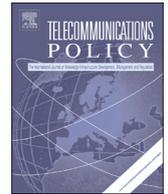




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The stalemate of cable digital switchover: A study of competition effects and deregulation



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ABSTRACT

This paper addresses the phenomenon of delayed cable digitization in Taiwan and reports the results of a longitudinal analysis, determining that (1) inter-platform competition, primarily from internet protocol television (IPTV), generates a strong and positive impact on the digitization of cable service after it acquires numerous customers; (2) the installed cable base induces economies of scale that increase its digital penetration; (3) the overbuild of the equivalent-size rivalry can increase digital adoption, whereas unequal-sized competition might reversely decrease it; and (4) the monthly flat fee charged to customers does not influence digital adoption. In addition, this paper presents a discussion on the policy instruments derived from econometric results. Although repealing the horizontal integration cap in the cable TV industry could generate economies of scale, doing so may encourage monopolization over several franchises. The efficacy of intra-platform competition is reserved only for certain cases. Combining the results of these analyses reveals that inter-platform competition most effectively stimulates cable operators' digital conversion. Hence, regulators should create a level playing field among various TV platforms, such as equal programming access and open standards, to ensure a high degree of cable digitization

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1. Cable TV facing digital convergence

As digital convergence has become a distinct phenomenon, TV platform innovation has emerged as a cutting-edge business. According to PricewaterhouseCoopers, video services constitute the leading segment of entertainment and media industries worldwide, contributing US\$229.45 billion to the industries, equivalent to 14% of the market value ([Industry Bureau, 2008, p. 29](#)). In particular, the potential monetary value of video services in all 16 Asian-Pacific territories is estimated at US\$45 billion ([MPA, 2012](#)). Currently, TV platform operators compete with one another to provide audiences with various video services. For instance, terrestrial broadcasting has converted to digital transmission to regain the audiences it has lost to cable and satellite counterparts. Although cable operators provide customers with the service of improved quality against competition from direct satellite broadcasting (DSB) or direct to home (DTH), internet protocol television (IPTV) has recently emerged and has already penetrated the pay-TV market.¹ Thus, offering customers digital services seems a panacea for TV operators in preserving their market share and profit margins. [Table 1](#) displays the degree to which pay-TV services are provided digitally in the Asian-Pacific region: 4 of 16 countries have 50% penetration of digital pay-TV service; five countries, Hong Kong, Singapore, New Zealand, Malaysia, and Australia, have 100% of their pay-TV services offered digitally. Media Partners Asia (MPA) predicts that digital

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¹ Pay-TV services include cable, DSB, and IPTV.

Table 1

The pay-TV services in the Asian-Pacific region, 2011.

Source: MPA (2012).

| Country | Penetration rate of pay-TV service ^a (%) | Penetration rate of digital pay-TV service (%) | Penetration rate of cable service (%) | Penetration rate of digital cable service (%) |
|--------------------|---|--|---------------------------------------|---|
| <i>South Korea</i> | 100 | 43 | 80 | 23 |
| <i>Taiwan</i> | 90 | 14 | 81 | 6 |
| <i>Hong Kong</i> | 83 | 83 | 42 | 42 |
| <i>India</i> | 79 | 19 | 63 | 3 |
| <i>Singapore</i> | 66 | 66 | 48 | 48 |
| <i>New Zealand</i> | 53 | 53 | 2 | 2 |
| <i>Malaysia</i> | 51 | 51 | 0 | 0 |
| <i>Pakistan</i> | 47 | 5 | 47 | 5 |
| <i>China</i> | 46 | 26 | 46 | 26 |
| <i>Australia</i> | 32 | 32 | 9 | 9 |
| <i>Japan</i> | 28 | 25 | 15 | 12 |
| <i>Vietnam</i> | 17 | 5 | 13 | 1 |
| <i>Thailand</i> | 13 | 7 | 7 | 2 |
| <i>Philippines</i> | 10 | 5 | 8 | 3 |
| <i>Sri Lanka</i> | 9 | 7 | 3 | 0.4 |
| <i>Indonesia</i> | 5 | 5 | 1 | 0.5 |

Note

^a Subscription rate (%)=the number of the pay-TV subscribers/the total number of TV households.

pay-TV subscription will grow rapidly in Northeast Asia, one of the fastest growing areas in the world, reaching 60% in 2020 from 23% in 2011 (MPA, 2012).

As mentioned, TV digitization refers to many connotations because of its various platforms, which include terrestrial broadcasting, cable, satellite, and IPTV. We instead delimit the scope of this paper to the digitization of cable TV. Unlike European and North American counterparts, many Asian-Pacific countries have cable TV as the default video platform (Table 1).² The issue of cable TV digitization could not be ignored in these countries, because the path and speed of digitization mainly determine the outcome of TV appearances in the future. As shown in Table 1, countries such as India, South Korea, and Taiwan have dawdled behind the wave of digital TV migration. Because these countries have enormous installed bases of analog cable, this lag, unsurprisingly, has been caused by cable rather than other platforms. The experiences of these countries suggest that cable operators might have disincentives to migrate to digital technologies once analog cable is firmly established. The phenomenon of a country enjoying an excessively high penetration rate of cable service that is comparatively sluggish in digital adoption is worthy of academic inquiry.

This paper reports the findings of examining the underpinnings and barricades of cable digitization and proposes policy remedies to expand digital cable services. Previous studies have investigated cable growth from the competition perspective. Some have argued for intra-modal competition from cable overbuilds, whereas others have contended that the entry of DSB, the inter-modal competition, likely improves cable service quality by increasing programming content. Hence, both competition effects are evaluated. Furthermore, the cable industry is highly regulated, notably in franchise zoning and tariff setting. Broadening the franchise size that entails economies of scale is often cited as the main motive to invest in innovation. Tariff deregulation, likewise, allows firms adequate revenues directed to infrastructure buildup. The influences of cable viewership and price are therefore included in investigating cable's digital switchover.

An econometric study on Taiwan's pay-TV industry is conducted to validate the hypotheses. Cable has replaced terrestrial broadcasting to become the primary TV platform in Taiwan since 1999, despite only 10% of its subscribers, approximately 571,000 households in 2011, receiving the signal digitally (Chiang, 2011). This figure of digital subscription is one of the lowest among the Asian-Pacific countries (MPA, 2009, p. 19). Taiwan's case offers a unique observation of the contrast of the high penetration rate of cable services exhibiting sluggish digital subscription. The results of this study emphasize the underpinnings of cable TV's low digitization, and thus, the policies that promote cable digitization.

The remainder of this paper is organized as follows: Section 2 introduces Taiwan's pay-TV industry and the status of cable digitization and presents a discussion on the amendments of Cable TV Act proposed by the regulatory authority of Taiwan, the National Communication Commission (NCC), in response to digital deadlocks. Section 3 addresses the influences of competition, franchises, and tariff regulation on cable digitization from both theoretical and empirical perspectives; the section also reviews two recent studies on Taiwan's cable industry. Section 4 formulates the hypotheses and introduces the data and estimation model of the econometric analysis. Section 5 presents the results obtained from running the regressions, identifies the policy instruments derived from digitization factors, and presents the results of evaluating the policy efficacy of the law amendments that the NCC proposed. Finally, Section 6 concludes the paper. The limitation of this study and the possibilities for future research are also discussed.

² Most Western European countries have terrestrial broadcasting and DBS TV competing for the major video platform. The Netherlands is the only country in which cable TV dominates, whereas in the United States, cable TV primarily competes against DBS for customers.

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