

Willingness to Pay for Online News: An Empirical Study on the Viability of the Subscription Model

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As no business models seem to generate reliable revenue streams for online news services, many publishers see the subscription model as a last resort for survival although little evidence suggests users are ready to pay for online news at this moment. A random-sample telephone survey of 853 Hong Kong residents found very few users actually responded to paid content and most had no intent to pay in the future. Hierarchical regression analysis showed that age and newspaper use are related to paying intent, whereas income is not. Online publishers may consider the economic implications before adopting the subscription model.

With more than 5,000 daily, weekly, and other newspapers providing online services worldwide (Newspaper Association of America, 2002), the Internet has become a well-established news medium. However, the profitability issue still troubles the online publishing industry. After years of experimenting, no business models seem to generate reliable revenue streams for online news services.

In the mid-1990s, many news sites started by charging users a subscription fee for online news access, but most failed. The advertising model followed, with only limited success, and the effectiveness of online advertising remains questionable. Starting in 2000, the economic downturn caused a decline in online advertising revenue. On the other hand, e-commerce never fulfilled its promise. Thus a number of online news publishers have been reconsidering the subscription model as a last resort for survival. Some have readopted the model, and many more may follow suit.

Although this “free-to-fee” trend seems inevitable, little evidence suggests users are ready to pay for online news at this moment. By implementing the fee-based model, the online news industry runs the risk of losing the user base that they have tried so hard to build (by giving content away for free). As a result of this, advertisers will turn away. This may create another crisis and may seriously undermine the quality and quantity of online news services offered to the public. To evaluate the viability of the subscription model, an empirical examination of online users’ response to paid content is essential.

This study investigates how consumers in a geographic market respond to fee-based online news services. Paying intent, or willingness to pay (WTP), for online news is measured. Regression analysis examines what factors have an influence on paying intent. Economic implications are discussed. The examination of WTP in a real-world setting contributes to a better understanding of online news economics.

THE ECONOMICS OF ONLINE NEWS

Search for Revenue Models

Since the birth of the online medium, Internet news publishers have been experimenting with various revenue models for their online operations to achieve profitability: the subscription model, the advertising model, the transactional model, and the bundled model. (For a detailed review of these models, see Mings & White, 2000.) The industry’s endeavor in seeking economic viability has become a unique case in media economics because no other media have had to experiment with so many revenue models as online newspapers have.

However, recent market research shows that many newspapers generated less than \$5 in online revenue per unit of circulation (Borrell & Associates, 2003). Disappointing results as such make one wonder which models would work, whether online media can survive without a viable model, and whether there is value to maintaining digital media when profitability is not achievable (Kawamoto, 2003).

A 1999 survey of 64 online newspapers serving California, Texas, New York, and Florida investigated the application of various revenue models in the online news industry and reported quite an unenthusiastic response to the subscription model (Chyi & Sylvie, 2001). Almost 80% of the sites surveyed generated revenues from online advertising. Fewer than 20% adopted e-commerce and pay-per-use models. Only 3% of the sites were subscription-based. Most said it would be unlikely or very unlikely to charge for online news access within the next 2 years (i.e., between 1999 and 2001) because they did not believe general-interest news sites could rely on the subscription model as *WSJ.com* (the online version of the *Wall Street Journal*) did.

The real market development was somewhat surprising, however. The economic downturn caused massive layoffs and consolidations in online news organizations all over the world. By 2001, the free-to-fee trend took off.¹ The subscription model re-entered the agenda. Many general-interest news publishers said it was time to start charging for the valuable information they offered online (Outing, 2002).

WTP for Online News

This free-to-fee move contradicts the general belief that “content must be free unless it is very specialized,” which once seemed to be the industry’s consensus (Carlson, 2003, p. 54). In the meantime, market researchers found little evidence suggesting that users are ready to pay. Results of a March 2002 consumer survey showed that 70% of online adults could not understand why anyone would pay for content online (Jupiter Media Metrix, 2002). Another market study revealed that 71% of news site users would go somewhere else because there are so many free sites available (Borrell & Associates, 2001). At the theoretical level, this “no one would pay for it” phenomenon is related to two economic concepts: a horizontal demand curve and cross-price elasticity of demand.

First of all, online news, offered free of charge in most cases, is characterized by a horizontal demand curve at the price of zero. A horizontal demand curve indicates that consumers would purchase as much as they can at the current price, but if the price goes even a penny up, the quantity demanded drops to zero—meaning the price elasticity of demand equals infinity (Katz & Rosen, 1991, p. 89).

In addition, as most users believe close substitutes for general-interest online news are available (online and offline), cross-price elasticity is high. Unless every alternative news product increases the price at the same time, switching from free to fee can only trigger the substitution effect, which would result in a huge decline in the quantity demanded.

It is therefore not surprising that the “no one would pay for online news” phenomenon prevails. The sign-up rate for fee-based online newspapers was as low as 0.2% to 2.6% of the print circulation (Borrell & Associates, 2001). A focus group study of international students in Hong Kong also found that although most ranked the Internet as their main information source and were able to identify many of its strengths and weaknesses as a news medium, participants showed minimal paying intent (Chyi, 2002).

WTP is an important concept in microeconomics, and this study aims at systematically examining WTP for online news. In the content market, media products are offered either for free (such as broadcast TV and radio) or for a fee (such as books, newspapers, and cable channels). In the former case, there is no need to as-

¹For a detailed account of such practices in the industry, check the Web site at theendoffree.com.

ness WTP; in the latter case, WTP usually is taken for granted. A review of literature found limited empirical research on WTP for media goods, of which a study on WTP for Public Broadcasting Services (PBS) by Schwer and Daneshvary (1995) provides insights into the issue at hand.

According to Schwer and Daneshvary (1995), possible elimination of public funding might force PBS stations to charge the audience for viewership. This hypothetical free-to-fee transition driving the need for research on WTP for PBS is by nature the same issue in online news economics. Moreover, as some online newspapers have already switched from free to fee, this case provides a real-world context for WTP to be studied. This study, aiming at understanding users' response to paid content, addresses the following questions:

- RQ1: How many users are actually paying for online news services? Which ones? Why?
- RQ2: How many users will be willing to pay for online news services in the future? Why?

Methodologically, Schwer and Daneshvary (1995) measured WTP for PBS using contingent valuation methods, asking a hypothetical question in a survey of Las Vegas residents: "What is the most you (your household) would be willing to pay each year to keep PBS in Las Vegas?" This study first asks respondents whether they currently subscribe to any online news services, and, if not, asks them to estimate the likelihood of paying for online news in the future.

Schwer and Daneshvary (1995) used regression methods to examine the potential predictors of WTP, including income, television use, preference for a substitute good (i.e., look-alike cable television), and demographics. Previous research on Internet use also found demographics and media use related to time spent online (Chyi & Lasorsa, 2002; Dimmick, Chen, & Li, 2004; Pew Internet & American Life Project, 2003; Stemple & Hargrove, 1996; Stemple, Hargrove, & Bernt, 2000). Therefore, this study examines whether demographic variables and media use relate to online users' paying intent by addressing the following questions:

- RQ3: How do demographics (i.e., gender, age, education) predict paying intent?
- RQ4: How does media use (i.e., TV, newspaper, and Internet use) predict paying intent after controlling for demographics?

In addition, media psychologists have explored user perception of online and offline news content (Sundar, 1999). Previous research on the relation between online and print newspapers also explored an attitudinal variable called preference for online/print formats and found that the print edition was preferred even among Web users when compared with the online format on the "other-things-

being-equal” basis (Chyi & Lasorsa, 2002). Therefore, this study addresses the following question:

RQ5: How does format preference predict paying intent after controlling for demographics and media use?

Finally, income is an important variable in WTP research because it is the consumer’s budget constraint. In addition, Chyi (2002), in an effort to provide an explanation for the seemingly “no one would pay for it” phenomenon, suggested that online news could be “inferior goods”—“goods for which an increase in income decreases consumption, *ceteris paribus*” (Katz & Rosen, 1991, p. 72). To further investigate the economic nature of online news, one must examine the relation between income and consumption of fee-based online news services. Therefore, this study addresses the following question:

RQ6: How does income predict paying intent after controlling for demographics, media use, and format preference?

METHOD

A random-sample telephone survey of 853 Hong Kong residents was conducted during November 13–17, 2002 to investigate the general public’s response to online news.

Hong Kong—with the highest Internet penetration in greater China—is also one of the most wired cities in Asia. As of 2002, 54% of people age 10 or over had used a personal computer and 48% had used Internet services during the previous 12 months (Hong Kong Census and Statistics Department, 2003). Hong Kong also has the highest newspaper penetration in the region. About 15 daily newspapers remain active in the market. At the end of 2002, 18 media Web sites provided online news services—12 were operated by newspapers and 6 by TV or radio stations. An online-only news aggregator (www.now.com.hk) and several portal sites also provided online news services. Faced with the economic viability issue, online publishers in Hong Kong seemed relatively radical when compared with their counterparts elsewhere in experimenting with the subscription model. At the time of the study, six online news sites were charging (local or overseas) users for access to at least some parts of the site.²

²They were the online editions of the *Oriental Daily* (overseas users), *Apple Daily* (overseas users and premium content), the *Sun* (overseas users), the *South China Morning Post* (premium content), Commercial Radio (archive), and www.now.com.hk (entire site).

Sampling

A systematic random sample was drawn from the Hong Kong telephone directory combining the “plus one” method (adding one to the last digit of each number sampled), which ensured every residential telephone (including unlisted and new numbers) an approximately equal chance of being included (Landon & Banks, 1977). The sampled area included the Hong Kong Island, Kowloon, and New Territories, yielding a combined population of around 6,815,000 (Hong Kong Census and Statistics Department, 2003).

Data Collection

Graduate and undergraduate students in communication completed 853 interviews after a training session. The sample size of 853 yielded a standard sampling error of ± 3.4 percentage points at the 95% confidence level. The response rate was 44%.

Measurement

The survey, which took an average of 15 min to complete, focused on usage of and attitudes toward traditional and online media. Questions were developed according to the results of a focus group of 10 students registered in a university in Hong Kong. Revisions were made based on the results of a pretest conducted before the study.

Response to paid content was measured by the question “Are you currently paying for access to any online news services? Which online news services? Why?”

Paying intent (WTP) was measured by the following question, followed by an open-ended question probing the reason behind the answer: “How likely is it that you will pay for access to online news services in the future? (1) very unlikely (2) somewhat unlikely (3) somewhat likely (4) very likely. Why?”

Demographic data (i.e., gender, age, education, and income) were collected by standard survey measurements.

TV, newspaper, and Internet uses were measured by asking respondents “How much time do you spend watching TV/reading newspapers/using the Internet per day?” (in hours and minutes).

Format preference for online or print newspapers was measured by asking the same hypothetical question as in previous research (Chyi & Lasorsa, 2002): “Imagine that you are provided with both print newspapers and online newspapers with the same news content and at the same price. Which would you prefer? (1) print (2) online.”

Data Analysis

Because the outcome variable (paying intent) is at the interval level, hierarchical multiple regression analysis (Cohen, Cohen, West, & Aiken, 2003) was utilized to examine the potential predictors of paying intent (WTP). Based on the conceptual

framework, the predictor variables were entered in four blocks: demographics (age, gender, and education), media use (TV, newspaper, and Web use), preference for on-line news, and income. Income was entered last because the impact of income on paying intent on the other-things-being-equal basis is a focus of this study.

RESULTS

The sample of 853 Hong Kong residents had slightly more women, as most telephone surveys do. The sample over-represented people ages 15 to 24 and under-represented those in the lowest education category. Table 1 summarizes the differences between the survey sample and the 2001 Hong Kong Census statistics in several demographic variables. Overall, the sample was reasonably representative of the population.

TABLE 1
A Comparison of the Sample and the 2001 Hong Kong Census Data

<i>Variable</i>	<i>Census (%)</i>	<i>Sample (%)</i>
Gender		
Men	48.6	45.9
Women	51.4	54.1
Age ^a		
15–24	16.4	28.1
25–34	19.8	18.0
35–44	24.3	21.2
45–54	17.2	16.6
55–64	9.0	7.5
65+	13.3	8.6
Education ^b		
Elementary or less	28.9	16.1
Forms 1–3	18.9	17.1
Forms 4–5	26.3	31.8
Forms 6–7	9.4	10.0
Tertiary	16.4	24.9
Monthly income ^c		
1–6,000	17.9	16.6
6,001–10,000	24.8	24.3
10,001–20,000	34.8	33.6
20,001–30,000	11.3	13.7
30,001–40,000	4.6	6.0
40,001 or above	6.6	5.7

Note. Source: Hong Kong Census and Statistics Department (2003).

^aBase = people age 15 or above. ^bForms 1–7 are the equivalent of Grades 7–13; tertiary is the equivalent of college or higher. ^cBase = people age 15 or above with income; the currency is Hong Kong dollars (H.K.\$7.8 = U.S.\$1).

Of all respondents ($N = 853$), 97% watched TV on a daily basis. (Cable TV penetration was 28%.) On average, a TV viewer spent 2 hr and 37 min watching TV per day. About 89% of all respondents read the newspaper, and the average time for newspaper reading was 57 min per day. About 55% of all respondents used the Internet regularly, spending an average of 2 hr and 12 min online per day.

Of all respondents, 46% had used online news ($n = 396$). The following analysis focuses on these online news users' response to fee-based online news services and their future paying intent (WTP).

Response to Paid Content

The first research question asked how many users were paying for online news services. Despite the fact that six online news providers were charging for access to at least some parts of their sites, Hong Kong people's response to paid content was far from active. Only 10 respondents (i.e., 2.5% of online news users) subscribed to any of these online news services at the time of the study. The leading online newspaper (www.appledaily.com) and the online-only news aggregator (www.now.com.hk) attained the most subscribers at three each.

A follow-up question asked respondents why they decided to subscribe to paid content; 7 participants answered this open-ended question. Two said they paid because the subscription fee for such services was reasonably low; 2 said the subscription fee was actually paid by their employer or family members; 1 said it was convenient to use such a news service, and 1 said the news site served as a useful tool for doing homework. Another paid to gain access to another information source.

Future Paying Intent (WTP)

To address the second research question regarding future paying intent, online news users who were not currently subscribing to fee-based online news services were asked to estimate the possibility of subscribing to such services in the future ($n = 375$). The results were not very promising either. Some 43% said it was "unlikely" that they would pay for online news in the future; 35% said "very unlikely"; 21% said "likely"; and only 1.3% answered "very likely."

An open-ended question probed the reasons for the lack of paying intent: Nearly 40% of those without future paying intent indicated that free alternative news services exist—29% mentioned traditional news media and 10% mentioned other online news services. Some 17% said they would not need such services, and another 17% said price was a factor that affected their WTP.

As for those who said they might be willing to pay in the future, the conditions were "if I have such needs" (21%) and "if the price is reasonable" (15%).

Predictors of Paying Intent (WTP)

Results of the hierarchical regression analysis revealed the relation between paying intent and predictor variables such as demographics (gender, age, education), media (TV, newspaper, Internet) use, preference for online news, and income. All four models were statistically significant. The first model accounted for 3% of the variance in paying intent ($R^2 = .03, p < .05$). The second model accounted for 4% of the variance in paying intent ($R^2 = .04, p < .05$). The third and the fourth models accounted for 5% of the variance in paying intent ($R^2 = .05, p < .05$). Table 2 summarizes the results.

To address the third research question regarding the association between demographic variables and paying intent, gender, age, and education were entered on the first step of the regression analysis. The only significant predictor of paying intent was age (negative). In other words, younger users were more likely to pay for online news access. Beta was $-.15$ ($p < .05$) and simple correlation r was $-.14$ ($p < .01$), indicating a significant but weak association with paying intent.

The fourth research question asked whether media use would predict paying intent after controlling for demographic variables. TV, newspaper, and Internet uses were entered at the second step of the regression analysis. In addition to age, newspaper use also was a significant predictor of paying intent ($\beta = .12, p < .05$). More time spent on reading newspapers was associated with higher paying intent, after controlling for gender, age, and education. Yet simple correlation between newspaper use and paying intent for online news was not significant.

The fifth research question asked whether format preference for online newspapers would predict paying intent after controlling for demographics and media use. Results of the third equation showed that format preference was not a significant

TABLE 2
Hierarchical Regression Analysis of Predictors of Paying Intent

Predictor Variables	Regression 1	Regression 2	Regression 3	Regression 4
Gender (female)	-.08	-.07	-.07	-.07
Age	-.15*	-.16**	-.15*	-.11
Education	-.004	-.02	-.01	-.001
TV use		-.08	-.08	-.09
Newspaper use		.12*	.13*	.13*
Web use		.06	.05	.06
Preference for online format			.07	.07
Income				-.07
R^2	.03	.04	.05	.05
Adjusted R^2	.02	.03	.03	.03
Significance of change	.038	.135	.204	.348

Note. Betas, $n = 320$.

* $p < .05$. ** $p < .01$.

predictor. However, simple correlation analysis showed that format preference was weakly associated with paying intent ($r = .10, p < .05$).

The sixth research question dealt with whether income would predict paying intent after controlling for demographics, media use, and format preference. Results showed that income was not a significant predictor of paying intent, other things being equal. It is interesting to note that beta was negative, and simple correlation analysis also revealed a significant negative relation between income and paying intent ($r = -.13, p < .01$). In other words, people with higher income were actually less, not more, willing to pay for online news.

Age dropped out as a significant predictor when income entered the equation. Newspaper use became the only significant predictor of paying intent ($\beta = .13, p < .05$) in the fourth model. Overall, this full model accounted for 5% of the variance in paying intent ($R^2 = .05, p < .05$).

DISCUSSION

Lack of Paying Intent

This study shows that most Internet users in Hong Kong were not paying for online news services and did not show a strong intent to pay in the future, suggesting that the subscription model is not working and may not work well in the future. The results correspond with the trend identified in U.S.-based market research that the lack of paying intent characterizes online news consumption (Borrell & Associates, 2001, 2003; Jupiter Media Metrix, 2002). Obviously, online publishers should exert caution when implementing the subscription model.

At the theoretical level, the lack of paying intent carries implications regarding the economic nature of online news as a media product. First, online users said they were reluctant to pay for online news access because free alternatives existed online and offline, as revealed by the open-ended question, meaning users did not perceive online news as something with unique value. This indicates a failure of product differentiation under intra- and inter-media competition. As the market structure of online newspapers is characterized by monopolistic competition (Chyi & Sylvie, 1998), suppliers should have price-making power when they provide heterogeneous products (Katz & Rosen, 1991). Apparently this is not happening.

Second, it may seem natural that users don't feel like paying for online news because free alternatives are readily available. But if one considers the fact that most people are willing to pay for the print newspaper, which usually carries similar content and costs more than its fee-based online counterpart, other factors that make users reluctant to pay for online content may exist. It is along this line that Chyi (2002) indicated the possibility that online news is an inferior good, and this study empirically examined the relation between income and online news consumption.

Income and WTP for Online News

This study identified a negative relation between income and paying intent for online news. Simple correlation analysis produced a significant negative coefficient. Although hierarchical regression analysis did not identify income as a predictor of paying intent after controlling for gender, age, education, media use, and preference, the regression coefficient also was negative. The findings provided preliminary support for the “online news as inferior goods” hypothesis.

Factors Related to Paying Intent

Hierarchical regression analysis identified age as the only demographic variable related to paying intent for online news. It is not surprising that younger users were more likely to pay for online news access. Newspaper use also predicts paying intent after controlling for demographic variables; more time spent reading newspapers meant a higher likelihood of paying for online news.

Simple correlation analysis found age (negative), preference for online news (positive), and income (negative) related to paying intent. Online publishers may consider these factors when developing market strategies for their services.

Overall, the regression model accounted for only 5% of variance in paying intent. There are two possible explanations for this limited R^2 value. First, this study might have overlooked some important predictors. Future research on the economics of online news may take into account other variables related to paying intent. Another possibility is that WTP for online news, as conceptualized and measured in this study, is based on fairly personal judgment and thus is independent from external factors.

CONCLUSION

This study documented the public’s unenthusiastic response to fee-based online news services, suggesting that online news publishers may find it difficult to reply on the subscription model to achieve economic viability. If the effectiveness of online advertising remains questionable, what is the future of the online news industry? Given the specific nature of online news as a media product, no one can rule out the possibility that online newspapers simply cannot serve as a profit center as their print counterparts. However, as the Internet has become an important news medium serving millions of news users worldwide, the answer to Kawamoto’s (2003) question “Is there value to maintaining digital media when profitability is not achievable?” (p. 27) should be a yes.

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