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Costs and Revenues of à la Carte (ALC) Versus Bundling in Television Markets

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Abstract. This paper compares costs and revenues of two modes of provision of pay-television by cable and satellite providers. The two modes are bundling and à la carte, both of which are subscription-based services. Results of this research show that on average à la carte is more expensive to deliver than bundling, while revenues of both are comparable. The paper also deals with the economics of urban agglomeration and regional networks. It shows that improvement in technology makes it possible to simulate agglomeration in metropolitan areas with networks, which makes it possible for small urban regions and rural regions to share in network outputs.

1. Introduction

Litman (1995) provides a summary of the historical events since the 1960s that culminated in the development of the pay-television market. The market for pay-television was created to fill a void due to the scarcity of the electromagnetic spectrum. This scarcity caused a limitation to the availability of the very high frequency (VHF) stations in local markets, which restricted transmission to only three national TV networks. Litman goes on to describe the Federal Communications Commission (FCC) rulings permitting pay-TV to exist, but in the meantime restricting the programming to only types not available from commercial broadcasting. In 1972, Home Box Office (HBO) started a channel subscription service available on a monthly basis. In 1977, the U.S. Court of Appeals declared that the FCC limitations on programming were invalid, which opened the door for pay-cable networks to be competitive with the three commercial networks. Litman estimates that in 1995 cable television penetrated about two-thirds of households in the United States.

Litman further explains the development of pay-TV by noting that consumers were willing to subscribe to redundant networks as cable systems began to offer multiple networks. Crawford and Yurukoglu (2012), henceforth CY, term this trend in marketing as bundling (multichannel). Multichannel TV refers to subscription-based services.

CY explain that multichannel TV is widespread among some 110 million viewers who spend about $50 billion a year to watch on average more than seven hours of TV every day. The multichannel system, though it makes consumer tastes more homogeneous, nevertheless extracts producers' surplus. The welfare effects are ambiguous, as pointed out by Stigler (1963) and Adams and Yellen (1976). CY's paper addresses an alternative to bundling, termed à la carte (ALC) pricing. Regulations requiring ALC choice by consumers would probably alter the TV market. Canada, Hong Kong, and India mandate unbundling with different structures of regulations, which makes generalizations difficult.

CY provides a thorough description of the bundling of channels, explaining that all cable and satellite systems offer a variety of systems. The first type, the broadcast channels, is advertising

supported. This includes major national channels, such as ABC, CBS, NBC, FOX, and public and independent television. The second type, the cable programming channels, is supported by advertising and fees and includes MTV, CNN, and ESPN. The third type is premium programming, which is advertising free, such as HBO and Showtime. The fourth type is pay-per-view for on-demand viewing, allowing viewers to watch theatrical releases and sporting events. Note here that broadcast and cable channels are bundled and offered as basic services. Premium channels are unbundled and sold as premium services. Most recently, premium channels started offering "multiplexing" programming as a single brand, such as HBO, HBO2, and HBO Family.

Through a process of simulation, CY estimated that total input costs of ALC would rise 103.0 percent for a combination of 49 channels. Consumer welfare would increase between 0.2 and 5.4 percent. Industry profits would increase in the range of 2.4 percent and 12.8 percent. Total surplus would increase in the range of 1.7 percent and 6.0 percent. A general assessment of CY is that the implementation or marketing costs of ALC could result in a worsening condition for all involved.

Thompson (2012) claims that families do not mind paying $80 a month for cable when compared to the alternatives. Even though $80 is somewhat expensive, for a family of four persons, in which members may watch TV for approximately three to four hours every day (the national average), the cost would come out to a mere 20 cents per hour. The entertainment value of 20 cents an hour compared to the price of a magazine read in approximately four hours is definitely a bargain. Watching a movie in a theatre for two-and-a-half hours is 20 times more costly.

Some references suggested by CY to analyze ALC pricing are Reuters News Service (2003), Schatz (2006), and the Federal Communications Commission (2002, 2004, 2006). Surveys indicate that about 52 percent of consumers support ALC. In the process of their comprehensive research, CY provided a rich source of new data, which will be the basis of research for this paper. In Section 2, a treatment of the intended research will be forwarded. Following this section, the paper will provide sections on methodology and results. A conclusion section will follow.

2. Literature Review: Regional, Urban, and Rural Considerations

Johansson and Quigley (2004) tackle the issue of TV networks economics as related to agglomeration in metropolitan areas and its relationship to regional economics. Although modern economic theory puts a great deal of emphasis on the importance of agglomeration in urban space, when firms produce homogeneous products, such as electricity and TV channels, the need for concentration in metropolitan urban areas is not necessary. Their reasoning for this statement is that non-standardized differential output would be more economical in metropolitan urban areas, while standardized homogeneous output can be attained in small urban or rural regions. Johansson and Quigley give a direct example relating to the technical development of networks. They say (p. 175), "Consider the diversity in consumption. In the recent past, outside the francophone countries it required a city of reasonable size to offer a decent selection of French films. Now the universe of French language films is only a keystroke away from any isolated consumer." Furthermore, they indicate that advantages in consumption due to specialization as a result of agglomeration can be obtained in smaller urban regions and rural areas because of technical advances.

Johansson and Quigley explain further that improvement in technology makes it possible to substitute network solutions for agglomeration. The technology allows goods and services to become standardized and makes it possible to rely on network solutions for diversity in consumption and production. Toward the end of their article, Johansson and Quigley comment (p. 175), "The emergence of agglomerative economics and the spread of these external economics by networks is the hallmark of regional development in the twenty first century."

The Federal Communications Commission (2006) reports that multichannel video programming distributors account for 92.2 million, subscribing households, or 85.1 percent of the total. Cable serves about 69.4 percent of multichannels, and direct broadcast satellite serves about 27.7 percent of multichannels. An issue of consideration raised in the report is competitive developments in small and rural markets. Here, small cable operators and telephone companies provide video subscriptions from 50 to 100,000. Even though these numbers seem small, they are large in the aggregate, totalling around eight million subscribers, which is about 12

percent of total multichannel household subscriptions.

On a regional basis, the report identified 96 networks that provide programming of local or regional interest distributed through multichannel providers. Aside from that, a number of regional networks offer local news and sports programming and, in some cases, religious or ethnic programming. Among the identified 96 regional networks, the report identified 44 (45.8 percent) as vertically integrated with well-known large multiple-system operators of multichannel providers such as Comcast, Cablevision, and Time Warner, who may enjoy lower costs of securing channels.

Mayo and Otsuka (1991), henceforth MO, employing a sample of 1,355 providers, of which about 62 percent were devoted to urbanized and 38 percent to less-urbanized or rural regions, delve deeply into questions of demand and pricing of the TV industry in these areas. In particular, their work is focused on calculating various forms of elasticities, providing a good picture of the demand of consumers in these regions.

Two dependent variables were assessed by MO. The first is "basic services penetration rate" and the second is "Pay TV service penetration rate," with the results indicating in both cases that the urban independent variable was statistically significant at the 0.05 level. Dealing with elasticities of TV market rankings (ADI), which are indirect substitutes that may have some effect on the demand for pay services, the findings were revealing. The following price-elasticity results are reported by MO (p. 407):

	Basic		Pay	
TV Market	Own Price	Cross Price	Own Price	Cross Price
Top 50 ADI markets				
Urban System	-1.51	-1.030	-1.162	-0.370
Suburban System	-1.05	-0.761	-1.721	-0.295
Second 50 ADI markets				
Urban System	-1.22	-0.705	-1.456	-0.337
Suburban System	-0.918	-0.655	-2.038	-0.293
Below Top 100 ADI markets	-0.816	-0.496	-2.135	-0.280
Outside ADI markets	-0.699	-0.392	-2.176	-0.267
Aggregate sample	-0.969	-0.626	-1.770	-0.300

What these numbers examine is the effect of price on basic and cable TV prices by market area. Note that the aggregate price elasticities of demand for basic services are barely less than unity at -0.969. The price elasticity of pay service is well above unity at -1.77. On the other hand, the aggregate cross-price elasticities show that subscription rates to pay TV are more sensitive to changes in basic service rates than are subscription rates to basic service. When looking at the disaggregation by TV market areas, MO conclude that the own price elasticity for basic service in large urban areas is higher than unity. The interpretation of this result is that basic service elasticity is most likely higher due to the wider range of alternative entertainment in urbanized areas. In the more urbanized markets (the top 50 markets), the elasticity of -1.51 is more than twice as large as the smaller rural areas, which face an inelastic demand at -0.699.

In summary, the aggregate demand for basic cable service is in the inelastic range. The demand for pay services is in general in the elastic range. Another point emerging is that the demand elasticity for basic service shows a great deal of variation depending on the presence or absence of substitutes. In the smaller, less urbanized and rural markets, the price elasticity for basic services is considerably less than one. In large urban markets, where substitutes are more readily available, the price elasticity is considerably more than one.

An interesting article regarding news consumption via TV media market is contributed by Althaus, Cizmark, and Gimpel (2009), henceforth ACG, using data obtained from Nielsen Media Research, which splits the market into 200 mutually exclusive desig-

nated market areas (DMAs) where TV viewers for news are oriented toward common sources at the county level. Their stratified random sample for research is drawn at the county level. TV media is divided into three types: local television news, network television news, and cable news. ACG concludes that local TV news is popular in rural plains and midwestern states, but less so in the western states. For network national TV, the exposure is mainly in the eastern half of the country, and it is least watched in western states and most states across the black belt counties of the Old South, which encompass areas from eastern North Carolina all the way through the Mississippi Delta region. Added to these least watched areas are northern New England and the Gulf Coast, as well as the Northern Plains. ACG shows that cable TV news coverage is popular in southern and southeastern states, with a smaller number of exposures in the upper Midwest and in the Mountain West. These preferences reflect differences in tastes across the country.

The regional, urban, and rural considerations discussed in this section were motivated by regional differences in the availability of natural resources and the composition of the population. Added to these are the regulatory environments, political boundaries, resource endowments, and cultural backgrounds. Some of these differences tend to disappear due to forces that create a more homogenous society, such as the federal government, national market, and migration.

In particular, the cable television industry in recent years has experienced a great deal of consolidation in the United States, according to Byrne (2011). The consolidation is transforming an industry of many small locally-owned cable operators to an industry dominated by a few large firms. The expansion is driven by the acquisition of small cable companies. This expansion would enable the creation of country-wide homogeneous access to various modes of programming offerings available to regional, urban, and rural areas, as Johansson and Quigley proclaimed.

3. Methodology and Data

The focus of this research is to employ a partial source of data supplied by CY (Table 9, p. 677). The table lists the included channels. Here, distributors set a single fee for the bundle of 49 channels and ALC pricing for an individual channel. The purpose of this paper is to use the data on bundling and ALC costs as well as the total bundling and total ALC revenues. The main objectives of the research are:

(1) Test for equality of means of bundling and ALC costs.
(2) Test for equality of means of bundling and ALC revenues.
(3) Test for convergence/divergence of bundling and ALC costs.
(4) Test for convergence/divergence of bundling and ALC revenues.

Two statistical techniques are employed for analysis. The first is testing for equality of means of the two categories bundling and ALC for costs and revenues. One way to do this is a one-factor analysis of variance. The second technique is linear regression, connecting the 49-channel costs and revenues for bundling and ALC.

According to Doane and Seward (2007), the statements for the null (H_0) and the alternative (H_1) hypotheses are:

H_0: $\mu_1 = \mu_2$

H_1: the means are not equal

The one-factor model says that an observation in factor j came from a population with a common mean (μ) plus a factor effect (A_j) plus random error (ε_{ij}). That is,

$$y_{ij} = \mu + A_j + \varepsilon_{ij} \quad j = 1,2 \; and \; i = 1,2, \dots, 49. \qquad (1)$$

The total sample size is $n = 49$. The random error has zero mean. If the interest is on the response for a particular level, as, for instance, bundling or ALC, the model is known as fixed-effects. The hypotheses to be tested of equation (1) are reduced to a null (H_0) and an alternative (H_1):

H_0: $A_1 = A_2 = 0$ (all factor effects are zero)

H_1: not all $A_j = 0$

If H_0 is true, then an observation from factor j, say j from bundling, is of no help in explaining the variation in the response y_{ij}. The model of equation (1) is then reduced to

$$y_{ij} = \mu + \varepsilon_{ij}. \qquad (2)$$

The computations necessary are

$$\overline{y}_j = \left(\frac{1}{n_j}\right) \sum_j y_{ij} \qquad i = 1, \dots, 49, \qquad (3)$$

which is the mean for group j, and

$$\overline{y} = \left(\frac{1}{n}\right)\sum_j n_j \overline{y}_j \quad j = 1,2, \tag{4}$$

which is the sample mean of the two combined. By writing

$$\left(y_{ij} - \overline{y}\right) = \left(\overline{y}_j - \overline{y}\right) + (\overline{y}_{ij} - \overline{y}_j) \tag{5}$$

and squaring and summing the terms in equation (5), the result is

$$\sum_j \sum_i (y_{ij} - \overline{y})^2 = \sum_j n_j \ (\overline{y}_j - \overline{y})^2 + \sum_j \sum_i (y_{ij} - \overline{y}_j)^2. \tag{6}$$

The relationship of equation (6) is expressed simply as

$$SST = SSA + SSE, \tag{7}$$

where *SST*, *SSA*, and *SSE* refer to sum of squares total, between groups, and within groups.

Dividing *SSA* and *SSE* by their respective degrees of freedom, the results are *MSA* and *MSE* denoted by "between mean square" and "within mean square," respectively. The test statistic is the ratio

$$F^* = \frac{MSA}{MSE}. \tag{8}$$

For statistical significance at α level, F^* of equation (8) is compared with the tabular F-distribution, F(α, 1, 47). If $F^* >$ F(α, 1, 47), the null hypothesis of equality of means is rejected. Alternatively, the p-value for the F-test is compared with the significance level α. When p-value < α, the conclusion is significance.

For the regression models, under the assumption that the data are random variables, each two (x,y) with a bivariate distribution, the relating correlation model, according to Rohatgi (1984), has a bivariate regression with the expectation

$$E\{y|x\} = \mu_1 + \rho\left(\frac{\sigma_1}{\sigma_2}\right)(x - \mu_2), \tag{9}$$

where y and x have the respective means and standard deviations (μ_1, σ_1) and (μ_2, σ_2) and $|\rho|<1$ is the correlation coefficient. For simplicity, equation (9) is written as

$$E\{y|x\} = \mu_1 + \beta(x - \mu_2), \tag{10}$$

estimated by least squares as

$$\hat{y}_i = m_y + b(x_i - m_x), \tag{11}$$

which, after simplification, takes the form

$$\hat{y}_i = b_0 + b_1 x. \tag{12}$$

When $b > 1$ in equation (11), divergence takes place because channels with values above or below the mean m_x (the bundling) diverge further from the mean when multiplied by a number greater than 1.00. It will show that the costs or revenues of ALC are diverging from the costs and revenues of bundling. The opposite – convergence - implies that ALC costs and revenues approach those of bundling.

The correlation coefficient ρ of equation (9) is estimated by r, tested for significance by

$$t = r(n-2)^{\frac{1}{2}}/(1 - r^2)^{\frac{1}{2}}, \tag{13}$$

with, for significance level α, a critical t value of ±t(α/2, 47), where 47 are the degrees of freedom. The difference between the observed value of y and its estimated value $\hat{y}$ in equation (11) is denoted by the residual

$$e_i = y_i - \hat{y}_i, \tag{14}$$

tested for significance by

$$t = (y_i - \hat{y}_i)/\left[s_y^2\,(1 - r^2)\right]^{1/2}, \tag{15}$$

with critical values ±t(α/2, 47) for significance level α.

The residual between an actual observation and the prediction from the regression in equation (14) is interpreted in this model as the differential change. Differential effects, from a statistical standpoint, may be considered as outliers. In the current application, according to Quah (1997), a channel under consideration denotes extraordinarily better or extraordinarily worse relative to other channels in the sample in terms of costs and revenues.

The regression scheme described above was applied in a variety of studies, such as Creedy (1985), Kwoka (1982), Stonebraker (1979), and, in particular, Congdon and Shepherd (1988), who provided the theoretical basis for use in convergence analysis. Larson (1982) has indicated that the scheme is best used when regressing matched data.

4. Data Analysis

Table 1 is summary data on which this paper is based, obtained from CY. The first column of the table lists the 49 channels. The next two columns,

Table 1. Input Cost and Revenue of Channels.

Channel	C1	C2	C3	C4_
ABC Family Channel	0.32	0.83	0.46	0.58
AMC	0.32	0.54	0.41	0.43
Animal Planet	0.2	0.97	0.25	0.53
Arts and Entertainment	0.31	1.08	0.57	0.91
BET Networks	0.26	0.58	0.56	0.55
Bravo	0.27	0.51	0.39	0.4
Cartoon Networks	0.26	0.78	0.54	0.62
CNBC	0.34	0.93	0.53	0.7
CNN	0.49	2.92	0.81	1.98
Comedy Central	0.23	0.66	0.61	0.72
Country Music TV	0.18	0.56	0.26	0.29
Court TV	0.22	0.85	0.35	0.49
Discover Channel	0.34	1.47	0.59	1.16
Disney Channel	0.77	0.7	0.68	0.27
E! Entertainment Network	0.3	0.48	0.41	0.38
ESPN	2.44	0.87	3.8	2.33
ESPN 2	0.33	0.71	0.46	0.48
Food Network	0.19	0.85	0.49	0.71
Fox News Channel	0.36	1.83	0.7	1.27
Fox Sports News	1.56	0.79	1.51	0.46
FX	0.36	0.68	0.61	0.58
GSN	0.19	0.42	0.23	0.12
Golf Channel	0.32	0.14	0.37	0.1
Hallmark Channel	0.17	0.63	0.33	0.32
HGTV	0.25	1.04	0.6	0.82
History Channel	0.29	2.29	0.53	1.16
Lifetime	0.32	0.85	0.81	0.88
MSNBC	0.26	0.69	0.33	0.31
MTV	0.37	0.47	1.02	0.93
MTV2	0.17	0.54	0.19	0.21
Nat'l Geographic Channel	0.29	0.65	0.34	0.32
Nickelodeon	0.48	0.45	1.38	1.23
Oxygen	0.24	0.09	0.31	0.16
Syfy	0.27	0.7	0.55	0.63
SoapNet	0.22	0.44	0.24	0.15
Speed Channel	0.27	0.42	0.32	0.18
Spike TV	0.29	0.6	0.54	0.53
TBS Superstation	0.38	0.88	0.89	1.04
The Weather Channel	0.22	0.6	0.34	0.56
TLC	0.27	0.83	0.42	0.57
TNT	0.84	0.93	1.35	1.15
Toon Disney	0.21	0.39	0.24	0.1
Travel Channel	0.26	0.45	0.32	0.16
TV Guide Channel	0.16	0.14	0.24	0.18
TV Land	0.21	0.86	0.34	0.53
USA Network	0.51	0.84	1.13	1.17
Versus	0.25	0.29	0.26	0.13
VH1	0.24	0.44	0.55	0.5
Women's Entertainment	0.22	0.32	0.26	0.19
Total	18.22	36.98	29.42	30.17

Notes: C1= Bundling input cost, C2= ALC input cost,
C3= Total bundling revenue, C4=Total ALC revenue.
Source: Cranford and Yurukoglu (2012).

labeled C1 and C2, provide input costs for bundling and ALC, respectively. The next two columns, labeled C3 and C4, provide total revenues for bundling and ALC, respectively.

Descriptive statistics are provided in Table 2, giving the mean, the standard deviation, the minimum, and the maximum of the costs and revenues for both bundling and ALC. While input costs on average seem to be significantly different at \$0.372 for bundling compared to \$0.755 for ALC, their revenues seem to be comparable at \$0.600 for bundling compared to \$0.616 for ALC. The analysis of variance confirms, as shown in Table 3, that the costs differ significantly (p-value=0.000), while the revenues do not (p-value=0.8832). This conclusion is evident by comparing the between and within sum of squares (SS), as outlined in equations (7) and (8).

Table 2. Factor Summary Statistics.

Channels	Mean	Std. Dev.	Min	Max
Input costs				
Bundling	0.372	0.375	0.16	2.44
ALC	0.755	0.498	0.09	2.92
Revenues				
Bundling	0.6	0.559	0.19	3.8
ALC	0.616	0.466	0.1	2.33

Note: ALC = à la carte. Values in dollars.
Source: Cranford and Yurukoglu (2012) and authors' calculations.

Table 3. ANOVA Results.

Channels	SS		F	p-values
	Between	Within		
Bundling vs. ALC				
Cost	3.591	18.652	18.48	0
Revenue	0.008	25.38	0.02	0.8832

Note: ALC = à la carte.
Source: Cranford and Yurukoglu (2012) and authors' calculations.

Table 4 provides the results of the regression schemes outlined in equation (9) through equation (15), which probe the question of convergence and divergence. The model is used in various combinations of the four columns of Table 1. With the exception of relating the convergence of ALC to bundling costs, the combinations were highly significant. Convergence is observed for ALC and

bundling revenues. This means that providers of the sampled channels would be indifferent to whether the mode is bundling or ALC. The coefficient of costs for the two modes converges, but the coefficient is not statistically significant.

Table 4. Tests for Convergence.

Channels	Coefficients		p-values		95% CI for b_1		r
	b_0	b_1	b_0	b_1	Lower	Upper	
ALC vs. bundling							
Cost	0.691	0.171	0.000	0.377	-0.216	-0.559	0.129
Revenue	0.240	0.626	0.001	0.000	0.464	0.783	0.751*
Own revenue vs. cost							
Bundling	0.888	1.338	0.088	1.378	1.211	1.545	0.924*
ALC	0.127	0.647	0.158	0.000	0.449	0.845	0.693*

Note: Regression by equation (12). * for r indicates significance by equation (13).
Source: Cranford and Yurukoglu (2012) and calculations by the authors.

Table 5 provides the names of the channels that performed better than expected (+ sign) and those that performed less than expected (- sign). In terms of cost (C2 vs. C1), the table shows, for instance, that CNN, Fox News, and the History Channel would be statistically (5%) more expensive to provide by ALC mode than by bundling mode. For revenues (C4 vs. C3), the (+) sign indicates that for CNN, Discovery, Fox News, and the History Channel, the bundling provision mode is more profitable than ALC.

Table 5. Channels with Significant Residuals.

C2 vs. C1	C4 vs. C3	C3 vs. C1	C4 vs. C2
+ CNN	+ CNN	- Discovery	+ ESPN
+ Fox News	+ Discovery	+ ESPN	+ Nickelodeon
+ History	+ Fox News	- Fox Sports News	
	- Fox Sports News	+ MTV	
	+ History	+ Nickelodeon	
		+ USA	

Notes: C1=bundling input cost. C2=ALC input cost. C3=total bundling revenue. C4=total ALC revenue. Calculations of residuals by equations (14) and (15).
Source: Cranford and Yurukoglu (2012) and calculations by the authors.

5. Conclusions

There is a widespread belief that the bundling of TV channels by providers extracts surplus from consumers. Requiring consumers to purchase services of many redundant channels could add unnecessary cost. An alternative, which is debated and requires regulation by the Federal Communications Commission, is the à la carte mode of provision.

CY has extensively probed this question using many approaches, as pointed out in the introduction. CY, in the process, provides a rich source of new data on which this research is based. In particular, the paper probed the question of costs and revenues for the two modes of operation – bundling and ALC – and found that costs do differ significantly, as shown in Table 2. ALC is more costly on average to provide. However, on average, the revenues are comparable. The paper also examines the question of convergence or divergence in a variety of cost-revenue combinations, with results shown in Table 4. A final contribution was to pinpoint the channels which may be more expensive or more profitable under the two modes.

The paper addressed the controversy between those who advocate ALC, where consumers have better choices for channels they pay for, and the way TV channels are packaged and priced. The tension, according to Ramachandran and Marr (2013), boils down to complaints from cable and satellite operators about the practice of entertainment companies bundling together all their channels. It's

hard for distributors to drop channels with small audiences; even though they can turn down certain channels, they still end up paying more.

The issue of selection of the specific channels for viewing is more apparent on the regional, urban, and rural areas, as was indicated in the text. Preferences tended to be, to a great extent, based on geographical locations and tastes. The paper also dealt with elasticities of demand, showing that the more a region is urbanized, the larger is the elasticity, because in such regions there are more substitutes for entertainment than in smaller urban or rural areas. The paper also addressed the trends of consolidation driven by the acquisition of small cable companies by larger ones which makes possible the creation of country-wide access to all types of programming in all regions, whether urban or rural.

On the horizon, there is what Thompson (2012) calls the "gadget war" among tech companies such as Apple, Google, and Microsoft. The gadget war started on computers, moved on to phones and tablets, and is moving on to television. This gadget war will transform the payment for TV the same way the Internet made newspapers almost free and Napster and Apple implemented the sale of music á la carte at a mere 99 cents per song. The prediction is to offer a TV screen which transforms the TV market into iTV the way the iPhone transformed the cellphone market. The iTV would offer live programming, a gaming platform, and full internet access. Thus, although TV programming in practice is provided across the nation, in reality it will be provided in national, urban, and rural markets as well when the gadget war is won.

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