

Bureau Telecommunicatie en Post
Telecommunications Regulatory Authority of Curaçao

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Telecommunication, Broadband and Television Indicators

2009-2012

Willemstad, Curaçao

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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 first 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), which was sent to operators in the first half of 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' (published beginning of 2014). Together with another ITU publication called 'Measuring the Information Society 2013', 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 Centraal Bureau voor de Statistiek 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 four years, the number of subscriptions in the fixed voice market continued its downward trend in 2012 as illustrated in Figure 1. In 2012, total subscriptions recorded approximately 63.8 thousand compared to 68.0 thousand in 2011. This represented an overall 6.6 per cent or 4.2 thousand fall in subscriptions from the last period.

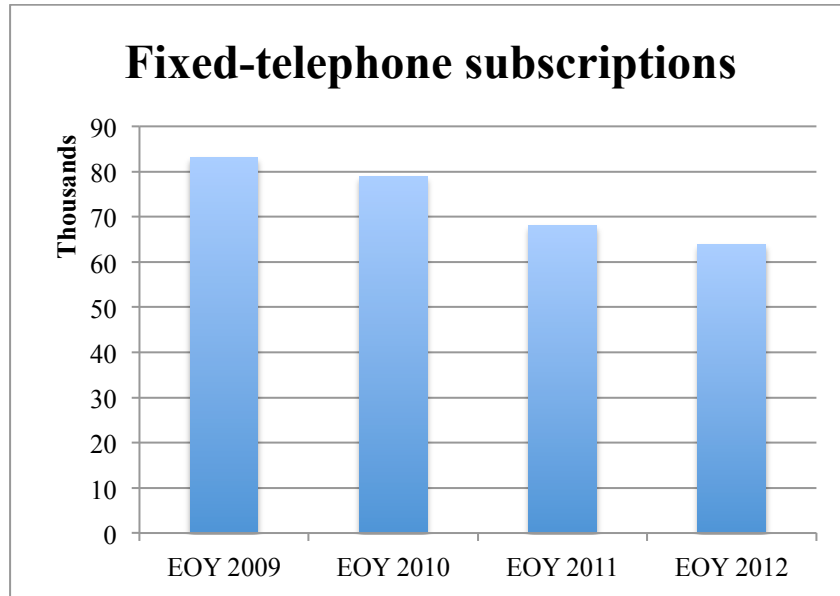


Figure 1: Fixed-telephone subscriptions, EOY 2009 – EOY 2012

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. As at December 2012 fixed voice penetration was calculated at 41.8. This means that in 2012 there were approximately 42 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.

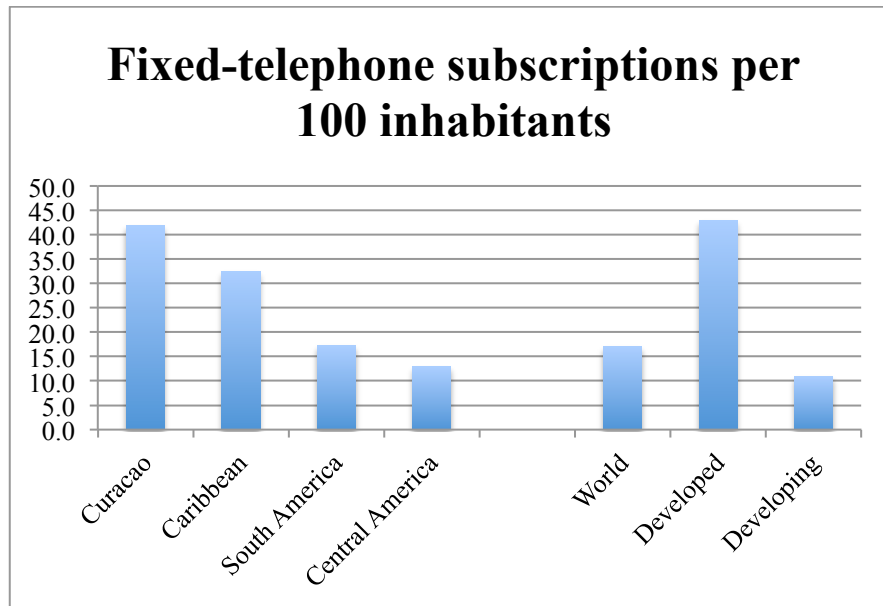


Figure 2: Fixed-telephone subscriptions per 100 inhabitants, EOY 2012
Compared to the region and the World¹

¹ 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 high, if compared to the average costs in the Caribbean region and South and Central America. The average price of a 3 minute call in the Caribbean would cost around 0.09 USD peak and 0.08 off peak. Further research must show how these price differences can be explained.

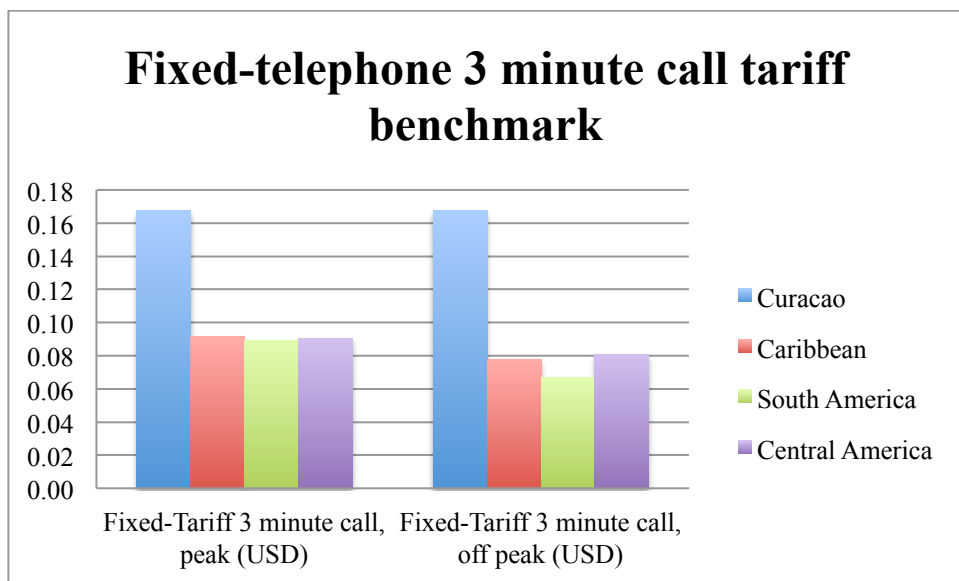


Figure 3: Fixed-telephone 3 minute call tariffs compared with the region in USD, EOY 2012

3 MOBILE-CELLULAR NETWORK

3.1 Mobile-cellular telephone subscriptions

The mobile market seems to continue the stable trend of the last four years in 2012. Recording a total of 204.7 thousand subscriptions as at December 2012, the mobile market experienced a little 0.8 per cent or 1.6 thousand decrease in the number of subscriptions when compared to 2011. As Figure 4 below highlights, the mobile voice market has been relatively flat.

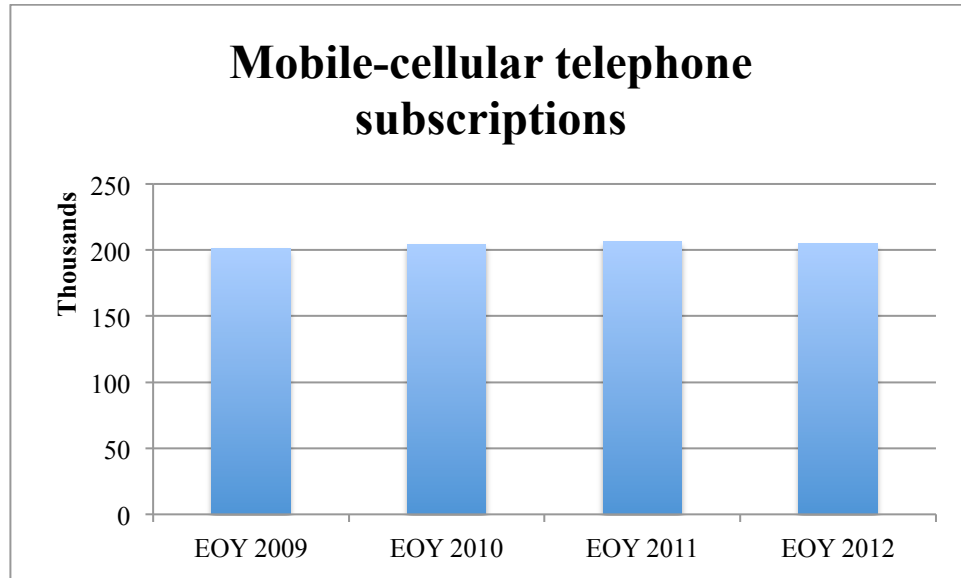


Figure 4: Mobile-cellular telephone subscriptions, EOY 2009 – EOY 2012

3.2 Mobile-cellular subscriptions per 100 inhabitants

As at December 2012, mobile penetration stood at 134.0. This implies that there were approximately 134 mobile subscriptions per 100 inhabitants in Curaçao at the end of 2012.

As shown in figure 5, Curaçao compares high in mobile penetration rates compared to region averages of the Caribbean, South American and Central American countries. Also it has a higher mobile-cellular penetration compared to developed, developing countries and the world average. See Appendix D1 for list of countries and source data.

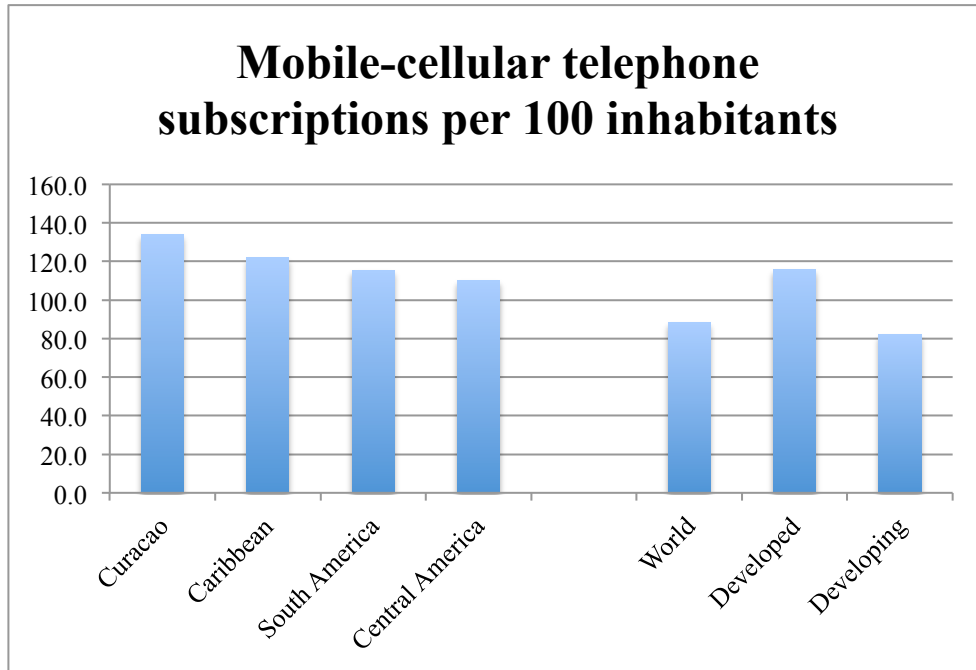


Figure 5: Mobile-cellular telephone subscriptions per 100 inhabitants, EOY 2012

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 2012.

As shown in figure 6, both peak and off-peak, on-net and off-net prices are high, 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.

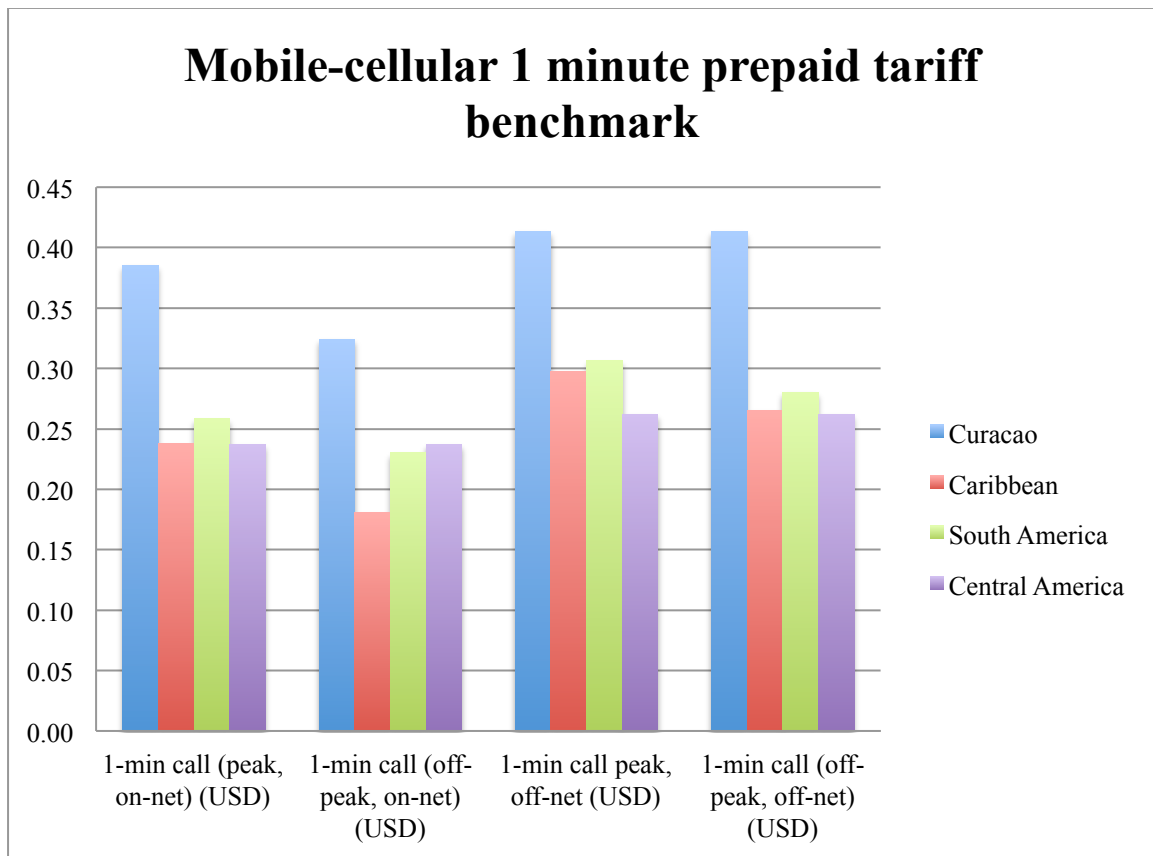


Figure 6: Mobile-cellular price of 1-minute call, compared to the region, EOY 2012

4 FIXED (WIRED) BROADBAND

4.1 International Bandwidth

The International Internet bandwidth is estimated at 4730 Mbit/s. This figure refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s). This figure is only an estimation as it needs more verification. BT&P is expecting a more accurate value when the data for EOY 2013 is delivered by the telecommunication providers.

4.2 Fixed (wired) broadband subscriptions

The market for fixed (wired) broadband² subscriptions experienced a significant growth in 2012. Figure 7 illustrates the figures for fixed (wired) broadband subscriptions in 2011 and 2012, and shows the increase of 11.2 percent or 3.6 thousand subscriptions. There were approximately 35.4 thousand fixed Broadband subscriptions in Curaçao, as at December 2012.

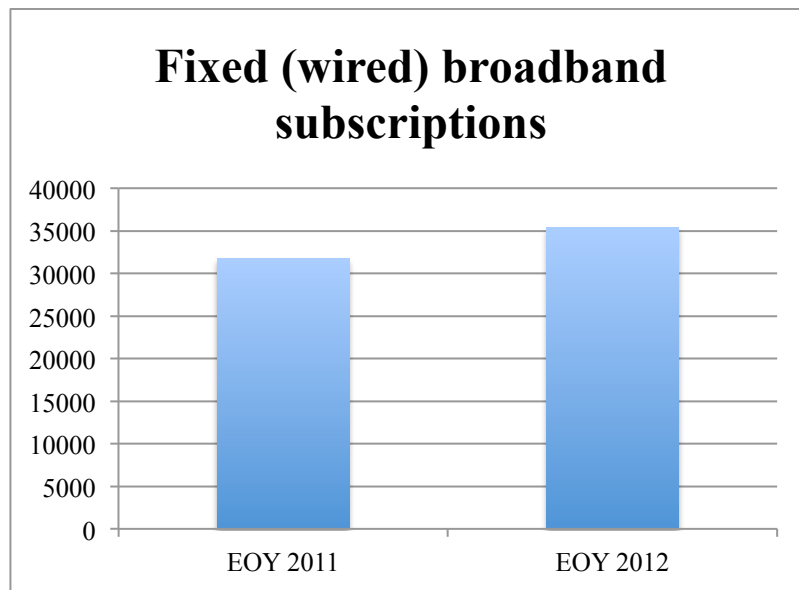


Figure 7: Fixed (wired) broadband subscriptions, EOY 2011 – EOY 2012

² 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

For 2012, Curaçao recorded a fixed (wired) Broadband penetration of 23.2. This implies that there were approximately 23 fixed (wired) Internet subscriptions for every 100 inhabitants in Curaçao at the end of 2012.

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

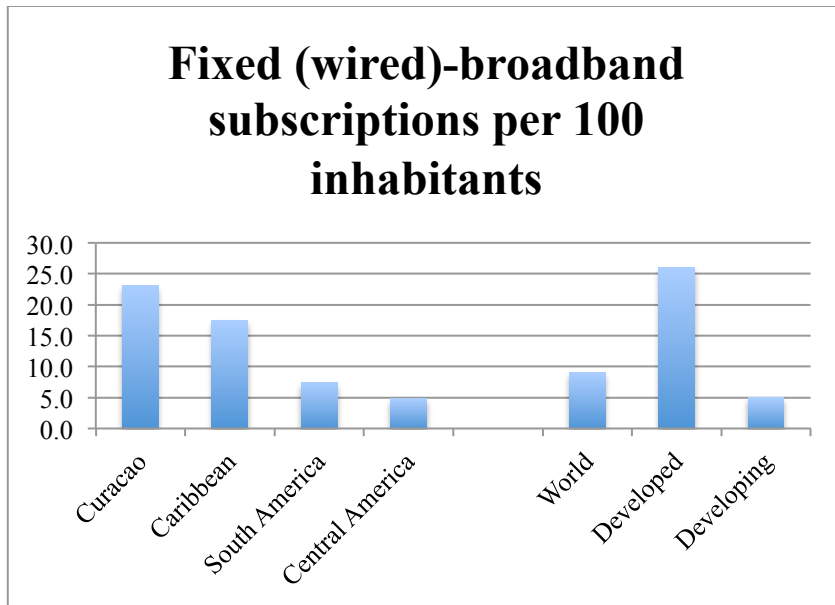


Figure 8: Fixed (wired) Broadband subscriptions per 100 inhabitants, EOY 2012

4.4 Ratio speeds of fixed (wired) broadband subscriptions

The data for the broadband market showed that approximately 52% of the subscriptions are of Internet speeds above 10 Mbit/s (see figure 9). Then there is a substantial group of approximately 45% of the subscriptions with a speed between 2 Mbit/s and 10 Mbit/s. The other 3% is taken up by speeds below 2 Mbit/s.

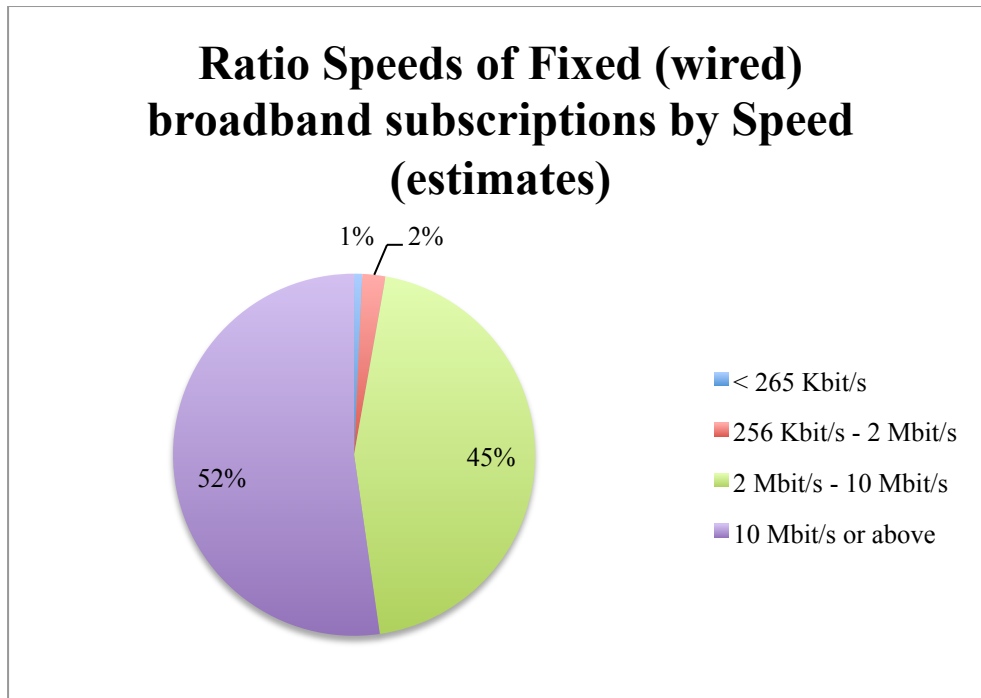


Figure 9: Ratio speeds of Fixed (wired) Broadband Subscriptions

4.5 Top list broadband penetration in the Caribbean region

Compared to the top list of broadband subscription per 100 inhabitants of the Caribbean region, Curaçao ranks 5th in a ranking list of islands in the Caribbean region of which data is available. In a world ranking, Curaçao would rank approximately 37th.

Rank	Economy	Fixed (wired) Broadband subscriptions per 100 inhabitants
1	Bermuda	61.74*
2	Cayman Islands	33.57
3	Anguilla	29.01
4	Saint Kitts and Nevis	27.25
5	Curaçao	23.15
6	Barbados	23.09
7	British Virgin Islands	21.09
8	Aruba	18.91*
9	Puerto Rico	15.51
10	Trinidad and Tobago	13.75
11	Grenada (Grenada, Carriacou and Petite Martinique)	13.69
12	Saint Lucia	13.59
13	St. Vincent and Grenadines	12.45
14	Montserrat	11.89
15	Dominica	11.86
16	Antigua and Barbuda	4.64
17	Dominican Republic	4.34
18	Jamaica	4.32
19	Bahamas	4.23
20	Cuba	0.04

* 2010 figure (last known figure)

4.6 Download speeds

Similar to the last three years, the year average download speed³ continued its upward trend in 2012 as illustrated in Figure 10. In 2012, the average download speed recorded was approximately 6.7 Mbit/s compared to 6.0 Mbit/s in 2011. This represents a 11.7 per cent increase in download speed in the last period. The upward trend of download speed is expected to continue in 2013, when the average download speed was measured around 13 Mbit/s.

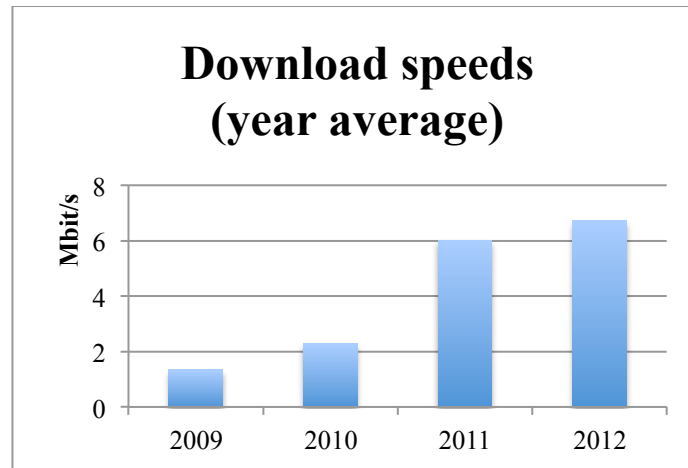


Figure 10: Download speeds (year average), 2009-2012

4.7 Affordability of 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 2012. 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 is ranked 5th in terms of affordability compared to countries in the Caribbean region, South- and Central America. From a world perspective, Curaçao would rank place 47th in terms of affordability in a list of 169 countries.

³ 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	GNI p.c., USD, 2011 (or latest available)
1	Trinidad and Tobago	1.0	12.3	15'040
2	Uruguay	1.5	14.9	11'860
3	Venezuela	1.5	15.4	11'920
4	Bahamas	1.6	30.0	21'970
5	Curaçao	1.8	29.0	19'869
6	Brazil	2.0	17.8	10'720
7	Panama	2.1	14	7'910
8	Mexico	2.3	17.6	9'240
9	Chile	2.5	25.8	12'280
10	Costa Rica	2.5	15.8	7'660
11	Saint Kitts and Nevis	3.5	36.7	12'480
12	Colombia	3.7	18.7	6'110
13	Peru	3.9	18	5'500
14	Barbados	4.3	45.2	12'660
15	Argentina	4.5	36.5	9'740
16	Grenada	4.9	29.4	7'220
17	Dominican Republic	5.3	23.3	5'240
18	Antigua and Barbuda	5.5	54.9	12'060
19	Dominica	5.6	33.0	7'090
20	Ecuador	5.8	20.2	4'140
21	Saint Lucia	6.5	36.2	6'680
22	St. Vincent and Grenadines	6.6	33.6	6'100
23	Suriname	6.6	41.9	7'640
24	Jamaica	7.0	29.2	4'980
25	El Salvador	7	20.3	3'480
26	Guatemala	8.6	20.6	2'870
27	Paraguay	8.8	21.8	2'970
28	Guyana	10.1	24.5	2'040
29	Honduras	12.1	19.9	1'970
30	Bolivia	14.4	24.5	2'040
31	Belize	16.3	50	3'690
32	Nicaragua	22.8	22.2	1'170
33	Haiti	81.9	47.8	700
34	Cuba	386.9	1760.4	5'460

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

In the affordability benchmark in paragraph 4.7, 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 12,30 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 2nd after Mexico. However: Mexico uses a capped subscription, and Curaçao does not.

Rank	Economy	Price per 1 Mb/s (USD)
1	Mexico	2.93*
2	Curaçao	4.84
3	Panama	14.00
4	Grenada	14.70
5	Dominica	16.50
6	Brazil	17.80
7	Saint Lucia	18.10
8	Saint Kitts and Nevis	18.35
9	Ecuador	20.20
10	Barbados	22.60
11	Dominican Republic	23.30
12	Chile	25.80
13	Jamaica	29.20
14	Bahamas	30.00
15	Venezuela	30.80
16	Costa Rica	30.98
17	St. Vincent and Grenadines	33.60
18	Paraguay	34.88
19	Peru	36.00
20	Argentina	36.50
21	Colombia	37.40
22	Uruguay	39.21
23	El Salvador	40.60
24	Nicaragua	44.40
25	Guyana	49.00
26	Bolivia	49.00
27	Trinidad and Tobago	49.20
28	Antigua and Barbuda	54.90
29	Honduras	79.60
30	Guatemala	82.40
31	Suriname	83.80
32	Haiti	191.20
33	Belize	192.31
34	Cuba	7041.60

* This subscription has a fixed (wired)-broadband cap of 10 Gigabytes, with a price of excess usage of 4,94 USD per 1 GB.

5 WIRELESS BROADBAND

5.1 Total wireless broadband subscriptions

The market for wireless broadband subscriptions experienced a significant growth in 2012, after a drop in 2011. Figure 11 illustrates the wireless broadband subscriptions in from 2009 to 2012. From 2011 to 2012, it shows an increase of 47.6 percent or 2.6 thousand subscriptions. There were approximately 8.1 thousand wireless internet subscriptions in Curaçao in December 2012.

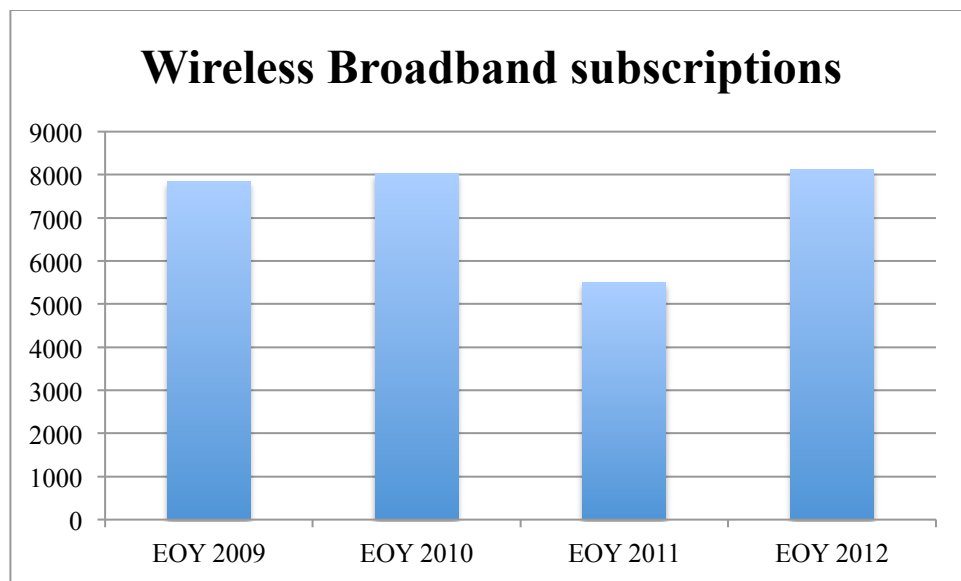


Figure 11: Wireless Broadband subscriptions, EOY 2009 – EOY 2012

5.2 Mobile broadband subscriptions per 100 inhabitants

For 2012, Curaçao recorded a Mobile broadband⁴ subscriptions penetration of 5.3. This implies that there were 5.3 Mobile broadband subscriptions for every 100 inhabitants in Curaçao at the end of 2012.

Compared to the region, as shown in figure 12, Curaçao has a low mobile Broadband subscription rate. Curaçao scores below average of Caribbean, South American, Central American countries. Also, it scores low compared to the world average subscription rate, in developed and developing countries. However, it is expected that these numbers will dramatically increase when the data for EOY 2013 is collected, as 3G and 4G services have become very popular and a lot of subscriptions were made in 2013. See Appendix D for list of countries and source data.

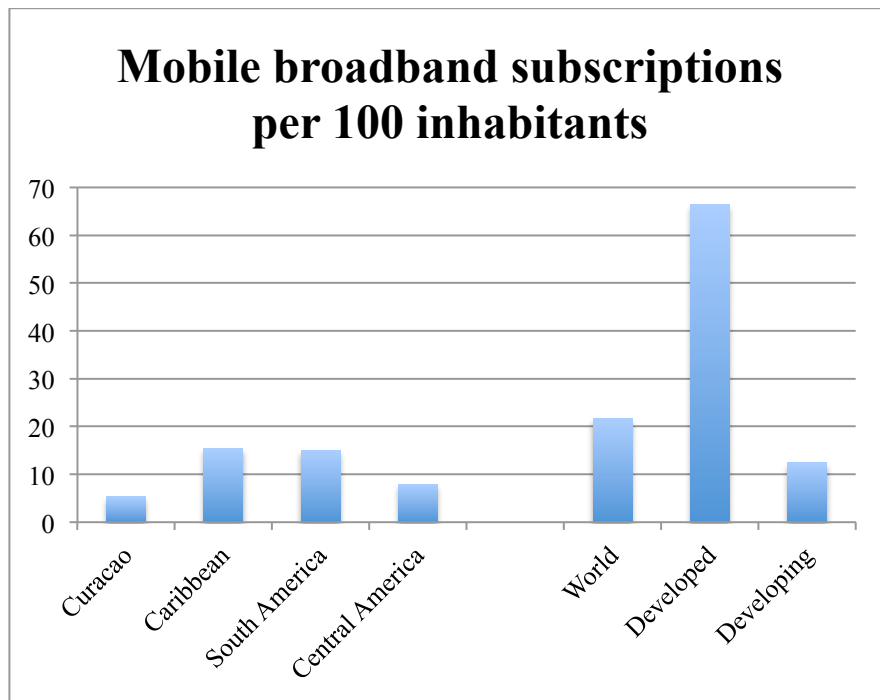


Figure 12: Mobile broadband subscriptions per 100 inhabitants, EOY 2012

⁴ Mobile broadband is a subset of Wireless broadband, excluding satellite broadband and terrestrial fixed wireless broadband subscriptions. For more information, please refer to Appendix B – Definitions.

6 OTHER INDICATORS

6.1 Terrestrial multichannel TV subscriptions

The trend seems to be 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 2012 as illustrated in Figure 13. In 2012, total subscriptions recorded approximately 30.3 thousand compared to 26.3 thousand in 2011. This represented an overall 4.0 thousand or 15.2% rise in subscriptions from the end of year 2011.

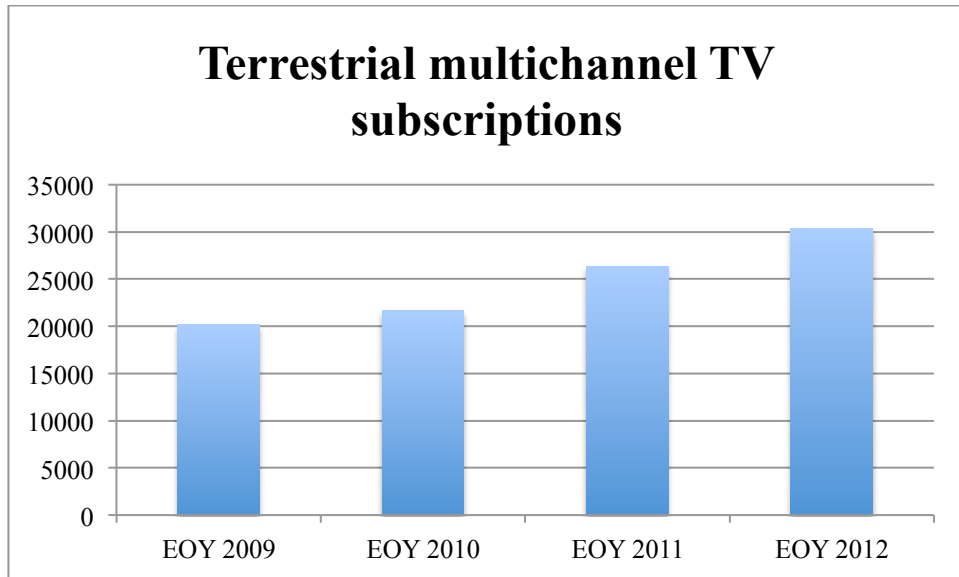


Figure 13: Terrestrial multichannel TV subscriptions, EOY 2009 – EOY 2012

Appendix A - Trends 2009-2012 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
DEMOGRAPHY, ECONOMY				
Population	147122	150284	151378	152798
Households				54940
FIXED TELEPHONE NETWORK				
Fixed-telephone subscriptions	83080	78846	68070	63868
Fixed-telephone subscriptions per 100 inhabitants	56.47	52.46	44.97	41.80
Price of a three-minute local call to a fixed-telephone line, peak rate, in USD				0.17
Price of a three-minute local call to a fixed-telephone line, off-peak rate, in USD				0.17
MOBILE-CELLULAR NETWORK				
Mobile-cellular telephone subscriptions	201097	204024	206294	204702
Mobile-cellular subscriptions per 100 inhabitants	136.69	135.76	136.28	133.97
Mobile-cellular prepaid – price of a one-minute local call (peak, on- net) in USD				0.39
Mobile-cellular prepaid – price of a one-minute local call (off-peak, on-net) in USD				0.32
Mobile-cellular prepaid – price of a one-minute local call (peak, off- net) in USD				0.41
Mobile-cellular prepaid – price of a one-minute local call (off-peak, off-net) in USD				0.41
INTERNET				
International Internet bandwidth, in Mbit/s				4730
FIXED (WIRED) BROADBAND				
Fixed (wired) Broadband subscriptions			31800	35380
Fixed (wired) Internet Broadband subscriptions per 100 inhabitants			21.01	23.15
WIRELESS BROADBAND				
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
OTHER INDICATORS				
Terrestrial multichannel TV subscriptions	20149	21681	26320	30329
PERFORMANCE INDICATORS				
Average download speed, in Kb/s (See appendix C for calculations)	1346	2285	6025	6727

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	Calculated by dividing the number of mobile-cellular telephone subscriptions by the

inhabitants	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.
FIXED (WIRED) BROADBAND BY TECHNOLOGY	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.

WIRELESS BROADBAND	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.
OTHER INDICATORS	
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).

Appendix C – Download speeds

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

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

MONTHLY RESULTS in Kbps	2009	2010	2011	2012
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
May	1284.47	2025.94	5437.88	6613.32
June	1402.40	1805.20	5542.92	6577.46
July	1390.57	1878.51	6205.85	6986.88
August	1410.99	2654.15	6419.04	7846.57
September	1598.92	2659.47	6424.34	7593.47
October	1444.95	2808.32	5882.68	6451.46
November	1482.57	3405.19	6681.45	5763.54
December	1455.22	3942.85	7034.25	6631.60

*http://www.google.com/publicdata/explore?ds=z8ii06k9csels2_

The 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 go up to approximately 13 Mbps.

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
Curaçao		41.8	134.0	23.2	5.3
Caribbean		32.5	121.9	17.4	15.4
South America		17.3	115.4	7.4	15.1
Central America		12.9	110.1	4.9	8.0
World		17.0	91.0	9.0	21.7
Developed		43.0	63.0	26.0	66.4
Developing		11.0	13.0	5.0	12.4
CARIBBEAN REGION	ECONOMY	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	36.29	80.65	4.23 (2011 figure)	2.69
	Turks and Caicos Islands	11.41	...	...	...
Greater Antilles	Cuba	10.79	14.92	0.04	...
	Haiti	0.49	59.91	...	...
	Dominican Republic	10.41	86.94	4.34	15.20
	Jamaica	9.55	96.27	4.32	1.57
	Cayman Islands	64.95	171.68	33.57	...
	Puerto Rico	19.12	82.55	15.51	13.72
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)	43.68	173.49	21.09	...
	Anguilla	42.46	184.69	29.01	...
	Antigua and Barbuda	37.23	143.01	4.64	13.16
	Saint Martin	...	...	...	...
	Sint Maarten	...	155.20	...	...
	Saba	...	...	...	...
	Sint Eustatius	...	...	...	...
	Saint Barthélemy	...	...	...	...
	Saint Kitts and Nevis	37.32	156.76	27.25	...
	Montserrat	51.53	83.23	11.89	19.62
	Guadeloupe (Les Saintes, Marie-Galante, La Désirade)	..	...	...	...
Windward islands	Dominica	20.34	152.47	11.86	...

	Martinique	...	..	...	...
	Saint Lucia	20.37	125.50	13.59	...
	St. Vincent and Grenadines	17.72	123.87	12.45	...
	Grenada (Grenada, Carriacou and Petite Martinique)	27.02	121.35	13.69	...
	Barbados	50.84	122.52	23.09	35.31
	Trinidad and Tobago	21.43	140.84	13.75	7.13
Leeward Antilles	Aruba	35.16	131.86	18.91 2010 figure	20.51
	Curaçao	41.80	133.97	23.15	5.31
	Bonaire	...	...	...	...
Other	Bermuda	105.80	139.54	61.74 2010 figure	35.27
<i>AVERAGES</i>		32.53	121.87	17.41	15.41
SOUTH AMERICA					
	Ecuador	14.9	106.23	5.28	21.3
	Uruguay	29.78	147.13	16.59	31.94
	Chile	18.76	138.17	12.41	27.89
	Brazil	22.3	125	9.15	33.2
	Colombia	13.01	102.85	8.16	4.93
	Argentina	23.52	151.91	10.89	12.41
	Paraguay	6.15	101.59	1.19	5.14
	Peru	11.39	98	4.74	2.79
	Suriname	16.17	106.46	5.48	14.97
	Venezuela	25.53	101.88	6.72	4.74
	Bolivia	8.38	90.44	1.05	6.55
<i>AVERAGES</i>		17.26	115.42	7.42	15.08
CENTRAL AMERICA					
	Mexico	16.73	83.35	10.52	9.35
	Panama	16.83	178.03	7.83	14.31
	Honduras	7.69	92.87	0.77	8.56
	El Salvador	16.82	137.34	3.84	5.48
	Guatemala	11.56	137.82	1.81	4.5
	Costa Rica	20.71	111.92	9.32	20.34
	Nicaragua	4.99	86.13	1.65	1.01
	Belize	7.84	53.21	3.08	0.13
<i>AVERAGES</i>		12.90	110.08	4.85	7.96

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)	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 (PEAK, OFF-NET) (USD)	MOBILE-CELLULAR PREPAID- 1-MIN CALL (OFF-PEAK, OFF-NET) (USD)
Curaçao	0.17	0.17	0.39	0.32	0.41	0.41
Caribbean	0.09	0.08	0.24	0.18	0.30	0.27
South America	0.09	0.07	0.26	0.23	0.31	0.28
Central America	0.09	0.08	0.24	0.24	0.26	0.26
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 (PEAK, OFF-NET) (USD)	MOBILE-CELLULAR PREPAID- 1-MIN CALL (OFF-PEAK, OFF-NET) (USD)
Bahamas	...	...	0.33	0.15	0.33	0.15
Haiti		...	0.11	0.08	0.12	0.10
Dominican Republic	0.11	0.11	0.20	0.20	0.25	0.25
Jamaica	0.04	0.04	0.12	0.09	0.16	0.16
Anguilla	0.08	0.07	0.22	0.19	0.28	0.28
Antigua and Barbuda	0.06	0.06	0.30	0.26	0.39	0.30
Saint Kitts and Nevis	0.10	0.09	0.19	0.16	0.34	0.33
Dominica	0.08	0.04	0.22	0.09	0.30	0.30
Saint Lucia	0.09	0.06	0.28	0.24	0.31	0.30
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	0.11	0.35	0.35
Barbados	...	...	0.26	0.23	0.36	0.34
Trinidad and Tobago	0.12	0.12	0.22	0.13	0.22	0.13
Curaçao	0.17	0.17	0.39	0.32	0.41	0.41
<i>AVERAGES</i>	0.09	0.08	0.24	0.18	0.30	0.27

South America						
Ecuador	0.03	0.03	0.18	0.18	0.25	0.25
Uruguay	0.17	0.06	0.32	0.32	0.32	0.32
Chile	...	...	...	...	...	...
Brazil	0.17	0.11	0.61	0.61	0.64	0.64
Colombia	0.15	0.15	0.18	0.18	0.24	0.24
Argentina	0.02	0.01	0.29	0.29	0.57	0.57
Paraguay	0.09	0.07	0.14	0.09	0.14	0.09
Peru	0.06	0.05	0.19	0.19	0.19	0.19
Suriname	0.05	0.05	0.18	0.16	0.22	0.22
Venezuela	0.06	0.06	0.25	0.18	0.25	0.18
Bolivia	0.08	0.08	0.25	0.11	0.25	0.11
<i>AVERAGES</i>	0.09	0.07	0.26	0.23	0.31	0.28
Central America						
Mexico	0.13	0.13	0.30	0.30	0.30	0.30
Panama	0.12	0.12	0.12	0.12	0.16	0.16
Honduras	...	...	...	...	...	...
El Salvador	...	...	...	...	...	...
Guatemala	0.11	0.11	0.27	0.27	0.27	0.27
Costa Rica	0.03	0.01	0.07	0.07	0.07	0.07
Nicaragua	0.04	0.03	0.32	0.32	0.43	0.43
Belize	0.11	...	0.34	0.34	0.34	0.34
<i>AVERAGES</i>	0.09	0.08	0.24	0.24	0.26	0.26

*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

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

DOWNLOAD SPEEDS

- Global Broadband Ookla Net Index - Source data viewed with Google Public data explorer: http://www.google.com/publicdata/explore?ds=z8ii06k9csels2_