

ESTIMATING THE ECONOMIC BENEFITS FROM INCREASED COMPETITION IN WIRED VIDEO DELIVERY

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ABSTRACT

Competition to cable television as the dominant means of delivering video programming via wired infrastructures to the home is starting to emerge in several countries. A few areas have competitive overbuilds and in others innovative broadband service providers (BSPs) are using digital systems to deliver video services. The recent emergence of IP-based video technologies and BSPs has provided the technological basis for competition, but legacy regulatory structures often remain in place.

This paper shows how business data on cable television demand—including packages, pricing, and market penetration—can be combined with economic models to estimate the gains to consumers from the emerging competition. Among the research questions are:

1. From where will the subscribers to new wired video competitors come?
2. How are program offerings and prices likely to change with the introduction of wired video competition?
3. What are the expected changes in subscription fees, revenues, and franchise fees?

KEYWORDS

wired video delivery, cable television, IPTV, convergence, regulation

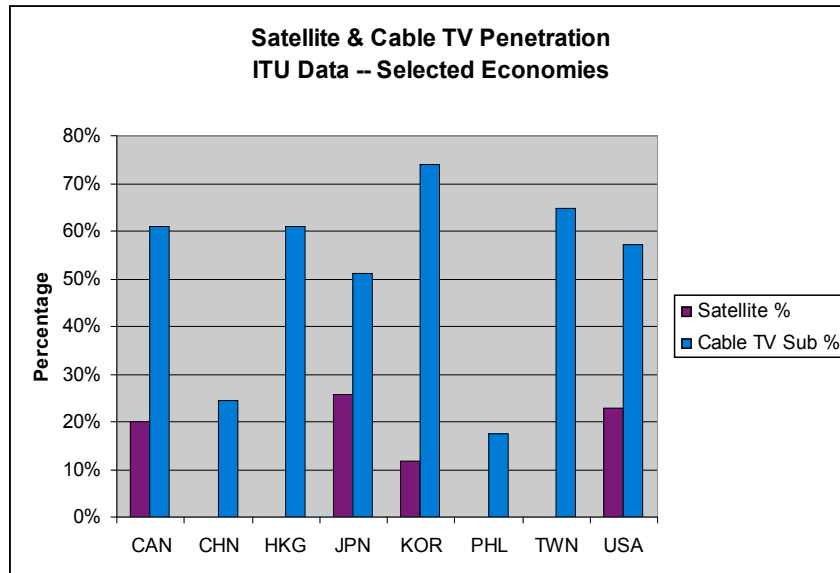
1. INTRODUCTION

Video programming has been offered to consumers via terrestrial broadcasting, satellite, and cable television delivery systems. The cable television plant has also become a platform for broadband and voice services. At the same time traditional voice telephone carriers have added broadband data services and are starting to introduce IP-based video, thus providing another video delivery system in a number of geographic regions. This diffusion of new technologies has enabled carriers in what were previously viewed as separate industries to start to compete head-to-head, or at least bundle-for-bundle, in many geographic areas. In other words, the convergence that was a subject of much

speculation and discussion over the past decade is now here, at least in part. But convergence is not complete, either geographically or across all service offerings.

The penetrations and mix of video delivery systems varies widely. Exhibit 1 shows the penetrations (on a per-household basis) of satellite and cable television in eight Pacific region economies. Exhibit 2 presents recent IPTV subscriber counts by region, and Exhibit 3 lists selected IPTV subscriber information for six Asian economies.

EXHIBIT 1



Notes:

1. Based on data from ITU World Telecom/ICT Indicators database for 2006.
2. Data are from 2005, except for China (2002), Japan (2003-4), Philippines (2002).
3. As these percentages are based on total households, they may not be comparable to data from other sources that use "Television Households" as the base.

EXHIBIT 2

IPTV SUBSCRIBERS: FIRST HALF YEAR 2005, 2006, & 2007

| Region | H1 2005 | H1 2006 | H1 2007 |
|-----------------|-----------|-----------|-----------|
| Asia Pacific | 612,000 | 987,000 | 2,176,000 |
| Europe | 521,000 | 1,505,000 | 4,984,000 |
| Americas | 267,000 | 409,000 | 1,059,000 |
| Other Users | 70,000 | 50,000 | 0 |
| Total Worldwide | 1,470,000 | 2,950,000 | 8,229,000 |

Notes:

1. Data provided for the DSL Forum by Point Topic.
2. "Other" category eliminated in 2007.

EXHIBIT 3

SELECT IPTV SUBSCRIBER RESULTS – SIX ASIAN ECONOMIES

| Economy | IPTV Subscribers | Source |
|----------------|--|---|
| China | UTStarcom's RollingStream IPTV: 310,500 subscribers in 19 commercial deployments with both China Telecom and China Netcom. | http://www.utstart.com (Aug. 2007) |
| Hong Kong SAR | NOW (PCCW): 700,000 subscribers. | http://www.varietyasiaonline.com/content/view/678/53/ (Jan. 2007) |
| Japan | J:COM (Jupiter): 2.1 million video subscribers, of which 1.3 million are digital. | http://www.lgi.com/japan.html (July 2007) |
| South Korea | HanaTV (Hanaro Telecom): 500,000 IPTV subs. | http://www.hanaro.com/ (Aug. 2007) |
| Philippines | Philippine Long Distance Telephone Co., and Bayantel plan to move into IPTV as part of the triple-play strategy [in 2008]. | http://newsinfo.inquirer.net/breakingnews/infotech/view_article.php?article_id=72318 (June 2007) |
| Chinese Taipei | Chunghwa Telecom: 330,000 IPTV subs. | http://www.cht.com.tw (Aug. 2007) |

This paper illustrates how business data on cable television demand—including packages, pricing, and market penetration—can be combined with economic models to estimate the gains to consumers from the emerging competition in wired video delivery.

The remainder of this paper explains the data, assumptions, and analysis on which these estimates are based. A set of spreadsheets showing the details is available on the web at: www.sims.berkeley.edu/~bigyale/cable/ .

2. ANALYSIS

The sample data on cable television demand are from the State of California in 2005. We obtained data from a major cable television market research firm on the number of cable television subscribers and the monthly prices they pay for the major cable television systems in the four major Designated Market Areas (DMAs) in California: Los Angeles, Sacramento/Stockton/Modesto, San Diego, and San Francisco.² Together, these four DMAs contain approximately 90% of the households in California. (See Exhibit 4.)

| EXHIBIT 4 | DMA SIZE AND CABLE TELEVISION PRICES | |
|---------------------------------|--------------------------------------|--------------------------------|
| | Households | Average Cable TV Monthly Price |
| Los Angeles DMA | 5,536,430 | \$ 58.29 |
| Sacramento/Stockton/Modesto DMA | 1,345,820 | \$ 53.41 |
| San Diego DMA | 1,026,160 | \$ 49.54 |
| San Francisco DMA | 2,355,740 | \$ 57.38 |
| Four DMAs overall (a) | 10,264,150 | \$ 56.40 |
| California state total (b) | 11,502,870 | |

Notes:
(a) Data are from 2005. Source: Nielsen Media Research Local Universe Estimates
(b) Data are from 2000. Source: California Quick Facts from the US Census Bureau

Since each cable system typically offers several packages of channels at different prices, the next step was to calculate weighted average monthly prices paid by the subscribers—first for each cable system, then for each DMA, and finally for the state. These average prices are also shown in Exhibit 4. In performing these calculations we needed to make a few assumptions:

- The average price paid to the cable system operator for non-digital cable television service without a premium package was the simple average of the prices for non-digital “basic cable” and “expanded basic.” This assumes that basic and expanded basic each account for 50% of the subscriptions to non-digital packages without premium service.
- The average price paid for non-digital service with a premium package was on average \$10 per month over the price charged for non-digital expanded basic.
- The market shares of the different cable television operators in each DMA are assumed to hold across all packages.

These assumptions represent approximations, but the overall results are not sensitive to small changes in the assumptions. Similarly, although the different sources provided data from different years, any errors introduced by this are also likely to be small.

Combining the weighted average prices paid with the number of cable subscribers in each DMA gives us the total monthly spending on cable television in the DMA. We then multiplied this sum by twelve to get annual spending on cable television service in the four DMAs of over USD \$4 billion. This number became the starting point from which we calculated the expected savings after the introduction of wired competition.

Our next step was to estimate the likely reduced cable subscription prices when there would be direct competition. One estimate was the 15.7% from the FCC’s 2005 “Report on Cable Industry Prices,” which uses 2004 data. The FCC found that cable television service was provided in 32,510 “non-competitive” communities while there were only approximately 400 communities with competitive wireline overbuilds.³ Based on a stratified random sample, the monthly subscription rates for basic and expanded basic services were on average 15.7% lower in the competitive group than in the non-competitive group and 27.2% lower on a per-channel basis.⁴ Using a different

methodology, the General Accounting Office (GAO) compared the monthly cable television rates in six markets with broadband service providers who offered a full range of services including subscription television with six comparable markets without such competition.⁵ The monthly cable TV subscription prices for expanded basic service in five of the six matched markets ranged from 15% to 41% lower with competition than without.⁶ In the sixth market the subscription price was 3% higher. Averaging the results from all six markets, the average price was 22.2% lower when competition was present. (Prices for voice telephone service and high-speed Internet service were either less or the same in the competitive markets when compared to their matched non-competitive pairs.)

Using these two estimates, we then calculated the likely prices for each cable package in each market and the resulting savings from competition. (We actually used 15% and 22% for the estimated savings percentages, figuring that it was more conservative to truncate the numbers rather than risk rounding up.) At this point we introduced another assumption; specifically, that savings occurred equally in percentage terms across all cable packages in a given DMA. The average monthly cable bill dropped to \$47.94 with the 15% savings, which we called Scenario A, and to \$43.99 with the 22% savings, our Scenario B. These figures represent average monthly savings of \$8.46 and \$12.41 for each cable subscriber with the two competition scenarios. The dollar estimates of the expected savings are likely to be low as they ignore cable subscriber spending on non-English language channels and programming that is not included in the packages.

Although the four DMAs account for the overwhelming majority of the households in California, there are still another 1.24 million households (just under 11% of the total) outside the DMAs. Therefore, we scaled up the total savings to include these non-DMA households. This scaling may lead to an over-estimate of the savings if the non-DMA areas do not see wired video competition, or it may lead to an under-estimate if the cable penetration outside the DMAs is greater than in the metropolitan areas and competition does emerge. In any event, completely ignoring any savings outside the DMAs would only lower our savings estimate by 11%. The resulting annual savings statewide under the two scenarios amount to \$692 million and \$1,015 billion. These results are summarized in Exhibit 5.

| EXHIBIT 5 | RESULTS | | |
|------------------------------|----------|------------|------------|
| | Current | Scenario A | Scenario B |
| Estimated percentage savings | -- | 15% | 22% |
| Average monthly bill | \$ 56.40 | \$ 47.94 | \$ 43.99 |
| Average monthly savings | -- | \$ 8.46 | \$ 12.41 |
| Annual savings (\$ million) | -- | \$ 692 | \$ 1,015 |

This analytical structure can be extended to model the changes in viewership of satellite and terrestrial broadcasters as well as that of the incumbent cable operators. These expected changes can then be combined with information on local, regional, or national franchise fees to estimate the effects the introduction of new delivery media will have on government revenues.⁷

3. DISCUSSION

It is important to realize that there are additional benefits from wired video competition. The FCC Pricing Study found that the average price per-channel was, on a percentage basis, even lower than the average overall price for wired video service in competitive markets than in markets without competition. This finding can be explained by the fact that the operators in the competitive markets, on average, offer more channels as well as lower prices than those in the non-competitive markets.

Another advantage relates to competitive operators offering a wider variety of packages and options as they seek to serve additional market segments. One example of this can be seen in the packages and programming services available from SureWest, which serves parts of Roseville-Sacramento area. SureWest offers nine different digital video packages and a wide range of video programming services over a fiber-to-the-home network. These packages range from 27 to 244 channels, enabling SureWest to provide direct competition to the dominant cable operators.

Finally, we should point out that these gains from direct competition in the delivery of video services will not appear instantaneously. The competitive pairs in the GAO study included broadband service providers who had offered video services for at least one year.⁸ Our estimates assume competitive services are rolled-out sufficiently to provide competition across the state. As a result it may take several years for the full value of these benefits to be achieved. On the other hand, as the competition becomes more entrenched the magnitude of the benefits can increase substantially.

The likely timing and nature of the build-out of the infrastructure to provide competitive wired video services is difficult to predict. There are both franchise and regulatory hurdles that take time, and this delay can often be longer than the time necessary to install or upgrade the required network. In addition, some have charged that any roll-out by competitors will likely target high-income neighborhoods, leaving other demographic groups without the benefits of competition. It is difficult to understand how this would come about as the demand for video services does not appear to be positively correlated with family income, ethnicity, or other demographic and socio-economic factors.⁹

ENDNOTES

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² “Designated Market Area” is a term developed by Nielsen Media Research to indicate a group of counties that are covered by a specific group of television stations. It is a standard definition of metropolitan area used in media businesses.

³ U.S. Federal Communications Commission, “Report on Cable Industry Prices” (February 4, 2005), at par 14.

⁴ *Ibid.*, at par. 7.

⁵ U. S. General Accounting Office, “Wire-Based Competition Benefited Consumers in Selected Markets” (GAO 04-241, February 2004).

⁶ *Ibid.*, p. 16.

⁷ See the spreadsheets at: www.sims.berkeley.edu/~bigyale/cable/

⁸ *Ibid.*, p. 2

⁹ See, for example, General Accounting Office, “Issues in Providing Cable and Satellite Television Services” (GAO 03-130, October 2002; Table 3 on page 47) where the regression coefficient for the median household income variable in the reduced form cable subscribers equation is negative and significantly different from zero.