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Demystifying the demand relationship between online and print products under one newspaper brand: the case of Taiwan and the emergence of a universal pattern

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ORIGINAL ARTICLE

Demystifying the demand relationship between online and print products under one newspaper brand: the case of Taiwan and the emergence of a universal pattern

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This study uncovers a universal pattern regarding the oft-misunderstood demand relationship between online and print products under one newspaper brand. Growing from the portfolio management perspective and building on previous research conducted in the US and Hong Kong, this study examines the newspaper market in Taiwan. Secondary analysis of survey data collected from 7706 Web users confirmed that: (1) the print edition attains a much higher penetration relative to its online counterpart, suggesting that more people would rather consume the print edition over free Web offerings; and (2) compared with the general public, readers of the online edition were more, not less, likely to read the same newspaper's print edition. Such counter-intuitive findings carry important theoretical and managerial implications regarding the management of multiple product offerings under one newspaper brand.

Keywords: newspaper; Internet; Taiwan; media management; journalism

The newspaper industry worldwide started experimenting with online delivery in the mid-1990s when many newspapers launched electronic editions on the Web. Since then, newspapers have come in two distinct formats: online and in print. Newspaper companies once hoped that their dual product offerings would go hand in hand; however, the online edition has failed to generate sufficient revenue to make up for the deficiencies on the print side, as evidenced in the US newspaper crisis in 2009 (Clifford, 2008; Karp, 2007; Mutter, 2009a; Pew Research Center for the People & the Press, 2008; Project for Excellence in Journalism, 2010).

Many newspapers have found managing multiple news products under the umbrella of one newspaper brand difficult, indicating a 'product portfolio management' challenge often encountered when media firms begin producing more than one product into the market (Picard, 2005). Disagreements exist among newspaper practitioners on issues such as the 'cannibalization effect'¹ and the 'free vs. fee' dilemma²: the latter has been resurrected a number of times during the past 15 years (Borrell & Associates, 2001; Jarvis, 2007; Mings & White, 2000; Project for Excellence in Journalism, 2010). However, such long-term debates are often fueled by misconceptions about the demand relationship between online and print

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newspapers, which, as a result of insufficient research, have led to irreversible decisions and costly consequences for newspaper management and economics.

To address the theoretical as well as managerial challenges inherent in media portfolio management, it is essential to clarify the oft-misunderstood demand relationship between online and print newspapers with reality-based research. Of particular interest is how online and print readerships relate to each other. This study replicates and extends previous studies (Chyi, 2006; Chyi & Lasorsa, 1999, 2002) and seeks to re-examine the issue on a comparative basis across nations, as suggested by media economist Alan Albarran (2010a), this time in a much larger media market (Taiwan) where dozens of news media (including the earliest Chinese-language online newspapers) compete for user attention.

Based on data obtained from a panel-based online survey of more than 7000 respondents that assessed users' responses to major newspapers' print and online offerings, the goal is three-fold: (1) To clarify the demand relationship between online and print newspapers from the product portfolio management perspective, (2) to uncover a universal pattern governing such a relationship in multiple markets, and (3) to examine the dynamics of competition pertinent to Taiwan's newspaper market.

Literature review

Multiplatform media enterprises and product portfolio management

Since the mid-1990s, newspaper companies worldwide have continued to evolve into multiplatform media enterprises, distributing content to multiple platforms and devices (Albarran, 2010b). This study seeks to examine the relationship between online and print products under one newspaper brand from the perspective of portfolio management. Portfolio management for new products refers to a process in which 'new projects are evaluated, selected, and prioritized; existing products may be accelerated, killed, or deprioritized; and resources are allocated and reallocated to active projects' (Cooper, Edgett, & Kleinschmidt, 2001, p. 3). This study investigates the true demand relationship between newspapers' print (existing) and online (new) products, which determines how newspapers prioritize their dual products when engaged in multiplatform news delivery.

Like most media firms, newspapers have traditionally focused on one single product. Since the mid-1990s, in response to market changes and convergence, newspapers have been publishing in online and print formats, creating the need for managing a *cross-media* product portfolio (Picard, 2005, p. 1). However, a firm specializing in traditional media may have difficulties operating a portfolio that includes new media products because of inherited company culture, lack of expertise, and limited understanding of strategy associated with portfolio management (Picard, 2005). This seems to be the exact case of newspapers, as their online venture has fallen short of expectations: online readership and sales have been lagging (Chyi & Lewis, 2009; Mutter, 2009b) and no business models seem to work (Stepp, 2008).

To successfully operate product portfolios, media firms should regularly analyze and adapt their portfolios to changing market conditions, that is, to identify primary products and secondary ones based on market shares and market growth, so as to focus resources on those that are most important to the media company (Picard, 2005). Given their start in the mid-1990s, newspapers' online experiment has been

going on for about 15 years. It is time to scrutinize their multiplatform product portfolio and to distinguish the 'cash cow' from the 'problem child' (Picard, 2003, 2005) so as to effectively offer companies guidance for how to best manage their cross-media portfolio. Thus this study seeks to re-examine the demand relationship between online and print newspapers from the media management and economics perspective.

Dual product offerings under one newspaper brand

Communication scholars have long been interested in studying the interaction of traditional and online media use with different theoretical approaches. The mainstream approach is based on the uses and gratifications paradigm or its variations such as the theory of the niche (Dimmick, 2003) or the media system dependency perspective (Riffe, Lacy, & Varouhakis, 2008). Many have focused on the time displacement effect between online and traditional news media at the individual level: whether individual users spend less time on traditional media because of new media (De Waal & Schoenbach, 2010; Dimmick, Chen, & Li, 2004; Lee & Leung, 2008; Nguyen, 2010). Some (De Waal, Schoenbach, & Lauf, 2005; Dutta-Bergman, 2004) have described online and traditional media products as 'complements' or 'substitutes' without adopting strict economic definitions.³ Additionally, most displacement-effect studies defined media use in general terms (i.e., referring to *newspapers* without specifying which newspapers, or to *the Internet* as opposed to specific online news sites).⁴ As a result, such findings have offered limited managerial implications because online and print newspapers should be examined as product items within one newspaper's cross-media portfolio.

An alternative approach is based on media economics. Under the umbrella of one newspaper brand and sharing similar content, a newspaper's online and print products are demand-related goods (Chyi, Yang, Lewis, & Zheng, 2010). The most extensive investigation is the study by Gentzkow (2007), which examined the demand relationship between a newspaper's online and print editions with a regression model that includes as many as 15 predictors⁵ and concluded that *The Washington Post* and *washingtonpost.com* are actually substitutes, if all relevant factors are controlled for, although the magnitude of the crowding-out effect is relatively small, compared with some earlier predictions. Although Gentzkow presented a fairly comprehensive model, his analysis focused on one single US newspaper. Therefore, generalizability remains an issue.

Additionally, the relationship between two media products can be tricky and delicate, even if such a relationship is defined and can be measured by cross-price elasticity of demand. For example, popular music can be consumed either in CD formats or through MP3 downloads. When people download a song instead of buying a CD, the two products are substitutes. But when people buy the CD after first acquiring the song through the Internet, they are complements (Hoskins, McFadyen, & Finn, 2004). The same complexity characterizes the relationship between a newspaper's online and print editions because similar information is published in two formats under one newspaper brand.

Aside from the theoretical debate on whether online and print newspapers are complements or substitutes, certain industrial practices have further complicated the issue. For example, since 2007, the US newspaper industry has been promoting

the ‘combined online and print audience’ measure (Audit Bureau of Circulations, 2008), which gives an impression that the overall newspaper readership is increasing while downplaying losses on the print side. By doing so, ‘newspapers implicitly argue for market *simplification*, rather than acknowledging their market *fuzziness*’ (Chyi et al., 2010).

Regarding the study of the demand relationship of online and print newspapers, a third approach exists, i.e., enumerating demand for *each* newspaper’s online and print products in a well-defined geographic market. This approach aims at comparing the size and share of online and print products under one newspaper brand. In addition, the unit of analysis moves away from individual users to newspapers, thus allowing for a holistic view of the newspaper market under study. Along this line, Chyi and Lasorsa (1999, 2002) documented and compared the online and print readerships of the local, regional, and national newspapers circulated in Austin, Texas. A later survey took a similar approach examining newspaper competition in Hong Kong (Chyi, 2006). These studies compared the penetration rates of multiple newspapers’ print and online editions, identified consistent patterns characterizing consumer demand for online and print products, and provided baseline data which addressed managerial implications and helped develop theoretical postulations regarding the relationship between online and print newspapers.⁶ To extend and theorize the findings generated by the Austin- and Hong Kong-based studies, this present study seeks to generate and test hypotheses regarding the demand relationship between online and print newspapers in Taiwan. The methodology would avoid pitfalls that have prevented time-displacement studies from addressing the managerial and theoretical challenges associated with cross-media portfolio management while, at the same time, attempting to uncover universal patterns and capturing the competition dynamics of Taiwan’s newspaper market.

The newspaper market in Taiwan

Taiwan’s media environment is among the freest in Asia,⁷ with a dynamic and diverse press that serves the country’s 23.1 million residents by reporting aggressively on political affairs and commenting on the performance of any government officials (Freedom House, 2009; Wang & Lo, 2000). Some 19 dailies (Brain Magazine, 2007) can be classified into 6 categories (Ho & Sun, 2008): general interest newspapers (e.g., *The China Times*, *The United Daily News*, *The Liberty Times*, and *Apple Daily*), business newspapers (e.g., *The Commercial Times* and *Economic Daily News*), evening newspapers (e.g., *The United Evening News*), regional newspapers (Tainan’s *Chung Hwa Daily* and Kaohsiung’s *Commons Daily*), English-language newspapers (e.g., *The China Post* and *Taiwan News*), and entertainment newspapers (e.g., *Da Cheng Daily* and *Min Sheng Daily*).⁸ The top four newspapers, i.e., *Apple Daily*, *The China Times*, *The Liberty Times*, and *The United Daily News*, owned by four different media groups, accounted for 85% of all newspaper advertising revenue (Brain Magazine, 2007). Among them, *The China Times* and *The United Daily News* dominated Taiwan’s newspaper market for decades. *The Liberty Times* has gained substantial market share since 1990s with aggressive marketing strategies (Wang & Lo, 2000). *Apple Daily*, launched by Next Media (a Hong Kong-based media group)

in 2003, has since become the top-selling paper in Taiwan, featuring tabloid journalism and sensational content (Lee, 2007).

In addition to offline competition, most newspapers in Taiwan also publish an online edition of their paper on the Web. ChinaTimes.com, the electronic edition of *The China Times* launched in 1995, was the first Chinese-language online newspaper on the Web. At the end of 2009, 18 Taiwan-based news sites had substantial market share; of these, 10 were online-only news providers, 6 were operated by newspapers, 1 by a television station, and 1 by a news agency (InsightXplorer, 2010). No online news sites charged users a fee for news access at the time of the study; that is, all online news sites are offered to Taiwan residents for free except for news archives.

On the print side, newspaper readership had slipped from its peak of 76% in the early 1990s to 46% by March 2007 (Ho & Sun, 2008). Cable television and the Internet have provided plenty of substitutes for newspapers in Taiwan, causing newspaper demand to decline. Cable penetration rose from 26% in 1992 to 85% in 2008, the highest in Asia (Freedom House, 2009). Moreover, according to the non-profit Taiwan Network Information Center (2009), the percentage of the population using the Internet has risen from 57% in 2003 to 71% in 2009. Overall, the entry of *Apple Daily* into the newspaper market in Taiwan brought about renewed competition in the general newspaper market, and the prevalence of online news in Taiwan also provides a unique context for the re-examination of the demand relationship between online and print newspapers.

Research questions and hypotheses

To better understand the degree to which different online and print newspaper offerings engage readers in Taiwan, this study enumerates demand for individual newspapers' multiple product offerings, addressing the following research questions:

RQ1a: Among Web users, what is the penetration rate of various print newspapers?

RQ1b: Among Web users, what is the penetration rate of various online newspapers?

However, online and print readerships are far from mutually exclusive. Therefore, it is essential to 'combine the multiple modes of media access and use within a single brand rather than viewing audience behaviors in each medium separately' (Vishwanath, 2008, p. 19). A review of literature found a series of research articles that identified substantial overlap between a newspaper's online and print readership. Chyi and Lasorsa (2002) first documented the simultaneous use of the print and online editions across the newspapers circulated in the Austin market. For the local daily, 83% of its online readers residing within the Austin area also read the print edition.⁹ For the national and regional papers also circulated in the market, about one half of their online readers did so.¹⁰ The follow-up study conducted in Hong Kong (Chyi, 2006) produced similar findings: the overlap of online and print readership was extensive for the Top 4 newspapers, with more than 50% of the local readers who read the Web edition also reading the print edition during the same week.¹¹ In Washington, DC, 59% of local washingtonpost.com readers also read the print edition of *The Washington Post* during the previous 24 hours; over a five-day

window, 76% of online users did so (Gentzkow, 2007). A recent study based on online reader surveys on 28 US newspaper websites found that two-thirds of a newspaper site's local users also read its print counterpart (Chyi et al., 2010). Based on these findings, this study hypothesizes that, within the local market, the majority of the *leading* newspaper's online readers also read the print edition.

$$H1: \frac{\text{Hybrid Readers}}{\text{Online Edition Readers}} > 50\%$$

where hybrid readers = online edition readers who also read the print edition.

An important issue surrounding the relationship between online and print newspapers is the cannibalization effect. Because print newspapers almost always serve as the content provider for their online counterparts, extensive content-sharing raised questions on the negative impact of launching a free online edition on the print edition's subscription base. One preliminary test on the cannibalization effect involves comparing the penetration rate of the same newspaper's online and print editions among the general public, or Web users, to whom both products are readily accessible. Since the Web edition is usually offered for free and the print edition requires a fee, observing the choice readers make between the two related goods provides a hint on the degree of the cannibalization effect. The previous studies conducted in Austin and in Hong Kong found the print edition attained higher penetrations than its online counterpart among the general public and among Web users and inferred that the cannibalization effect was not as strong as expected (Chyi, 2006; Chyi & Lasorsa, 1999, 2002). Based on these findings, this study hypothesizes that, within the local market, among Web users, the print edition would attain a higher penetration rate than the online edition.

$$H2: \frac{\text{Online Edition Readers}}{\text{WU}} < \frac{\text{Print Edition Readers}}{\text{WU}}$$

where WU = the number of web users.

A different test on the cannibalization effect involves comparing the print penetration among the general public to that among the particular newspaper's online readers. Previous research found that print penetration increased among the same newspaper's online readers (Chyi, 2006; Chyi & Lasorsa, 1999, 2002), making it hard to argue that the online offering substantially erodes print readership. Therefore, this study hypothesizes that, within the local market, print penetration would increase among the same newspaper's online readers.

$$H3: \frac{\text{Print Edition Readers}}{\text{WU}} < \frac{\text{Hybrid Readers}}{\text{Online Edition Readers}}$$

Overall, how do a newspaper's online and print readerships relate to each other? Research based on raw correlation analysis found that reading a newspaper's online edition is positively associated with reading the same newspaper's print edition (Chyi, 2006; Chyi & Lasorsa, 1999, 2002). When accounting for consumer heterogeneity (e.g., demographics, employment-related factors, location of residence, etc.), Gentzkow (2007) conducted a partial correlation analysis and reported a weaker (but still significant) positive relationship between online and print newspaper use (p. 725).¹² Therefore, this study hypothesizes that:

H4: A newspaper's online and print readerships are positively related.

Finally, to expand the scope of previous research on the relationship between online and print newspapers, this study seeks to examine the influence of age, which has been identified as a predictor of print and online newspaper use (Burgoon & Burgoon, 1980; De Waal & Schoenbach, 2010; De Waal et al., 2005; Mutter, 2009a; Schoenbach, Lauf, McLeod, & Scheufele, 1999). In other words, this study attempts to explore whether the current relationships hold true across different age groups, addressing the following research question:

RQ2: Would the relationships specified by H1 through H4 hold true across all age groups?

Methods

Secondary data analysis

The data used in this analysis were collected by InsightXplorer (IX), an Internet research and consulting firm, which operates a national panel of more than 177,000 Web users in Taiwan. The IX panel was recruited through major portals, ISPs, content and service sites, e-commerce sites, and other Web sites.¹³ The online survey of 7706 respondents was conducted in June 2009 to examine Web users' response to online and print newspapers. Respondents of the survey were randomly selected from the IX panel and participation was solicited through email. Each panelist was asked to enter his or her account number and password before participating in the survey to ensure the sample included no duplications. The response rate was 4.1%, and the completion rate was 98.6%. Compared with Random Digit Dialing (RDD), online surveys' response rates tend to be low but allow respondents to choose when and where to complete the survey, lower the intrusiveness associated with telephone surveys, eliminate the interviewer bias, and reduce the social desirability effect (Fisher, 2005).

Survey instrument

The survey, which took an average of five minutes to complete, focused on usage of print and online newspapers among Web users in Taiwan. The variables in the original dataset included Internet media usage, newspaper usage, and respondents' demographic information (i.e., age, gender, and occupation).

Newspaper penetration

Newspaper penetration usually is measured by the percentage of households within that geographic area buying or receiving a newspaper (Lacy & Simon, 1993; Picard & Brody, 1997). Since this survey involved both print and online newspapers, to afford comparison, a newspaper's print/online penetration was operationalized as the percentage of respondents who said they read the print/online edition during the past week.

Demand relationship

Given the limitations associated with secondary data analyses, this study determines the demand relationship between a newspaper's online and print products by the correlation coefficient between the use of one product and the use of the other product during the seven-day period, ranging from 1 (positive) to -1 (negative). In the partial correlation analysis, age is controlled for as previous research has indicated that it may affect newspaper consumption.

Results

Comparing the differences between the survey sample of 7706 Web users and Taiwan's Internet population in terms of gender, age, and occupation, we found the sample over-represented people aged 20–34 and under-represented those under 19 and over 40 (Table 1). Therefore, the data were weighted to age, ensuring that the demographic characteristics of the sample closely match the demographic characteristics of the Internet population in Taiwan. Table 1 compares weighted and unweighted sample distributions to population parameters on gender, age, and occupation. The weighted sample ($N = 7707$) is reasonably representative of Taiwan's Internet population. The margin of error is ± 1.1 percentage points at the 95% confidence level.

RQ1a asked about the penetration rate of various print newspapers in Taiwan. Table 2 presents the results by five major categories. General interest newspapers attained the highest penetration rates: *Apple Daily* was the leading newspaper in print, reaching 52.6% of Web users ($N = 7707$) during a seven-day period, followed

Table 1. A comparison of the sample and Taiwan's Internet population.

	Internet population ^a (%)	Sample unweighted (%)	Sample weighted (%)
Gender			
Male	53.7	41.6	43.9
Female	46.3	58.4	56.1
Age			
Under 19	24.7	10.8	24.7
20–24	12.3	24.2	12.3
25–29	15.1	25.3	15.1
30–34	13.1	19.4	13.1
35–39	11.6	10.2	11.6
Over 40	23.3	10.2	23.2
Occupation			
Student	35.0	31.0	34.7
Employed	52.4	47.8	45.6
Other	12.6	21.2	19.7
<i>N</i>		7706	7707

^aSource: Ipsos Taiwan (2010).

Table 2. Penetration of print newspapers.

	Newspaper name	%				
		Among all Web users	Among age 19 years or below	Among age 20–29 years	Among age 30–39 years	Among age 40 years or above
General interest papers	<i>Apple Daily</i>	52.6	52.3	53.9	56.0	47.6
	<i>Liberty Times</i>	39.3	39.9	38.9	39.6	38.6
	<i>United Daily News</i>	24.5	21.5	19.5	24.5	33.7
	<i>China Times</i>	21.2	16.7	18.0	23.4	27.6
Evening papers	<i>United Evening News</i>	6.7	7.2	5.3	5.5	9.2
Business papers	<i>Economic Daily News</i>	6.2	1.6	3.8	8.2	11.6
	<i>Commercial Times</i>	5.1	1.1	3.2	7.4	9.1
Regional papers	<i>Chung Hwa Daily</i>	3.1	4.1	2.9	2.1	3.4
	<i>Commons Daily</i>	0.9	0.5	0.7	0.8	1.7
English papers	<i>China Post</i>	1.1	1.2	1.0	0.8	1.3
	<i>Taiwan News</i>	1.0	1.2	1.0	0.4	1.3
Other newspapers		0.5	0.7	0.4	0.4	0.6
Read no newspapers		21.5	26.3	22.5	19.4	17.6

Note: 'Which of the following newspapers did you read during the past week?'
 N = 7707.

by *The Liberty Times* (39.3%), *The United Daily News* (24.5%), and *The China Times* (21.2%). *The United Evening News*, the only evening newspaper in the market, reached 6.7% of Web users. Some 21.5% of the respondents reported reading no newspapers at all during the past week.

RQ1b asked about the penetration rate for various online newspapers in Taiwan. Table 3 presents the results. Most respondents reported visiting a news site during the past week: only 9.4% did not. The most visited newspaper sites were *The United Daily News* (17.7%), *Apple Daily* (13.9%), *The China Times* (11.5%), and *The Liberty Times* (8.0%). The top 4 newspaper sites were operated by the top 4 newspapers in print, but with different rank-orders.

To place the market share of these newspapers sites in context, Table 3 also presents the penetration rate of major portal news sites in Taiwan. Outperforming all the

Table 3. Penetration of online news services.

		%				
	Media name (URL)	Among all Web users	Among age 19 years or below	Among age 20–29 years	Among age 30–39 years	Among age 40 years or above
Newspaper sites	United Daily News (udn.com)	17.7	9.2	13.7	22.7	25.9
	Apple Daily (tw.nextmedia.com)	13.9	11.2	12.2	16.0	16.3
	China Times (news.chinatimes.com)	11.5	4.0	7.7	14.9	20.3
	Liberty Times (libertytimes.com.tw)	8.0	7.2	6.6	7.5	11.0
	Epoch Times (epochtimes.com)	2.2	1.4	2.5	1.9	2.8
	News portals/ aggregators	Yahoo! Kimo News (tw.news.yahoo.com)	77.8	79.8	83.7	79.8
MSN News (news.msn.com.tw)		15.7	10.8	17.2	19.1	15.7
PChome News (news.pchome.com.tw)		10.0	4.9	7.2	14.3	14.3
Google News (news.google.com.tw)		9.4	7.8	8.7	8.9	12.4
NOW News (nownews.com)		8.2	4.4	7.0	10.2	11.2
Yam News (n.yam.com)		7.7	8.5	6.1	6.7	9.6
HiNet News (times.hinet.net)		7.0	4.7	4.6	7.4	11.7
Sina News (news.sina.com.tw)		2.9	2.8	2.9	2.7	3.2
Other news sites		0.3	0.2	0.3	0.5	0.1
Visited no news sites	9.4	12.8	6.8	6.4	11.7	

Note: 'Which of the following news sites did you browse during the past week?'
N = 7707.

newspaper sites, Yahoo! Kimo News is the dominant online news service in Taiwan, reaching 77.8% of respondents during the previous week. Since Yahoo! Kimo is the No. 1 search engine/portal in Taiwan, with a reach of 97.34% (equivalent to 12,381,740 unique visitors a year) in 2009 (Luo, Chen, & Li, 2010),¹⁴ the popularity of its news service may be partly attributed to the success of the portal itself.

Yet, print and online readerships are not mutually exclusive. Figure 1 illustrates three mutually exclusive reader groups for each of the four newspapers: (1) print-only, (2) hybrid, and (3) online-only. Results showed that *Apple Daily* was the leading

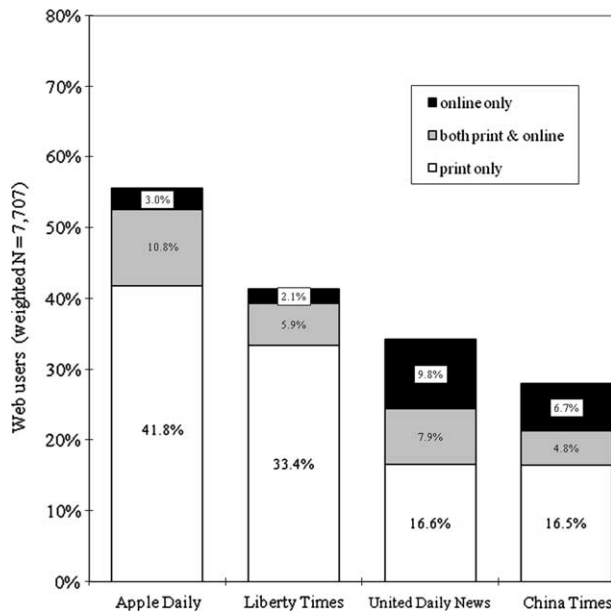


Figure 1. Print-only, hybrid, and online-only readers.

newspaper overall and in print, but not online. In contrast, *The United Daily News* attained the highest online penetration rate but its print penetration was far behind the top two newspapers. Such discrepancies seem to reflect different newspapers' portfolio management strategy, the implications of which will be discussed later.

H1 hypothesized that the majority of the *leading* newspaper's online readers residing within the local market also read the same newspaper's print edition. Results showed that 78.0% for *Apple Daily's* online readers residing in Taiwan read its print edition during the same week. Therefore, H1 is supported. This also holds true for *The Liberty Times* (73.8%), the second most-circulated print newspaper in Taiwan. For *The United Daily News* and *The China Times*, the figures are 44.7% and 41.5%, respectively. Therefore, H1 applies to not just one but two leading newspapers in this market.

Table 4. Online and print penetrations among Web users.

Newspaper	Penetration of the online edition among Web users (%)	Penetration of the print edition among Web users (%)
<i>Apple Daily</i>	13.9	52.6*
<i>Liberty Times</i>	8.0	39.3*
<i>United Daily News</i>	17.7	24.5*
<i>China Times</i>	11.5	21.2*

$N = 7707$.

* $p < .001$.

H2 hypothesized that the print edition would attain a higher penetration rate among Web users. Table 4 compares the penetration rate of the Top 4 papers in online and print formats, among Web users, who have access to both online and print editions of the newspaper. Results showed that the print edition attains significantly higher penetrations than the same paper's online counterpart across each of the top 4 newspapers in the Taiwan market. The online edition of *Apple Daily* reached 13.9% of Web users, while its print edition reached 52.6% of Web users during the same week ($\chi^2 = 2603.3$, $df = 1$, $p < .001$). Such a relationship also holds true for *The Liberty Times* (online = 8.0%, print = 39.3%, $\chi^2 = 2091.6$, $df = 1$, $p < .001$), *The United Daily News* (online = 17.7%, print = 24.5%, $\chi^2 = 109.1$, $df = 1$, $p < .001$), and *The China Times* (online = 11.5%, print = 21.2%, $\chi^2 = 268.3$, $df = 1$, $p < .001$). H2 is supported.

H3 hypothesized that print penetration would increase among that same newspaper's online readers. Table 5 shows that print penetration increases significantly among their own online readers: from 52.6% to 78.0% for *Apple Daily* ($\chi^2 = 245.4$, $df = 1$, $p < .001$), from 39.3% to 73.8% for *The Liberty Times* ($\chi^2 = 279.3$, $df = 1$, $p < .001$), from 24.5% to 44.7% for *The United Daily News* ($\chi^2 = 237.0$, $df = 1$, $p < .001$), and from 21.2% to 41.5% for *The China Times* ($\chi^2 = 182.6$, $df = 1$, $p < .001$). Compared with general Web users, the newspaper's online readers are more likely to read that newspaper in print. Therefore, H3 also is supported.

H4 hypothesized that a newspaper's online and print readerships are positively related to each other. Correlation analysis examined the relationship between the four newspapers' online and print readerships among Web users. The *phi* coefficient (a statistic appropriate for measuring the strength of association of two nominal variables) ranges from .179 to .218: .204 for *Apple Daily*, .208 for *The Liberty Times*, .218 for *The United Daily News*, and .179 for *The China Times* ($p < .001$ for all). In other words, print readers were more likely to read the same newspaper's online edition and vice versa: H4 is supported.

Finally, RQ2 asked whether the relationships specified by H1 through H4 would hold true across all age groups. To address this research question, H1–3 were re-examined among four different age groups (under 19, 20–29, 30–39, and 40+). Results showed that all three hypotheses are supported across all age groups. In addition, H4 was re-examined by a partial correlation analysis, controlling for age. Results showed that all four newspapers' online and print readerships still are positively related to each other, after controlling for age (the correlation coefficient

Table 5. Print penetration among Web users and readers of the online edition.

Newspaper	Print penetration (%)	
	Among Web users ($N = 7707$)	Among readers of its online edition (n^a)
<i>Apple Daily</i>	52.6	78.0* (1067)
<i>Liberty Times</i>	39.3	73.8* (615)
<i>United Daily News</i>	24.5	44.7* (1361)
<i>China Times</i>	21.2	41.5* (884)

^aNumber of users of its online edition.

* $p < .001$.

remains positive across the board): .206 for *Apple Daily*, .209 for *The Liberty Times*, .203 for *The United Daily News*, and .162 for *The China Times* ($p < .001$ for all). Therefore, all four hypotheses hold true, regardless of respondents' age.

Discussion

The universal pattern

First and foremost, this study has unmistakably uncovered and theorized a universal pattern regarding the demand relationship between the online and print products under one newspaper brand, which states, within a geographic market:

$$\frac{\text{Online Edition Readers}}{\text{GP or WU}} < \frac{\text{Print Edition Readers}}{\text{GP or WU}} < \frac{\text{Hybrid Readers}}{\text{Online Edition Readers}}$$

where GP = the number of general public.

In addition, a newspaper's print and online readership are positively related to each other. Taken together, these findings compose a universal pattern because they can be found in at least three different geographic markets and among different age groups.

Such findings yield two counter-intuitive conclusions. The first one involves the hybrid use of the old media and the new among newspaper readers: that is, despite extensive content-sharing, the print product, especially that of the leading newspaper, is still being consumed by a large number of readers of the online edition. This occurred whether the research site was in Taiwan, Hong Kong, or Austin: 78% for *Apple Daily* in Taiwan, 70% for *The Oriental Daily* in Hong Kong (Chyi, 2006), as well as more than 80% for *The American-Statesman* in Austin (Chyi & Lasorsa, 1999, 2002). Second, despite extensive content-sharing, many more Web users opt for the print edition, which they have to pay for, as opposed to the online edition, which is offered at the price of zero. Both conclusions posit important theoretical as well as managerial challenges regarding newspaper companies' cross-media product offerings under one brand.

The first conclusion (i.e., simultaneous use of both products) seems like a positive sign for newspaper companies because they hoped their multiple product offerings would go hand in hand.¹⁵ But the fact that two products based on similar content form a matching as opposed to a crowding-out relationship is counter-intuitive, requiring a second thought. Chyi's Hong Kong study (2006) provided some hints in this regard. An open-ended question asked hybrid users ($n = 185$) why they read both editions within the same week. The most common reasons were: 'I read the online edition when I don't buy the print edition' (18%); 'I read different editions in different places' (12%); 'I read different editions for different purposes' (11%); 'When I have time, I read both editions; when I'm busy, I read one edition only' (9%); 'I check online news when I'm online' (7%); 'Because online and print editions provide different content' (7%). Reading the online edition in certain locations, for different purposes, or for different content, seems to confirm a matching relationship. However, reading the online edition while not buying the print newspaper seems to suggest the contrary, although these users did use both editions during the same week. Often, such subtleties characterizing the demand relationship between online and print newspapers are ignored by time-displacement or cross-price

elasticity studies. Researchers should scrutinize the demand relationship and avoid making sweeping generalizations without properly defining what constitutes complementarity.

The second conclusion, that more people would prefer to consume the print edition over free Web offerings, is also intriguing. In the recent discussion about the future of newspapers, the print format is often described as dying (Chyi, Lewis, & Zheng, 2010; International Journalists' Network, 2009) while many believe the future is online. Yet, empirical evidence produced by previous studies and this one has suggested that the print edition remained competitive and unthreatened, *in relation* to the same newspaper's online counterpart (Chyi, 2006; Chyi & Lasorsa, 2002; Gentzkow, 2007). Such findings confirm Picard's assertion that the print edition is the 'cash cow', i.e., products that have low growth but high market shares which is funding 'problem child' ventures such as online and mobile (Picard, 2003, 2005). Regarding why this is the case, research has indicated that users perceive the online edition as a convenient but less likable, less satisfying, less enjoyable, and less useful alternative to the print newspaper (Chyi & Chang, 2009; De Waal et al., 2005; Online Publishers Association, 2008). Chyi and Yang (2009) argued that online and print newspapers co-exist as a combination of an inferior good and a normal good.¹⁶ In other words, the 'container' is not neutral: it is the medium rather than the content that determines readers' response to the newspaper (Thurman & Myllylahti, 2009). From the portfolio management perspective, ill-based conceptions often lead to bad decisions, e.g., killing or deprioritizing existing products that generate most of the revenue.¹⁷ Since portfolio expansion in publishing firms does not always improve company performance (van Kranenburg, 2005), newspapers should evaluate their product portfolio with reality-based data (how readers value their cross-media product offerings) to develop proper portfolio management strategies.

Besides the online-print product relationship, this study has identified another noteworthy pattern: one that illustrates the competition dynamics between portals and newspaper sites. Portals outperformed newspaper sites as the dominating online news source. In Taiwan, Yahoo! Kimo News, as the most visited news site, reached nearly 80% of Web users, while the most popular newspaper site (udn.com) attained only 17.7% of the same population. In the US, the most frequently visited news sites were Yahoo! (28%), MSN/Microsoft (19%), CNN.com (17%), Google (11%), MSNBC/NBC (10%), and AOL (8%), none of which was affiliated with a newspaper. Trailing behind the portal sites and TV sites were NYTimes.com and local news sites: each reaching 4% of online news users (Pew Research Center for the People & the Press, 2008). At the local level, newspaper sites also trailed Yahoo! News, MSNBC, and AOL News as a source for online news in most local markets (Chyi & Lewis, 2009). The dominance of portal news sites seen in the US and in Taiwan may explain why the economic viability of newspaper sites remains questionable.

Competition dynamics of Taiwan's newspaper market

Other than the universal pattern, this study has also captured the competition dynamics specific to Taiwan's newspaper market. One salient phenomenon is that *Apple Daily* and *The Liberty Times* enjoyed the highest penetrations in print but their online penetrations were not nearly as impressive. In contrast, *The United Daily News* and *China Times* have more online-only readers than the former two

newspapers but their print penetrations were relatively low. A plausible explanation lies in their portfolio management strategy. *Apple Daily*, as the newest player in Taiwan's newspaper market, has deliberately focused on its print operation. Gordon MC Tsang, *Apple Daily's* General Manager, indicates that his paper has been doing so well in the general-interest 'dinosaur' business where it appeals to readers from all walks of life that they can afford to ignore the Internet because online advertising effectiveness is problematic anyway (Tsang, 2009, p. 442). In contrast, *The United Daily News* and its long-time rival, *The China Times*, have been investing heavily in their Web ventures since the 1990s. Also, perhaps because of their long-term dominance of Taiwan's newspaper market before the 1990s, they perform much better among older readers but have obvious difficulties attaining younger ones (see Tables 1 and 2). When examining these two legacy papers' online and print readership data, one may wonder: where have their print readers gone? One cannot rule out the possibility that the cannibalization effect may have kicked in over time, meaning a well-developed online edition may have caused the migration of some print readers to the online-only category. Future studies should investigate the long-term cannibalization effect with longitudinal data (De Waal & Schoenbach, 2010).

Limitations of the study

This study utilized secondary data collected through a cross-sectional Web-based survey with limitations inherent in this type of methodology. First, because the survey was conducted online, those without Internet access could not participate in the survey. Second, because this study is based on secondary data, the researchers had no control over the design of the questionnaire. Fortunately, the questions were almost completely comparable with those asked in former studies and thus allowed for the re-examination of the online-print product relationship in this particular media market. In addition, the response rate was low, which, however, is not uncommon among panel-based online surveys conducted by market research firms. To improve the representativeness of the sample, the researchers weighted the data. Finally, it is recognized that the demand relationship between any two products is dynamic, and the media environment has been evolving rapidly. Considering the possibility that the cannibalization effect might be more salient in the long run (De Waal & Schoenbach, 2010), longitudinal analysis would be a more effective approach in that regard.

Taken together, this study has clarified and theorized the demand relationship of online and print products under one newspaper brand with data collected in Taiwan. The cross-national examination has uncovered a universal pattern, contributing to a better understanding of the oft-misunderstood print-online relationship from a media management and economics perspective.

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Notes

1. The cannibalization effect refers to the negative impact of launching a free online edition on the print edition's subscription base.
2. The 'free vs. fee' debate focuses on whether newspaper publishers should charge for access to their online content.
3. Economic theory defines the relationship between two related goods by cross-price elasticity of demand, i.e., the percentage change in quantity demanded for one good divided by the percentage change in the price of a related good. When cross-price elasticity is positive, the two products are substitutes; when cross-price elasticity is negative, the two products are complements (Hoskins, McFadyen, & Finn, 2004).
4. This is especially true among studies based on US national survey data. With more than 1400 daily newspapers circulated in the US, it is methodologically difficult to name specific local newspapers in a national survey.
5. They are: age, gender, education, income, employment-related variables, political orientation, Internet access at work, use of Internet for work-related or education-related tasks, high-speed Internet access at home, etc.
6. For example, the simultaneous use of the same newspapers' online and print editions served as a rationale for the 'online news is an inferior good' hypothesis (Chyi & Yang, 2009).
7. Taiwan's freedom of the press ranked No. 1 in Asia during 2007–2008 and No. 2 (next to Japan) in 2009.
8. *Da Cheng Daily* and *Min Sheng Daily* exited the newspaper market in February and November 2006, respectively.
9. i.e., *The Austin American-Statesman*.
10. *The Wall Street Journal* (55%), *USA Today* (42%), *The New York Times* (41%), *Dallas Morning News* (64%), and *Houston Chronicle* (46%).
11. *The Oriental Daily* (70%), *Apple Daily* (63%), *Ming Pao* (56%), and *The Sun* (52%).
12. Gentzkow (2007) went further and developed a full model that included as many as 15 variables and concluded that online and print papers are substitutes, characterized by a demand relationship that is non-negligible but small. However, many of the variables are not available in our current data set.
13. Altogether, these sites reach 99% of Web users in Taiwan.
14. In 2000, Yahoo! acquired Kimo (www.kimo.com.tw), the most frequently visited Web portal in Taiwan at that time (Yahoo! Media Relations, 2000), and has since become the No. 1 portal.
15. But if the vast majority of online readers also read the print newspaper, that means the online edition duplicates the print readership without reaching non-print readers.
16. Plausible explanations include the less-than-satisfactory reading experience associated with reading text online, the cluttered design often seen on news sites, or simply the fact that online news is free (for details, see Chyi & Yang, 2009).
17. Currently, US newspapers' online operations account for less than 10% of total newspaper ad revenue (Karp, 2007; Newspaper Association of America, 2007, p. 34; Seelye, 2007).

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References

- Albarran, A.B. (2010a). *The transformation of the media and communication industries*. Media markets monographs. Pamplona, Spain: University of Navarra.
- Albarran, A.B. (2010b). *The media economy*. Hoboken: Routledge.
- Audit Bureau of Circulations. (2008, October 18). ABC, Scarborough Research and NAA unveil details of new Audience-FAX initiative integrating circulation, readership and online measurements. Retrieved from <http://www.accessabc.com/press/press071707.htm>
- Borrell & Associates. (2001, March 3). The free vs. paid debate: Newspapers must decide between short-term ROI and long-term goals. Retrieved from <http://www.borrellassociates.com/reports/industrypapers/online-archives/112-the-free-vs-paid-debate>
- Brain Magazine. (2007). 2007 media guide. *Brain Magazine*, 53–57.
- Burgoon, J.K., & Burgoon, M. (1980). Predictors of newspaper readership. *Journalism Quarterly*, 57(winter), 589–596.
- Chyi, H.I. (2006). Re-examining the market relation between online and print newspapers: The case of Hong Kong. In X. Li (Ed.), *Internet newspapers* (pp. 193–205). Mahwah, NJ: Lawrence Erlbaum.
- Chyi, H.I., & Chang, H. (2009). Examining the use of and preference for online news in the context of intermedia competition. In L. Leung, A. Fung, & P.S. Lee (Eds.), *Embedding into our lives: New opportunities and challenges of the Internet* (pp. 101–123). Hong Kong: Chinese University Press.
- Chyi, H.I., & Lasorsa, D.L. (1999). Access, use and preference for online newspapers. *Newspaper Research Journal*, 20, 2–13.
- Chyi, H.I., & Lasorsa, D.L. (2002). An explorative study on the market relation between online and print newspapers. *Journal of Media Economics*, 15(2), 91–106.
- Chyi, H.I., & Lewis, S.C. (2009). Use of online newspaper sites lags behind print editions. *Newspaper Research Journal*, 30(4), 38–53.
- Chyi, H.I., Lewis, S.C., & Zheng, N. (2010). *Writing their own obituaries? Examining how newspapers covered the newspaper crisis from the media economics perspective*. Presented at the Annual Convention of the Association for Education in Journalism and Mass Communication, Denver, CO. Retrieved from http://www.allacademic.com/meta/p_mla_apa_research_citation/4/3/4/6/5/p434656_index.html
- Chyi, H.I., & Yang, M.J. (2009). Is online news an inferior good? Examining the economic nature of online news among users. *Journalism and Mass Communication Quarterly*, 86(3), 594–612.
- Chyi, H.I., Yang, M.J., Lewis, S.C., & Zheng, N. (2010). Use of and satisfaction with newspaper sites in the local market: Exploring differences between hybrid and online-only users. *Journalism and Mass Communication Quarterly*, 87(1), 62–83.
- Clifford, S. (2008, October 12). Newspapers' Web revenue is stalling. *The New York Times*, B1.
- Cooper, R.G., Edgett, S.J., & Kleinschmidt, E.J. (2001). *Portfolio management for new products* (2nd ed.). Cambridge, MA: Perseus Publ.
- De Waal, E., & Schoenbach, K. (2010). News sites' position in the mediascape: Uses, evaluations and media displacement effects over time. *New Media and Society*, 12(3), 477–496.
- De Waal, E., Schoenbach, K., & Lauf, E. (2005). Online newspapers: A substitute or complement for print newspapers and other information channels? *Communications*, 30(January), 55–72.
- Dimmick, J., Chen, Y., & Li, Z. (2004). Competition between the Internet and traditional news media: The gratification-opportunities niche dimension. *Journal of Media Economics*, 17, 19–33.
- Dimmick, J.W. (2003). *Media competition and coexistence: The theory of the niche*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Dutta-Bergman, M.J. (2004). Complementarity in consumption of online news types across traditional and new media. *Journal of Broadcasting and Electronic Media*, 48, 41–60.
- Fisher, L. (2005, July). Random sampling versus panel-based research. *MRA Alert Magazine*. Retrieved from <http://www.synovate.com/research-services/online-panel-research/pdf/Synovate-Random%20Sampling%20versus%20Panel-Based%20Research-Article56.pdf>

- Freedom House. (2009). Map of press freedom, 2009 edition. Retrieved from <http://www.freedomhouse.org/template.cfm?page=251&year=2009>
- Gentzkow, M. (2007). Valuing new goods in a model with complementarities: Online newspapers. *American Economic Review*, 97(3), 713–744.
- Ho, S.J., & Sun, M.P. (2008). Heterogeneous multi-product competition in Taiwan's newspaper industry. *Asian Journal of Communication*, 18(2), 102–116.
- Hoskins, C., McFadyen, S., & Finn, A. (2004). *Media economics: Applying economics to new and traditional media*. Thousand Oaks, CA: Sage.
- InsightXplorer. (2010, January 10). Access rating online Internet audience measurements. Retrieved from http://www.insightxplorer.com/en/product_aro.html
- International Journalists' Network. (2009, May 11). Should journalists be writing journalism's obituary? Retrieved from http://www.ijnet.org/ijnet/discussions/should_journalists_be_writing_journalism_s_obituary
- Jarvis, J. (2007, September 20). Times deselected. *BuzzMachine*. Retrieved from <http://www.buzzmachine.com/2007/09/17/times-deselected/>
- Karp, S. (2007). Newspaper online vs. print ad revenue: The 10% problem. *Publishing 2.0*. Retrieved from <http://publishing2.com/2007/07/17/newspaper-online-vs-print-ad-revenue-the-10-problem/>
- Lacy, S., & Simon, T.F. (1993). *The economics and regulation of United States newspapers*. Norwood, NJ: Ablex.
- Lee, P.S., & Leung, L. (2008). Assessing the displacement effects of the Internet. *Telematics and Informatics*, 25(3), 145–155.
- Lee, Y.C. (2007). Effects of market competition on Taiwan newspaper diversity. *Journal of Media Economics*, 20(2), 139–156.
- Luo, Z., Chen, Y., & Li, S. (2010). 2010 Web 100. *Business Next*, 190, 83–89.
- Mings, S.M., & White, P.B. (2000). Profiting from online news: The search for viable business models. In B. Kahin & H.R. Varian (Eds.), *Internet publishing and beyond: The economics of digital information and intellectual property* (pp. 62–96). Cambridge, MA: MIT Press.
- Mutter, A.D. (2009a, February 20). Newspaper-site traffic: Weaker than it looks. Retrieved from <http://newsosaur.blogspot.com/2009/02/newspaper-site-traffic-weaker-than-it.html>
- Mutter, A.D. (2009b, April 13). Newspaper Web sales lag by every measure. *Reflections of a Newsosaur*. Retrieved from <http://newsosaur.blogspot.com/2009/04/newspaper-web-sales-lag-by-every.html>
- Newspaper Association of America. (2007). Newspapers' online operations: Performance report 2006. *Newspaper Association of America*. Retrieved from http://www.naa.org/docs/Digital-Media/200710_NP_Online_Per_Present.pdf
- Nguyen, A. (2010). Harnessing the potential of online news: Suggestions from a study on the relationship between online news advantages and its post-adoption consequences. *Journalism*, 11(2), 223–241.
- Online Publishers Association. (2008, November 30). Multi-channel media brands: Attitudinal and usage study. Retrieved from http://www.online-publishers.org/media/140_W_opa_multichannel_media_brand_study_nov03.pdf
- Pew Research Center for the People & the Press. (2008, November 19). Key news audiences now blend online and traditional sources: Audience segments in a changing news environment. Retrieved from <http://people-press.org/reports/pdf/444.pdf>
- Picard, R.G. (2003). Cash cows or entrecôte: Publishing companies and disruptive technologies. *Trends in Communication*, 11(2), 127–136.
- Picard, R.G. (2005). The nature of media product portfolios. In R.G. Picard (Ed.), *Media product portfolios: Issues in management of multiple products and services* (pp. 1–22). Hoboken: Routledge.
- Picard, R.G., & Brody, J.H. (1997). *The newspaper publishing industry*. Boston: Allyn & Bacon.
- Project for Excellence in Journalism. (2010). The state of the news media 2010. Retrieved from http://www.stateofthemediamedia.org/2010/online_economic_attitudes.php
- Riffe, D., Lacy, S., & Varouhakis, M. (2008). Media system dependency theory and using the Internet for in-depth, specialized information. *Web Journal of Mass Communication Research*, 11(January 2008).

- Schoenbach, K., Lauf, E., McLeod, J.M., & Scheufele, D.A. (1999). Distinction and integration: Sociodemographic determinants of newspaper reading in the USA and Germany, 1974–96. *European Journal of Communication*, 14(2), 225–239.
- Seelye, K.Q. (2007, March 26). Drop in ad revenue raises tough question for newspapers. *The New York Times*, p. 2.
- Stepp, C.S. (2008). Maybe it is time to panic. *American Journalism Review*, 2008 (April/May). Retrieved from <http://www.ajr.org/Article.asp?id=4491>
- Taiwan Network Information Center. (2009). Internet usage in Taiwan: A summary report of the January survey of 2009. Retrieved from <http://www.twnic.net.tw/download/200307/0901b.pdf>
- Thurman, N., & Myllylahti, M. (2009). Taking the paper out of news. *Journalism Studies*, 10(1), 1–18.
- Tsang, G.M.C. (2009). *The taste of Apple: The addictive marketing, management, and creativity approach*. Taipei, Taiwan: Shang Zhou Publishing.
- van Kranenburg, H. (2005). Product portfolios, diversification, and sustainability of media firms. In R.G. Picard (Ed.), *Media product portfolios: Issues in management of multiple products and services* (pp. 23–40). Hoboken: Routledge.
- Vishwanath, A. (2008). The 360° news experience: Audience connections with the ubiquitous news organization. *Journalism and Mass Communication Quarterly*, 85(spring), 7–22.
- Wang, G., & Lo, V. (2000). Taiwan. In S.A. Gunaratne (Ed.), *Handbook of the media in Asia* (pp. 661–681). Thousand Oaks, CA: Sage.
- Yahoo! Media Relations. (2000). Yahoo! to Acquire Kimo. Retrieved from <http://docs.yahoo.com/docs/pr/release643.html>