



From Sluggish to Brisk: An analysis of Taiwan's cable TV digitalization policy



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ABSTRACT

This paper analyzes the reasons for the slow implementation of the digitalization policy at the beginning and explains the negative implications of the market situation in 2012 when consumer sovereignty was not promoted, the user-pay concept was not implemented, and the channel market was not fully developed. Then, this paper reports on the rapid growth of the proportion of digital cable TV in Taiwan since 2012 based on the effectiveness of the digitalization policy, changes in the external environmental, and the slack industry (market) structure. Third and finally, we conduct an empirical analysis to verify the accuracy of the relevant inferences as well as the effectiveness of policies promoted by the central authority, the National Communications Commission (NCC).

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1. Introduction

Digitalization has become the prerequisite for the convergence of communications – the merging of telecommunications and broadcasting in the modern world. An overview of digitalization's development in Taiwan shows that the domestic telecommunications industry has long been digitized and, as such, is poised for convergence. The broadcasting sector, on the other hand, was in the relatively early stages of digitalization despite several years of developmental efforts before 2011 (Chiang, 2011). Plans for digital audio radio (DAR) have not yet even been finalized. With regards to terrestrial TV, the switchover was completed on July 1, 2012, but plans towards the comprehensive digitalization of cable TV are still taking place. With a penetration rate of over 80%, cable TV is the largest communications platform in Taiwan, and thus actual communications convergence in Taiwan depends on the full digitalization of cable TV (Executive Yuan, 2010).

Although the Taiwan government started the cable TV digital switchover from 2003, as of December 2012 the rate still stood at a lowly 21.03%. However, as shown in Table 1, the digitalization of cable TV suddenly sped up in Q3 2012. In March 2014 the ratio of digital cable TV in Taiwan reached 52.33% and hit 79% by the end of 2014.¹ The digitalization of cable TV is an irreversible process. Once more than 50% of subscribers have complete digitalization, system operators will hasten their progress toward comprehensive digitalization based on the consideration of operating expenses.

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¹ According to the National Communications Commission (NCC) press release announced on January 6, 2015, Taiwan has increased its progress in cable TV digitalization since Q3 2012; at the end of 2012, the proportion of subscribers with cable TV set-top boxes (STB) was 21.03%; it then reached 45.64% at the end of 2013 and hit 79% by the end of 2014 (National Communications Commission, 2014a, 2015a).

Table 1Number of different pay-TV subscriptions in Taiwan unit: 1000 s. Source: NCC website (<http://www.ncc.tw>).

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Analog cable	4463	4566	4690	4752	4629	4767	4724	4703	4491	3940	2710	1054
Digital cable	28	43	52	55	57	118	256	381	571	1049	2275	3948
Cable (total)	4491	4609	4742	4807	4686	4885	4980	5084	5062	4989	4985	5002
DSB	12	13	15	17	18	20	22	25	31	33	40	40
IPTV	0	28	100	249	401	676	698	815	1064	1205	1265	1275
Total	4503	4650	4857	5073	5105	5581	5700	5924	6157	6227	6290	6317

Like most other countries, Taiwan's cable TV system is run by private operators, and the system network is categorized as private assets. Therefore, an enhancement of network technology and transmission quality through digitalization shall be considered as operators' investment of innovations, thus relying on their spontaneous improvements instead of the government's direct support with budgets and subsidies.² What are the incentives for cable TV system operators to spontaneously conduct digitalization?

The purpose of digitalization is to promote the overall value of the system network, and revenue per household will also increase along with the offering of broadband service. While comprehensive cable TV digitalization in Taiwan is just around the corner, interesting questions remain: What are the challenges for Taiwan's cable TV industry in digitalization? What pushed operators to make investments in such a short period to speed up their TV digitalization promotion? These issues are worth a further in-depth discussion.

Numerous studies in the literature have discussed the factors that influence the speed of promoting cable TV digitalization policies. [Adda and Ottaviani \(2005\)](#) mentioned that government policy can influence digitalization. By adopting a microeconomic theoretical model, they analyzed the switchover transition in the U.K. and discovered that the government can influence the progress of digitalization in three ways: first, to control the signal quality and public service broadcasting; second, to intervene in the digital equipment market by offering subsidies; third, to announce the conditions and schedule of the switchover. [CASBAA \(2008\)](#) indicated that tariff regulations may limit operators' ability at providing bundle and package services. This will affect not only operators' revenue and profits, but also their willingness to conduct investment on digitalization.

Based on consumers' point of view, [Gourville \(2005\)](#) pointed out that, instead of comparative advantages, consumers are more sensitive to disadvantages brought by the digital switchover as they are loss-aversers. The quality of substitute services should be higher than the current service in order to compensate the "psychological switching cost of loss aversion" caused by the digital switchover. Also from the consumer aspect, [Hazlett \(2001\)](#) revealed that consumers' lack of interest was the reason that the U.S. saw a slow promotion of the digitalization of terrestrial television a few years ago. [Liu and Chuang \(2013\)](#), on the other hand, analyzed the slow promotion of Taiwan's cable TV digitalization policy at the beginning from the perspective of supply and demand equilibrium in the cable TV market and also explained the policy launched by NCC in 2013 and its expected performance.

[Karilari, Brown, and Abramowitz \(2003\)](#) and [Sung \(2011\)](#) stated that overbuilds (interregional competition within the industry) cause a decrease in tariffs and accelerate the penetration rate. [Karilari et al. \(2003\)](#), [Goolsbee and Pertin \(2004\)](#), [Savage and Wirth \(2005\)](#), and [Sung \(2011\)](#) all noted that, whether to lower the tariff or not, cable TV operators always respond to cross-industry competition from DSB or IPTV by enhancing program quality and the number of channels. Competition also is the main drive of digitalization. [Chou \(2014\)](#) presented that existing cable TV operators make adjustments on program contents and tariffs when they feel threatened by competition. As digitalization brings more channels and better quality, audiences' viewing experiences will also be enhanced, which will help existing operators fight against industry competition or cross-industry competition brought about by IPTV.

By taking Taiwan's cable TV industry status into consideration, [Liu and Chuang \(2013\)](#) adopted Porter's Five Forces Analysis as the fundamental analysis framework, allowing them to evaluate factors affecting digitalization while at the same time taking into account the existing industry structure and future digital convergence. Therefore, we base our paper on the industry structure and policy analysis proposed by [Liu and Chuang \(2013\)](#) to discuss the following.

First, we analyze the reasons for the slow implementation of the digitalization policy at the beginning and explain the negative implications of the market situation in 2012 when consumer sovereignty was not promoted, the user-pay concept was not implemented, and the channel market was not fully developed. Second, we report on the rapid growth of the proportion of digital cable TV in Taiwan since 2012 based on the effectiveness of the digitalization policy, changes in the external environmental, and the slack industry (market) structure. Third and finally, we conduct an empirical analysis to verify the accuracy of the relevant inferences as well as the effectiveness of promoted policies.

² As terrestrial TV networks are granted licenses and designated with a public radio frequency, governments around the world usually offer subsidies or push operators in accordance with regulations to complete digitalization in order to ensure efficient frequency use and to maintain subscribers' benefits. To accelerate the promotion of its cable TV digitalization policy, the Taiwan government started from the conditions of configuration control – that is, to include digitalization equipment as licensing conditions for new applications or renewal in drafted amendments of the relevant cable TV acts. For detailed information, please refer to [Section 3](#).

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