INTERNET PROTOCOL TELEVISION: IS INCOME REDLINING BEING PRACTICED?

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ABSTRACT

This study examines the entry strategy of Internet Protocol TV (IPTV) into the video programming service market with emphasis on income redlining. Specifically, CenturyLink's entry into the state of Colorado with their Prism TV service is examined. The study found that counties with higher median household income were chosen over counties with lower median household income, even though a local franchising system, which should promote public interest and reduce income redlining, is in place in the state.

INTRODUCTION

With the Telecommunication Act of 1996, Congress increased competition between cable television and traditional telephone companies (telcos) and caused the creation of new businesses (Furchtgott-Roth & Roth, 2016). Telcos were allowed to enter the multichannel video programming distribution (MVPD) market and provide television programming service while cable companies were allowed to offer telephone service. Beginning in the late 1990s, telcos entered this market in a small way (Hills, 2008) utilizing the new video technology of internet protocol television (IPTV). However, significant subscriber growth did not start until 2004 with 17,000. The number of subscribers reached 11,349,000 in 2013 and is predicted to grow to 16,141,000 by 2020 (Digital TV Research, 2014).

Even though the Telecommunication Act of 1996 increased competition, the FCC in 2006 found that the "…local franchising process often is a roadblock to achievement of the statutory goals of enhancing cable competition and broadband deployment" (FCC, 2006, p. 11). Telcos and any other competitor that want to enter the cable incumbent's territory must engage in a costly and lengthy negotiation process and face several requirements to obtain a franchise license. In order to increase competition at the state and local levels, 19 states have eased these requirements, especially the build-out requirement that cable operators have faced for many years (Bagchi & Sivadasan, 2016). Telcos in these states do not have to make sure that they provide all households and businesses in the franchise area with service.

The removal of the build-out requirement by some states, thereby allowing telcos to enter areas of their choosing, has caused concern about their entry strategy into only areas with a large population and moderate to high levels of income, also referred to as income redlining (Parker, 2012). According to What is 'Redlining' (n.d.), "Redlining is the unethical practice where financial institutions make it extremely difficult or impossible for residents of poor inner-city neighborhoods to borrow money, gain approval for a mortgage, and take out insurance or gain access to other financial services because of a history of high default rates. In this case, the rejection does not take the individuals' qualifications and creditworthiness into account." According to the Digital Divide (n.d.), in the broadband industry, redlining is similar to "The digital divide that refers to the difference between people who have easy access to the internet and those who do not." These differences occur between rural and urban customers, different races, income and education, and between developed and developing nations.

Previous research (Ji, 2014) found that AT&T, with its IPTV U-Verse service, carefully selected its areas of entry into the state of Indiana, one of the 19 states, to maximize revenue. As a result, Ji found that AT&T engaged in income redlining in the beginning. Since this business practice occurred in a state with a deregulated or modified franchise system to address the FCC's concern mentioned above, does it also occur in states that maintain the traditional local franchise system? This study examines the entry behavior of CenturyLink, the third largest telco in the United States, into the Colorado market with its IPTV service, Prism TV. Did CenturyLink also choose moderate and high income areas to enter first?

LITERATURE REVIEW

There are very few empirical studies on the entry strategies of telcos in the IPTV market for states with and without a deregulated cable franchise system. Bagchi and Sivadasan (2016) found that the price of "Basic" service declined between 2004 and 2010 in states with a deregulated cable franchise system and that more telcos entered such states than states that did not deregulate their cable franchise system. However, the researchers did not consider income redlining as a topic in the study. A second study (Ji, 2014) examined income redlining by AT&T's U-Verse in the state of Indiana which is one of the states that deregulated its cable franchising system. Ji found that AT&T engaged in income redlining in areas where competition was increased by its entry in the market.

In addition, only a few studies with anecdotal evidence are not in agreement that consumers benefitted from a deregulated cable franchise system. Spiwak (2006), Schneider (2007), and Rogers (2008) suggested that deregulation was benefitting customers by providing lower prices, increased programming choices and good customer service while Kreucher (2008) and Barrett (2008) said that prices have risen and that the law did not provide increased competition. None of these authors considered income redlining by telcos or any other competitive local exchange carrier as they entered the markets of the incumbent local exchange carriers.

CENTURYLINK

CenturyLink, the emphasis of this study, has a long history dating back to the early 1930s when it started as the Oak Ridge Telephone Company in Oak Ridge, Louisiana (Company history, n.d.). In 1971 the company changed its name to Century Telephone Enterprises, Inc., and again to CenturyTel, Inc., in 1999. The company changed its name once again in 2010 to CenturyLink, Inc., after the purchase of Embarq Corporation (Company history, n.d.; CenturyTel and Embarq agree to Merger, 2008). It entered the state of Colorado via a purchase of Qwest Communication in 2011 (Vuong, 2011). Today, it is the largest telco in the state of Colorado and the third largest in the U.S.A. (Snyman & Gilliard, 2016).

IPTV CenturyLink's IPTV interests date back to August 21, 2007, when fiercecable.com (Embarq to test IPTV, 2007) reported that Embarq was testing an IPTV system in the Kansas City area. No details were disclosed by the company. In 2009, CenturyLink started testing their Prism IPTV service which is based on Embarq's IPTV system in LaCrosse, WI, Columbia, MO, and Jefferson City, MO (O'Neill, 2010; Prism TV, n.d.).

In 2013, the western half of Eagle County, Colorado, became one of the first U.S. areas to get Prism TV for the purpose of testing the service in the smallest rural franchise area of CenturyLink (Barthold, 2013). The company also expanded service in the same year to parts of El Paso County and the cities of Monument, Fountain and Colorado Springs but the company would not commit to providing IPTV service to a specific number of low income residents as requested by city officials (Dampier, 2012). In November 2013, Highlands Ranch became the company's 13th market (CenturyLink to expand Prism TV to Highlands Ranch, 2013).

In October 2014, CenturyLink expanded service to parts of Douglas County, including the cities of Castle Rock, Castle Pines and Sedalia (Goldensara, 2014). In November, the company started Prism TV service to Parker and Lone Tree (Chuang, 2016). Littleton, Colorado, and parts of Jefferson County also received Prism TV service during 2014 (CenturyLink receives franchise approval to expand Prism TM TV service into metro Denver, 2015).

In early 2015, Denver City Council approved the expansion of Prism TV service in metro Denver neighborhoods (CenturyLink receives franchise approval to expand Prism TM TV service into metro Denver, 2015). The company started service in the neighborhoods of Baker, Bonnie Brae, Belcaro, Cole, Congress Park, Corey Merrill, Hilltop, West Highlands, Overland, Park Hill, Platt Park, Rosedale, some parts of Stapleton, Washington Park East and West, University, University Park, and Villa Park (Avery, 2015). In August 2016, CenturyLink announced an additional expansion of Prism TV in the Denver area. The service was now available to an additional 500,000 homes but the company did not disclose how many households have signed up (Chuang, 2016) for the service. This is the most recent expansion of the service in Colorado.

HYPOTHESIS

In 2014, CenturyLink filed a claim with the FCC against the Comcast proposed acquisition of Time Warner Cable, citing increased market power to harm competitors. CenturyLink accused Comcast of making it difficult for them to enter Comcast markets, especially the Denver market. When CenturyLink approached the Denver city council for a franchise license for its Prism TV service, Comcast lobbied the council to impose a significant buildout requirement in an attempt to make it very difficult for CenturyLink to obtain a license (Brodkin, 2014). Comcast also used income redlining as an argument for the council not to extend a license to CenturyLink. In their response to CenturyLink, Comcast claimed that they were looking out for poor communities. However, local franchise authorities have shown leniency to new entrants by relaxing the buildout requirement in order to promote competition (Brodkin, 2014). Given this response by local franchise authorities, the following hypothesis is applicable:

New entrants like CenturyLink will engage in income redlining as an entry strategy into the video market even under local franchise authority system.

METHOD

Data on the entry behavior of telcos and cable companies are very rarely available (Ji, 2014) because they are not required to release data on their coverage areas. This information is considered proprietary and confidential (Parker, 2012). However, Ji was able to obtain data at the Census block group level which the Indiana Utility Regulatory Commission only made available on a temporary basis because a new law closed this window of opportunity. A Census block group consists of a population between 600 and 3,000 making it the smallest geographical unit (Census block group, n.d.). Bagchi and

Sivadasan (2016) could not obtain pricing data for telcos at the community level and therefor used county data.

To test the hypothesis, median household income (MHI) of Colorado counties was used. MHI is the most widely used and accepted measure of income to assess the level of wealth and poverty of geographic areas, including counties (Measures of income in the census, n.d.). MHI (in dollars) by Colorado counties was generated from the American Community Survey data tables on the United States Census website (American Community Survey, n.d.). Data covered averages from 2010 to 2015.

RESULTS

The median household income for Colorado's 64 counties ranged from $31,400 to $102,626 from 2010 to 2015, with $59,448 as the average MHI (American Community Survey, n.d.). This average was used as the income redline threshold in this study which is similar to Ji's (2014) use of the average MHI of the Census block groups. Prism TV is currently available in 6 counties: Arapahoe, Denver, Douglas, Eagle, El Paso, and Jefferson county. MHI for these six counties ranged from $51,800 to $102,626 with a mean of $69,600 while the remaining 58 counties ranged from $31,400 to $82,154 with a mean of $49,228. The mean of all counties was $59,448.

The MHI for the six counties mentioned above is just below or above the income redline for all counties. Only El Paso and Denver counties were below the redline, however, Denver county, the most recently entered county, has the lowest MHI of the Prism TV counties, indicating that there might be a trend for CenturyLink to enter lower income counties as it keeps expanding. A similar trend was observed by Ji (2014) with AT&T's expansion in the state of Indiana.

To test the hypothesis, a t-test was performed on the MHI for counties with CenturyLink's Prism TV as one category and counties without Prism TV as the other category. Results show a significant statistical difference ($p = 0.0003$) between the means of the two categories, confirming the hypothesis that new entrants like CenturyLink will engage in income redlining as an entry strategy into the video market.

DISCUSSION

This study examined the entry strategy of IPTV provider CenturyLink into the video programming service market of the state of Colorado with its Prism TV service. The focus was on the choice of median household income of the counties and cities of the state of Colorado. Results of the study show that even with the buildout requirement of the state's franchising system in place, CenturyLink still chose to enter counties with higher median household income which raised the possibility of income redlining in its entry strategy. It appeared that the intent was more on maximizing profit rather than on preventing income redlining, which is intent observed in AT&T's entry of the Indiana market with its IPTV service of U-verse (Ji, 2014).

A reason IPTV providers may prefer high income markets is related to the high cost associated with the service. GWI, a broadband service provider in Maine since 1994, cited several reasons for not entering the IPTV market including that the service requires an investment in expensive equipment and expensive content (Jones, 2012). In addition, the shrinking market of pay television has been slowing down the growth of IPTV services (Gilliard & Snyman, 2016). Also, research results of Ji (2014) showed that AT&T entered high income areas in Indiana first before entering low income areas, causing redlining to occur.

LIMITATIONS AND FUTURE RESEARCH

The use of the medium household income of a county assumed that CenturyLink entered the entire area of a county, whereas only a few cities may have been entered. Future research should make cities the unit of analysis to reduce this measurement error. The city unit of analysis could also be reduced to wards within cities to obtain information on redlining in neighborhoods.

Previous research found that AT&T avoided entering video markets of cable operators (Ji, 2014). Future research should measure the competitiveness of video and broadband markets to determine CenturyLink's decision to enter or avoid such markets. Furthermore, competition from newer internet-based companies such as Hulu.com and Netflix has not been assessed and should be included in future research studies.

Ji's (2014) study only considered AT&T's entry into the state of Indiana where a statewide franchise exists and the current study only considered CenturyLink's entry into the state of Colorado where a local city or municipality franchise system is still in existence. Future research should compare the entry strategy of CenturyLink into the state of Florida, a statewide franchise system, to the company's entry into the state of Colorado.

REFERENCES

(Available upon Request)