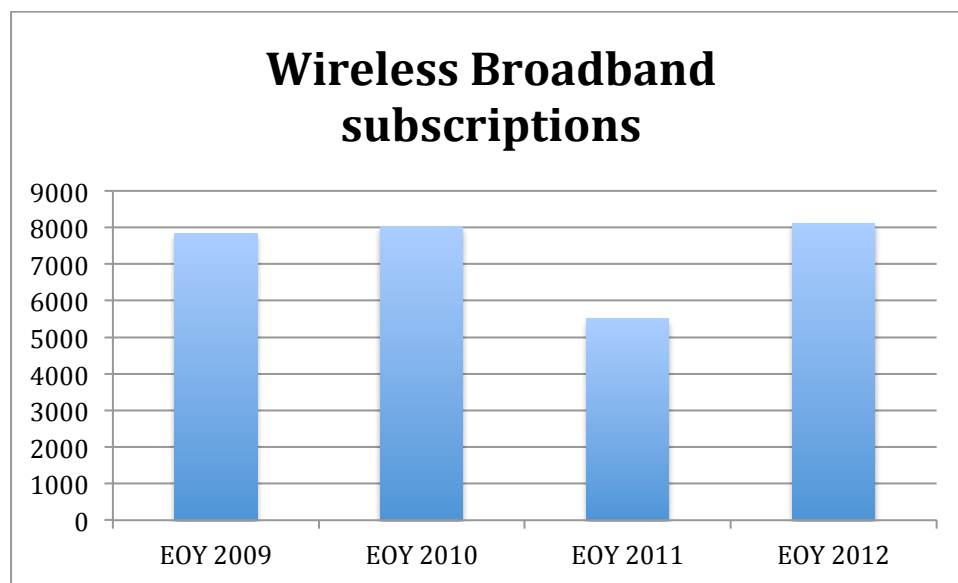
Table 3 - Benchmark prices of entry-level broadband package per 1 Mbit/s



## 5 WIRELESS BROADBAND

### 5.1 Total wireless broadband subscriptions

It is estimated that the market for wireless broadband subscriptions grew significantly in 2013 due to the introduction of 3G services in Curaçao. However, BT&P did not receive enough data from operators to be able to estimate the end of year 2013 figure. Therefore, only end of year 2012 figures are available and shown in figure 10.



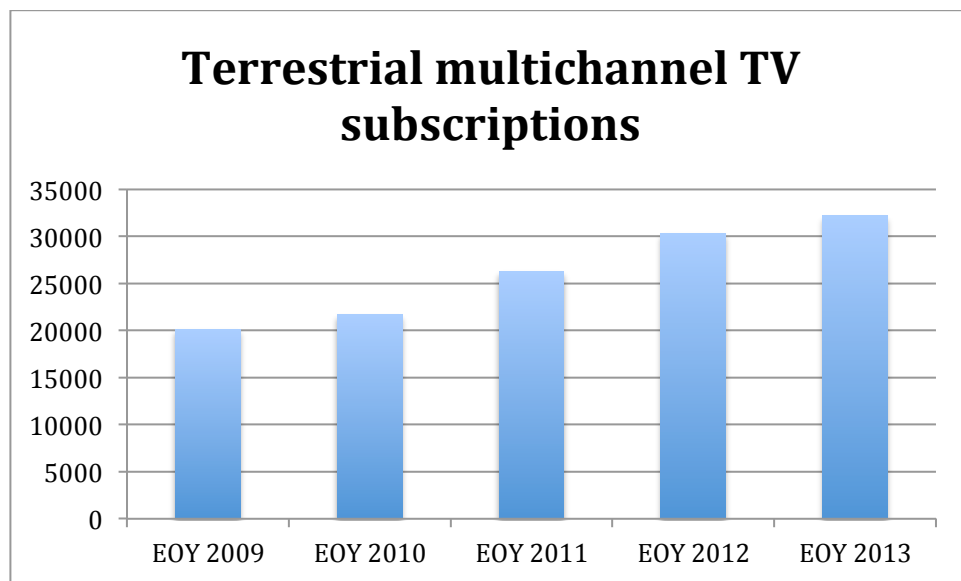
*Figure 10: Wireless Broadband subscriptions, EOY 2009 – EOY 2012*

In 2011, a significant decrease in Wireless Broadband subscriptions was recorded. This was due to the drop of Wi-Max connections. Since then, and with to the introduction of 3G services, Wireless Broadband subscriptions grew back to its former proportions..

## 6 OTHER INDICATORS

### 6.1 Terrestrial multichannel TV subscriptions

The trend over the latest 5 years is in the upward direction when looking at the number of Terrestrial multichannel TV subscriptions. The (paid) television market seems to continue its upward trend in 2013 as illustrated in Figure 11. End of year 2013, the total subscriptions recorded approximately 32.2 thousand compared to 30.3 thousand the year before. This represented an overall 1.9 thousand or 6.3% rise in subscriptions.



*Figure 11: Terrestrial multichannel TV subscriptions, EOY 2009 – EOY 2013*

## Appendix A - Trends 2009-2013 for Curaçao

How to read the data:

1. Thousands are separated by an apostrophe (') and decimals by a period (.).
2. Other symbols used:

... or "blank"	Data not available (yet).
—	Zero or a quantity less than the unit shown. Also used for data items that are not applicable.
Italics	Data in italics are BTP estimates.

3. Telecommunication/ICT data have been obtained from replies to ITU questionnaires from operators and the national statistics office. The main source of the telecommunication/ICT data for each economy is shown in the list of sources, see Appendix C.
4. The Yearbook has been prepared by the Bureau Telecommunicatie en Post Curaçao. Comments should be addressed to: Mr. Leonardo Ladeira, Bureau Telecommunicatie en Post, Beatrixlaan 9, Willemstad, Curaçao.
5. Please refer to Appendix B for definitions.
6. Information about ITU statistics is available on: <http://www.itu.int/ITU-D/ict>

CURAÇAO

INDICATOR	EOY 2009	EOY 2010	EOY 2011	EOY 2012	EOY 2013
<b>DEMOGRAPHY, ECONOMY</b>					
Population	147122	150284	151378	152798	154843
Households	...	...	...	54940	57349
<b>FIXED TELEPHONE NETWORK</b>					
Fixed-telephone subscriptions	83080	78846	68070	63868	63017
Fixed-telephone subscriptions per 100 inhabitants	56.47	52.46	44.97	41.80	40.70
Price of a three-minute local call to a fixed-telephone line, peak rate, in USD	...	...	...	0.17	0.17
Price of a three-minute local call to a fixed-telephone line, off-peak rate, in USD	...	...	...	0.17	0.17
<b>MOBILE-CELLULAR NETWORK</b>					
Mobile-cellular telephone subscriptions	201097	204024	206294	204702	203502
Mobile-cellular subscriptions per 100 inhabitants	136.69	135.76	136.28	133.97	131.42
Mobile-cellular prepaid – price of a one-minute local call (peak, on- net) in USD	...	...	...	0.39	0.39
Mobile-cellular prepaid – price of a one-minute local call (off-peak, on-net) in USD	...	...	...	0.32	0.32
Mobile-cellular prepaid – price of a one-minute local call (peak, off-net) in USD	...	...	...	0.41	0.41
Mobile-cellular prepaid – price of a one-minute local call (off-peak, off-net) in USD	...	...	...	0.41	0.41
<b>INTERNET</b>					
International Internet bandwidth, in Mbit/s	...	...	...	4730	8200
<b>FIXED (WIRED) BROADBAND</b>					
Fixed (wired) Broadband subscriptions	...	...	31800	35380	40000
Fixed (wired) Internet Broadband subscriptions per 100 inhabitants	...	...	21.01	23.15	25.83
<b>WIRELESS BROADBAND</b>					
Total wireless broadband subscription	7846	8020	5500	8120	...
Mobile-broadband subscriptions	...	...	...	8118	...
Mobile broadband subscriptions per 100 inhabitants	5.33	5.34	3.63	5.39	...
<b>OTHER INDICATORS</b>					
Terrestrial multichannel TV subscriptions	20149	21681	26320	30329	...
<b>PERFORMANCE INDICATORS</b>					
Average download speed, in Kb/s (See appendix C for calculations)	1346	2285	6025	6727	12895

Table 4 – Curacao data EOY 2009 – EOY 2013

## Appendix B – Definitions

INDICATOR	DEFINITION
DEMOGRAPHY, ECONOMY	The indicators in this category are useful for deriving ratios in order to make comparisons across countries. They are generally obtained from international organizations (see Sources) or national statistical offices. Readers are advised to consult the publications of the international organizations shown in Sources for precise definitions of the demographic and macro-economic data.
Population	The data for population are mid-year estimates. They typically refer to the de facto population within the present boundaries.
Households	The data for households refer to the number of housing units consisting of persons who live together or a person living alone. Estimates are based on growth rates between censuses.
FIXED TELEPHONE NETWORK	The indicators in this category refer to the fixed telephone network.
Fixed-telephone subscriptions	Fixed-telephone subscriptions refers to the sum of active number of analogue fixed-telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones.  This indicator was previously called Main telephone lines in operation.
Fixed-telephone subscriptions per 100 inhabitants.	Calculated by dividing the number of fixed telephone subscriptions by the population and multiplying by 100.
Price of a three-minute local call to a fixed-telephone line, peak rate	Price of a three-minute local call (peak-rate) to a fixed-telephone line refers to the price of a three-minute peak local call from a residential fixed-telephone line, including any call set-up charges, within the same exchange area using the subscriber's own terminal (i.e. not from a public telephone). Taxes should be included.
Price of a three-minute local call to a fixed-telephone line, off-peak rate	Price of a three-minute local call to a fixed-telephone line refers to the price of a three-minute off-peak local call from a residential fixed-telephone line, including any call set-up charges, within the same exchange area using the subscriber's own terminal (i.e. not from a public telephone). Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
MOBILE CELLULAR NETWORK	The indicators in this category refer to mobile cellular networks.
Mobile-cellular telephone subscriptions	Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.
Mobile-cellular subscriptions per 100 inhabitants	Calculated by dividing the number of mobile-cellular telephone subscriptions by the population and multiplying by 100.

Mobile-cellular prepaid – price of a one-minute local call (peak, on- net)	Refers to the price per minute of a peak prepaid call from a mobile- cellular telephone with a prepaid subscription to another subscriber in the same network. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
Mobile-cellular prepaid – price of a one-minute local call (off-peak, on- net)	Refers to the price per minute of a prepaid call from a mobile-cellular telephone with a prepaid subscription made to the same mobile-cellular network during off-peak time. Off-peak refers to the 2010: cheapest rate before mid-night. If the only off-peak period is after mid-night, the peak price should be used. Taxes should be included.
Mobile-cellular prepaid – price of a one-minute local call (peak, off- net)	The price per minute of a peak rate call from a mobile-cellular prepaid telephone to a mobile-cellular subscriber of another (competing) network during peak time. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
Mobile-cellular prepaid – price of a one-minute local call (off-peak, off- net)	The price per minute of an off-peak rate call from a mobile cellular prepaid telephone to a mobile cellular subscriber of another (competing) network. Off-peak refers to the cheapest rate before mid-night. If the only off-peak period is after mid-night, the peak price should be used. Taxes should be included.
INTERNET	The indicators in this category refer to Internet.
International Internet bandwidth, in Mbit/s	International Internet bandwidth refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s). It is measured as the sum of used capacity of all Internet exchanges (locations where Internet traffic is exchanged) offering international bandwidth. If capacity is asymmetric (i.e. more incoming (downlink) than outgoing (uplink) capacity), then the incoming (downlink) capacity should be provided.
<b>FIXED (WIRED) BROADBAND BY TECHNOLOGY</b>	The indicators in this category refer to fixed (wired)-broadband subscriptions by technology.
Fixed (wired)-broadband subscriptions	Fixed (wired)-broadband subscriptions refers to subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the- home/building and other fixed (wired)-broadband subscriptions. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks and technologies listed under the wireless-broadband category.
Fixed (wired)-broadband subscriptions per 100 inhabitants.	Calculated by dividing the number of fixed (wired) broadband Internet subscriptions by the population and multiplying by 100.
Fixed (wired)-broadband monthly subscription charge	Fixed (wired)-broadband monthly subscription charge refers to the monthly charge subscription charge for fixed (wired)-broadband Internet service. Fixed (wired) broadband is considered to be any dedicated connection to the Internet at downstream speeds equal to, or greater than, 256 kbit/s. If several offers are available, preference should be given to the 256 kbit/s connection.
Fixed (wired)-broadband speed, in Mbit/s	Fixed (wired)-broadband speed, in Mbit/s refers to the advertised maximum theoretical download speed, and not speeds guaranteed to users associated with a fixed (wired)-broadband Internet monthly subscription.

<b>WIRELESS BROADBAND</b>	The indicators in this category refer to wireless broadband.
Wireless-broadband subscriptions	Wireless-broadband subscriptions refers to the sum of satellite broadband, terrestrial fixed wireless broadband and active mobile-broadband subscriptions to the public Internet.
Mobile- broadband subscriptions	Mobile-broadband subscriptions refers to the sum of standard mobile-broadband and dedicated mobile-broadband subscriptions. It covers actual subscribers, not potential subscribers, even though the latter may have broadband enabled- handsets.
Mobile-broadband subscriptions per 100 inhabitants	Calculated by dividing the number of mobile-broadband Internet subscriptions by the population and multiplying by 100.
<b>OTHER INDICATORS</b>	
Terrestrial multichannel TV subscriptions	Terrestrial multichannel TV subscriptions refers to the number of subscriptions to terrestrial multichannel TV such as cable TV, Internet protocol television (IPTV), digital terrestrial TV (DTT), microwave multipoint distribution systems (MMDS).

*Table 5 – Definitions*

## Appendix C – Download speeds

YEAR AVERAGES in Kbps	2009	2010	2011	2012	2013
Average download speeds per year	1345.5	2285.3	6024.8	6726.7	12895.14

*From: Ookla Netindex,  
viewed with Google Public  
data explorer \**

*Table 6 – Definitions*

MONTHLY RESULTS in Kbps	2009	2010	2011	2012	2013
January	1101.19	1348.84	5753.22	6490.05	...
February	1050.45	1711.44	5719.62	6633.30	...
March	1147.63	1615.78	5520.82	6529.43	...
April	1376.34	1568.16	5675.62	6603.65	12814.36
May	1284.47	2025.94	5437.88	6613.32	13042.97
June	1402.40	1805.20	5542.92	6577.46	13849.50
July	1390.57	1878.51	6205.85	6986.88	13095.30
August	1410.99	2654.15	6419.04	7846.57	13454.28
September	1598.92	2659.47	6424.34	7593.47	13176.01
October	1444.95	2808.32	5882.68	6451.46	13079.28
November	1482.57	3405.19	6681.45	5763.54	11557.14
December	1455.22	3942.85	7034.25	6631.60	11987.44

*Table 7 – Monthly download speed results*

\*[http://www.google.com/publicdata/explore?ds=z8ii06k9csels2\\_](http://www.google.com/publicdata/explore?ds=z8ii06k9csels2_)  
(not available anymore)

The average yearly download speed data is calculated from the yearly average of monthly results in a year, see Appendix E. As from April 2013, Curaçao is recorded separately, so as of 2013 measurements from April to December are used for higher accuracy.



## Appendix D1 – List of countries and comparison data

General Statistics		Fixed-telephone subscriptions per 100 inhabitants	Mobile-cellular telephone subscriptions per 100 inhabitants	Fixed (wired)- broadband subscriptions per 100 inhabitants	Mobile broadband subscriptions per 100 inhabitants
Curacao		40.7	131.4	25.8	...
Caribbean		32.8	118.2	18.6	25.5
South America		17.4	124.0	8.7	26.5
Central America		12.4	116.5	5.4	17.2
World		15.9	93.1	9.9	27.3
Developed		40.3	120.6	27.2	74.0
Developing		14.5	98.7	6.3	17.4
Caribbean region	Island	Fixed-telephone subscriptions per 100 inhabitants	Mobile-cellular telephone subscriptions per 100 inhabitants	Fixed (wired)- broadband subscriptions per 100 inhabitants	Mobile broadband subscriptions per 100 inhabitants
Lucayan Archipelago	Bahamas	36.04	76.05	4.11	...
	Turks and Caicos Islands	12.09	...	...	...
Greater Antilles	Cuba	10.98	17.71	0.05	...
	Haiti	0.40	69.40	...	...
	Dominican Republic	11.26	88.43	4.65	25.41
	Jamaica	8.99	102.24	5.06	30.76
	Cayman Islands	62.83	167.77	34.80	...
	Puerto Rico	17.92	83.65	16.30	15.82
Lesser Antilles - Leeward islands	U.S. Virgin Islands (Saint Croix Saint Thomas Saint John Water Island)	...	...	...	...
	British Virgin Islands (Tortola, Virgin Gorda, Anegada, Jost van Dyke)	42.62	188.44	21.81	47.11
	Anguilla	41.96	181.82	30.07	...
	Antigua and Barbuda	36.82	127.09	4.61	30.39
	Saint Martin	...	...	...	...
	Sint Maarten	...	...	...	...
	Saba	...	...	...	...
	Sint Eustatius	...	...	...	...
	Saint Barthélemy	...	...	...	...
	Saint Kitts and Nevis	35.43	142.09	24.54	5.54
	Montserrat	58.93	88.39	23.57	...
	Guadeloupe (Les Saintes, Marie- Galante, La Désirade)	..	...	...	...
Windward islands	Dominica	23.81	129.96	14.81	...
	Martinique	...	..	...	...
	Saint Lucia	18.38	116.31	13.72	8.23

	St. Vincent and Grenadines	17.43	114.63	13.35	...
	Grenada (Grenada, Carriacou and Petite Martinique)	26.99	125.59	17.00	0.85
	Barbados	52.25	108.10	23.82	41.46
	Trinidad and Tobago	21.72	144.94	14.56	20.16
Leeward Antilles	Aruba	34.01	134.87	18.66	...
	Curacao	40.70	131.4	25.8	...
	Bonaire	...	...	...	...
Other	Bermuda	110.19	144.32	61.37	35.27
<i>AVERAGES</i>		<b>32.81</b>	<b>118.25</b>	<b>18.63</b>	<b>25.52</b>
<b>South America</b>					
Ecuador		15.22	111.46	6.37	26.27
Uruguay		30.77	154.62	21.13	45.54
Chile		18.18	134.29	12.96	35.66
Brazil		22.48	135.31	10.08	51.46
Colombia		14.78	104.08	9.29	24.96
Argentina		23.31	162.53	14.44	32.09
Paraguay		6.43	103.69	1.7	4.89
Peru		11.26	98.08	5.18	2.91
Suriname		15.75	161.07	6.88	13.06
Venezuela		25.57	101.61	6.31	40.85
Bolivia		8.19	97.7	1.33	13.88
<i>AVERAGES</i>		<b>17.45</b>	<b>124.04</b>	<b>8.70</b>	<b>26.51</b>
<b>Central America</b>					
Mexico		16.83	85.84	10.85	13.45
Panama		15.17	162.97	7.71	25.22
Honduras		7.65	95.92	0.85	11.72
El Salvador		14.98	136.19	4.45	6.04
Guatemala		12.04	140.39	2.21	4.95
Costa Rica		19.88	145.97	9.74	72.73
Nicaragua		5.34	111.98	2.17	1.27
Belize		7.25	52.61	...	2.05
<i>AVERAGES</i>		<b>12.39</b>	<b>116.48</b>	<b>5.43</b>	<b>17.18</b>

## Appendix D2 – List of countries and comparison data (prices)

Economy	Fixed-Tariff 3 minute call, peak (USD)	Fixed-Tariff 3 minute call, off peak (USD)	1-min call (peak, on-net) (USD)	1-min call (off-peak, on-net) (USD)	1-min call peak, off-net (USD)	1-min call (off-peak, off-net) (USD)
Curacao	0.17	0.17	0.39	0.32	0.41	0.41
Caribbean	0.14	0.14	0.24	0.18	0.30	0.26
South America	0.10	0.08	0.24	0.22	0.28	0.26
Central America	0.09	0.08	0.20	0.20	0.21	0.21
Economy	Fixed-Tariff 3 minute call (USD)	Fixed-Tariff 3 minute call off peak (USD)	Mobile-cellular prepaid– 1-min call (peak, on-net) (USD)	Mobile-cellular prepaid– 1-min call (off-peak, on-net) (USD)	Mobile-cellular prepaid– 1-min call (USD)	Mobile-cellular prepaid– 1-min call (USD)
Bahamas	...	...	0.33	0.15	0.33	0.15
Turks and Caicos Islands	0.45	0.45	...	...	...	...
Cuba	...	...	...	...	...	...
Haiti		...	0.11	0.11	0.12	0.09
Dominican Republic	0.10	0.10	0.18	0.18	0.24	0.24
Jamaica	0.03	0.03	0.10	0.08	0.15	0.14
Cayman Islands	0.16	0.16	0.27	0.25	0.49	0.43
Puerto Rico	...	...	0.11	0.11	0.11	0.11
U.S. Virgin Islands (Saint Croix Saint Thomas Saint John Water Island)	...	...	...	...	...	...
British Virgin Islands (Tortola, Virgin Gorda, Anegada, Jost van Dyke)	0.45	0.45	...	...	...	...
Anguilla	0.10	0.07	0.22	0.19	0.31	0.31

Antigua and Barbuda	0.06	0.06	0.26	0.18	0.26	0.26
Saint Martin	...	...	...	...	...	...
Sint Maarten	...	...	...	...	...	...
Saba	...	...	...	...	...	...
Sint Eustatius	...	...	...	...	...	...
Saint Barthélemy	...	...	...	...	...	...
Saint Kitts and Nevis	0.10	0.09	0.28	0.09	0.39	0.39
Montserrat	...	...	...	...	...	...
Guadeloupe (Les Saintes, Marie-Galante, La Désirade)	...	...	...	...	...	...
Dominica	0.08	0.04	0.21	0.11	0.36	0.34
Martinique	...	...	...	...	...	...
Saint Lucia	0.09	0.06	0.32	0.28	0.36	0.34
St. Vincent and Grenadines	0.09	0.06	0.32	0.28	0.33	0.33
Grenada (Grenada, Carriacou and Petite Martinique)	0.09	0.06	0.18	0.15	0.38	0.36
Barbados	...	...	0.23	0.23	0.23	0.23
Trinidad and Tobago	0.11	0.11	0.22	0.13	0.22	0.13
Aruba	0.09	...	0.41	0.20	0.41	0.20
Curacao	0.17	0.17	0.39	0.32	0.41	0.41
Bonaire	...	...	...	...	...	...
Bermuda	...	...	...	...	...	...
<i>AVERAGES</i>	<b>0.14</b>	<b>0.14</b>	<b>0.24</b>	<b>0.18</b>	<b>0.30</b>	<b>0.26</b>
<b>South America</b>						
Ecuador	0.03	0.03	0.20	0.20	0.20	0.20
Uruguay	0.16	0.05	0.32	0.32	0.32	0.32
Chile	0.16	0.16	0.18	0.18	0.31	0.31
Brazil	0.17	0.11	0.53	0.53	0.55	0.55
Colombia	0.26	0.26	0.19	0.19	0.19	0.19

Argentina	0.02	0.01	0.27	0.27	0.53	0.53
Paraguay	0.09	0.07	0.18	0.18	0.18	0.18
Peru	0.06	0.05	0.18	0.18	0.18	0.18
Suriname	0.05	0.05	0.18	0.16	0.22	0.22
Venezuela	0.04	0.04	0.18	0.13	0.18	0.13
Bolivia	0.08	0.08	0.22	0.10	0.22	0.10
<i>AVERAGES</i>	<b>0.10</b>	<b>0.08</b>	<b>0.24</b>	<b>0.22</b>	<b>0.28</b>	<b>0.26</b>
<b>Central America</b>						
Mexico	0.14	0.14	0.08	0.08	0.08	0.08
Panama	0.10	0.10	0.12	0.12	0.16	0.16
Honduras	0.08	0.08	0.16	0.16	0.16	0.16
El Salvador	0.13	0.13	0.17	0.17	0.14	0.14
Guatemala	0.11	0.11	0.30	0.30	0.30	0.30
Costa Rica	0.03	0.01	0.07	0.07	0.07	0.07
Nicaragua	0.03	0.02	0.34	0.34	0.47	0.47
Belize	0.15	0.08	0.34	0.34	0.34	0.34
<i>AVERAGES</i>	<b>0.09</b>	<b>0.08</b>	<b>0.20</b>	<b>0.20</b>	<b>0.21</b>	<b>0.21</b>

\*No ITU data available of Caribbean economies and therefore ignored in price comparison: Turks and Caicos Islands, Cuba, Cayman Islands, Puerto Rico, U.S. Virgin Islands (Saint Croix, Saint Thomas, Saint John, Water Island), British Virgin Islands (Tortola, Virgin Gorda, Anegada, Jost van Dyke), Saint Martin, Sint Maarten, Saba, Sint Eustatius, Saint Barthélemy, Montserrat, Guadeloupe (Les Saintes, Marie-Galante, La Désirade), Aruba, Bonaire, Bermuda, Martinique.

## Appendix E – Sources

### DEMOGRAPHY, ECONOMY

CBS data 2012, 2013

### TELECOMMUNICATION AND INFORMATION AND COMMUNICATION TECHNOLOGIES

Data on these subjects are obtained from operators through the annual ITU questionnaire, completed by ‘BTP aansluitpuntgegevens’ and ITU publications.

A full list:

- ITU Enquete EOY 2012 – UTS
- ITU Enquete EOY 2012, 2013 – Flow
- ITU Enquete EOY 2012, 2013 – Digicel
- ITU Enquete EOY 2012, 2013 – TRES
- ITU Enquete EOY 2012, 2013 – Scarlet
- ITU Enquete ICT Price Basket EOY 2012
- Curaçao Fixed Internet Penetration Indicators 2009, BT&P
- Curaçao Fixed Internet Penetration Indicators 2011, BT&P
- Curaçao Fixed Internet Penetration Indicators 2014, BT&P
- BTP aansluitpuntgegevens 2012, 2013
- BTP televisiegegevens 2009-2011
- ITU EYE Data: <http://www.itu.int/net4/itu-d/icteye/>
- ITU Yearbook of Statistics Telecom & ICT Indicators 2003-2013
- ITU Key data 2005-2015
- ITU Measuring the Information Society 2013, 2014
- CBS: Population and Population Growth of Curaçao (9-5-2014), downloaded from [www.cbs.cw](http://www.cbs.cw)
- AMS-IX Caribbean statistics portal: <https://cw.ams-ix.net/technical--2/statistics>

### DOWNLOAD SPEEDS

- Global Broadband Ookla Net Index - (not available anymore)