

Bureau Telecommunicatie en Post
Telecommunications Regulatory Authority of Curaçao

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Telecommunication, Broadband and Television Indicators

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 third 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 2015, and requests to provide the values on the point-in-time date of 31 December 2014 (from here on: EOY 2014). In this report the fixed and mobile-telephone subscription indicators for EOY 2015 are based on BT&P data that is collected separately from the ITU Questionnaire.

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 2015' (published beginning of 2015). Together with another ITU publication called 'Measuring the Information Society 2015', 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

End 2014, total subscriptions recorded approximately 61.1 thousand compared to 63.7 thousand end 2013. This represented an overall 4.1 per cent or 2.59 thousand fall in subscriptions from the previous period.

In the end of 2015 the number of subscriptions increased to 62.6 thousand representing an overall 2.4 per cent or 1.44 thousand increase in subscriptions. This is the first time in the last years that the figures for fixed telephone network are showing an increase in numbers.

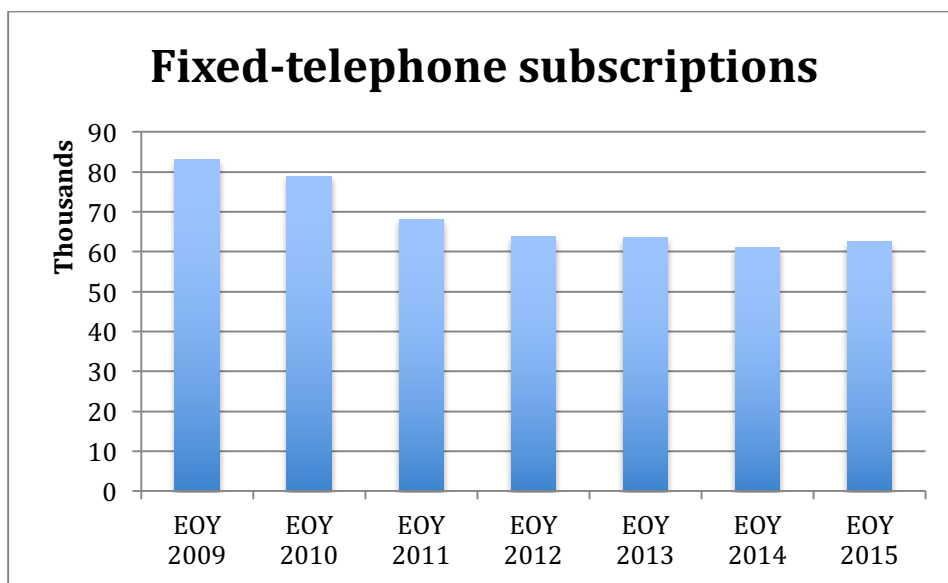


Figure 1: Fixed-telephone subscriptions, EOY 2009 - EOY 2015

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 2014 fixed voice penetration was calculated at 38.94. This means that in 2014 there were approximately 39 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.

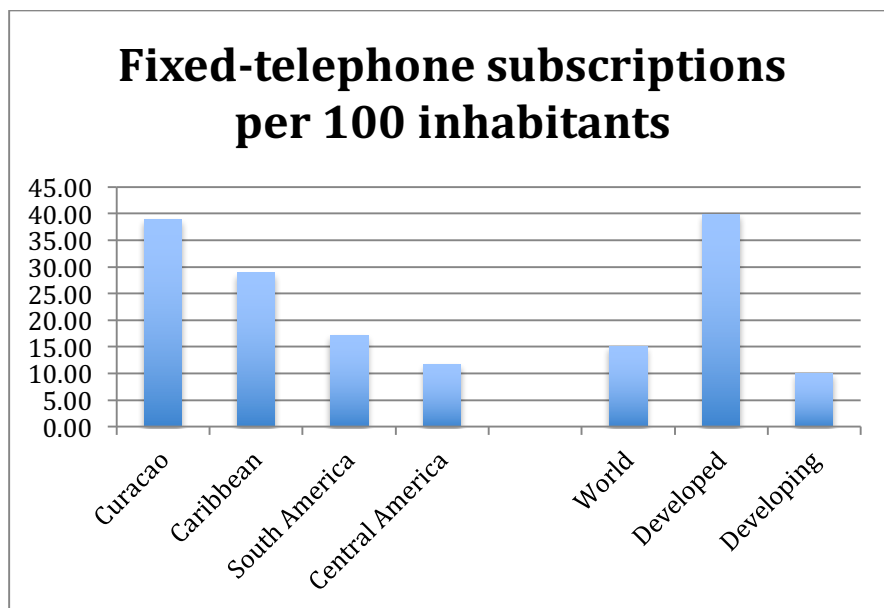


Figure 2: Fixed-telephone subscriptions per 100 inhabitants, EOY 2014
Compared to the region and the World¹

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 higher if compared to the average costs in the Caribbean region and South and Central America. The price difference compared with the Caribbean region has become smaller due to higher costs in the Caribbean region for peak phonecalls. The average price of a 3 minute call in the Caribbean would cost around 0.15 USD peak and 0.13 USD off peak.

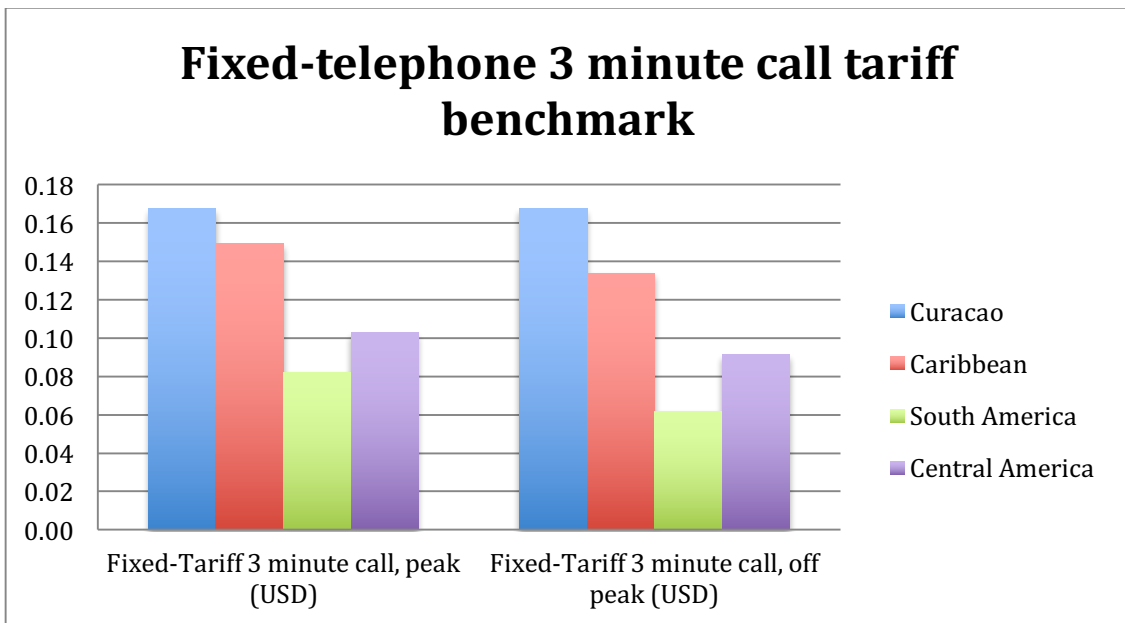


Figure 3: Fixed-telephone 3 minute call tariffs compared with the region in USD, EOY 2014

2.4 Affordability of Fixed-telephone price sub-basket

While absolute prices are important, comparing these with the average net income per month for the country gives insight in the affordability of fixed-telephone usage. ITU uses an international standardized ‘sub-basket’ when comparing and benchmarking fixed-telephony prices. The fixed-telephone sub-basket consists of 30 local calls (15 peak and 15 off-peak) of 3 minutes each. The sub-basket is then divided by the average monthly income (GNI) per capita to know which portion of the monthly income would go for this portion of phone calls. For Curacao, this sub-basket will cost 19.78 USD. This reflects a 1.16% of the GNI, which places Curacao on the 9th position of affordability in the region.

Rank	Economy	% of GNI	USD of fixed-telephony sub-basket	GNI p.c., USD, 2014 (or latest available)
1	Cuba	0.05	0.27	6010
2	Venezuela	0.12	1.22	6873
3	Suriname	0.40	3.10	9361
4	Trinidad and Tobago	0.46	6.01	15744
5	Uruguay	0.79	9.97	15165
6	Bahamas	0.90	16.25	21548
7	Costa Rica	1.06	8.45	9540
8	Saint Kitts and Nevis	1.09	12.61	13876
9	Curacao	1.16	19.78	20420
10	Antigua and Barbuda	1.18	12.78	13037
11	Ecuador	1.45	6.94	5754
12	Barbados	1.73	22.00	15219
13	Brazil	1.90	18.50	11678
14	St. Vincent and Grenadines	2.02	14.39	4775
15	Chile	2.07	26.28	15215
16	Dominica	2.15	12.39	6923
17	Grenada	2.15	13.41	7483
18	Mexico	2.18	18.07	9930
19	Guatemala	2.23	6.21	3337
20	Saint Lucia	2.28	13.41	7053
21	Peru	2.29	11.98	6264
22	Paraguay	2.52	8.42	4006
23	Jamaica	2.71	11.76	5215
24	El Salvador	2.92	9.03	3716
25	Colombia	2.96	18.68	7582
26	Dominican Republic	3.08	14.77	5764
27	Honduras	3.61	6.56	2178
28	Nicaragua	4.57	6.81	1788
29	Belize	6.26	23.49	4505
30	Haiti	7.38	4.98	809
31	Bolivia	11.33	24.05	2547
32	Panama	16.08	27.37	10689

Table 1 – Affordability of fixed-telephone sub-basket

3 MOBILE-CELLULAR NETWORK

3.1 Mobile-cellular telephone subscriptions

The mobile market seems to continue its downward trend of the last three years. With a total of 192.6 thousand subscriptions at December 2014, the mobile market experienced a 5.4 per cent or 10.9 thousand decrease in the number of subscriptions when compared to 2011. As Figure 4 below highlights, the mobile voice market has a downward trend in terms of subscriptions. The 2015 number of 190.5 thousand subscriptions shows the continuation of the downward trend.

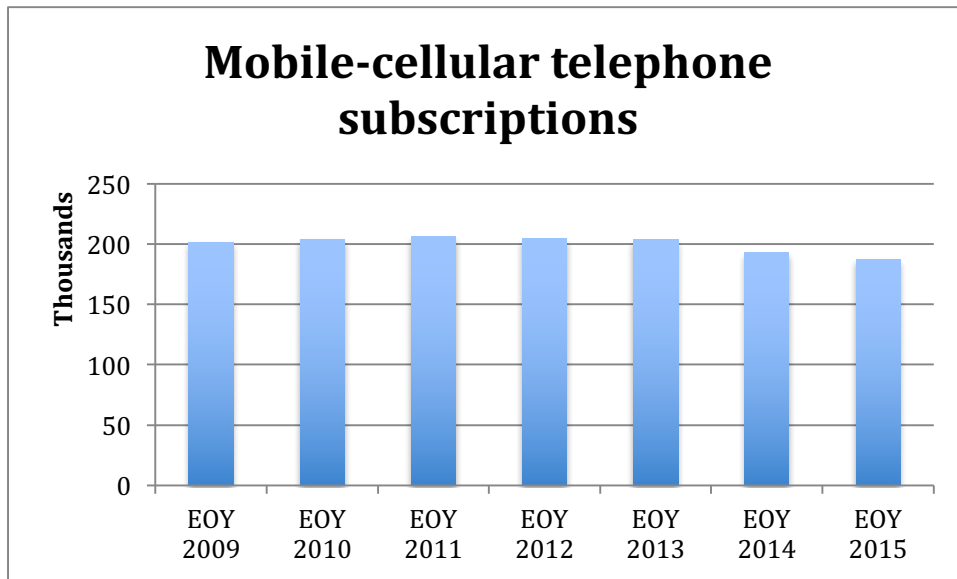


Figure 4: Mobile-cellular telephone subscriptions, EOY 2009 – EOY 2015

3.2 Mobile-cellular subscriptions prepaid versus postpaid ratio

As shown in figure 5, the mobile market consists 90% out of prepaid subscriptions, while only 10% is postpaid.

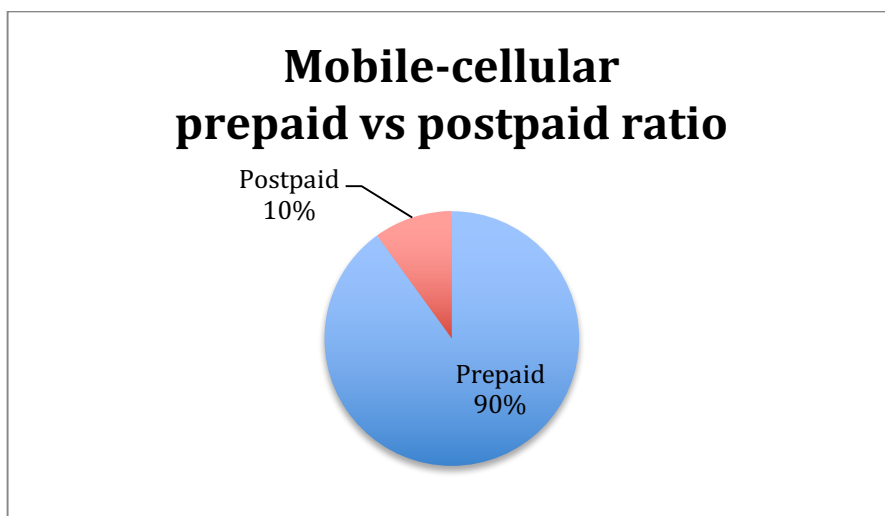


Figure 5: Mobile-cellular prepaid vs postpaid ratio, EOY 2014

3.3 Mobile-cellular subscriptions per 100 inhabitants

As at December 2014, mobile penetration stood at 122.7. This means that there were approximately 123 mobile subscriptions per 100 inhabitants in Curaçao at the end of 2014.

As shown in figure 6, the mobile penetration rates in Curaçao are comparable to region averages of the South American and Developed countries. The mobile-cellular penetration is higher compared to region averages of the Caribbean, Central America, developing countries and the world average. See Appendix D1 for list of countries and source data.

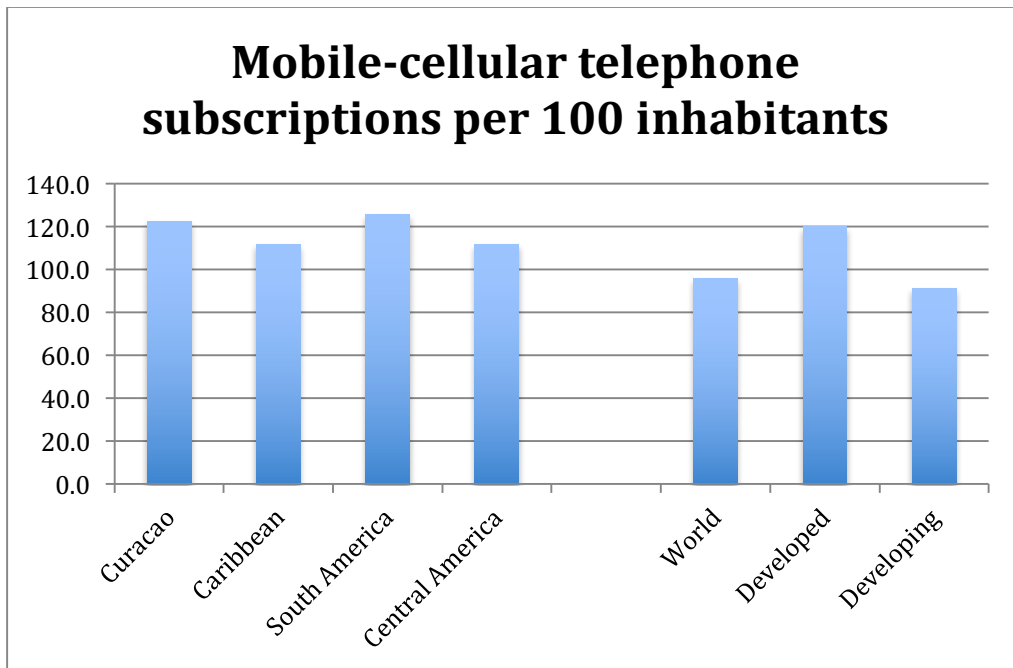


Figure 6: Mobile-cellular telephone subscriptions per 100 inhabitants, EOY 2014

3.4 Mobile-cellular telephone tariff benchmark

Mobile-cellular telephone tariffs are benchmarked 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 2014.

As shown in figure 7, 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.

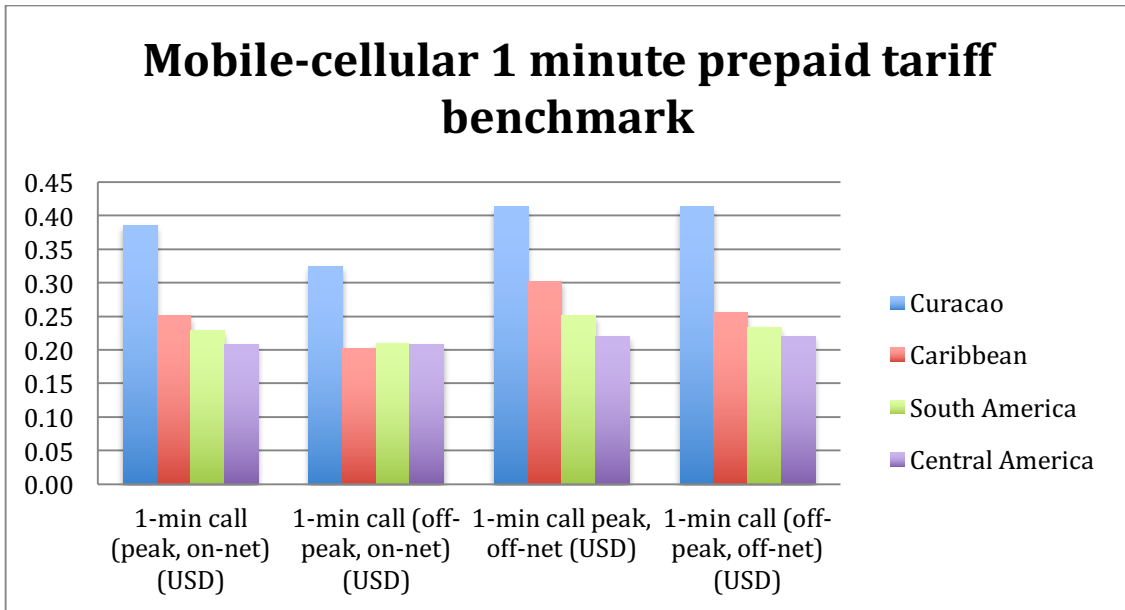


Figure 7: Mobile-cellular price of 1-minute call, compared to the region, EOY 2014

When looking at the trend in mobile-cellular prepaid tariffs in figure 8, the Curaçao prices are stable for the last 3 years. In the Caribbean region, prices are raising slightly over the last three years. However, the prices in Curaçao are significant higher than the Caribbean average.

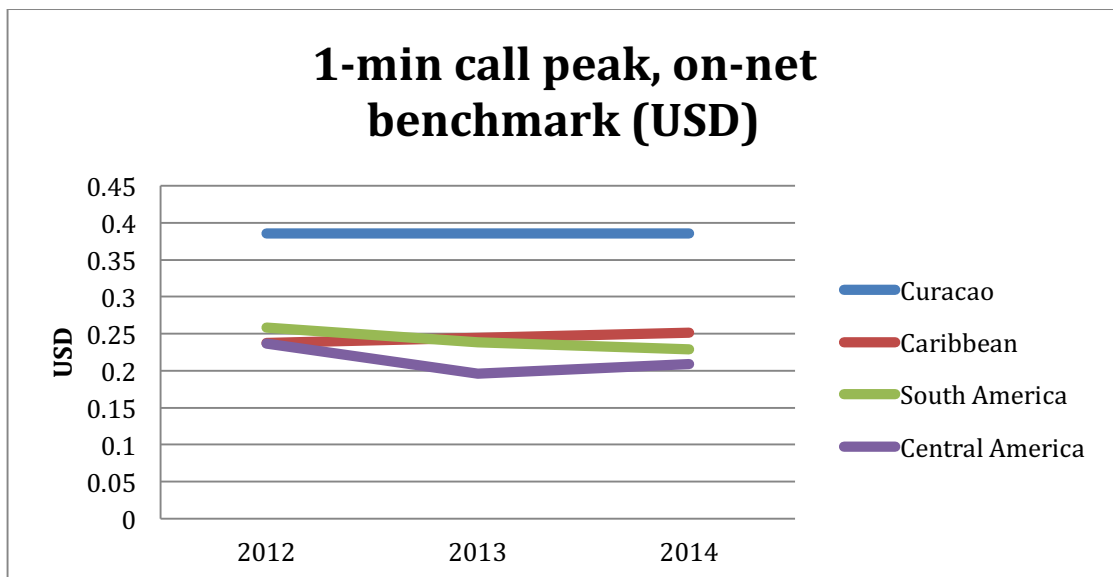


Figure 8: Mobile-cellular price of 1-minute peak, on-net, compared to the region, 2012-2014

3.5 Affordability of Mobile-cellular price sub-basket

While absolute prices are important, comparing these with the average net income per month for the country gives insight in the affordability of fixed-telephone usage.

The mobile-cellular sub-basket consists of 30 outgoing calls (both on-net, off-net and to a fixed line, and for peak and off-peak) in predetermined ratios, plus 100 SMS messages. The sub-basket is then divided by the average monthly income (GNI) per capita to know which portion of the monthly income would go for this portion of phone calls. For Curacao, this sub-basket will cost 34.40 USD or 2.02% of the GNI per capita, placing the country on the 12th place in the region in terms of affordability.

Rank	Economy	% of GNI	USD of mobile-cellular sub-basket	GNI p.c., USD, 2014 (or latest available)
1	Costa Rica	0.48	3.84	9,540
2	Bahamas	0.97	17.48	21,548
3	Venezuela	1.20	12.56	6,873
4	Trinidad and Tobago	1.22	16.04	15,744
5	Mexico	1.34	11.12	9,930
6	Panama	1.41	12.59	10,689
7	Uruguay	1.58	19.99	15,165
8	Saint Kitts and Nevis	1.64	18.86	13,876
9	Chile	1.81	22.98	15,215
10	Jamaica	1.94	8.45	5,215
11	Barbados	1.97	24.98	15,219
12	Curacao	2.02	34.40	20,420
13	Suriname	2.09	16.33	9,361
14	Antigua and Barbuda	2.15	23.40	13,037
15	Brazil	2.27	22.05	11,678
16	Peru	2.36	12.30	6,264
17	Dominica	2.90	16.74	6,923
18	Dominican Republic	3.02	14.50	5,764
19	Colombia	3.12	19.71	7,582
20	Paraguay	3.54	11.81	4,006
21	Ecuador	3.58	17.17	5,754
22	Grenada	3.74	23.34	7,483
23	Cuba	4.30	21.53	6,010
24	Saint Lucia	4.38	25.74	7,053
25	St. Vincent and Grenadines	4.58	24.61	4,775
26	El Salvador	4.76	14.73	3,716
27	Bolivia	5.38	11.43	2,547
28	Guatemala	7.89	21.93	3,337
29	Belize	8.03	31.30	4,505
30	Honduras	8.63	15.66	2,178
31	Haiti	14.06	9.48	809
32	Nicaragua	20.54	30.60	1,788

Table 2 –Affordability of mobile-cellular sub-basket

4 FIXED (WIRED) BROADBAND

4.1 Fixed (wired) broadband subscriptions

The market for fixed (wired) broadband² subscriptions continues to show growth in 2014. Figure 7 illustrates the figures for fixed (wired) broadband subscriptions of 38.6 thousand subscriptions end of year 2014. The figure of EOY 2013 is recalculated to 37 thousand subscriptions. The growth thereby represents an increase of 4.4 percent or 1.6 thousand subscriptions.

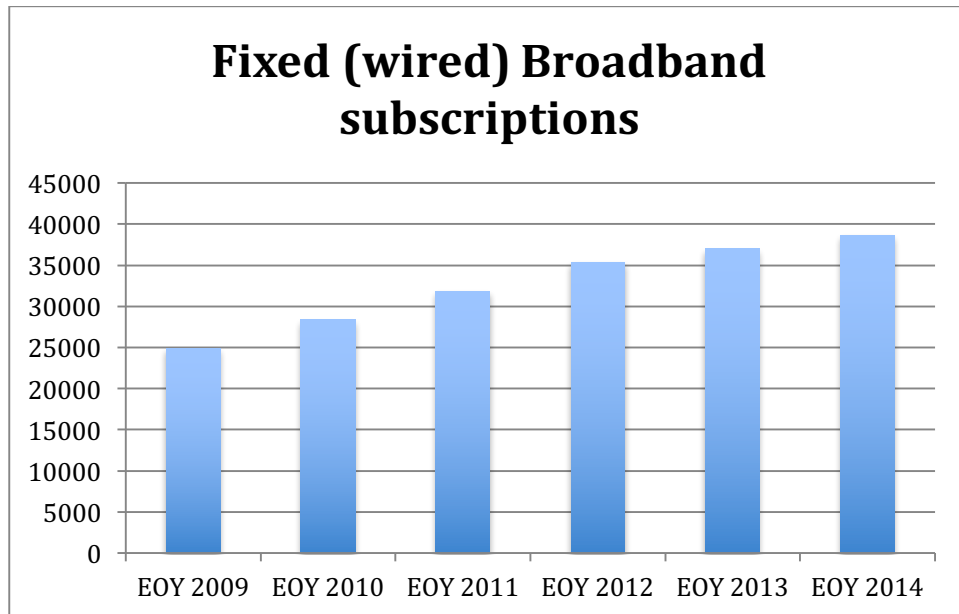


Figure 9: Fixed (wired) broadband subscriptions, EOY 2009 - EOY 2014

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. In following year (EOY 2015) the definition also includes wireless-fixed broadband.

4.2 Fixed (wired) Broadband subscriptions by speed

More than half (55%) of the Fixed (wired) Broadband subscriptions are of speeds between 10 Mbit/s and 100 Mbit/s. This is consistent with an overall development of broadband utilization by the population and an increased digital economy. This speed group has grown 3% in the last two years, while the speed group of 2 Mbit/s to 10 Mbit/s remained the same at 45%. The speed group below 2 Mbit/s has diminished in the last two years, as the Fixed (wired) Broadband subscriptions of these speeds are not available anymore.

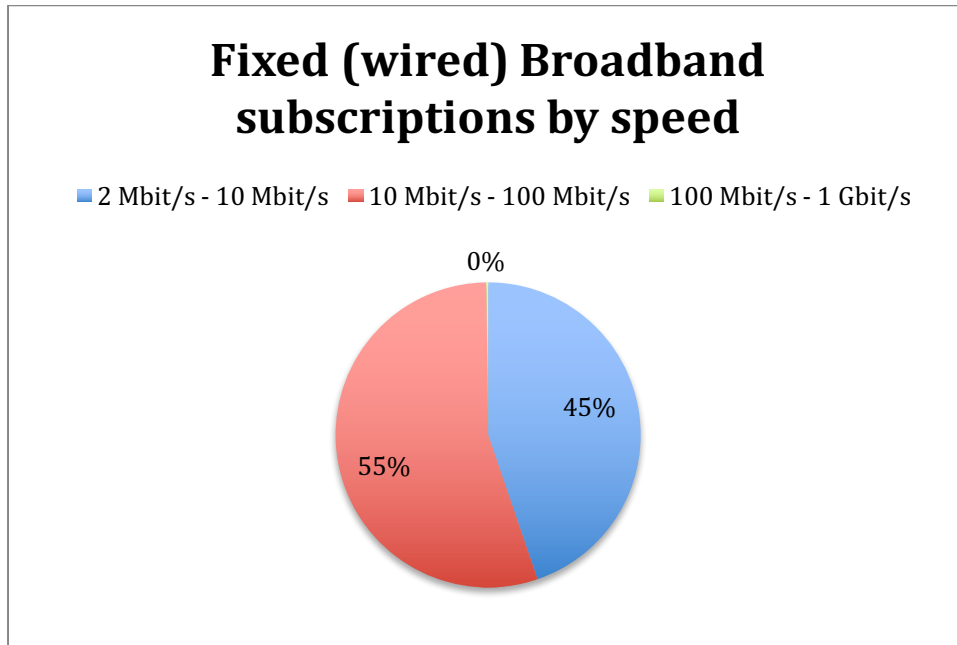


Figure 10: Fixed (wired) broadband subscriptions by speed, EOY 2014

4.3 Fixed (wired) Broadband subscriptions per 100 inhabitants

For 2014, Curaçao estimated a fixed (wired) Broadband penetration of 24.6. This implies that there were approximately 25 fixed (wired) Internet subscriptions for every 100 inhabitants in Curaçao at the end of 2014.

If compared to the region as shown in figure 11, Curaçao has a higher fixed (wired)-broadband subscription penetration rate, although the Caribbean average is nearing with an average of 22.8. Curaçao scores just below developed countries (average 28.3). See Appendix D1 for list of countries and source data.

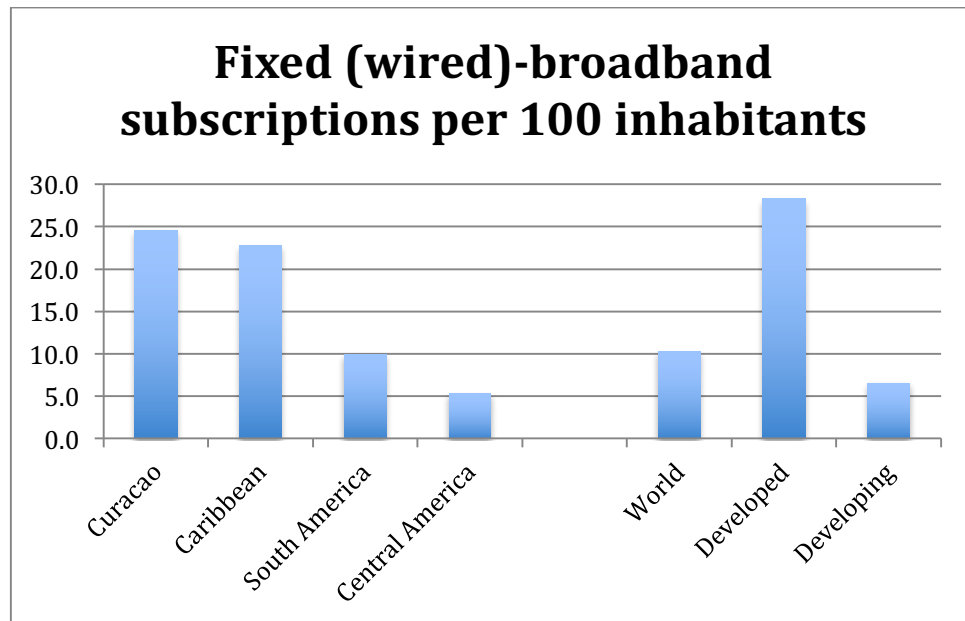


Figure 11: Fixed (wired) Broadband subscriptions per 100 inhabitants, EOY 2014

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 7th in 2014, in a ranking list of islands in the Caribbean region of which data is available, coming from an (estimated) 4th place in 2013. Curacao drops 20 places to the 52th place in the world ranking of over 200 economies, from a 37th place in 2013.

Rank	Economy	Fixed (wired) Broadband subscriptions per 100 inhabitants
1	Bermuda	53.06
2	Montserrat	52.58
3	Cayman Islands	39.63
4	Anguilla	30.43
5	Barbados	27.17
6	Saint Kitts and Nevis	25.55
7	Curaçao	24.63
8	British Virgin Islands	22.38
9	Bahamas	20.17
10	Aruba	18.56
11	Grenada (Grenada, Carriacou and Petite Martinique)	18.29
12	Trinidad and Tobago	17.57
13	Puerto Rico	16.57
14	Dominica	15.76
15	Saint Lucia	15.40
16	St. Vincent and Grenadines	14.92
17	Antigua and Barbuda	11.83
18	Dominican Republic	5.70
19	Jamaica	5.41
20	Cuba	0.07

Table 3 - List of broadband penetration in the Caribbean region

4.5 Download speeds

Similar to the last six years, the year average download speed³ continued its upward trend in 2014 and 2015 as illustrated in Figure 12. In 2014, the average download speed recorded was approximately 14.7, and 2015 at 16.0 Mbit/s (from January to July 2015).

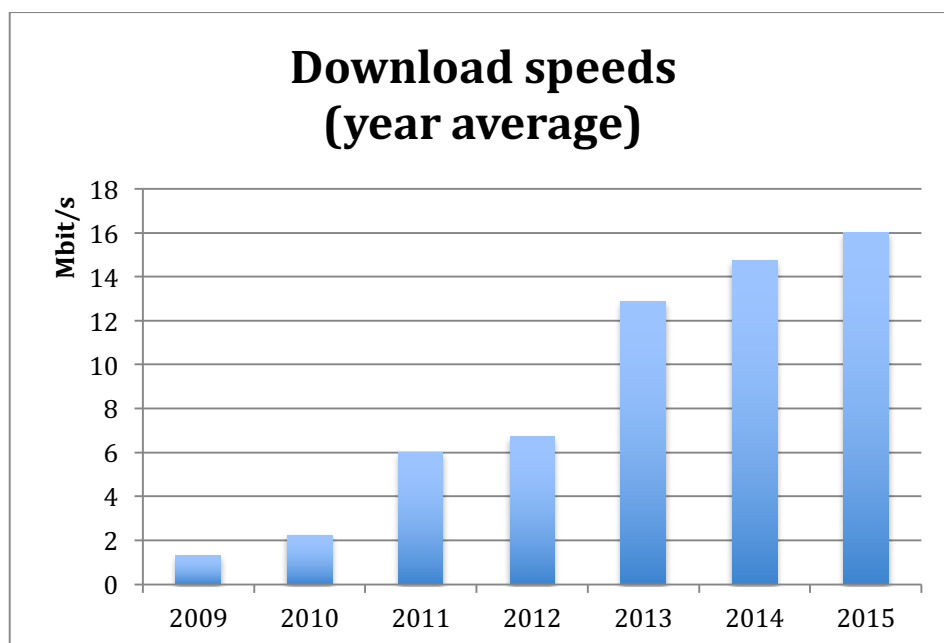


Figure 12: Download speeds (year average), 2009 – 2015

Source: Ookla speedtest (discontinued service from august 2015).

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. 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.

For Curaçao, the entry-level plan would be the 49 ANG data plan of the largest market share operator with a speed of 6 Mbit/s offered end of 2014 and 2015. 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 36'553 ANG/20'420 USD (latest figure, 2012).

Therefore the entry-level broadband plan costs 1.7% of the GNI per capita in Curacao, clearly meeting the United Nations target⁴ of 5% of the GNI per capita by 2015.

³ Average yearly download speed data is calculated from the yearly average of monthly results in a year, see Appendix E.

⁴ <http://iif.un.org/content/broadband-commission-digital-development>

Curaçao rose 2 places in comparison with last year, ranking 6th in terms of affordability compared to countries in the Caribbean region, South- and Central America. From a world perspective, Curaçao would rank place 58th (last year 59th) in terms of affordability in a list of 181 countries.

Rank	Economy	% of GNI	USD	Speed in Mbit/s	GNI p.c., USD, 2014 (or latest available)
1	Trinidad and Tobago	0.9	12.33	0.25	15,744
2	Uruguay	1.1	13.64	5.00	15,165
3	Brazil	1.3	12.66	1.00	11,678
4	Venezuela	1.6	17.19	1.00	12,537
5	Bahamas	1.7	29.99	1.00	21,548
6	Curaçao	1.7	29.00	6.00	20,420
7	Panama	1.8	16.04	1.00	10,689
8	Costa Rica	1.8	14.49	1.00	9,540
9	Chile	2.2	28.04	4.00	15,215
10	Colombia	2.9	18.48	1.00	7,582
11	Saint Kitts and Nevis	3.2	36.67	2.00	13,876
12	Mexico	3.2	26.26	5.00	9,930
13	Barbados	3.4	42.50	6.00	15,219
14	Peru	4.0	20.99	1.00	6,264
15	Ecuador	4.2	20.16	3.00	5,754
16	Dominican Republic	4.3	20.74	1.00	5,764
17	Grenada	4.7	29.39	2.00	7,483
18	Suriname	4.8	37.23	6.00	9,361
19	Antigua and Barbuda	5.1	54.94	1.00	13,037
20	Jamaica	5.7	24.68	1.00	5,215
21	El Salvador	5.8	18.07	1.00	3,716
22	Paraguay	6.1	20.44	0.75	4,006
23	Saint Lucia	6.2	36.20	2.00	7,053
24	St. Vincent and Grenadines	6.3	33.65	1.00	6,454
25	Dominica	6.6	37.91	2.00	6,923
26	Bolivia	6.8	14.33	0.30	2,547
27	Guatemala	6.9	19.27	1.00	3,337
28	Guyana	7.8	24.21	0.25	3,746
29	Honduras	12.1	22.00	0.50	2,178
30	Belize	13.3	50.00	0.25	4,505
31	Nicaragua	16.1	23.99	0.50	1,788
32	Cuba	35.9	180.00	0.25	6,010
33	Haiti	63.5	42.82	0.25	809

Table 4 - Affordability entry-level broadband plan

5 WIRELESS BROADBAND

5.1 Total wireless broadband subscriptions

It is estimated that the market for wireless broadband subscriptions grew significantly in 2013 and 2014 due to the introduction of 3G services in Curaçao. There are an estimated 75 thousand wireless-broadband subscriptions in Curacao end of 2014.

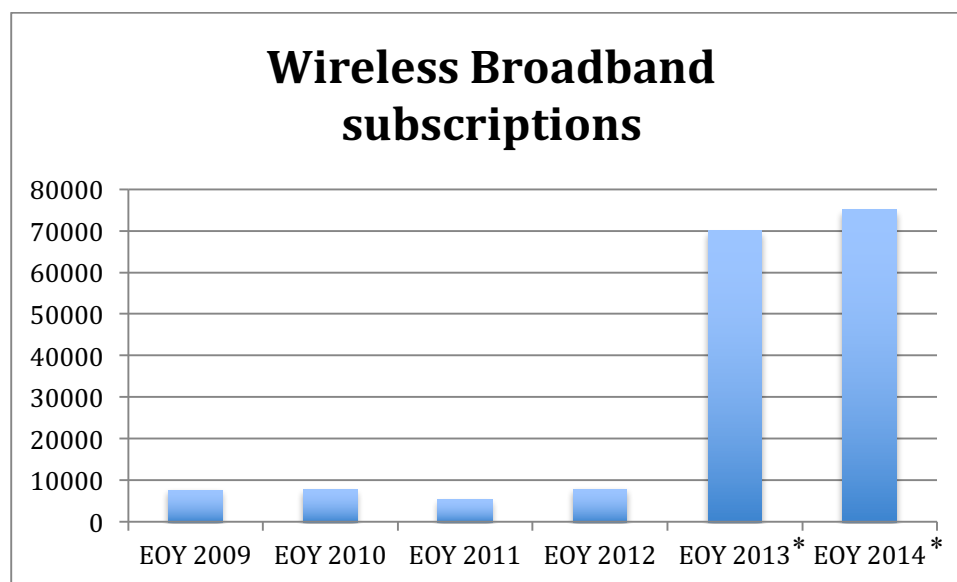


Figure 10: Wireless Broadband subscriptions, EOY 2009 – EOY 2014

* estimate

6 International Bandwidth

The International Internet bandwidth is estimated at 8600 Mbit/s in December 2014. This figure refers to the total of used capacity over the fibre-optic cables connecting Curacao to the mainland over a 12-month period for all operators combined. This figure is an estimation based on data from the ITU Questionnaire and AMS-IX Caribbean. BTP will also start collecting the total capacity of the fibre-optic seacables in upcoming year.

7 ICT Price Basket

7.1 Introduction

The cost and affordability of ICT services remain a determining factor for ICT uptake. As such, it is important to measure and benchmark the ICT market prices. To be able to benchmark the affordability of ICT services, BTP adopted the ‘ICT Price Basket’ methodology from ITU. The IPB is relevant as a basic benchmarking tool that allows countries to assess their relative affordability of ICT prices, evaluate progress over time and identify challenges and shortcomings.

The ICT Price Basket (IPB) is a composite basket that includes three price sets, referred to as sub-baskets: the fixed-telephone, mobile-cellular and fixed-broadband sub-baskets (figure 12).

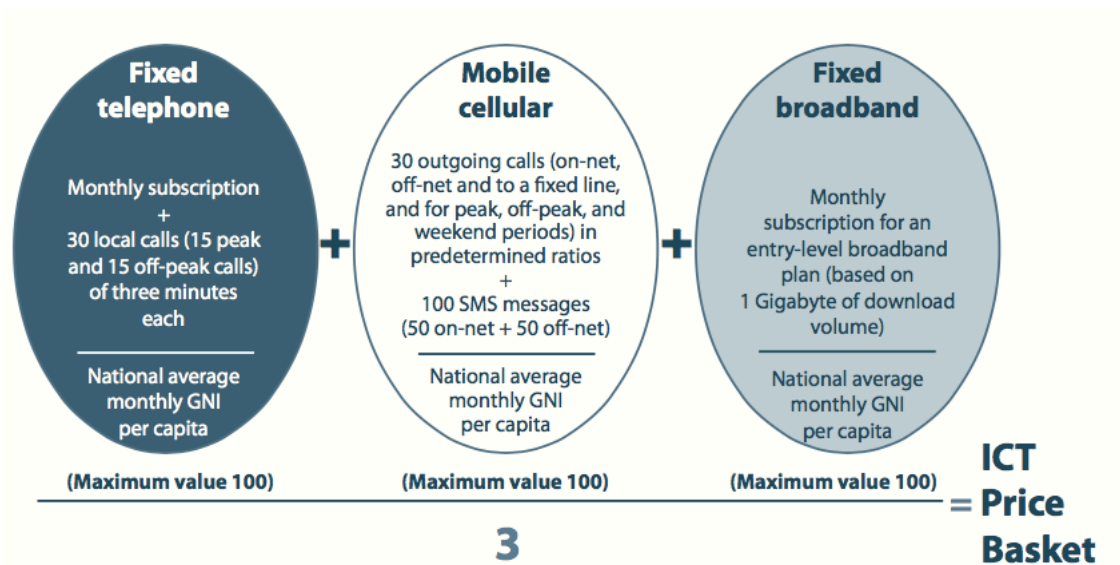


Figure 12: ICT Price Basket methodology

7.2 ICT Price Basket value for Curacao

In this report, the three sub-baskets are calculated at 1.16% for fixed-telephone (paragraph 2.4), 2.02% for mobile-cellular (paragraph 3.5), and 1.71% for the fixed-broadband sub-basket (paragraph 4.7). The IPB for Curacao end of year 2014, is the average of the three sub-baskets and values 1.63%.

This places Curacao on a 5th position in the Caribbean, South and Central American region. The island takes a 65th place on the world ranking consisting of 170 countries. BTP will reassess the IPB every year to evaluate progress over time and determine the position of Curacao in the digital economy.

Rank	Economy	IPB 2014
1	Trinidad and Tobago	0.9
2	Venezuela	1.0
3	Costa Rica	1.1
4	Bahamas	1.2
5	Curaçao	1.6
6	Panama	1.7
7	Brazil	1.8
8	Chile	2.0
9	Saint Kitts and Nevis	2.0
10	Mexico	2.2
11	Suriname	2.4
12	Barbados	2.4
13	Antigua and Barbuda	2.8
14	Peru	2.9
15	Colombia	3.0
16	Ecuador	3.1
17	Jamaica	3.4
18	Grenada	3.5
19	Dominican Republic	3.5
20	Dominica	3.9
21	Paraguay	4.1
22	Saint Lucia	4.3
23	St. Vincent and Grenadines	4.3
24	Guyana	4.3
25	El Salvador	4.5
26	Guatemala	5.7
27	Bolivia	7.8
28	Honduras	8.1
29	Belize	9.3
30	Nicaragua	13.7
31	Haiti	28.3

Table 5 - ICT Price Basket benchmark compared with the region

8 OTHER INDICATORS

8.1 Terrestrial multichannel TV subscriptions

The (paid) television market seemed to decline in 2014 as illustrated in Figure 13. End of year 2014, the total subscriptions estimated approximately 28.9 thousand compared to 32.2 thousand the year before. This represented an overall 3.4 thousand or 10.4% decline in subscriptions. The drop in pay television subscription was fairly expected due to the rise and popularity of “over-the-top” (OTT) online television services like Netflix and others.

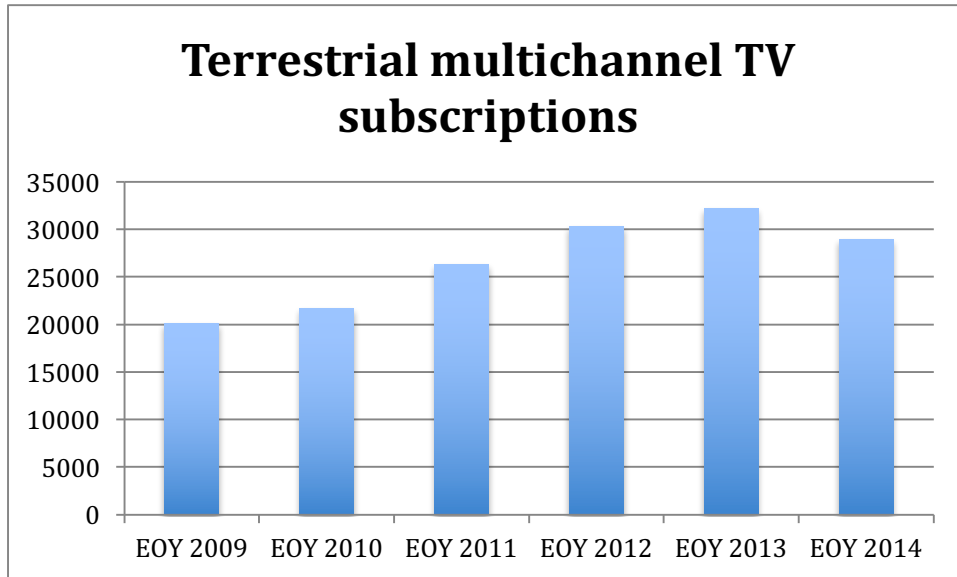


Figure 13: Terrestrial multichannel TV subscriptions, EOY 2009 – EOY 2014

Appendix A - Trends 2009-2014 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	EOY 2014
DEMOGRAPHY, ECONOMY						
Population	147122	150284	151378	152798	154843	156971
Households	...	...	...	54940	56499	57274
FIXED TELEPHONE NETWORK						
Fixed-telephone subscriptions	83080	78846	68070	63754	63715	61130
Fixed-telephone subscriptions per 100 inhabitants	56.47	52.46	44.97	41.72	41.15	38.94
Price of a three-minute local call to a fixed-telephone line, peak rate, in USD	...	...	...	0.17	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	0.17
MOBILE-CELLULAR NETWORK						
Mobile-cellular telephone subscriptions	201097	204024	206294	204702	203502	192569
Mobile-cellular subscriptions per 100 inhabitants	136.69	135.76	136.28	133.97	131.42	122.68
Mobile-cellular prepaid – price of a one-minute local call (peak, on- net) in USD	...	...	...	0.39	0.39	0.39
Mobile-cellular prepaid – price of a one-minute local call (off-peak, on-net) in USD	...	...	...	0.32	0.32	0.32
Mobile-cellular prepaid – price of a one-minute local call (peak, off- net) in USD	...	...	...	0.41	0.41	0.41
Mobile-cellular prepaid – price of a one-minute local call (off-peak, off-net) in USD	...	...	...	0.41	0.41	0.41
INTERNET						
International Internet bandwidth, in Mbit/s	...	...	...	4730	8200	8600
FIXED (WIRED) BROADBAND						
Fixed (wired) Broadband subscriptions	...	...	31800	35380	37000	38663
Fixed (wired) Internet Broadband subscriptions per 100 inhabitants	...	...	21.01	23.15	23.89	24.63
WIRELESS BROADBAND						
Total wireless broadband subscription	7846	8020	5500	8120	70000	75138
OTHER INDICATORS						
Terrestrial multichannel TV subscriptions	20149	21681	26320	30329	32212	28858
PERFORMANCE INDICATORS						
Average download speed, in average Kb/s for the year (See appendix C for calculations)	1346	2285	6025	6727	12895	14744

Table 6 – Curacao data EOY 2009 – EOY 2014

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.
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).

Table 7 – Definitions

Appendix C – Download speeds

YEAR AVERAGES in Kbps	2009	2010	2011	2012	2013	2014	2015
Average download speeds per year	1345.5	2285.3	6024.8	6726.7	12895.14	14744.24	16035.7

MONTHLY RESULTS in Kbps	2009	2010	2011	2012	2013	2014	2015
January	1101.19	1348.84	5753.22	6490.05	...	10823.17	14050.00
February	1050.45	1711.44	5719.62	6633.30	...	13679.56	14200.00
March	1147.63	1615.78	5520.82	6529.43	...	14335.05	13500.00
April	1376.34	1568.16	5675.62	6603.65	12814.36	14344.65	16000.00
May	1284.47	2025.94	5437.88	6613.32	13042.97	14754.09	17000.00
June	1402.40	1805.20	5542.92	6577.46	13849.50	16106.32	17500.00
July	1390.57	1878.51	6205.85	6986.88	13095.30	15327.46	19000.00
August	1410.99	2654.15	6419.04	7846.57	13454.28	15922.03	...
September	1598.92	2659.47	6424.34	7593.47	13176.01	16034.84	...
October	1444.95	2808.32	5882.68	6451.46	13079.28	15801.44	...
November	1482.57	3405.19	6681.45	5763.54	11557.14	14986.73	...
December	1455.22	3942.85	7034.25	6631.60	11987.44	14815.57	...

Table 9 – Yearly and monthly download speed results

The average yearly download speed data is calculated from the yearly average of monthly results in a year.

Notes:

- As from April 2013, Curaçao is recorded separately, so as of 2013 measurements from April to December are used for higher accuracy.
- From 2015 on, Ookla only shows graphs, no more raw data per country. The download speeds of 2015 are derived from that graph.
- From August 2015, Ookla data viewing is discontinued and therefore not available anymore.

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		38.94	122.7	24.6	47.7
Caribbean		28.9	111.9	22.8	33.8
South America		17.3	125.8	10.0	47.5
Central America		11.9	111.7	5.4	26.7
World		15.2	96.1	10.3	47.2
Developed		39.9	119.9	28.3	86.7
Developing		10.0	91.1	6.6	39.1
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	32.85	82.30	20.17	39.97
	Turks and Caicos Islands	12.15	...	...	...
Greater Antilles	Cuba	11.23	22.48	0.07	...
	Haiti	0.39	64.71	...	0.15
	Dominican Republic	11.65	78.86	5.70	30.09
	Jamaica	9.09	107.38	5.41	38.83
	Cayman Islands	55.55	153.75	39.63	...
	Puerto Rico	22.36	87.11	16.57	43.08
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)	41.49	165.27	22.38	64.09
	Anguilla	40.80	179.81	30.43	...
	Antigua and Barbuda	21.91	132.05	11.83	33.00
	Saint Martin	...	...	...	...
	Sint Maarten	...	...	...	...
	Saba	...	...	...	...
	Sint Eustatius	...	...	...	...
	Saint Barthélemy	...	...	...	...
	Saint Kitts and Nevis	35.41	118.64	45.63	45.63
	Montserrat	60.37	87.63	52.58	...
	Guadeloupe (Les Saintes, Marie-Galante, La Désirade)	..	...	...	...
Windward islands	Dominica	24.33	127.45	15.76	...
	Martinique	...	..	...	...
	Saint Lucia	17.88	102.59	15.40	29.80

	St. Vincent and Grenadines	21.85	105.16	14.92	34.37
	Grenada (Grenada, Carriacou and Petite Martinique)	25.66	110.20	18.29	2.61
	Barbados	52.92	128.73	27.17	61.70
	Trinidad and Tobago	21.48	147.34	17.57	28.32
Leeward Antilles	Aruba	33.84	135.07	18.56	...
	Curacao	38.94	122.7	24.7	47.7
	Bonaire	...	...	...	...
Other	Bermuda	44.66	90.88	53.06	7.71
<i>AVERAGES</i>		28.95	111.91	22.79	33.80
South America					
Ecuador		15.28	103.9	8.26	30.87
Uruguay		31.68	160.8	24.58	59.84
Chile		19.17	133.26	14.08	50.47
Brazil		21.84	138.95	11.68	78.15
Colombia		14.68	113.08	10.27	45.06
Argentina		22.97	158.8	15.57	53.63
Paraguay		5.38	105.6	2.43	...
Peru		9.86	103.61	5.74	13.65
Suriname		15.61	170.57	8.53	71.65
Venezuela		25.31	98.95	7.78	43.97
Bolivia		8.08	96.34	1.59	28.13
<i>AVERAGES</i>		17.26	125.81	10.05	47.54
Central America					
Mexico		17.77	82.22	10.48	41.13
Panama		14.99	158.05	7.9	29.5
Honduras		6.38	93.52	1.39	16.34
El Salvador		14.94	144.01	5	18.44
Guatemala		10.83	106.63	2.73	9.44
Costa Rica		17.85	143.83	10.52	87.2
Nicaragua		5.51	114.57	2.48	1.36
Belize		6.68	50.71	2.91	10.15
<i>AVERAGES</i>		11.87	111.69	5.43	26.70

Table 9 – List of countries and comparison data (penetration)

* Where no ITU data available, the applicable economy is ignored in penetration comparison.

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	0.15	0.13	0.25	0.20	0.30	0.26
South America	0.08	0.06	0.23	0.21	0.25	0.23
Central America	0.10	0.09	0.21	0.21	0.22	0.22
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						
	0.50	0.50	...	...	...	...
Cuba	...	...	...	...	...	...
Haiti		...	0.10	0.10	0.11	0.09
Dominican Republic	0.10	0.10	0.18	0.18	0.23	0.23
Jamaica	0.03	0.03	0.09	0.09	0.13	0.13
Cayman Islands						
	0.16	0.16	0.30	0.24	0.45	0.36
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	0.24	0.24	0.33	0.33

Antigua and Barbuda	0.06	0.06	0.29	0.29	0.29	0.29
Saint Martin	...	...	...	...	...	...
Sint Maarten	...	...	...	...	...	...
Saba	...	...	...	...	...	...
Sint Eustatius	...	...	...	...	...	...
Saint Barthélemy	...	...	...	...	...	...
Saint Kitts and Nevis	0.10	0.09	0.29	0.29	0.29	0.29
Montserrat	...	...	...	...	...	...
Guadeloupe (Les Saintes, Marie-Galante, La Désirade)	...	...	...	...	...	...
Dominica	0.09	0.06	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	0.18	0.38	0.36
Barbados	...	...	0.26	0.23	0.36	0.23
Trinidad and Tobago	0.04	0.04	0.23	0.13	0.23	0.13
Aruba	0.18	...	0.42	0.21	0.42	0.21
Curacao	0.17	0.17	0.39	0.32	0.41	0.41
Bonaire	...	...	...	...	...	...
Bermuda	...	...	...	...	...	...
<i>AVERAGES</i>	0.15	0.13	0.25	0.20	0.30	0.26
South America						
Ecuador	0.03	0.03	0.20	0.20	0.20	0.20
Uruguay	0.14	0.05	0.31	0.31	0.31	0.31
Chile	0.14	0.14	0.21	0.21	0.21	0.21
Brazil	0.17	0.11			0.47	0.47
Colombia			0.17	0.17	0.17	0.17

Argentina	0.01	0.01	0.38	0.38	0.38	0.38
Paraguay	0.09	0.07	0.17	0.17	0.17	0.17
Peru	0.06	0.05	0.17	0.17	0.17	0.17
Suriname	0.06	0.06	0.22	0.22	0.22	0.22
Venezuela	0.04	0.04	0.22	0.16	0.22	0.16
Bolivia	0.08	0.08	0.22	0.10	0.22	0.10
<i>AVERAGES</i>	0.08	0.06	0.23	0.21	0.25	0.23
Central America						
Mexico	0.13	0.13	0.07	0.07	0.07	0.07
Panama	0.15	0.15	0.12	0.12	0.16	0.16
Honduras	0.08	0.08	0.17	0.17	0.17	0.17
El Salvador	0.11	0.11	0.14	0.14	0.18	0.18
Guatemala	0.11	0.11	0.30	0.30	0.30	0.30
Costa Rica	0.05	0.05	0.06	0.06	0.06	0.06
Nicaragua	0.03	0.02	0.46	0.46	0.47	0.47
Belize	0.17	0.09	0.34	0.34	0.34	0.34
<i>AVERAGES</i>	0.10	0.09	0.21	0.21	0.22	0.22

Table 10 – List of countries and comparison data (prices)

*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, 2014

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, 2014 – UTS
- ITU Enquete EOY 2012, 2013, 2014 – Flow
- ITU Enquete EOY 2012, 2013, 2014 – Digicel
- ITU Enquete EOY 2012, 2013, 2014 – TRES
- ITU Enquete EOY 2012, 2013, 2014 – Scarlet
- ITU Enquete ICT Price Basket EOY 2012
- ITU Enquete ICT Price Basket EOY 2013
- ITU Enquete ICT Price Basket EOY 2014
- 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, 2014
- BTP televisiegegevens 2009-2014
- ITU EYE Data: <http://www.itu.int/net4/itu-d/icteye/>
- ITU Yearbook of Statistics Telecom & ICT Indicators 2003-2014
- ITU Key data 2005-2015
- ITU Measuring the Information Society 2013, 2014, 2015
- CBS: Population and Population Growth of Curaçao (9-5-2014), downloaded from 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)

Appendix F – List of concessionholders and broadband technologies

Operator	Used technologies
United Telecommunication Services N.V. (UTS)	Fixed-Wired Broadband: DSL / Fibre-to-the-Home or Building Wireless-broadband/mobile: HSPA+ / LTE International communication
Columbus Communications N.V. (Flow)	Fixed-Wired Broadband: Cable / HFC International communication
Digicel N.V.	Wireless-broadband/mobile: HSPA+ International communication
TRES Networks	Fixed-Wired Broadband: Fibre-to-the-Home or Building International communication
Scarlet N.V.	Wireless-broadband: WiMAX
Smitcoms N.V.	International communication
Flamingo TV Bonaire	International communication

Table 10 – List of operators and used broadband technology