Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Implementation of Section 3 of the Cable	**)**	MM Docket No. 92-266
Television Consumer Protection and Competition	**)**	
Act of 1992	**)**	
	)	
Statistical Report on Average Rates for Basic	**)**	
Service, Cable Programming Service, and	**)**	
Equipment	**)**	

REPORT ON CABLE INDUSTRY PRICES

Adopted: October 12, 2016 **Released: October 12, 2016**

By the Chief, Media Bureau:

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Heading   Paragraph #

I.   INTRODUCTION AND EXECUTIVE SUMMARY

      1.   Section 623(k) of the Communications Act of 1934, as amended by the Cable Television Consumer Protection Act of 1992 (Cable Act),[1] requires the Federal Communications Commission (Commission or FCC) to publish annually a statistical report on the average rates that cable operators[2]

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[1] Section 623(k), adopted as Section 3(k) of the Cable Act, Pub. L. No. 102-385, 106 Stat. 1460, codified at 47 U.S.C. § 543(k).

[2] In the Report, a cable operator refers to an entity that operates a wireline system and is a multichannel video programming distributor (MVPD) that makes available for purchase, by subscribers or customers, multiple channels of video programming. *See* 47 C.F.R. § 76.905(d). The term includes operators of traditional coaxial and fiber cable systems, municipalities, and telephone companies (including Verizon FiOS) registered with the Commission.

(continued….)

charge for delivery of basic cable service, other cable programming, and cable equipment (The Report).[3] The Cable Act requires the Commission to compare the rates of operators found subject to effective competition, under a statutorily defined standard (hereinafter referred to as "effective competition"),[4] with those of operators that the Commission has not to date found are subject to effective competition.[5] This

(Continued from previous page) ———————————————
See 47 C.F.R. § 76.1801. Direct broadcast satellite (DBS) systems and AT&T U-verse are not registered operators and therefore are excluded from this report. The Commission however considers DBS and AT&T U-verse competitors for assessing effective competition cases.

[3] The Cable Act requires operators to offer an entry-level basic service that must include, at a minimum, all commercial and noncommercial educational local broadcast stations entitled to carriage under the must-carry provisions of the Communications Act of 1934, as amended, 47 U.S.C. §§ 534-35. Basic service must also offer any other local broadcast station provided to any subscriber, as well as public, educational, and governmental access channels that the LFA may require the operator to carry. *See* 47 U.S.C. § 543(b)(7). Cable programming service refers to a tier of video channels for which the operator charges a separate rate, other than the basic service channels and channels for which per-channel or per-program charges apply. *See* 47 U.S.C. § 543(k)(l)(2). Cable equipment refers to a converter box and other customer premises equipment used for accessing cable services. *See* 47 U.S.C. § 543(b)(3). For previous reports, *see Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Statistical Report on Average Rates for Basic Service, Cable Programming Service, and Equipment*, 612 FCC Rcd 3239 (1997) (1997 Report); 14 FCC Rcd 8331 (1999) (1998 Report); 15 FCC Rcd 10927 (2000) (1999 Report); 16 FCC Rcd 4346 (2001) (2000 Report); 17 FCC Rcd 6301 (2002) (2001 Report); 18 FCC Rcd 13284 (2003) (2002 Report); 20 FCC Rcd 2718 (2005) (2003-04 Report); 21 FCC Rcd 15087 (2006) (2005 Report); 24 FCC Rcd 259 (2009) (2006-08 Report); 25 FCC Rcd 13350 (2010) (2009 Report); 27 FCC Rcd 2427 (2012) (2011 Report); 28 FCC Rcd 9857 (2012 Report); 29 FCC Rcd 14272 (2013 Report); and 30 FCC Rcd 1755 (2014 Report).

[4] *See* 47 U.S.C. § 543(k)(1) (cross-referencing 47 U.S.C. § 543(a)(2)). Under the Cable Act, if the Commission grants a finding of effective competition to an operator and the community it serves, that operator is not subject to regulation of its basic service price. Such a finding requires the operator to meet one of four statutory tests. First, fewer than 30 percent of households in the franchise area subscribe to the operator's cable programming service (low penetration test). Second, the operator and at least one other MVPD, including DBS operators, offer comparable service to at least 50 percent of franchise area households and at least 15 percent of such households subscribe to such service other than from the largest MVPD (the 50/15 test). Third, a municipality offers MVPD service to at least 50 percent of franchise area households (municipal test). Fourth, a local exchange carrier (LEC) or its affiliate, or an entity using the facilities of the LEC or its affiliate, offers MVPD service by means other than DBS service directly to subscribers in an area that an unaffiliated MVPD offering comparable services also serves (LEC test). *See* 47 U.S.C. § 543(l) and 47 C.F.R. § 76.905(b). The LFA may not regulate the rate for basic cable service of operators deemed subject to effective competition unless the LFA seeks and the Commission grants recertification. *See* 47 U.S.C. §§ 543(a)(2) and 47 C.F.R. § 76.916(a). A finding of effective competition based on more generally applicable competition analysis may not necessarily reach the same conclusion as a finding of effective competition based on this statutory standard. See, generally, the U.S. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines, http://www.justice.gov/atr/public/guidelines/hmg-2010.html.

[5] *See* 47 U.S.C. § 543(k)(2). We note here that since the collection date of 2015 data in this Report (Jan. 1, 2015), the Commission changed the effective competition process by adopting a rebuttable presumption that cable operators are subject to one type of effective competition, known as the Competing Provider Effective Competition, or 50/15, test. This change was justified by the ubiquitous nature of Direct Broadcast Satellite (DBS) services, with DBS providers capturing almost 34 percent of the MVPD subscribers. The Commission concluded that it thus is appropriate to presume that the "50/15 effective competition" test described in the previous footnote is met. *See Amendment to the Commission's Rules Concerning Effective Competition, Implementation of Section 111 of the STELA Reauthorization Act*, Report and Order, 30 FCC Rcd 6574 (2015) (*Effective Competition Order*). Because the *Effective Competition Order* did not take effect until September 9, 2015, it will not affect the data in this Report. However, beginning with the next Report, which will collect data as of January 1, 2016, we may have to adopt changes in the way we collect and report our data.

Report fulfills the statutory directives and presents key findings for the 12 months ending January 1, 2015.[6]

2.   The Media Bureau's staff conducted an annual survey for the calendar year ending January 1, 2015, of the rates cable system operators (operators) charge for basic cable television service (basic service), expanded basic service, and cable equipment. For this purpose, Media Bureau staff surveyed a random sample of operators in communities nationwide. In the sample, some of the operators had not been found to be facing effective competition and were thus potentially subject to local franchise authority (LFA) regulation of basic service rates while the other operators had a finding of effective competition from the Commission and were thus exempt from regulation. Media Bureau staff compared the rates of the two groups and found that on average the rates for basic service were lower for the group of operators with an effective competition finding. Expanded basic rates were higher for this same group, due at least in part to providing a greater number of channels. Overall, looking at all the operators from both groups, the average monthly rate for basic service increased by 2.3 percent over the 12 months ending January 1, 2015, to $23.79. Expanded basic service rates increased by 2.7 percent, to $69.03. The average price per channel (price divided by number of channels) for expanded basic service declined by 1.8 percent, to 46 cents per channel. These price changes compare to a 0.1 percent decline in general inflation as measured by the Consumer Price Index (CPI) (All Items) over the 12 months ending January 1, 2015.

3.   For purposes of this survey, we have defined all cable operators that do not have an FCC finding of effective competition as "noncompetitive". In many such communities, the incumbent cable operator could possibly have met the effective competition test, but for various reasons had not petitioned the Commission for an effective competition finding; or, if a petition was filed it might have been pending as of the January 1, 2015 cut-off date for our survey. Available data are inadequate to allow us to estimate the potential impact that these communities may have on our findings. For reasons discussed in paragraph 9, *infra,* a significant number of these communities may exist in our sample of noncompetitive operators. We note, however, that even without a finding of effective competition the LFA may elect not to regulate the price of basic service. In fact, according to our survey, in the communities without a finding of effective competition finding, only 13 percent of subscribers are in areas where the LFAs elect to regulate the price of basic cable service.[7]

4.   *Average prices for all communities.* The average monthly price of expanded basic service (the combined price of basic service and the most subscribed cable programming tier excluding taxes, fees, and customer premises equipment charges) for the communities surveyed grew by 2.7 percent over the 12 months ending January 1, 2015, to $69.03, compared to a decrease of 0.1 percent in the CPI. This compares to a compound ten-year average rate of increase from 2005-2015 of 4.8 percent in the price of expanded basic and a 1.5 percent increase in the CPI. The price per channel (price divided by number of channels) for subscribers purchasing expanded basic service decreased by 1.8 percent over the 12 months ending January 1, 2015, to 46 cents per channel. Over the 10 years from 2005-2015, the price per channel has declined by 1.4 percent on an average annual compound basis.[8]

5.   *Average prices in communities with a finding of effective competition compared with prices in communities without a finding of effective competition.* Over the 12 months ending January 1,

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[6] The information in this Report meets the Commission's information quality guidelines. *See Implementation of Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Pursuant to Section 515 of Public Law No. 105-554*, Information Quality Guidelines, 17 FCC Rcd 19890 (2002).

[7] *See* 2014 report, para. 2. A 2015 estimate is unavailable due to changes in the survey questions.

[8] We note here that the compound average annual decline is based on an index that takes account of changes in the way we collected channel counts over time. Please see paragraph 8 in the Appendix, below.

2015, the average price of expanded basic service increased by 3.3 percent, to $67.85, for those operators serving communities for which no effective competition finding was made as of January 1, 2015. For the effective competition communities, the average price of expanded basic increased by 2.0 percent, to $70.31. Over this period, price per channel decreased by 0.6 percent in communities without a finding of effective competition, to 49.7 cents per channel, and decreased by 3.3 percent in effective competition communities, to 41.2 cents per channel. The price per channel is 17 percent lower in effective competition communities than in communities without a finding of effective competition, which reflects that operators in effective competition communities carry, on average, more channels on expanded basic service than operators carry in communities without this finding.

6.   As noted, the price of expanded basic service averaged across effective competition communities was higher than the price of expanded basic service averaged across communities without such a finding. The difference is statistically significant. The four previous surveys also found that the price of expanded basic service in effective competition communities was higher than the price of expanded basic in communities without such a finding. Prior to that, surveys found that effective competition communities in general had lower prices. One factor contributing to this reversal of trend is an increase in communities where there has been a finding of effective competition based on the DBS market share.[9] The DBS subgroup constitutes over two-thirds of all effective competition findings and thus has considerable weight on the average price. This subgroup tends to contain larger systems that carry more channels. The price for expanded basic charged by cable operators in the DBS subgroup is significantly higher, by 3.8 percent, than the noncompetitive average as shown in Table 3. The price per channel, however, for expanded basic service is significantly lower for this group (by 17.1 percent).

7.   We next compare the price of expanded basic service in effective competition communities overall ($70.31) to the four subgroups (defined at note 4, above, and paragraph 11, below) of the effective competition communities, as of January 1, 2015. Prices on average were 1.2 percent lower ($69.46) for incumbent cable operators in communities with a rival operator and 5.3 percent higher ($74.05) for the rival operators. Prices were 0.1 percent higher ($70.41) in communities with effective competition findings the Commission granted on the basis that the DBS market share met the 15 percent threshold established by the statute. Prices were 0.5 percent lower ($69.97) in the Wireless/Low Penetration subgroup of cable operators, those competing with a wireless MVPD system or who met the low penetration test as a result of serving fewer than 30 percent of households in the community.

II.   OVERVIEW OF THE SURVEY

8.   The basis for the information and analysis provided in this Report is the Commission's 2015 survey of cable industry prices (survey). In August 2015, the Commission directed a randomly selected sample of cable operators to respond to a survey questionnaire that requested data primarily as of January 1, 2014 and January 1, 2015.[10] On this basis, increases and decreases in prices and channels from 2014 to 2015 reported herein are based on the data collected in the 2015 survey, not a comparison of the data from the 2014 and 2015 surveys, as those surveys included different samples of operators.[11] The

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[9] Note that the survey does not include DBS prices but rather the prices that cable operators charge in areas where an effective competition finding is based on DBS market share.

[10] *See Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Statistical Report on Average Prices for Basic Service, Cable Programming Services, and Equipment*, MM Docket No. 92-266, Media Bureau, DA 14-672, (rel. May 16, 2015).

[11] To calculate 2014-2015 price change, the survey sampled two years of data, rather than using the 2014 price from the prior (2014) survey, so as not to introduce random sampling variance that may occur between independent samples. *See* Appendix, para. 9. Table 1 reports the 2015 price and annual change based on the 2015 survey. Table 4 reports the historical price series based on price data from that survey year.

survey requested data from a random sample of 800 cable operators serving two groups of communities: (1) communities where operators have not been formally found to meet one of the statutory tests for effective competition; and (2) communities where operators have been found to meet one of the statutory tests for effective competition (effective competition communities). In the latter group, the operator serving that community is not subject to rate regulation.

9.   We surveyed operators serving 485 out of the 22,828 communities without a finding of effective competition and 315 out of the 10,550 communities granted an effective competition finding pursuant to the statute. In selecting cable operators for our sample from the effective competition communities, we relied on the Commission's formal findings of effective competition, based on the statutory definition of effective competition in the Cable Act.[12] The basis of most of the effective competition cases that come before the Commission is competition between a cable operator and a DBS provider. The basis of the remaining effective competition cases is either competition between a cable operator and a wireline or wireless competitor or low subscriber penetration. Our list of effective competition communities is limited to those that have received a formal FCC finding of effective competition under the statutory tests. The statute mandating this annual Report does not consider the notion that there are areas of the country where conditions may be present (i.e., sufficient market-based competition) to warrant a finding of effective competition but where no cable operator has petitioned for a finding or where the Commission had not yet acted on a pending petition for such a finding as of January 1, 2015.[13] Many such areas may exist due to the emergence of competing wireline providers (Verizon, AT&T, and others) and of DBS providers (available nationwide and serving greater than 15 percent of households on average). These areas of the country may have a competing provider that exceeds the 15 percent threshold set forth in the 50/15 test for effective competition, but the incumbent cable operator has not petitioned the Commission for a finding of effective competition.[14]

10.   DIRECTV and DISH Network provide DBS programming services similar to cable systems. Accordingly, we include a comparison of those companies' prices and channels to cable provider offerings as part of this Report even though the statute does not require it.[15] As in prior years, we compare the national average price, number of channels, and price per channel for cable's expanded basic service package to comparable packages offered by DIRECTV (the Choice package) and DISH Network (America's Top 120 Plus). As of January 1, 2015, the average cable price of expanded basic cable service ($69.03) was lower than the comparable DIRECTV package ($73.92). However, DIRECTV offered more channels (197 in comparison to cable's 181) and had a lower price per channel (37.6 cents) compared to the cable average of 45.6 cents. Looking at DISH, the cable price of $69.03 was significantly higher than the comparable DISH package Network ($59.99). However, DISH Network offered significantly fewer channels (127 channels) compared to cable and DIRECTV, and the price per channel for DISH (47.5 cents) exceeded the cable average of 45.6 cents. Attachment 8 provides details.

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[12] *See* 47 U.S.C. § 543(a)(2). *See also* the discussion of effective competition at note 5, above.

[13] *See* 47 U.S.C. § 543(k). In these cases, the LFA may or may not choose to price regulate.

[14] As noted above, although the Commission has changed the effective competition process to presume that cable operators are subject to effective competition as a result of ubiquitous DBS service, given that the period covered by this report is prior to the effectiveness of that rule change, for purposes of this Report we have continued to apply the Commission's earlier determination of effective competition. *See also* note 5 above.

[15] While these companies' programming packages are similar, we note that DBS systems, which are available on a nationwide basis, do not provide a local-facilities-based service, and can therefore add subscribers anywhere with minimal incremental infrastructure cost. *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming,* Fifteenth Report, 28 FCC Rcd 10496, 10546 para. 112 (2014).

11. *Overview of Survey Methodology*. We selected the sample of cable operators granted a finding of effective competition from four subgroups.[16] The first two subgroups are comprised of communities in which a second wireline operator's offerings is the basis for the finding of effective competition. Specifically, the first subgroup consists of *incumbent* operators in cable overbuild areas with a second cable operator. The incumbent is the operator who provided service prior to the rival operator's introduction to the market. The second subgroup consists of the *rival* second cable operators in these communities. We also report the weighted average of both the incumbent and rival operators. The basis of findings of effective competition for the incumbent subgroup are either (a) the 50/15 test resulting from the presence of at least two MVPDs or (b) the local exchange carrier (LEC) test resulting from the presence of at least two MVPDs, one of which is a LEC or an entity affiliated with or using the LEC's facilities.[17]

12. The third subgroup contains operators in communities in which a sufficient percentage of households subscribed to DBS service to substantiate a finding of effective competition under the 50/15 test (*DBS* subgroup).[18] The basis of most effective competition cases that come before the Commission is competition between a cable operator and a DBS provider. The basis of the remaining effective competition cases is either competition from a wireless competitor or a cable operator with low subscriber penetration (Wireless/Low Penetration subgroup) in the community. The fourth subgroup consists of incumbent operators in communities that either: (a) are also served by a wireless operator who offers MVPD programming comparable to the cable operator's offerings; or (b) meet the low penetration test as a result of serving fewer than 30 percent of households in the service area. Effective competition findings involving a wireless MVPD to date have been based on the LEC test, although the Commission could also make a finding of effective competition based on the presence of a wireless MVPD under the 50/15 test, assuming the wireless MVPD's service met the requirements for that test.

13. For each community selected for the sample, we asked the operator serving that community to complete a questionnaire that included questions on the prices of basic cable service and other cable programming service offerings. We used the information collected to estimate and compare average prices across the sample groups and subgroups. Basic cable service consists of the local broadcast stations; public, educational, and governmental access channels;[19] and typically a few additional channels that may be of local, regional, national, or international origin. Subscribers purchase basic service as a prerequisite to subscribing to expanded basic.[20] The survey focused on expanded basic service, which consists of the basic service channels plus a large number of popular national cable networks. Expanded basic service is generally the most-subscribed-to level of service after basic service. We also collected information on the price of the "next most popular" (or next most subscribed) service after expanded basic. This next most popular service package generally includes all the programming

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[16] These subgroups are designed to achieve desirable levels of statistical precision, and, thus, are not grouped according to the four statutory tests for effective competition under Section 623(l) of the Cable Act. See Attachment 1 and the Appendix, Section A, for a more complete description of our sampling methodology.

[17] We define these tests in note 6, *supra*. As noted*, the survey does not collect AT&T U-verse prices. *See* note 3, *supra*. The Commission however considers AT&T U-verse a competing MVPD for assessing effective competition and the incumbent subgroup includes effective competition findings that use as evidence AT&T U-verse competition. For the LEC test, there are many telephone companies in the rival subgroup, from large national systems such as Verizon FiOS, to small municipalities.

[18] The DBS subgroup does not include DBS prices; rather it consists of incumbent cable operators who cited DBS competition.

[19] *See, e.g.,* 47 U.S.C. § 543(b)(7).

[20] *See, e.g.,* 47 U.S.C. § 543(b)(7).

channels included in the expanded basic service package and at least seven additional cable network channels. As of January 1, 2015, 89 percent of subscribers took at least expanded basic service, and 11 percent took basic service only.[21] In addition, 53 percent of subscribers took the next most popular programming service as an additional tier. (We did not collect information on additional tiers beyond the next most popular). Survey respondents reported prices as of January 1, 2014 and January 1, 2015, permitting us to calculate the annual percentage changes for the year ending January 1, 2015. We calculated averages for each survey question by subgroup, by the larger sample groups, and for communities overall.

14. *Accuracy and Reliability Review*. We take a number of steps to ensure the accuracy and reliability of the data upon which we base this Report. Our survey is fully Internet-based, which means we provide the questionnaires to respondents to complete and submit on the Commission's Internet site. Many of the questions have built-in checks for reasonableness, which prompt the respondents to re-check their answers as they are completing the survey if those answers fall outside of a predetermined "range of reasonableness" based on our experience with prior price surveys. A second responsible party within each cable operator's company (other than the person who completed the survey) must certify the completeness and accuracy of the company's responses. After receiving the submitted surveys, we examine all responses using a computer program designed specifically to identify apparent inaccuracies. If we find a particular response to lie outside of its statistically expected reasonable range or to be inconsistent with the answers to other questions in the questionnaire, the computer program flags that response and we contact the cable operator and ask that operator to re-check the response and make corrections if needed.

III. SURVEY RESULTS

15. Cable operators in communities where the Commission has found effective competition accounted for 47 percent of cable subscribers nationwide. Of the 33,378 cable communities, 10,550 locales (32 percent) had a finding of effective competition. DBS market share was the basis for most findings. The DBS subgroup accounted for 70 percent of cable subscribers in communities with an effective competition finding. Incumbent operators and the rivals in these communities together accounted for 23 percent of all cable subscribers in the communities with an effective competition finding. Operators in the Wireless/Low Penetration subgroup served the remaining seven percent of subscribers in effective competition communities because they were in the range of a wireless video operator or satisfied the market low penetration test.

A. Cable Programming Services

16. Table 1 reports the average programming price of basic service, expanded basic service, and the next most popular service (defined for purposes of the survey sample to include expanded basic plus at least seven additional channels) on January 1, 2015.[22] It also reports the annual percentage change

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[21] This 89 percent includes subscribers whose operators do not offer a separate expanded basic service tier but instead offer a basic service tier that includes many of the popular national networks typically associated with expanded basic. All operators are required to offer a basic service tier that includes, at a minimum, those channels prescribed by statute, but the statute does not require operators to offer a separate tier of cable programming service, i.e., an offering that includes both the basic service tier and other cable programming. See 47 U.S.C. § 543(k). When an operator offers both a basic service tier and a separate expanded basic service tier, we refer to the basic service, for purposes of this survey, as "limited basic." Survey results indicate that less than three percent of subscribers receive basic service from operators that do not also offer a separate expanded basic service, i.e., from operators that do not offer a "limited basic" service.

[22] Prices in this table do not include prices for customer premises equipment unless the cable operator bundles the programming service and equipment into a single price.

in price for the year ending January 1, 2015, overall and separately for cable operators in communities without a finding of effective competition (referred to as the "noncompetitive group")[23] and for the effective competition group and subgroups. Looking at the Overall Average column, the price was $23.79 for basic service (2.3 percent increase), $69.03 for expanded basic (2.7 percent increase) and $81.75 for the next most popular cable programming service (2.2 percent increase). Overall, the expanded basic and next most popular services changed at a significant rate (indicated by the asterisk). The basic service price did not show significant change on average.

Table 1 Monthly Price of Programming By Status of Effective Competition January 1, 2015								
				Effective Competition Subgroups				
Cable Service	**Overall Average**	**Non-competitive**	**Effective Com-petition**	**Second Cable Operator Overbuild Subgroup**			**DBS**	**Wireless / Low Pene-tration**
				Incum-bent	*Rival*	*Both*		
Basic service	**$23.79**	**$24.55**	**$22.96**	**$21.43**	**$20.06**	**$21.24**	**$23.29**	**$25.57**
Annual change	2.3%	2.5%	2.2%	4.3%	3.3%	4.1%	1.6%	2.2%
Expanded basic	**$69.03**	**$67.85**	**$70.31**	**$69.46**	**$74.05**	**$70.11**	**$70.41**	**$69.97**
Annual change	2.7%*	3.3%*	2.0%*	3.2%*	10.3%*	4.2%*	1.3%	1.8%
Next most popular	**$81.75**	**$81.86**	**$81.64**	**$78.85**	**$86.80**	**$79.97**	**$82.15**	**$82.27**
Annual change	2.2%*	2.8%*	1.5%	3.1%*	7.5%*	3.8%*	0.8%	2.0%

Sources: Attachment 2. * Annual change is statistically significant at the 95% confidence level. Expanded basic prices include basic service prices, and next most popular service prices include expanded basic prices.

17.   Table 2 reports the average price per channel, or price divided by the number of channels the service offers. The price per channel measure adjusts the programming price shown in Table 1 to reflect differences in the number of channels the subscriber receives and for equipment lease fees.[24] Table 2 also reports the annual percentage change in the price per channel for the year ending January 1, 2015, overall for the sample and by status of effective competition. Overall, price per channel did not show significant change in the overall average for any of the services. The expanded basic price per

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[23] As discussed in paragraph 2, *supra*, the "noncompetitive" group includes communities for which the Commission has not received a request to make a finding of effective competition or has received but not yet ruled on such a request as of January 1, 2015, but in which such competition may in fact exist.

[24] The price component of the measure includes both programming and equipment if the operator requires equipment to view all of the channels that the service offers and does not bundle the equipment with programming at no additional charge. Thus, to some extent change in equipment price (see Table 5) drives the change in the price per channel. The equipment in the price per channel measure is the most commonly leased equipment, which all of the operators in the sample reported to be a set-top converter box. Attachment 3 reports the programming and equipment price component of price per channel and Attachment 4 reports the price per channel.

channel declined in all sample groups and subgroups except for cable overbuild rivals although not at a significant rate of change. Looking at the Overall Average column, the price per channel averaged 60 cents for basic cable service (2.4 percent decrease), 46 cents for expanded basic service (1.8 percent decrease) and 36 cents for the next most popular cable programming service (2.3 percent decrease).

				Effective Competition Subgroups				
Table 2 **Average Price per Channel** By Status of Effective Competition January 1, 2015								
Cable Service	**Overall Average**	**Non-competitive**	**Effective Com-petition**	**Second Cable Operator Overbuild Subgroup**			**DBS**	**Wireless / Low Pene-tration**
				Incum-bent	*Rival*	*Both*		
Basic service	**$0.602**	**$0.682**	**$0.516**	**$0.447**	**$0.698**	**$0.483**	**$0.519**	**$0.596**
Annual change	-2.4%	-1.3%	-3.9%	-0.7%	6.1%	0.8%	-5.3%	-3.9%
Expanded basic	**$0.456**	**$0.497**	**$0.412**	**$0.400**	**$0.475**	**$0.411**	**$0.412**	**$0.419**
Annual change	-1.8%	-0.6%	-3.3%	-2.4%	3.3%	-1.5%	-3.7%	-4.3%
Next most popular	**$0.359**	**$0.392**	**$0.326**	**$0.328**	**$0.351**	**$0.331**	**$0.323**	**$0.339**
Annual change	-2.3%	-1.0%	-4.1%	-0.7%	4.7%	0.1%	-5.4%	-4.6%

Source: Attachment 4. [*] Annual change is statistically significant at the 95% confidence level. Price per channel is the service price divided by the number of viewable channels with that service. Expanded basic prices include basic prices, and prices of the next most popular service include expanded basic prices. Similarly, expanded basic channels include basic channels, and next most popular service channels include expanded basic channels.

18.   Table 3 reports the price differential of each effective competition subgroup compared to the noncompetitive group. Overall, the price differentials in effective competition areas for basic service (6.4 percent lower) is statistically significantly lower compared to the average in the noncompetitive areas in all except the Wireless/Low Penetration subgroup. (An asterisk * indicates a statistically significant differential.) For expanded basic service, price in the effective competition group is higher by 3.6 percent compared to the noncompetitive group. However the price per channel for expanded basic service is statistically significantly lower (by 17 percent) in effective competition areas. These differentials are at the overall group level. At the subgroup level, on a per-channel basis for expanded basic service, the price per channel is also lower, compared to the noncompetitive group in all of the effective competition subgroups.

Cable Service	Overall Effective Competition Differential	Effective Competition Subgroup Differentials				
		Second Cable Operator Overbuild			DBS	Wireless / Low Penetration
		Incumbent	*Rival*	*Both*		
Basic service	-6.4%*	-12.7%*	-18.3%*	-13.5%*	-5.1%	4.2%
Expanded basic	3.6%*	2.4%*	9.2%*	3.3%*	3.8%*	3.1%*
Next most popular	-0.3%	-3.7%*	6.0%*	-2.3%*	0.3%	0.5%
Price per channel	-17.0%*	-19.4%*	-4.4%	-17.3%*	-17.1%*	-15.6%*

**Table 3
Differential in Average Price**
Effective Competition Group and Subgroups Compared to Noncompetitive Average Price
January 1, 2015

Sources: Attachments 2 and 4. * Indicates the difference is statistically significant at the 95% confidence level.

19.   Table 4 is an historical series that reports the compound average annual changes in prices and channels over the latest five and ten years. The table shows that over the last five years, 2010-2015, the price of basic cable grew from $17.93 to $23.79, representing a 5.8 average annual rate of change. Over the 10-year period from 2005-2015 the average annual increase was slightly lower at 5.2 percent. These percentages are higher than the 2.3 percent rate of increase over the last year (2014-2015) shown in Table 1. Over the last five years, the price of expanded basic service grew by an average of 4.9 percent, from $54.44 to $69.03, close to the 10-year average of 4.8 percent, and higher than the 2.7 percent increase over the latest year for expanded basic as shown in Table 1. Over the last five years, channels on expanded basic grew at a compound average annual rate of 9.2 percent, above the 4.4 percent average increase over the latest year as shown in Table 5.[25] Over the last five years, the price per channel declined by 4.0 percent compared to the 1.8 percent decrease on the latest year as shown in Table 2.[26] By comparison, the CPI for All Items, published by the Bureau of Labor Statistics (BLS) as a measure of general price inflation, grew annually at 1.5 percent over the last five years and 2.0 percent over the last 10 years. The CPI for Cable, Satellite, and Radio Services grew annually at 2.4 and 2.5 percent respectively over the last five and ten years.[27]

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[25] The prices and channels in Table 4 in each year are from the survey for that year. Each annual survey collects data for the current year and the prior year. Because of the random variance of survey samples from year to year means that the randomly selected sample of communities in the 2015 survey was different from those in the 2014 survey, the prior year (2014) value in the 2015 survey will not necessarily match the 2014 value from the 2014 survey because the randomly selected sample of communities in the 2015 survey was different from those in the 2014 survey due to standard sampling variance. For this same reason, the 2013 prices in Table 3 do not match exactly 2013 prices reflected in the 2012 survey, and so on for each year reported in Table 4.

[26] Year 2010 is the start of a new data series for channels and price per channel, reflecting the change to the survey questionnaire. The channel and price per channel indices in Attachment 7 adjust for this change and are the basis of the compound average annual change, as discussed in the Appendix.

[27] Because it covers a different mix of services and adjustments for change in the number of programming channels, the Cable, Satellite, and Radio CPI is not directly comparable with the change in cable prices in our survey.

		Table 4					
		Historical Averages					

Year	Basic Service Price	Expanded Basic Service			Next Most Popular Service and Equipment	CPI Index	
		Price	*Channels*	*Price per Channel*		*All Items*	*Cable*
2005	$14.30	$43.04	70.5	$0.620	$56.03	127.2	169.6
2006	$14.59	$45.26	71.0	$0.650	$59.09	132.2	174.4
2007	$15.33	$47.27	72.6	$0.670	$60.27	135.0	179.0
2008	$16.11	$49.65	72.8	$0.680	$63.66	140.8	183.9
2009	$17.65	$52.37	78.2	$0.710	$67.92	140.8	186.5
2010	$17.93	$54.44	117.0	$0.560	$71.39	144.5	191.9
2011	$19.33	$57.46	124.2	$0.569	$75.37	146.9	192.0
2012	$20.55	$61.63	149.9	$0.505	$78.91	151.2	199.8
2013	$22.63	$64.41	159.6	$0.484	$81.64	153.6	206.5
2014	$22.78	$66.61	167.3	$0.496	$84.65	156.0	212.0
2015	$23.79	$69.03	181.3	$0.456	$86.83	155.8	216.4
Compound Average Annual Rate of Change							
5-year average	5.8%	4.9%	9.2%	-4.0%	4.0%	1.5%	2.4%
10-year average	5.2%	4.8%	7.1%	-1.4%	4.5%	2.0%	2.5%

Source: 2005-2015 surveys. See Attachment 7 for references. Attachment 7 also shows the series back to 1995.

B. Cable Programming Channels

20.	Table 5 shows the average number of video channels offered, the annual percentage change in the number of video channels offered over the previous 12 months, and whether the percent change is statistically significant (indicated with an asterisk *). Channels shown under expanded basic include all basic service channels. The next most popular service package generally includes expanded basic channels plus at least seven additional channels. Overall, the number of channels averaged 59, 181, and 264 for basic service, expanded basic service, and the next most popular service, respectively. The overall average number of video channels for all services was approximately 455, consisting of the channels shown with basic, expanded basic, the next most popular service, other non-premium and premium packages, pay, and pay-per-view programming and additional channels on less subscribed tiers. Overall, the number of channels grew at a statistically significant percentage in each service category.

Table 5
Number of Video Channels
By Status of Effective Competition
January 1, 2015

Cable Service	Overall Average	Non-competitive	Effective Competition	Effective Competition Subgroups				
				Second Cable Operator Overbuild Subgroup			DBS	Wireless / Low Penetration
				Incumbent	*Rival*	*Both*		
Basic service	**58.8**	**54.3**	**63.7**	**72.3**	**51.0**	**69.3**	**62.4**	**58.0**
Annual change	4.9%*	5.1%	4.7%	6.1%	2.6%	5.6%	4.1%	7.6%
Expanded basic	**181.3**	**169.4**	**194.0**	**199.8**	**191.0**	**198.6**	**193.3**	**186.4**
Annual change	4.4%*	4.7%*	4.1%*	5.8%	6.7%	5.9%*	3.2%	6.7%
Next most popular	**264.4**	**248.6**	**280.4**	**281.1**	**291.3**	**282.5**	**280.3**	**274.5**
Annual change	3.2%*	3.8%*	2.7%	3.9%	2.3%	3.9%	2.0%	6.3%

Source: Attachment 6. * Change is statistically significant at the 95% confidence level. Table refers to viewable channels offered with the service at no extra charge including those requiring equipment to view. Expanded basic channels include basic channels; next most popular service channels include the expanded basic channels.

21.   Table 6 displays the basic service tier by channel categories, which vary by only a few channels between effective competition and noncompetitive communities. These categories are local broadcast; public, educational, and governmental (PEG) access; commercial leased access; non-premium regional sports networks; and other non-premium channels.

Table 6
Channel Composition
of Basic Cable Service
January 1, 2015

Video Channel Category	Overall Average	Non-competitive	Effective Competition	Effective Competition Subgroups				
				Second Cable Operator Overbuild Subgroup			DBS	Wireless / Low Penetration
				Incumbent	*Rival*	*Both*		
Broadcast	33.6	30.2	37.3	40.3	36.6	39.8	36.8	33.4
PEG	3.4	3.3	3.5	4.1	3.4	4.0	3.4	2.9
Leased access	1.0	0.9	1.2	1.1	0.7	1.0	1.2	1.9
Regional sports	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other channels	20.7	19.8	21.6	26.7	10.2	24.4	20.9	19.7
Total	**58.8**	**54.3**	**63.7**	**72.3**	**51.0**	**69.3**	**62.4**	**58.0**

Source: 2015 Survey. By individual channel (standard definition, high definition, and multicast).

22. Table 7 reports the number of regional sports networks (RSNs) included in service offerings. Overall, the average is 0.1 RSN channels on basic service, 3.4 channels on expanded basic service, and 4.2 on the next most popular service package. A regional sports network in this survey is a channel that carries a substantial number of live games from at least one nearby professional sports team that is a member of the National Football League, Major League Baseball, the National Basketball Association, or the National Hockey League.[28] It does not include pay-per-view events.

				Effective Competition Subgroups				
Cable Service	**Overall Average**	**Non-competitive**	**Effective Competition**	**Second Cable Operator Overbuild Subgroup**			**DBS**	**Wireless / Low Pene-tration**
				Incum-bent	*Rival*	*Both*		
Basic service	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Expanded basic	3.4	3.3	3.4	3.5	5.9	3.9	3.4	2.5
Next most popular	4.2	4.2	4.1	3.6	6.3	4.2	4.2	2.7

Table 7
Regional Sports Networks
By Status of Effective Competition
January 1, 2015

Source: 2015 Survey. Channels are the number of channels offered at no extra charge including those requiring equipment to view. Expanded basic channels include basic channels, and next most popular service includes expanded basic channels.

C. Customer Premises Equipment (CPE)

23. Table 8 reports the average prices for Most Commonly Leased Customer Premises Equipment. The survey asked cable operators if subscribers would need equipment to view all or some channels when purchasing each programming service. Virtually all answered that equipment, in the form of a set-top box and remote control, is necessary to view at least some channels. Next, the survey asked whether the service programming prices reported (the averages of which are in Table 1, *supra*) include equipment; e.g., whether the cable operator bundles equipment at no extra charge with the programming service.[29] The survey then asked operators who do not bundle equipment to report the unbundled lease price for the most commonly leased equipment.[30] Such equipment can include, for example, a converter set-top box to enable consumers to view digital signals on analog TVs, or a high definition (HD) converter that allows consumers to view HD channels in HD format, and a remote control. These operators then reported the extra monthly fee required to lease the most commonly leased equipment, and

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[28] While the instructions to the survey requested information on RSNs that carry a substantial number of live games from professional sports teams, to the extent that respondents also included RSNs that carry collegiate sports in addition to or instead of professional sports we have included them in the Report. It is anticipated that the instructions for the next survey will clarify and solicit information on all RSNs, regardless of whether they carry collegiate or professional sports.

[29] 45 percent of operators reported bundling equipment with the basic service, 42 percent bundled equipment with expanded basic service, and 46 percent of those offering an additional service tier said equipment is bundled with the next most popular service. These percentages are independent by level of service, not cumulative.

to identify the equipment features, such as an interactive programming guide, a digital video recorder, etc. Table 7 shows that, as of January 1, 2015, the average equipment price was $8.40 with basic service, $8.35 with expanded basic service, and $8.78 with the next most popular service. We note that equipment may change from year-to-year and thus the comparison of equipment prices to some extent may reflect changes in quality, including changes in features offered by the equipment.[31]

Cable Service	Overall Average	Non-compet-itive	Effective Com-petition	Second Cable Operator Overbuild Subgroup			DBS	Wireless / Low Pene-tration
				Incum-bent	*Rival*	*Both*		
Table 8 **Price for Most Commonly Leased** **Customer Premises Equipment** January 1, 2015								
				Effective Competition Subgroups				
Basic service	**$8.40**	**$8.30**	**$8.49**	**$8.23**	**$10.10**	**$8.51**	**$8.51**	**$8.18**
Annual change	1.5%	0.7%	2.2%	6.2%	-0.9%	5.1%	0.8%	3.4%
Expanded basic service	**$8.34**	**$8.17**	**$8.49**	**$8.23**	**$10.10**	**$8.52**	**$8.51**	**$8.18**
Annual change	1.4%	0.5%	2.2%	6.2%	-0.8%	5.1%	0.8%	3.4%
Next most popular svc.	**$8.76**	**$8.41**	**$9.07**	**$8.65**	**$10.10**	**$8.87**	**$9.17**	**$9.06**
Annual change	1.3%	0.6%	1.8%	5.5%*	-0.8%	4.5%	0.7%	1.8%

Source: Attachment 5. * Annual change is statistically significant at the 95% confidence level. These prices are for a single lease of the most commonly leased equipment and not the average charge per customer or per household, which would depend on the number and type of equipment leases.

24. Table 9 identifies equipment features and the percentage of cable systems in which the most commonly leased customer premises equipment includes one or more of the following features: a remote control unit (RCU), interactive programming guide (IPG), HD video capability, or a digital video recorder (DVR). For basic service, overall, for 83 percent of systems, the most commonly leased equipment includes HD video capability, and for 27 percent of systems, the most commonly leased equipment includes a DVR.

[31] We further note that the survey question asks respondents to report the charges for the most commonly leased piece of equipment, not the total average charge for equipment per household. Thus, the average household could pay several multiples of these amounts, for example, if the household subscribes to a more expensive but less commonly leased piece of equipment, or if it leases multiple pieces of equipment.

Table 9 Features Offered With Most Commonly Leased Customer Premises Equipment January 1, 2015									
					Effective Competition Subgroups				
Cable Service	**Feature**	**Overall Average**	**Non-competitive**	**Effective Com-petition**	**Second Cable Operator Overbuild Subgroup**			**DBS**	**Wireless/ Low Pene-tration**
					Incum-bent	*Rival*	*Both*		
Basic service	**DVR**	27%	20%	34%	55%	4%	48%	28%	41%
	HD	83%	80%	87%	92%	93%	92%	87%	66%
	IPG	85%	82%	88%	89%	46%	83%	90%	86%
	RCU	92%	89%	95%	92%	96%	93%	97%	95%
Expanded basic	**DVR**	28%	22%	34%	60%	9%	53%	27%	44%
	HD	43%	39%	47%	70%	93%	73%	39%	48%
	IPG	93%	93%	94%	93%	100	94%	94%	91%
	RCU	97%	95%	98%	97%	96%	97%	99%	100%
Next most popular	**DVR**	28%	23%	34%	60%	5%	52%	27%	44%
	HD	47%	42%	53%	74%	87%	76%	44%	55%
	IPG	98%	95%	100%	100%	100	100%	100	100%
	RCU	97%	94%	99%	97%	95%	97%	100	100%

Source: 2015 Survey.

D. Broadcast Retransmission Consent

25.   Section 110 of the STELA Reauthorization Act of 2014 (STELAR) requires that the Commission report data on broadcast retransmission consent fees.[32] As a result, we altered our questionnaire to include relevant questions. Specifically, the survey asked cable operators to report the total annual amounts paid to broadcasters in retransmission consent fees for the two latest calendar years in which a full year of data would be available (2013 and 2014). The survey requested that the reported expenses not include other expenses such as copyright fees paid to broadcasters. In addition, the survey asked for the number of cable subscribers that formed the basis of the reported annual compensations, and for the numbers and formats of channels carried on the system pursuant to retransmission consent. Based on these survey questions, in Table 10, we report estimates of the retransmission compensation paid by cable operators to broadcast stations for carriage on cable systems. Table 10 reports these estimates in aggregate, and on a monthly per subscriber per station basis. The average annual total amount paid for retransmission consent by a cable system was nearly $7.8 million in 2013 and $12.7 million in 2014, an increase of 63.2 percent.[33] We also report the average monthly fee per subscriber per station. These estimates are equal to the annual compensation reported by the respondents divided by 12 months,

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[32] *See* Pub. L. No. 113-200, 128 Stat. 2059 (2014) enacted on December 4, 2014 (H.R. 5728, 113th Cong.) (Instructing the Commission to include in its annual report "the aggregate average total amount paid by cable systems in compensation under section 325 [of the Communications Act of 1934, as amended]," and to report such information "in a manner substantially similar to the way other comparable information is published" in the report).

[33] As noted in the table, aggregate dollar amounts and subscriber numbers in this table are not necessarily at the physical cable system level, but instead may be at a market level or some other level at which the cable company maintains retransmission consent records.

divided by the number of subscribers, and divided by the number of stations.[34] On a station basis, the monthly fee per subscriber per broadcast station was 75 cents in 2013 and $1.07 in 2014, representing an annual increase in retransmission compensation of 43 percent.

Table 10 **Retransmission Consent Compensation**			
Statistic	*2013*	*2014*	*Percent Change*
Aggregate average retransmission consent compensation fees paid per year per cable system	$7,790,721	$12,715,686	63.2%
Aggregate average total per year per cable subscriber	$24.06	$36.10	50.0%
Average number of subscribers per cable system that were subject to retransmission consent compensation	449,888	442,152	-1.7%
Average number of broadcast television stations per cable system carried pursuant to retransmission consent fees	4.475	4.530	1.2%
Average monthly fee per cable subscriber per station[35]	$0.747	$1.069	43.1%

Source: 2015 Survey. Note: The aggregate average total per year per subscriber in this table cannot be calculated directly from the average monthly fee and other figures in this table due to statistical weighting. See Appendix.

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[34] We assume that the one primary standard definition (SD) station reported corresponds to one broadcast station. Because we separately asked respondents to report any high definition (HD) or multicast channels covered under retransmission consent, we believe this is an accurate assumption.

[35] The survey requested that operators report the number of primary SD channels compensated by retransmission consent fees, which we have assumed to be equivalent to the fee per television broadcast station. In addition to the primary SD channels carried, operators also reported HD streams and multicast channels carried pursuant to retransmission consent agreement. These additional programming streams have not been included as additional "stations" when deriving the station averages reported in Table 10; however, the average monthly fee per station in Table 10 represents the fees paid for all programming streams of each station.

IV.   CONCLUSIONS

26.   Basic cable service prices grew 2.3 percent during the 12 months ending January 1, 2015. Expanded basic cable prices increased by 2.7 percent for those 12 months compared to a compound average annual rate of 4.9 percent over the five-year period from 2010-2015, and 4.8 percent over the ten-year period from 2005-2015. Equipment prices for basic and expanded basic services increased by 1.5 percent and 1.4 percent, respectively, for the 12 months ending January 1, 2015. These price increases compare to a 0.1 percent decline in general inflation as measured by the CPI (All Items) for the same one-year period. The CPI's compound average annual rate of growth was 1.5 percent and 2.0 percent, respectively, over the latest five and ten year periods.

27.   Compared to the price of basic cable service in the noncompetitive communities (i.e., those without a finding of effective competition), prices on January 1, 2015, were 6.4 percent lower in communities with an FCC finding of effective competition. Regarding expanded basic service, the average price that cable operators charged in noncompetitive communities was 3.6 percent lower than in effective competition communities. However, the effective competition communities had a lower price per channel on average, by 17 percent for expanded basic service. This reflects that cable operators in effective competition communities generally offer more channels compared to cable operators in noncompetitive communities.

28.   As discussed above, consistent with the requirements of STELAR the survey collected data to estimate the annual retransmission compensation paid by cable operators to broadcast stations for carriage on cable systems. The average annual total amount paid for retransmission consent by a cable system was nearly $7.8 million in 2013 and $12.7 million in 2014, an increase of 63.2 percent. On a broadcast station basis, the monthly fee per subscriber, per station (determined by reporting of primary standard definition channels) was 75 cents in 2013 and $1.07 in 2014, representing an annual increase of 43 percent.

V.   ORDERING CLAUSE

29.   IT IS ORDERED that this Report be issued pursuant to authority contained in Section 623(k) of the Communications Act of 1934, as amended, 47 U.S.C. § 543(k).

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FEDERAL COMMUNICATIONS COMMISSION

William T. Lake
Chief, Media Bureau

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Attachment 1 **Cable Price Survey** **By Sampling Group** January 1, 2015				
Cable Communities by Group	**Number of Cable Communities**	**Percent of National Subscribers**	**Survey Sample Size**	**No. of Survey Responses**
Noncompetitive group	22,828	52.6%	485	467
Effective competition group	10,550	47.4%	315	315
Overall (both sample groups)	33,378	100%	800	782
Noncompetitive Subgroups by Cable System Subscriber Size				
Very large : more than 75,000	6,452	22.9%	149	148
Large : 25,001 - 75,000	4,735	13.9%	118	118
Medium : 10,001 - 25,000	4,061	7.6%	80	77
Small : 1,001 - 10,000	5,356	7.2%	98	93
Very small : 1,000 or below	2,224	1.0%	40	31
Effective Competition Subgroups by Type of Effective Competition Finding				
Second cable operator overbuild areas				
a) Incumbent cable system operators	740	9.5%	56	56
b) Rival "second" cable system operators	545	1.6%	56	56
DBS (Cable operator findings on the basis of DBS market share under the 50\15 test)	7,635	33.0%	163	163
Wireless/Low Pen (rival wireless MVPD or low market share)	1,630	3.3%	40	40

Sources: FCC Form 322, Cable Community Registration, required by 47 C.F.R § 76.1801; and FCC Form 325, Annual Cable Operator Report, required by 47 C.F.R § 76.403.

Notes: The Commission assigns a "cable community unit identifier" (CUID) to each cable operator for each community the operator serves. The noncompetitive group consists of communities for which the Commission had not made a finding of effective competition as of January 1, 2015. The effective competition communities are those for which the Commission had made a finding. *See* note 4 and the Appendix for further information.

There are fewer rivals (545) than there are incumbents (740) in the second cable operator subgroup primarily because the rivals do not include AT&T U-verse because these systems are not associated with a CUID. The Commission however considers AT&T U-verse a competing MVPD in determining a finding of effective competition for incumbent cable operators. Similarly, while the DBS subgroup consists of incumbent cable operators with a finding based on DBS market share, the DBS subgroup does not include the DBS operators.

The statute permits a municipality to petition for effective competition status if it offers an MVPD service to at least 50 percent of its households. *See* note 4, *supra*. To date, no municipality has petitioned the Commission, though incumbent petitioners sometimes cite municipals as rivals, in which case the municipality is included in the rival subgroup. The other municipal cable operators are included in the groups of operators without a finding of effective competition finding and some are in our sample.

							Standard Error	
Overall sample	All subgroups	Basic cable						
		Expanded basic						*
		Next most popular						*
Noncompetitive	All subgroups	Basic cable						
		Expanded basic						*
		Next most popular						*
Effective Competition	All subgroups	Basic cable						
		Expanded basic						*
		Next most popular						
	Cable overbuild incumbents	Basic cable						
		Expanded basic						*
		Next most popular						*
	Cable overbuild rivals	Basic cable						
		Expanded basic						*
		Next most popular						*
	Cable overbuild both operators	Basic cable						
		Expanded basic						*
		Next most popular						*
	Findings based on DBS market share	Basic cable						
		Expanded basic						
		Next most popular						
	Wireless/Low Pen findings	Basic cable						
		Expanded basic						
		Next most popular						

Attachment 2
Average Price of Cable Programming
By Sample and Programming Service

Attachment 3
Price of Programming & Equipment
By Sample and Programming Service

Sample Group							
Overall sample	All subgroups	Basic cable					
		Expanded basic					*
		Next most popular					*
Noncompetitive	All subgroups	Basic cable					
		Expanded basic					*
		Next most popular					*
Effective competition	All subgroups	Basic cable					
		Expanded basic					*
		Next most popular					*
	Cable overbuild incumbents	Basic cable					
		Expanded basic					*
		Next most popular					*
	Cable overbuild rivals	Basic cable					
		Expanded basic					*
		Next most popular					*
	Cable overbuild both operators	Basic cable					
		Expanded basic					*
		Next most popular					*
	Findings based on DBS market share	Basic cable					
		Expanded basic					
		Next most popular					
	Wireless/Low Pen findings	Basic cable					
		Expanded basic					
		Next most popular					

* An asterisk indicates a statistically significant change at the 95 percent confidence level. Source: 2015 Survey. If equipment is unnecessary to receive all the channels the service offers, or the operator bundles equipment with programming, then the price is simply the price of programming. Otherwise, price is the price of programming and the price of the most commonly leased equipment.

Attachment 4
Average Price per Channel
By Sample and Programming Service

Sample Group							
Overall sample	All subgroups	Basic cable					
		Expanded basic					
		Next most popular					
Noncompetitive	All subgroups	Basic cable					
		Expanded basic					
		Next most popular					
Effective competition	All subgroups	Basic cable					
		Expanded basic					
		Next most popular					
	Cable overbuild incumbents	Basic cable					
		Expanded basic					
		Next most popular					
	Cable overbuild rivals	Basic cable					
		Expanded basic					
		Next most popular					
	Cable overbuild both operators	Basic cable					
		Expanded basic					
		Next most popular					
	Findings based on DBS market share	Basic cable					
		Expanded basic					
		Next most popular					
	Wireless/ Low Pen findings	Basic cable					
		Expanded basic					
		Next most popular					

* An asterisk indicates a statistically significant change at the 95 percent confidence level. Source: 2015 Survey. For the exact calculation, see the methodology appendix to this report.

Attachment 5 Average Price of Equipment By Sample and Programming Service								
						Std. Error		
Overall sample	All subgroups	Basic cable	2015	410	8.40436	0.15727	1.5%	
			2014	406	8.27780	0.15983		
		Expanded basic	2015	426	8.34207	0.15710	1.4%	
			2014	420	8.22584	0.15952		
		Next most popular	2015	446	8.75883	0.11647	1.3%	
			2014	439	8.64865	0.11776		
Noncompetitive	All subgroups	Basic cable	2015	206	8.30222	0.21877	0.7%	
			2014	204	8.24806	0.22075		
		Expanded basic	2015	220	8.16937	0.22026	0.5%	
			2014	216	8.13252	0.22184		
		Next most popular	2015	241	8.40906	0.18162	0.6%	
			2014	236	8.35545	0.18207		
Effective competition	All subgroups	Basic cable	2015	204	8.48757	0.22290	2.2%	
			2014	202	8.30192	0.22743		
		Expanded basic	2015	206	8.49042	0.22248	2.2%	
			2014	204	8.30513	0.22701		
		Next most popular	2015	205	9.07361	0.14918	1.8%	
			2014	203	8.90939	0.15258		
	Cable overbuild incumbents	Basic cable	2015	41	8.22638	0.24869	6.2%	
			2014	42	7.74578	0.24365		
		Expanded basic	2015	41	8.22638	0.24869	6.2%	
			2014	42	7.74578	0.24365		
		Next most popular	2015	42	8.64765	0.14435	5.5%	*
			2014	42	8.19328	0.16064		
	Cable overbuild rivals	Basic cable	2015	47	10.10468	0.34788	-0.9%	
			2014	45	10.19222	0.35697		
		Expanded basic	2015	49	10.10061	0.33354	-0.8%	
			2014	47	10.18426	0.34165		
		Next most popular	2015	47	10.09952	0.33820	-0.8%	
			2014	45	10.18428	0.34660		
	Cable overbuild both operators	Basic cable	2015	88	8.50938	0.21763	5.1%	
			2014	87	8.09471	0.21501		
		Expanded basic	2015	90	8.51891	0.21623	5.1%	
			2014	89	8.10675	0.21366		
		Next most popular	2015	89	8.86783	0.13276	4.5%	
			2014	87	8.48456	0.14621		
	Findings based on DBS market share	Basic cable	2015	91	8.51200	0.33079	0.8%	
			2014	90	8.44394	0.34017		
		Expanded basic	2015	91	8.51200	0.33079	0.8%	
			2014	90	8.44394	0.34017		
		Next most popular	2015	91	9.17217	0.22421	0.7%	
			2014	91	9.11002	0.22724		
	Wireless/Low Pen findings	Basic cable	2015	25	8.17907	0.52795	3.4%	
			2014	25	7.91063	0.55456		
		Expanded basic	2015	25	8.17907	0.52795	3.4%	
			2014	25	7.91063	0.55456		
		Next most popular	2015	25	9.06042	0.35943	1.8%	
			2014	25	8.89633	0.38258		

* An asterisk indicates a statistically significant change at the 95 percent confidence level. Source: 2015 Survey. Equipment refers to a set top converter box or other digital gateway. The survey asks operators who do not bundle equipment with programming at no extra charge to report the unbundled price for the most commonly leased equipment. Because features may vary, difference in prices to some extent reflect quality differences.

Attachment 6
Average Number of Channels
By Sample and Programming Service

						Standard Error		
Overall sample	All subgroups	Basic cable	2015	778	58.8	0.82581	4.9%	*
			2014	768	56.1	0.83123		
		Expanded basic	2015	775	181.3	1.47551	4.4%	*
			2014	765	173.7	1.57292		
		Next most popular	2015	731	264.4	2.11024	3.2%	*
			2014	724	256.2	2.41637		
Noncompetitive	All subgroups	Basic cable	2015	463	54.3	1.08020	5.1%	
			2014	456	51.6	1.07118		
		Expanded basic	2015	461	169.4	2.09034	4.7%	*
			2014	454	161.8	2.07683		
		Next most popular	2015	417	248.6	2.75606	3.8%	*
			2014	412	239.5	2.89786		
Effective competition	All subgroups	Basic cable	2015	315	63.7	1.26020	4.7%	
			2014	312	60.8	1.28347		
		Expanded basic	2015	314	194.0	2.07978	4.1%	*
			2014	311	186.4	2.37906		
		Next most popular	2015	314	280.4	3.20152	2.7%	
			2014	312	273.0	3.87285		
	Cable overbuild incumbents	Basic cable	2015	56	72.3	2.48388	6.1%	
			2014	56	68.2	2.32746		
		Expanded basic	2015	56	199.8	4.43155	5.8%	
			2014	56	188.9	4.32399		
		Next most popular	2015	56	281.1	7.43891	3.9%	
			2014	56	270.4	7.24512		
	Cable overbuild rivals	Basic cable	2015	56	51.0	2.86548	2.6%	
			2014	54	49.7	2.47726		
		Expanded basic	2015	56	191.0	7.19121	6.7%	
			2014	54	179.0	6.17922		
		Next most popular	2015	56	291.3	8.16392	3.3%	
			2014	54	282.1	7.42094		
	Cable overbuild both operators	Basic cable	2015	112	69.3	2.17085	5.6%	
			2014	110	65.6	2.03683		
		Expanded basic	2015	112	198.6	3.93851	5.9%	*
			2014	110	187.6	3.82607		
		Next most popular	2015	112	282.5	6.49065	3.9%	
			2014	110	272.0	6.33391		
	Findings based on DBS market share	Basic cable	2015	163	62.4	1.63838	4.1%	
			2014	162	59.9	1.70007		
		Expanded basic	2015	163	193.3	2.63144	3.2%	
			2014	162	187.2	3.13089		
		Next most popular	2015	163	280.3	3.95746	2.0%	
			2014	163	274.7	5.06117		
	Wireless/Low Pen findings	Basic cable	2015	40	58.0	2.40486	7.6%	
			2014	40	53.9	2.02420		
		Expanded basic	2015	39	186.4	4.71886	6.7%	
			2014	39	174.8	4.43390		
		Next most popular	2015	39	274.5	8.20277	6.3%	
			2014	39	258.3	8.29964		

* Asterisk indicates a statistically significant change at the 95 percent confidence level. Source: 2015 Survey. Channels are the maximum viewable with service including channels requiring equipment. The number does not include audio-only channels.

Attachment 7
Historical Averages
1995-2015

| Year | Basic Tier Price | Expanded Basic Service | | | | | Next Most Popular Service & Equipment | CPI | |
| | | Price | Channels | | Price per Channel | | | All Items | Cable |
			No.	Index	Dollars	Index			
Jul. 1995	---	$22.35	44.0	100.0	0.600	100.0	---	100.0	100.0
Jul. 1996	---	$24.28	47.0	106.8	0.610	101.7	---	103.0	106.9
Jul. 1997	---	$26.31	49.4	112.3	0.630	105.0	---	105.2	114.9
Jul. 1998	$12.06	$27.88	50.1	113.9	0.650	108.3	$38.58	107.0	122.6
Jul. 1999	$12.58	$28.94	51.1	116.1	0.650	108.3	$38.43	109.3	127.0
Jul. 2000	$12.84	$31.22	54.8	124.5	0.660	110.0	$39.64	113.3	132.9
Jul. 2001	$12.84	$33.75	59.4	135.0	0.600	100.0	$45.33	116.4	139.1
Jul. 2002	$14.45	$36.47	62.7	142.5	0.660	110.0	$46.59	118.1	147.8
Jan. 2003	$13.45	$38.95	67.5	153.4	0.650	108.3	$49.03	121.2	157.1
Jan. 2004	$13.80	$41.04	70.3	159.8	0.660	110.0	$51.76	123.5	163.1
Jan. 2005	$14.30	$43.04	70.5	160.2	0.620	103.3	$56.03	127.2	169.6
Jan. 2006	$14.59	$45.26	71.0	161.4	0.650	108.3	$59.09	132.2	174.4
Jan. 2007	$15.33	$47.27	72.6	165.0	0.670	111.7	$60.27	135.0	179.0
Jan. 2008	$16.11	$49.65	72.8	165.5	0.680	113.3	$63.66	140.8	183.9
Jan. 2009	$17.65	$52.37	78.2	177.7	0.710	118.3	$67.92	140.8	186.5
Jan. 2010	$17.93	$54.44	117.0	204.7	0.560	110.3	$71.39	144.5	191.9
Jan. 2011	$19.33	$57.46	124.2	217.3	0.569	112.0	$75.37	146.9	192.0
Jan. 2012	$20.55	$61.63	149.9	262.2	0.505	99.4	$78.91	151.2	199.8
Jan. 2013	$22.63	$64.41	159.6	279.2	0.484	95.3	$81.64	153.6	206.5
Jan. 2014	$22.78	$66.61	167.3	292.6	0.496	97.6	$84.65	156.0	212.0
Jan. 2015	$23.79	$69.03	181.3	317.1	0.456	89.3	$86.83	155.8	216.4
Compound Average Annual Rate of Change									
5 year average	5.8%	4.9%	---	9.2%	---	-4.0%	4.0%	1.5%	2.4%
10 year average	5.2%	4.8%		7.1%		-1.4%	4.5%	2.0%	2.5%
Years 1995-2015	---	5.8%	---	5.9%	---	-0.5%	---	2.2%	3.9%

Notes: Values are weighted averages of the two sample groups except for 1995-2000 prices and 2000-01 channels, which are the noncompetitive group. 2014 averages are from the 2014 survey and may not match 2014 averages from the 2015 survey due to random sampling variance. The 1995 expanded basic price is programming and equipment less an estimate of the equipment portion. Before 2010, price of the next most popular service sums expanded basic, the digital tier, and equipment. We began surveying a more expansive set of channels in 2010 and the indices combine the two series. The 2010 index reflects 2009-2010 data from the 2010 survey for which the 2009 values are 101.6 channels and 60 cents per channel.

Sources: *Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Statistical Report on Average Rates for Basic Service, Cable Programming Service, and Equipment,* reports for years 1997-2015 (See note 5, *supra,* of the Report). CPIs are from *Bureau of Labor Statistics, Department of Labor, Consumer Price Index, All Urban Consumers, U.S. City Average, Not Seasonally Adjusted,* Series CUUR0000SA0, All Items (1982-84=100) and Series CUUR0000SERA02, Cable and Satellite Television and Radio Service (Dec. 1983=100). http://data.bls.gov/cgi-bin/srgate.http://data.bls.gov/cgi-bin/srgate. Accessed April 26, 2016. Rebased to July 1995.

Attachment 8 **2015 Programming Service Comparisons** **Between Cable Operators and DBS Providers**			
Price, Channels and Price per Channel	**Cable Expanded Basic Service Average**	**Average for DBS Packages**	
		DIRECTV Choice	**DISH America's Top 120 Plus**
Programming price	$69.03	$73.92　*	$59.99　*
Observations	776	40	40
Standard error	0.2080	0.0750	0.0000
t-value	---	-22.10	43.48
Number of channels	181.3	197.0　*	126.6　*
Observations	775	40	40
Standard error	1.4751	1.2687	1.2293
t-value	---	-8.092	22.68
Price per channel	$0.456	$0.376　*	$0.475　*
Observations	775	40	40
Standard error	0.0063	0.0022	0.0045
t-value	---	12.07	-2.527

An asterisk indicates that the difference in the cable and DBS average is statistically significant at the 95 percent onfidence level.

Sources: Cable averages are from Attachments 2, 4 and for January 1, 2015. DirecTV values in this table are from http://www.directv.com (Jan. 2014, Jan. 2015, and June 2016). DISH values: http://www.dish.com (Jan. 2014, Jan. 2015, and June 2016). For DBS, national prices and channels are for January 2015 and local channels and regional sports channels are the averages of the 2014 and 2016 data.

Methodology: DIRECTV sells service packages nationally at different prices for each package and based on whether local channels and regional sports channels are included in its service package. DISH generally sells service packages nationally at a uniform price for each package because it carries local channels in all Designated Market Areas (DMAs). We determined that DIRECTV Choice and DISH America's Top 120 Plus were the DBS packages most comparable to cable expanded basic service. The number of DBS channels delivered varies by DMA depending on the number of local broadcast signals and regional sports networks (RSNs) provided. The DBS channels represent 40 communities chosen in a systematic random sample of surveyed cable communities. Each DMA's local broadcast channel count consists of both standard and high definition channels. We added local broadcast channels and RSNs to each DBS national programming package to represent the total number of DBS channels offered in each community sampled. We did not include satellite radio networks in any of the channel tallies.

APPENDIX
Survey Methodology

A. Sampling Procedure

1.   We conducted the 2015 survey in order to fill the reporting requirements of the Cable Act.[1] For the survey, we selected communities nationwide at random to be part of the survey sample, chosen from the Commission's list of cable operators and communities the operators serve.[2] In choosing our sample, we divided the communities into two groups. The noncompetitive communities were those for which the Commission had not made a finding of effective competition as of January 1, 2015, and the effective competition communities were those for which the Commission had made such a finding by that date. We subdivided the two groups into strata, and selected a sample of communities from each stratum. For each community selected, we asked the operator in that community to complete a survey questionnaire that included questions on the prices charged for video programming service offerings as well as other questions related to the operator's system. We used the information collected to estimate and compare mean prices, and other statistics, across the different strata of operators and communities. Attachment 1 provides additional information on the sample.

2.   We divided the groups into strata to compare subgroups as well as to achieve desirable levels of statistical precision. Creating strata in which prices are less disparate than in the group overall tends to increase the efficiency of sampling by reducing sample price variance.[3] Because there is a correlation between price and the operator's system size, we stratified noncompetitive communities into five strata by system size – very large, large, medium, small, and very small systems – depending on the number of subscribers the system serves. We stratified the effective competition cable operators and communities into four strata on the basis for which the Commission had made a finding of effective competition. The first stratum consisted of incumbent cable operators in communities with a second rival operator. The second stratum consisted of the rival operators. Cable operators in the incumbent stratum have sometimes cited municipals as rivals. Municipals cited as such are included in the rival subgroup and a number are included in our survey. The other municipal cable operators are included in the groups of operators without an effective competition finding and some of these operators are included in our sample. The third stratum consisted of communities with a finding of effective competition based on the level of DBS subscribers in that community. The fourth stratum consisted of communities within range of a wireless MVPD or that met the cable low penetration test as a result of serving fewer than 30 percent of households in that community.[4] The survey collected prices charged by wireline operators. The survey did not collect prices charged by AT&T U-verse, DBS, and wireless MVPD operators.[5]

3.   We determined that 800 observations of communities were required for statistical precision, divided between the two sampling groups. To determine the number to allocate in each group,

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[1] *See* note 1, Section I, *supra*.

[2] The Commission assigns a community unit identifier (CUID) code to each registered cable operator for each community that operator serves. *See* 47 C.F.R. § 76.1801. If two cable operators serve the same community, the Commission assigns two CUIDs.

[3] *See e.g.,* W. G. Cochran, *Sampling Techniques,* 2nd ed. (1977) at 87-107.

[4] Low market penetration may have resulted from the presence of a second operator in the community. However, we did not include the second operators in this low penetration stratum, because the finding of effective competition was not made on that basis.

[5] This is because these entities are not registered operators. The Commission however considers DBS and U-verse competitors for assessing effective competition.

we used a sampling size formula calibrated to yield sample price means within one percent of actual price means at a 95 percent confidence level.[6] We then allocated the number of selections in each group among the group's strata. Allocation methods generally emphasize two criteria; selections allocated to a stratum increase relative to other strata in proportion to population size and price variance. For each stratum, we multiplied its share of the group's cable subscribers by the standard deviation of price.[7] A higher measure relative to the other strata resulted in a relatively higher allocation. Further, we adjusted each allocation by a non-response factor.[8] After completing the allocations, 42 of the 800 overall selections remained. We assigned these 42 observations among the incumbent and rival subgroups because these strata were of particular interest to the survey, yet had relatively few selections. Attachment 1 reports sample sizes for all strata.

4. After determining the number of sample selections using the process described above, we drew independent samples of communities from the strata,[9] using probability proportional to size (PPS) sampling without replacement.[10] A PPS design is efficient for our survey because of the correlation between the relative size of a community in terms of the number of subscribers and our primary survey study variable (price).[11] Using the PPS method of sampling, we assigned a selection probability to each community in direct proportion to the relative number of subscribers. In a group and stratum, the higher the level of subscribers relative to other communities in the strata, the higher the likelihood was of selection. PPS sampling requires sampling selection probability not to exceed one (or 100 percent). Therefore, we sub-stratified communities whose probability exceeded one into one-unit strata with probability equal to one.[12] The PPS sample design requires an estimate of the relative number of subscribers in each community. We estimated the relative sizes using the FCC's 1994 census of communities, the most recent census of subscribers at the community level. If the service areas of two communities merged subsequent to the census, we merged the subscriber counts accordingly. For the newly registered communities, not part of the census, we estimated the subscriber counts to be equal to the mean number of subscribers for the municipality types, *i.e., an incorporated city, private settlement, etc.*

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[6] *See* B. J. Mandel, S*tatistics for Management* (1984) at 258. *See also, e.g.,* C. A. Boneau, *Effects of Violations of Assumptions Underlying the t test,* Psychological Bulletin, 57 (1960) at 49-54.

[7] *See* G. W. Snedecor and W. G. Cochran*, Statistical Methods,* 7th ed. (1980) at 458-59. The allocation formula equals $N_h S_h / \Sigma N_h S_h$, where in stratum *h*, N is the number of cable subscribers on January 1, 2010 and S is the finite population adjusted standard deviation of price in the 2009 survey.

[8] Because previous surveys suggest not all selections will respond to the survey questionnaire for various reasons -- e.g., the system no longer operates -- the non-response factor adjusts selections by the expected number of non-responses. Our non-response factor equals $[1+ [NR_h / (NR_h + R_h)]]$, where in stratum *h*, NR equals the number of non-responses and R equals responses to our survey.

[9] To prevent sampling bias, we draw the samples independently including separate samples for incumbents and rivals in locations with a second cable operator; *i.e.,* selection of an incumbent did not necessarily require that the rival would be selected and *vice versa*.

[10] We generated the samples using the Surveyselect procedure, PPS Method without Replacement, SAS software, Version SAS/STAT 9.4, SAS Institute Inc., Cary, NC (2015).

[11] *See, e.g.,* F. Yates and P. M. Grundy*, "*Selection without Replacement from Within Strata with Probability Proportional to Size," *Journal of the Royal Statistical Society,* 15 (1953) at 253-261; and B. K. Som, Practical Sampling Techniques, 2nd ed. (1996).

[12] We applied the following algorithm to sub-stratify community units whose selection probability exceeded one in the stratum. For a sampling stratum, Z= number of subscribers, z_i = number of subscribers in community (unit) i, n= the sample size, $\pi_i = n (z_i /Z)$ = selection probability of unit i, and k is the number of units for which $\pi_i > 1$. In step

(continued….)

B. Data Quality Control

5.　　To improve the quality of the survey data and reduce the burden on operators, the survey questionnaire is web-based.[13] After the samples were drawn, we notified operators serving the selected communities and instructed them on how to complete the survey questionnaire on the Commission's website. We took steps to ensure the reliability and accuracy of the data collected. Computer checks notified respondents in real time of inconsistent answers. In addition, we asked a responsible party within each company (other than the person who completed the survey) to certify the completeness and accuracy of the company's responses. The survey response rate (ratio of completed to requested questionnaires) equaled 97 percent (or 782 of 800 communities in the sample). The 18 non-responses were cable operators who had either ceased operating in that community or had yet to begin operations at the time of the survey.

6. We systematically examined all questionnaires submitted using a computer program designed to identify answers which appeared to be inaccurate. When a particular response fell outside of its expected reasonable range or was inconsistent with the answers to other questions in the survey, the computer program automatically flagged that response and we contacted the operator and asked that operator to re-check and verify the flagged answer, or make a correction if needed. The percentage of survey responses that requires follow-up inquiries varies over time based on such factors as the familiarity of the respondents with the survey, the complexity of the questions, and introduction of new questions to the survey instrument. For the 2015 survey, we contacted approximately 10 percent of the survey respondents with follow-up inquiries. Each operator replied with a data correction or explanation of why a particular response was accurate. In the case of missing data, some operators provided these data and others explained that the operating company did not collect the particular information.

C. Estimation of Means

7.　　After we collected and checked the responses, we made estimates of the population means and variances from the samples based on the response to each survey question. We estimated the means and variances on a basic subscriber basis rather than a cable community basis. We choose this level of analysis because we are interested in understanding the price paid by the average subscriber rather than the price charged in the average community. These two methods of analysis yield different results when there is a correlation with the number of subscribers in a community and the response. To estimate the per-subscriber means and variances of those means, we use the Horvitz-Thompson ratio estimator.[14] This estimator is a well-known, unbiased method of estimation applicable to probability sampling designs. The Horvitz-Thompson estimator estimates the ratio of two totals.[15] By appropriately selecting those totals, we are able to weight the response from each cable community by the number of

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1, we sub-stratify units for which $\pi_i > 1$ and reduce sample size to n-k. In step 2, we recalculate π_i for each of the remaining communities and repeat step 1 until k equals zero. An alternative would be to set a maximum probability equal to one and not sub-stratify; however, sampling probabilities would no longer be proportionate to subscribers.

[13] Our web-based questionnaire includes features that ease the respondent's filing burden. For example, the questionnaire pre-fills some survey questions based on information already on file with the Commission, and asks the respondent to verify the information.

[14] We began using the Horvitz-Thompson ratio estimator with the 2009 Report. Prior to the 2009 Report, we applied the unweighted mean in each stratum.

[15] *See* D. G. Horvitz and D. J. Thompson, "A Generalization of Sampling without Replacement from a Finite Universe," *Journal of the American Statistical Association,* 47 (1952) at 663-685; and W. S. Overton and S. V. Stehman, "The Horvitz-Thompson Theorem as a Unifying Perspective for Probability Sampling: With Examples from Natural Resource Sampling," *The American Statistician,* 49(3) (1995); and Cochran (1977) at 259.

subscribers and estimate the per-subscriber mean of the responses. The numerator of our ratio estimator is the estimate of the industry total of the value of the response of the cable community multiplied by the number of basic subscribers in the community. The denominator is the estimate of the industry total of basic subscribers. For example, in estimating the mean basic price the numerator is the estimate of the industry total of the basic price in the community multiplied by the number of basic subscribers in the community. This resulting total is an estimate of total revenues from the purchase of basic service. The denominator is simply the estimate of the total basic subscribers. The resulting product is an estimate of basic service revenue per subscriber. Formally, the estimator of the per basic subscriber mean of variable X is

$$\frac{\sum_{i=1}^{N} \frac{1}{\pi_i} X_i \cdot Sub_i}{\sum_{1=1}^{N} \frac{1}{\pi_i} Sub_i}$$

Where X_i is the response from cable community i, Sub_i is the number of basic subscribers in community i, and π_i is the probability of community i being selected into the sample.[16]

8.   For expanded basic service, we report the overall mean as reported in previous survey Reports, and report time-series indices of the cumulative percent change in price, number of channels, and price per channel. There are two data series each for number of channels and the price per channel. This is because in 2010 we started collecting data on a more expansive set of cable channels (Series 2). As shown in Attachments 7, the 2009 and 2010 value for Series 2 are from the 2010 survey and the 2010 index value reflects the 2009 to 2010 change in Series 2. The data in Series 1 is from prior surveys and is the basis of the 1995-2009 index values. The index, in effect, links the percent changes of the two series by re-basing the newer series (Series 2) which began in 2010 to index base year 1995. For variable X, the index value (I) of mean ($\bar{x}$) in time series (s) in year (t) is

$$I_t = I_{t-1}(\bar{x}_{s,t} / \bar{x}_{s,t-1})$$

Where $I_t = 100$ in base year 1995 and the time series (s) is one (s=1) if t<2010, and s=2 if t>=2010. The mean price per channel of expanded basic service in a community (i) is

$$x_t = ((P_{i,t} + E_{i,t}) / C_{i,t})$$

Where $P_{i,t}$ is programming price, $E_{i,t}$ is equipment price, and $C_{i,t}$ is the number of channels. Equipment refers to the most commonly leased set-top converter or other digital gateway leased with expanded basic service. The equipment price is zero if equipment is pre-bundled into the programming price or if it is unnecessary to view any of the expanded basic channels.

D. Survey Accuracy

9.   Because the basis of our survey is a sample of communities rather than a 100 percent census, the price averages in this Report are subject to sampling variance. Expanding the survey to include all communities might increase accuracy, but would also increase the burden of collecting the information. Our sample results are likely to be different from results obtained if we were able to collect prices from all communities nationwide. The attachments report estimates of sampling variance or statistical "standard error" for each price mean. Standard errors express the degree of confidence that the true mean falls within a range around a sample mean. In this Report, the range expresses assurance that

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[16] We conducted the data analysis using SAS Software, Version 9.4, SAS Institute Inc., Surveymeans procedure.

in 95 out of 100 similar samples, the true mean will fall within the stated range (the "95 percent confidence interval").[17] Standard errors can also identify whether or not price differences are statistically significant at a 95-percent confidence level. The discussion above refers to within-sample variance. To prevent random variance that may occur across samples when measuring annual percentage change, the survey collected two years of data rather than comparing estimates over two different surveys. The exception is the historical time series table, which reports means from each survey year.

   10.   In addition to the sampling variance discussed above, changes in the composition of sample subgroups affect means.[18] The composition of communities making up the subgroups changes from year to year due to operators starting, ceasing, merging, or transferring operations. The composition further changes due to findings of effective competition and, therefore, migration of operators in the communities from the noncompetitive group to one of the effective competition subgroups.

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[17] This "95 percent confidence interval" is a range surrounding the sample average plus or minus 1.96 multiplied by the standard error.

[18] *See, e.g.,* D. Holt and C. J. Skinner, *Components of Change in Repeated Surveys,* International Statistical Review, 57 (1989) at 1-18.