

THE COST OF CONNECTIVITY 2013

Data Release: A comparison of high-speed Internet prices in 24 cities around the world

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OCTOBER 2013

Last year, the New America Foundation's Open Technology Institute published *The Cost of Connectivity*, a first-of-its-kind study of the cost of consumer broadband services in 22 cities around the world.¹ The results showed that, in comparison to their international peers, Americans in major cities such as New York, Los Angeles, and Washington, DC are paying higher prices for slower Internet service. While the plans and prices have been updated in the intervening year, the 2013 data shows little progress, reflecting remarkably similar trends to what we observed in 2012.

The 2013 data release includes:

- A comparison of “triple play” offerings that bundle Internet, phone, and television services;
- A comparison of the fastest Internet package available in each city;
- A survey of the best available home Internet plan for approximately \$35 USD in each city;
- A survey of the best available mobile Internet plan for approximately \$40 USD in each city;
- A comparison of the cost of 2 GB of mobile data in each city.

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Chattanooga, TN, and Hong Kong continue to offer world-leading gigabit speeds, but Seoul and Lafayette, LA, also joined the speed leaders, along with Kansas City, KS, and Kansas City, MO, which were not included in the 2012 report. Meanwhile, in larger U.S. cities, we continue to observe higher prices for comparatively slower speeds. In the U.S., for example, the best deal for a 150 Mbps home broadband connection from cable and phone companies is \$130/month, offered by Verizon FiOS. By contrast, the international cities we surveyed offer comparable speeds for less than \$80/month, with most coming in at about \$50/month. When it comes to mobile broadband, the cheapest price for around 2 GB of data in the U.S. (\$30/month from T-Mobile) is twice as much as what users in London pay (\$15/month from T-Mobile). It costs more to purchase 2 GB of data in a U.S. city than it does in any of the cities surveyed in Europe.

The new data underscores the extent to which U.S. cities lag behind cities around the world, further emphasizing the need for policy reform. Rather than allowing American cities to fall behind, policymakers should reassess current approaches and implement strategies to increase competition, in turn fostering faster speeds and more affordable access.

2013 Broadband Pricing Data

In this release, the Open Technology Institute examines how residential high-speed Internet services in U.S. cities compare to offerings in other cities around the world. We focus on the following cities:

- Amsterdam, Netherlands
- Berlin, Germany
- Bristol, VA, United States
- Bucharest, Romania
- Chattanooga, TN, United States
- Copenhagen, Denmark
- Dublin, Ireland
- Hong Kong, China
- Kansas City, KS, United States
- Kansas City, MO, United States
- Lafayette, LA, United States
- London, United Kingdom
- Los Angeles, CA, United States
- Mexico City, Mexico
- New York, NY, United States
- Paris, France
- Prague, Czech Republic
- Riga, Latvia
- San Francisco, CA, United States

- Seoul, South Korea
- Tokyo, Japan
- Toronto, Canada
- Washington, DC, United States
- Zurich, Switzerland

In addition to the cities we surveyed in 2012, we added Kansas City, KS, and Kansas City, MO, this year in light of the availability of Google Fiber in those locations.²

Comparison of Trends from 2012 to 2013

In this section, we present the findings from our analysis of the 2013 data in comparison to the trends that we observed in 2012. Although there were few major shifts in the landscape, there were some noticeable changes in plans and pricing, as well as some mergers and new entrants.

Over the past year, more advances were made internationally than domestically both for mobile and wireline offerings. Although international service providers now generally offer higher speeds at much lower prices, prices and speeds have stayed about the same in the United States. It is worth noting that in

places such as Hong Kong, where higher speeds (100-1000 Mbps) were previously available, prices and speed offerings have remained relatively similar. However, cities where such high speeds were previously unavailable now offer cheaper plans and significantly higher speeds (100-300 Mbps). For example, in 2012, consumers in Paris could pay around \$40/month for a maximum download speed of 100 Mbps. This year, speeds of 100, 200 and 300 Mbps are available in Paris for around \$30/month. Prices and offerings have remained static in a few international cities, but in those cases, we found that there are fewer data caps in 2013 than there were in 2012.

The United States saw modest changes in broadband offerings from last year to this year. Some Comcast plans are slightly cheaper, and Comcast also increased speeds on broadband services in some domestic markets.³ But for cities included in our study, broadband speeds listed as available online did not change significantly.

In July 2013, Verizon announced a new 500 Mbps service (with 100 Mbps upload speeds) available in selected areas of its FiOS service.⁴ However, this new 500 Mbps service costs around \$300 a month. In Amsterdam, a symmetrical 500 Mbps broadband plan (with 500 Mbps download and upload speeds) costs just over \$86.

2013 also saw limited expansion in the availability of residential broadband services. Although some portions of Kansas City are now connected and receiving Google services, the majority of the Google Fiber deployments remain in the construction or planning phase. Verizon has also stated that it has no plans to expand its FiOS service to new markets.⁵ Instead, it is focusing on completing local build out in municipalities where it has FiOS franchise agreements. Even in these cities, however, FiOS availability is limited to specific neighborhoods and sometimes specific buildings. In cities like New York, where Verizon's franchise agreement promised to expand FiOS to every household in the city,

connectivity remains an issue, and most residents have no options other than the incumbent cable company or Verizon's DSL service.⁶

In cities with municipal broadband networks, pricing generally remained the same. The notable exception was Chattanooga, TN, where the local municipal provider EPB dramatically lowered the costs of a symmetrical 1 Gbps connection from \$349/month to \$70/month.⁷ By contrast, in American cities without local fiber competitors, the highest speed available for \$70/month is around 50 Mbps. EPB also raised the speed of their their slowest broadband plan from 30 Mbps to 100 Mbps, while keeping the monthly price the same at \$57.99.

As for mobile data plans and pricing, there are increased offerings, higher caps, and cheaper plans available in international cities compared to last year's report. In Copenhagen, for example, the "best" plan available in 2012 was 10 GB of data at speeds up to 15 Mbps for around \$35/month. In 2013, however, 15 GB of data at speeds up to 20 Mbps costs around \$28/month. As with wireline offerings, there were few changes in cities where high speeds have long been the norm (such as Hong Kong). Domestically, prices and data remained relatively stable. Although T-Mobile and Verizon offered slightly cheaper plans, only Verizon increased its speed offerings and raised its data cap limits.

One critical difference between international and U.S. mobile providers remains in the way that data caps are implemented. Internationally, most providers throttle users when they hit their data caps, slowing connection speeds for the remainder of the monthly billing cycle. In general, they do not assess data overage fees. In the U.S., however, the opposite is true: more and more providers are monetizing data caps.⁸ Last year, for example, Verizon switched from throttling to charging for data overages, leaving T-Mobile as the only U.S. provider which throttles rather than charging steep overage fees.

Charts and Rankings

Section 1. Triple Play Rankings by Price

The term “triple play” generally refers to a bundle of services that includes high-speed Internet, telephone and television for a single monthly rate. Although it varies by country, consumers usually get discounts on their total monthly cost by subscribing to bundled

services rather than paying individually for all three. Comparing triple play is a useful metric for most consumers as a substantial number of individuals purchase their high-speed Internet in conjunction with television and phone packages. Triple play offerings are quite popular not only in the U.S., but also increasingly in other countries.

In this section, we rank the pricing of all triple

Table 1: Triple Play Rankings by Price

Rank	City	ISP	Price (USD/PPP)	Download Speed	Upload Speed	Network Technology	Data Cap (GB)
1	Seoul	C&M	\$14.52	10	.	Cable	N/A
2	Seoul	HelloVision	\$15.73	8	.	Fiber	N/A
3	Riga	Balti-Com	\$21.75	20	5	Cable	N/A
4	Zurich	VTX	\$29.96	10	.	DSL	.
5	Zurich	Sunrise	\$32.37	5	0.5	DSL	.
6	Berlin	TeleColumbus	\$33.52	16	1	Cable	N/A
7(t)	Paris	Free	\$34.87	28	1	ADSL	.
7(t)	Paris	SFR	\$34.87	25	.	ADSL	N/A
9	Bucharest	Romtelcom	\$34.93	4 to 6	1	ADSL	N/A
10	Seoul	LG Uplus	\$34.98	100	100	Fiber	N/A
11	Seoul	SK broadband	\$36.31	100	100	Fiber	N/A
12	Berlin	Kabel Deutschland	\$36.46	32	2	Cable	N/A
13(t)	Paris	Bouygues Telecom	\$37.09	20	16	ADSL	.
13(t)	Paris	Darty	\$37.09	20	1	ADSL	.
15	London	Sky	\$38.26	16	1.3	DSL	N/A
32	Bristol, VA	BVU	\$54.79	6	1	Fiber	N/A
44	Lafayette, LA	LUS	\$65.39	15	15	Fiber	400
45	Washington, DC	RCN	\$68.30	25	2	Cable	N/A
47(t)	Los Angeles, CA	Verizon	\$69.99	15	5	Fiber	N/A
47(t)	New York, NY	Verizon	\$69.99	15	5	Fiber	N/A
51	New York, NY	Time Warner Cable	\$74.97	15	1	Cable	N/A
54	Lafayette, LA	AT&T	\$79.00	6	.	DSL	250
55	Los Angeles, CA	Time Warner Cable	\$79.96	15	1	Cable	N/A
56	Washington, DC	Verizon	\$79.99	15	5	Fiber	N/A
57	Chattanooga, TN	EPB	\$81.82	100	100	Fiber	N/A
60	New York, NY	RCN	\$89.99	25	2	Fiber	.
61	San Francisco, CA	Comcast	\$99.00	25	.	Cable	.
62	Bristol, VA	Charter	\$99.97	30	4	Cable	N/A
63	Kansas City, KS	Time Warner Cable	\$99.99	15	1	Cable	N/A
66	Los Angeles, CA	AT&T U-Verse	\$109.00	18	1	DSL	250
67	Kansas City, MO	Time Warner Cable	\$112.49	10	1	Cable	N/A
68	Washington, DC	Comcast	\$112.50	20	.	Cable	300
70	Lafayette, LA	Cox	\$121.22	5	1	Cable	100
71	Chattanooga, TN	AT&T	\$133.00	6	6	DSL	250
72	San Francisco, CA	Astound	\$134.00	15	2	Fiber	300
73	Chattanooga, TN	Comcast	\$150.85	20	5	Cable	250

"." indicates that data could not be found.

This table ranks the top 15 triple play offers we found, and then indicates where the U.S. carriers that offer triple play services fall in the list.

NOTE: This table has been updated.

A previous version of this chart listed Chattanooga EPB's upload speed as 50 Mbps.

Table 2: Wired Speed Leaders

Rank	City	ISP	Network Technology	Download Speed	Upload Speed	Price (USD/PPP)	Data Cap (GB)
1(t)	Seoul	HelloVision	Fiber	1000	1000	\$31.47	N/A
1(t)	Tokyo	KDDI	Fiber	1000	1000	\$33.69	N/A
1(t)	Hong Kong	Hong Kong Broadband Network Limited	Fiber	1000	1000	\$48.82	N/A
1(t)	Chattanooga, TN	EPB	Fiber	1000	1000	\$69.99	N/A
1(t)	Kansas City, MO	Google Fiber	Fiber	1000	1000	\$70.00	N/A
1(t)	Kansas City, KS	Google Fiber	Fiber	1000	1000	\$70.00	N/A
1(t)	Lafayette, LA	LUS	Fiber	1000	1000	\$999.95	10000
8	Bristol, VA	BVU	Fiber	1000	50	\$319.95	N/A
9(t)	Riga	Baltcom	Fiber	500	500	\$9.22	N/A
9(t)	Amsterdam	KPN*	Fiber	500	500	\$86.14	.
11	New York, NY	Verizon	Fiber	500	100	\$299.99	N/A
12	Paris	SFR*	Fiber	300	.	\$26.73	N/A
13(t)	Washington, DC	Verizon	Fiber	300	65	\$209.99	N/A
13(t)	Los Angeles, CA	Verizon	Fiber	300	65	\$214.99	N/A
15	Toronto	Rogers	Fiber	250	250	\$183.73	500
16	Mexico City	Totalplay (Iusacell)	Fiber	200	66	\$254.11	.
17	Berlin	Deutsche Telekom*	Fiber	200	.	\$69.56	Throttle
18	Copenhagen	Stofa*	Cable	150	15	\$77.99	2500
19	Zurich	UPC	Cable	150	10	\$77.27	N/A
20	Bucharest	UPC	Fiber	150	6	\$29.94	.
21	Prague	UPC	Cable	120	10	\$45.62	N/A
22	San Francisco, CA	Comcast	Cable	105	20	\$114.95	.
23	London	Virgin	Fiber	100	.	\$47.35	N/A
24	Dublin	Magnet*	Fiber	100	.	\$60.98	N/A

"." indicates that data could not be found.

*Offers included additional bundled services.

NOTE: This table has been updated.

A previous version of this chart ranked Chattanooga EPB as 7(t) and listed their upload speed as 50 Mbps.

A previous version of this chart also listed Hong Kong Broadband Network Limited price as \$64.42.

play packages across the cities we surveyed by price. When a provider offered multiple triple play packages, we selected the cheapest bundle available. As in last year's report, this chart lists the top 15 triple play offers we found, and then indicates where U.S. carriers that offer triple play services fall in the list.

In comparison with the triple play rankings chart published last year, very little has changed. The top fifteen providers are still international, while U.S. carriers come in at 32nd place on the list. In last year's report, the U.S. came in 30th place.

Section 2: Wired Speed Leaders

The speed of your Internet connection determines your ability to view web pages, download and upload content, and use applications and services like voice over IP and two-way videoconferencing. As

network technology has improved over the years, the general trend has been an increase in broadband connection speeds. At the same time, however, the amount of bandwidth required by the average consumer increases as streaming video and sharing user-generated content becomes commonplace. Speed, therefore, remains an important metric for consumers when evaluating their broadband options and considering how they plan to use the Internet.

In this section, we compare "speed leaders" and rank offerings in each city based on the fastest advertised Internet speeds we found. This year's results show a significant increase in the high speeds available in many cities. The lowest-ranking high speed available in a surveyed city jumped from 40 Mbps to 100 Mbps, and the majority of cities have speeds of 200 Mbps or higher. Eight cities now offer speeds of 1000 Mbps, in contrast with two cities offering those speeds last

year. Two of the gigabit cities, Kansas City, Kansas, and Kansas City, Missouri, were not included in the 2012 report.

This year, we did not rank mobile speed leaders. Mobile data speeds vary greatly depending on interference, environmental factors, and local network congestion. Often, specific speeds are not explicitly advertised by U.S. providers. In addition, mobile plans usually are ranked and priced by data cap instead of speed. Thus, we decided to add two charts: one that shows the cost of 2 GB of data in each city, and another demonstrating the “Best Bang for your Buck,” to more accurately capture the pricing and availability of mobile Internet.

Section 3: The Best Bang for Your Buck

In last year’s report, we presented a ranking of the best wireline broadband plans that were available for approximately \$35 in each city. This year, we present an updated ranking of those plans along with a new ranking of mobile broadband plans that are available for the equivalent of \$40. Table 3 ranks home broadband offerings in terms of the highest speed available around the \$35 price point. Table 4 ranks mobile data-only offerings delivered by a USB dongle in terms of the largest data cap available around the \$40 price point. For more on the rationale behind these rankings, please see the Methodology section.

Table 3: The Best Bang for Your Buck for \$35 (Wired)

Rank	City	ISP	Price (USD/PPP)	Download Speed	Upload Speed	Network Technology
1	Seoul	HelloVision*	\$36.31	1000	1000	Fiber
2	Tokyo	NTT East	\$30.47	100	100	Fiber
3	Hong Kong	Hong Kong Broadband Network Limited	\$30.60	100	100	Fiber
4	San Francisco, CA	Webpass	\$37.50	100	100	Fiber
5	Paris	Orange*	\$39.42	100	50	Fiber
6	Riga	Balti-Com	\$27.25	100	20	Cable
7	Bucharest	Madnet	\$32.05	80	.	Fiber
8	Dublin	Vodafone Ireland	\$36.59	70	.	Fiber
9	Prague	UPC	\$38.32	60	6	Cable
10	New York, NY	RCN	\$34.99	50	6	Fiber
11	Washington, DC	RCN	\$39.99	50	6	Cable
12	Amsterdam	Telfort	\$31.33	50	5	.
13	Copenhagen	YouSee	\$38.63	50	5	Cable
14	Berlin	O2*	\$37.95	50	.	DSL
15	Toronto	Acanac	\$35.73	35	3	Cable
16(t)	Bristol, VA	Charter	\$37.49	30	4	Cable
16(t)	Los Angeles, CA	Charter	\$37.49	30	4	Cable
18	Chattanooga, TN	Comcast	\$39.99	25	5	Cable
19	London	PlusNet*	\$31.05	17	.	DSL
20	Lafayette, LA	LUS	\$34.95	15	15	Fiber
21	Kansas City, KS	Time Warner Cable	\$34.99	15	1	Cable
22	Zürich	VTX*	\$33.81	12	.	DSL
23	Kansas City, MO	Earthlink	\$35.95	7	.	Cable
24	Mexico City	Totalplay (Iusacell)	\$44.20	5	1	Fiber

"." indicates data could not be found.

*Offers included additional bundled services

NOTE: This table has been updated.

A previous version of this chart ranked Hong Kong Broadband Network Limited as 4th and listed their price as \$40.38.

Table 4: The Best Bang for Your Buck for \$40 (Mobile USB Dongles)

Rank	City	ISP	Price (USD/PPP)	Download Speed	Upload Speed	Data Cap (GB)	Data Cap Penalty
1	Seoul*	SK Telecom	\$24.21	10	3	N/A	N/A
2	Tokyo	J:COM	\$33.97	40	15.4	N/A	N/A
3	Zürich	Swisscom	\$35.25	21	2	N/A	N/A
4	Riga	LMT	\$33.08	4	.	N/A	N/A
5	Dublin	Three	\$42.67	21	5.76	60	\$5.08/MB
6	Toronto*	Mobilicity	\$16.26	21	6	20	Throttle
7	Copenhagen	Fullrate*	\$28.42	20	5	15	Throttle
8	Bucharest	Orange	\$42.73	43.2	5.76	10	Throttle
9	Prague	T-Mobile	\$36.42	42	5.76	10	.
10	Berlin	1&1	\$37.96	21.6	.	10	Throttle
11	Amsterdam	T-Mobile	\$42.17	14.4	.	10	Throttle
12	Paris*	Bouygues Telecom	\$46.40	42	.	10	Throttle
13	London	EE	\$39.38	100	50	8	.
14(t)	Bristol, VA	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Chattanooga, TN	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Kansas City, KS	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Kansas City, MO	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Lafayette, LA	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Los Angeles, CA	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	New York, NY	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	San Francisco, CA	Verizon	\$40.00	.	.	6	\$15/GB
14(t)	Washington, DC	Verizon	\$40.00	.	.	6	\$15/GB
23	Hong Kong	SmarTone	40.07	150	50	40.07	Throttle
24	Mexico City	Telcel	\$38.98	21	.	3	Throttle

"." indicates that data could not be found.

*Other plans closer to \$40 available; this is the best plan that is closest.

*Most expensive plan available.

NOTE: This table has been updated.

A previous version of this chart included a plan from China Mobile Hong Kong with advertised speeds of up to 100 Mbps.

These charts offer an interesting comparison between wireline and wireless broadband plans. First, wireless speeds are definitely lower than wired speeds and caps on data are considerably more restrictive in the wireless market. Generally speaking, since even the best deals across our dataset were found near the \$40 mark, subscribers to these plans pay much more for much less capability. Because of these distinctions, mobile broadband service is not a viable equivalent to wireline broadband services at this time.

Section 4: What does 2 GB of Mobile Data Cost?

This year, in Table 5, we present the best deal

that a consumer can get for a 2 GB mobile data subscription for a USB dongle in each city. T-Mobile offered the best deal among the U.S. providers, but it still placed 12th in our rankings behind all of the European cities surveyed. China, Japan, Mexico, and South Korea fell lower than the U.S. cities, although it must be noted that the Japanese provider offers an unlimited plan, while the lowest available data cap in Seoul is 5 GB. Moreover, the providers in Asian cities offered base packages with much faster speeds—100 Mbps download in Hong Kong and Seoul—than any of the other providers included in this ranking.

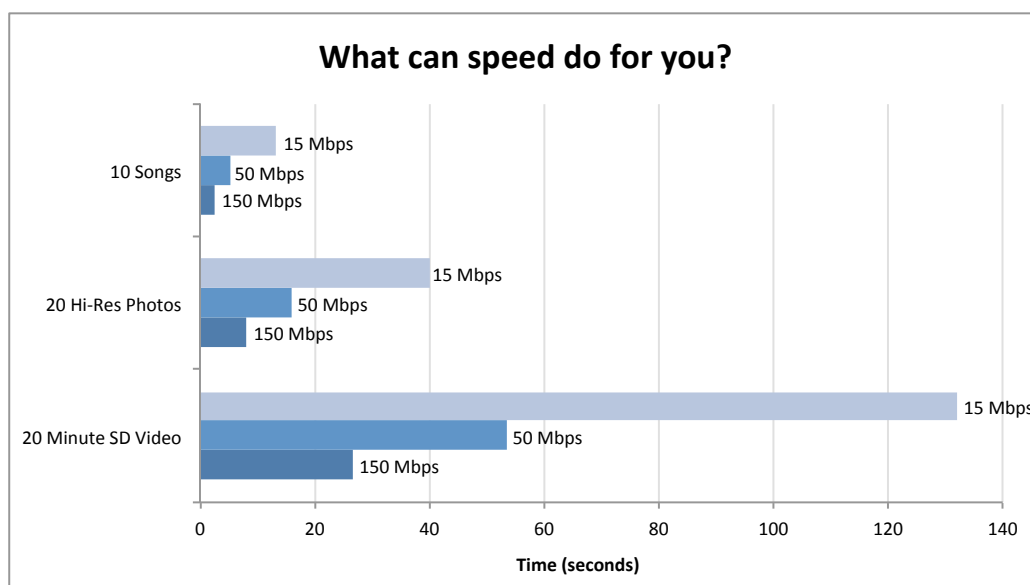
Table 5: What Does 2GB of Mobile Data Cost? (USB Dongles)

Rank	City	ISP	Price (USD/PPP)	Data Cap (GB)	Data Cap Penalty	Download Speed	Upload Speed
1	Copenhagen	Fullrate	\$5.17	1	Throttle	6	1
2	Bucharest	RCS & RDS	\$8.98	5	Throttle	7.2	3.6
3	Riga	Bite	\$12.50	2	\$0.08/MB	21.6	.
4	Zürich	Orange	\$13.67	1	Throttle	21.1	5.76
5	London	TMobile	\$15.15	2	\$4.55/day	21.6	5.76
6	Dublin	Three	\$15.84	2	\$6.20/MB	21	5.76
7	Paris	SFR	\$17.43	3	.	42	.
8	Toronto	WIND Mobile	\$20.33	3	\$0.01/MB	21	6
9	Prague	T-Mobile	\$21.82	3	.	42	5.76
10	Hong Kong	China Mobile Hong Kong	\$23.68	2	Throttle	100	.
11	Amsterdam	T-Mobile	\$25.30	2.5	Throttle	14.4	.
12	Berlin	E-plus	\$25.32	2	Throttle	7.2	1.4
13(t)	Bristol, VA	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Chattanooga, TN	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Kansas City, KS	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Kansas City, MO	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Lafayette, LA	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Los Angeles, CA	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	New York, NY	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	San Francisco, CA	T-Mobile	\$30.00	2.5	Throttle	.	.
13(t)	Washington, DC	T-Mobile	\$30.00	2.5	Throttle	.	.
22	Tokyo	J:COM	\$33.97	N/A	N/A	40	15.4
23	Mexico City	Iusacell	\$38.98	2	Throttle (or can upgrade)	21.6	.
24	Seoul	LG Uplus	\$39.94	5	\$0.04/MB	100	50

"." indicates data could not be found.

NOTE: This table has been updated.

A previous version of this chart ranked China Mobile Hong Kong as 21st and listed their price as \$31.25.



As the chart to the right demonstrates, the amount of bandwidth required by the average consumer increases dramatically if a user engages in activities such as streaming video or producing multimedia content.

Implications and Next Steps

Many American consumers take high prices and slow speeds to be a given, but our data demonstrates that it is possible to have faster, more affordable connectivity in cities of comparable density and size. To an extent, the data speaks for itself: whether consumers are interested in triple play packages or mobile broadband plans, they pay more money for lower speeds in the United States.

Our data also shows that the most affordable and fast connections are available in markets where consumers can choose between at least three competitive service providers. This trend is consistent with last year's data, and also underscores the critical role that competition plays in determining broadband prices and speeds. According to the 2010 National Broadband Plan, only nine percent of Americans have access to three or more providers; the majority are limited to one or two incumbent telephone or cable companies.⁹

In our forthcoming full report, we analyze the roots and impact of high costs and low speeds in the United States. We also offer policy recommendations for ensuring that the United States does not continue to fall behind global cities and remains competitive in an increasingly technological world.

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Overview

In the methodology of the 2012 *Cost of Connectivity* report, we wrote the following explaining the selection of the initial cities:

We selected a number of cities that ranked highly in surveys of Internet speeds, including many at the top of the list in the Akamai report, as well as major cities with relatively similar population sizes and densities. We also chose to include three smaller U.S. cities which have municipal broadband networks: Bristol, VA; Chattanooga, TN; and Lafayette, LA. These cities currently offer some of the fastest Internet connections in the U.S. because the local communities have invested in and built their own communications infrastructure.

We surveyed the same cities for the 2013 report. Keeping the same set of cities allows for the creation of a longitudinal data set and the comparison of local trends in broadband access over time. The only change in research was the addition of data from Kansas City, KS and Kansas City, MO. While they are separate municipalities, this single metropolitan area was added to account for Google Fiber and include its product offerings in our comparisons.

To assess changes in speed and price over the last year, we compared the 2013 data with the data in the 2012 report. In our analysis of these trends, we look at the general changes in pricing, speeds, caps and provider availability for each city, excluding Kansas City, KS and Kansas City, MO, since they were not included in last year's report. The trends for each individual city were then considered in the context of other cities to summarize the changes domestically and internationally for wired and mobile Internet availability.

Data Collection

In each of the selected cities, we researched the major home broadband and mobile providers. We then visited their primary websites and noted the broadband plans that qualified according to our research metrics. It should be noted that this research represents a best effort attempt to collect as much information as possible.

For home broadband services we focused our research on broadband providers utilizing DSL, cable, or fiber-optic technology. Residential services delivered by fixed wireless technologies were also included in our research if the providers appeared to have a prominent place in the local market. Due to our focus on urban regions, we did not include satellite-based services in our research. These services are rarely competitive except for in very rural or isolated areas.

For mobile broadband services we focused our research specifically on *data-only* mobile Internet plans, services which typically utilize a USB-based “dongle” modem. We do not include mobile data services that are part of a combined voice and data subscription plan.

The methodology and fields for data collection remain the same from 2012:

In 2010 the Federal Communications Commission (FCC) defined broadband Internet service as having a minimum speed of 4 megabits per second (Mbps) download and 1 Mbps upload. We used this metric as a threshold for our research and did not record any internet services where advertised download speeds were slower than 4 Mbps. For each plan, we collected data on the following metrics:

- Download and upload speeds
- Monthly costs
- Data caps & penalties (overage fees or slowed speeds)
- Activation and installation fees
- Modem and equipment rental or purchase fees
- Contract lengths

All foreign currencies have been adjusted to U.S. dollars using the World Bank’s purchasing power parity (PPP) metric.¹ Unlike direct exchange rates, which are often volatile and do not account for global income disparities, PPP conversion rates adjust for differences in costs of living, price levels, and other factors that affect a consumer’s purchasing power. This allows us to make more effective comparisons between the cities that we surveyed.

Additional notes about the data:

- All broadband speeds in the report are based on advertised speeds and listed in Megabits per second (Mbps).
- Price data reflects the non-promotional price for subscription. In instances where a multi-year contract includes an increase in price from one year to the next, the price listed reflects the average yearly subscription costs for the contract.
- References to data for data caps are recorded in Gigabytes (GB).
 - In the mobile data section we record plans that have limits of less than 1 GB as a decimal point fraction thereof. For example, a plan with a 500 Megabytes (MB) cap is recorded as “0.5” in the data column. We fully acknowledge that technically speaking, this is not accurate: 1 GB contains 1024 MB, so 500 MB represents 0.488 of a 1 GB. However, we chose to present the data in the manner we do for the sake of simplicity.
- The term “Not Applicable” (N/A) is used to indicate when it could be confirmed that certain

data fields did not apply to a researched service plan. For example, the “N/A” is used in the Data Caps field to indicate when a plan does not have a data limit.

- The null void period (“.”) is used to indicate when no information for a data field could be found.
- Research was conducted between July and September of 2013.

Ranking & Comparison Table Methodology

Section 1: Triple Play Rankings By Price

Although there are a variety of premium channels and Voice over IP add-on services available, we have highlighted the conventional triple play packages for the purpose of direct comparisons. The plans listed in Table 1 will get a consumer a standard cable subscription with high-definition (HD) programming, basic phone service and the lowest tier Internet speed available. The table ranks triple play offerings available with the above criteria in each city.

Section 2: Wired Speed Leaders

In this section, we compare “speed leaders” and rank offerings in each city based on the fastest advertised Internet speeds found in our research. We chose basic Internet packages, without bundled services, unless the Internet service provider only offered bundled services. The offerings are ranked by download speeds, with higher upload speeds used to differentiate between plans that are tied. Advertised download speeds continue to be a major selling point for consumer Internet service and often are substantially higher than upload speeds. However, upload speeds are rising in importance as users create and share more content and data. Higher upload speeds allow for more effective use of online video conferencing and the transfer of files to cloud-

based storage options. While more ISPs are offering symmetrical service, where the download and upload speeds are equal, most providers continue the standard practice of engineering their networks to maximize download speeds, a practice which is largely based on prior network designs.²

Section 3: The Best Bang for Your Buck

This section ranks wireline broadband offerings that are equivalent to about \$35 USD and mobile broadband offerings equivalent to about \$40 USD. Last year's report featured a section that only compared wireline broadband offerings priced at \$35 USD, but we have expanded this section for the sake of comparison between the services available to consumers.

For the wireline findings, we display standalone Internet packages unless providers only offer Internet bundled with other services. The results are ranked in descending order of speed.

In the wireless table, we found that a range between \$35 and \$50 (with a focus on plans available nearest to \$40) was an appropriate filter through which to compare mobile broadband plans since it included at least one plan from each country and encompasses the largest number of plans with broadband speeds that met our minimum definition. For some countries, however, their prices were too low to be included in the range, so the best plan that was closest to \$40 was chosen. In our ranking, we included any contract length since many providers require two year contracts for their services. It is also worth noting that while the advertised speeds listed here are certainly attainable, mobile broadband providers often list the maximum speed attainable by the device associated with the plan, rather than a speed promised to the consumer. Since mobile broadband speeds vary greatly depending on factors like USB dongle models and since most carriers offer plans based on data usage rather than speed, the plans are

ranked in descending order based on the size of the data cap.

Section 4: What Does 2 GB of Mobile Data Cost?

This year, for each city we present the best deal that a consumer can get for a 2 GB mobile data subscription, regardless of contract length. Where a provider offered a 2 GB package that was the best deal in the city, we chose the standard plan with the lowest speed that meets our minimum speeds of 4 Mbps download and 1 Mbps upload. In some cases, however, the provider with the best deal did not offer a 2 GB plan. In these cases, we applied the following rules to determine the appropriate plan and price to use in the rankings:

- If a provider offered a plan that was within 0.5 GB of 2 GB (e.g. 2.5 GB) we chose that plan.
- If a provider offered a plan with a data cap that was less than 2 GB, we used overage fees to determine the monthly cost for 2 GB of data on that plan.
 - If a provider offered a 1 GB plan and throttled the connection speed after the user exceeded the data cap, we displayed the regular price and chose that plan if it was the best deal.
 - If a provider offered a 1 GB plan and charged overage fees for excess data, we calculated the cost of 2 GB of data by adding the base price for the plan and the overage fees. However, if this number was higher than the cost of the next data tier available from that provider (e.g. 3 GB), we chose the next data tier.
 - If a provider offered a 1 GB plan but did not provide information about throttling or overage fees, we could not determine the cost of 2 GB of data and therefore did not use that plan. Where appropriate, we used the next data tier available from that provider (e.g. 3 GB).
- If the provider's smallest data cap was higher than 2 GB, we chose the least expensive available plan (i.e. the plan with the smallest data cap).

REFERENCES

1. For the PPP conversion tables used in this report, see the 2012 data at “PPP conversion factor, GDP (LCU per international \$),” World Bank, <http://data.worldbank.org/indicator/PA.NUS.PPP> [accessed October 23, 2013].
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