Managerial Perception of the FCC's Role in U.S. Television Digital Conversion

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Abstract

As the final deadline for U.S. television stations to convert to digital televisions approached, this study sought to assess the conversion process from the perspective of television station managers. Specifically, it applied a theoretical model of telecommunications regulation to gauge their assessment of the FCC’s role in the process. Results indicated that managers believed the FCC performed poorly and they preferred free market development of the technology. However, regulation may prove more beneficial in the long term.
Managerial Perception of the FCC’s Role in U.S. Digital Television Conversion

Introduction

In February 2009, less than two weeks before the much-publicized conversion from analog to digital television broadcasting in the U.S., Congress voted to extend the conversion deadline until June 2009 (Stelter, 2009), the third time in 10 years the deadline had been delayed. In pushing for this delay, former Federal Communications Commission (FCC) chairmen William Kennard and Michael Powell argued that the transition was “heading for a train wreck,” which would leave millions of Americans without access to television (“Don’t touch,” 2009).

President Barack Obama said that too many consumers were not ready for the switch and that the government had not done enough to help them (“Obama urges,” 2009). According to Jessell (2009):

> The National Telecommunications and Information Administration (NTIA), whose only task was to put $40 coupons in the hands of everybody who wanted a converter box or two, failed to anticipate the demand for the coupons and has run out. And for all its big talk, the FCC failed to organize a national call center able to handle millions of complaints and questions around transition day, even though it was clear … such a call center would be needed. It turns out the government isn’t ready. It didn’t do its job (¶3, 4).

The entire situation was a serious indictment of the digital transition process, which took place primarily by government mandate rather than market forces and entrepreneurial ambition (Picard, 2005). Working primarily through the FCC, the U.S. Congress established the basic regulatory framework of how the transition would take place, including timetables, deadlines, technical standards and spectrum assignments. But beyond this basic framework, television broadcasters were left alone to figure out the essential details of the transition. This
included questions about how to pay for the enormous cost of the transition, what kind of programming to run, and what to do with the additional spectrum space resulting from the digital conversion. Many of the important questions that bothered television broadcasters in the early years of the transition have yet to be answered, even as the transition neared completion. Several stations are still wrestling with the economics, trying to figure out a way to recoup their substantial investment. Others are struggling with a decision between different types of digital signals, including standard definition (SDTV), enhanced definition (EDTV) and high definition (HDTV). And a few are still trying to cross the digital finish line, even after the new deadline loomed.

The purpose of this study was to assess the effectiveness of the government-mandated conversion from the perspective of those television managers who went through it. How did government intervention work in the case of digital television? Would this transition have happened more smoothly and more efficiently if the government had stayed out and left the process to free market forces? Perhaps more importantly, what do the attitudes and beliefs of broadcast managers mean for the possible success of digital television in the near future?

Literature Review

The European Experience

The digital conversion experience of U.S. television stations came after many European countries had begun the process. Britain, Finland and Sweden were among the several countries that went through the transition in the 2000s and in many ways their experiences presaged the conversion problems of U.S. broadcasters. Aslama, Hellman and Sauri (2002) wrote of the marked economic, financial and technical difficulties in the Finnish transition, and noted that
digital television suffered from consumer resistance because of issues related to cost and uncertainty. These problems have caused many European countries to delay their conversion deadlines, in some cases by up to a decade (Picard, 2007). Galperin (2004) also observed that the U.S. and Europe had the same impetus for the digital conversion, namely a decline in the consumer electronics industry, the international diffusion of information, and a spectrum shortage created by the rapid growth of wireless technologies.

But governmental and regulatory differences make a direct comparison between the U.S. and Europe problematic. For example, the transition in Britain may have gone much smoother because the British government was able to act against the organized interests of the broadcasting industry and establish a regulatory regime that recognized the need for digital convergence. Emphasizing competition and public service goals the British experience was “driven by government rather than by company interests” (Picard, 2007, p. 98). By contrast, the U.S. system, with the FCC at the forefront, led to a more difficult transition because of entrenched local broadcasters who favored continuity over reform and “militate(d) against regime change and policy innovations” (Galperin, 2004, p. 12). Thus, Galperin argues that the digital transition experience is nation-specific and must be evaluated on that basis. This paper focused solely on the U.S. experience.

*Digital television*

Unlike traditional analog transmission, which is based on electromagnetic wave propagation, digital television utilizes binary code. This means the digital format is much more compressed, which not only increases programming capacity, but also delivers a much sharper, superior picture quality. The additional bandwidth capacity can be used to transmit several
SDTV signals, a few EDTV signals or one ultra-high quality HDTV signal ("What is," 2008).

Japan was a pioneer in digital television, developing the first HDTV system in the 1960s
Perhaps concerned that Japan would gain dominance in the emerging technology, the United
States began efforts to catch up. In the late 1980s, seven of the nation’s top electronics and
broadcasting firms had come together as a ‘Grand Alliance’ to work on American digital
television (Wiley, 1997). According to Taylor (as cited in Driscoll, 2002):

This was the period when the Japanese were building great cars. They
were building all of the consumer electronics. We used to lead the world
in those areas. They’re going to do digital television, so we should do
something about that. So that’s what got a lot of people in the FCC
very concerned about HDTV. So you have that whole backdrop of, ‘the
government has to get involved or this is not going to get done right’ (¶4).

As work on digital television continued, Congress charged the FCC with development
and regulation of the emerging technology. In 1993, the FCC reported that digital television was
ultimately achievable, but more development was still required (Ducey, 1996). When the FCC
was convinced that digital television would eventually become a reality, it got down to the
serious decisions regarding the allocation of spectrum space, clarification of technical issues and
the timetable for implementation. In its Fifth Report and Order (MM 87-268) of April 3, 1997
the FCC ordered the first digital signals on the air by 1999, and wanted all U.S. television
stations converted to digital by 2002. During the transition period, stations would keep their
analog spectrum space, but eventually have to return it to the government by 2006 ("Commission
adopts," 1997).

But as of 2002, only 422 stations in 128 markets were broadcasting a digital signal,
which accounted for only 10% of the 4,074 commercial, low-power and public stations in the
country at the time (‘DTV stations,’ 2002). The slow conversion rate eventually prompted
Congress to extend the digital deadline to December 31, 2006. The deadline was extended yet
again to February 17, 2009, at which time all full-power stations were to cease broadcasting in
analog and have a digital signal on the air (‘The digital,’ 2008).

Several factors caused the delays. Congress mandated that stations could begin
converting when 85% of their audiences could receive digital signals, but that transition went
very slowly. Former FCC commissioner Susan Ness (1997) called it a classic ‘chicken-and-egg’
dilemma: few consumers were willing to spend money on expensive digital receivers for lack of
programming, and few broadcasters were willing to provide digital programming if audiences
did not have receivers. By 2005, less than half of U.S. homes had access to digital television
signals (Teng, 2005).

Perhaps the largest issue has been cost. The National Association of Broadcasters (NAB)
estimated that by the end of the digital transition, the television industry will have invested
approximately $16 billion in equipment, design and manpower. Much of that cost is tied up in
FCC requirements that broadcasters offer both digital and analog signals until the transition is
nobody—can predict, with any degree of certainty how it’s all going to work out. It’s not the
sort of transition that lends itself to central industrial planning” (West, 1998, p. S7). According
to Picard (2007), commercial broadcasters would be unsupportive of a digital conversion
because of cost issues; specifically, an inability to depreciate analog investments and possible
reductions in future advertising revenue.
FCC Regulation

U.S. government intervention into broadcasting began soon after radio’s emergence in the early 20th century. Much like the government did not want to cede digital television to the Japanese, there was a fear that early radio would be dominated by foreign interests. President Woodrow Wilson believed that to become a world power the U.S. would need control of communication facilities, thus General Electric “created RCA for the purpose of eliminating British control of U.S. wireless through its domination of American Marconi” (Tillinghast, 2000, p. 27). Given the free speech privileges afforded the print media, the government was reluctant to step too deeply into regulation, but found it necessary to solve the myriad technical and scarcity issues related to broadcasting. To improve upon the shortcomings of the Radio Act of 1912, the 1927 Radio Act created the Federal Radio Commission (later the FCC) and mandated that stations must not only be licensed, but act in the public interest, convenience and necessity (LeDuc, 1987).

The FCC has been heavily involved in regulating the conversion from analog to digital television. Primarily, the FCC has established conversion deadlines for stations to meet and determined how stations will return their analog spectrum space after conversion. The commission has also required television stations to file quarterly reports on their efforts to educate the public on the conversion. Specifically, “broadcasters [must] provide on-air information to their viewers about the DTV transition, by compliance with one of three alternative sets of rules, and report those efforts to the Commission and the public” (“In the matter of,” 2008). As the conversion deadline neared, the FCC and its staff visited nearly a hundred television markets to hold town hall meetings and other events designed to raise
awareness about the transition (Puzzanghera, 2008). The agency also conducted a digital test in the Wilmington, North Carolina television market. On September 8, 2008, all full-power stations in the market shut off their analog signals and broadcast only in digital (Hearn, 2008).

History has shown that despite the best intentions of Congress and the FCC, regulation has often resulted in negative or adverse conditions for broadcasters. Ward (1994) observed that provisions of the 1927 Radio Act that favored commercial interests forced many non-commercial stations off the air. The Fairness Doctrine was designed to promote discussion of controversial issues, but it instead had a “chilling effect” that essentially killed debate and led to its repeal by the FCC (Smith, Wright II & Ostroff, 1998, p. 446). The Telecommunications Act of 1996 removed many of the restrictions related to station ownership in an attempt to spur competition, but it allowed a relatively few media conglomerates to gain control of the industry (Bagdikian, 1997). Tillinghast (2000, p. viii) notes, “The entire history of U.S. broadcast regulation has been one of ineffectual and toothless regulation producing precious little public service.”

Theoretical background

In analyzing the impact of FCC regulation on the development of advanced telecommunications services in the U.S., Prieger (2002) created a theoretical model that has direct application to the present study. The model showed that over time regulation had several negative results for consumers and communications industries. Specifically, FCC requirements reduce the number of services available to consumers. That is, the telecommunications companies in the study would have introduced 62% more services if the regulation had not been in place.

Regulation also has the effect of reducing expected profit of introducing a new service.
Prieger found that this happens because of the substantial direct costs and long delays associated with regulation. The model incorporates the work of Hausman (1997), who studied the impact of regulation on the introduction of voice mail services and found that regulatory delays cost consumers $690 million to $910 million in lost welfare. According to Prieger, “… regulatory delay … drives a wedge between innovation and introduction to consumers” (2002, 704).

Finally, Prieger observed that regulation is extremely difficult to get rid of once in place. Related to the regulation of telecommunications services such as fax, voice mail and audiotex, he observed, “The FCC intended the … regime to be a short-term solution [only until a] stricter regime was fully in place. It took twelve years for the burdens of the [short-term] regime to be significantly reduced—a caution to those who would set up ‘temporary’ regulation” (2002, 714).

Prieger noted that the FCC thought it was acting in the best interest of both the industry and consumers: “If regulators maximize social welfare, then they must have believed that the benefits of the … regime to consumers were large indeed” (2002, 714). However, the unintended negative consequences of FCC intervention in these emerging telecommunications services were reduced services, reduced profit, increased costs and lengthy delays.

In the case of digital television, Farrell, Shapiro, Nelson and Noll (1997) contend that the FCC sought to protect the interests of terrestrial broadcasters by ensuring participation for all stations and by choosing a technical standard whose signals could fit into existing spectrum slots. However, those decisions conflicted “with the ostensible goal of promoting HDTV and with the rational management of scarce spectrum … [and] as a consequence the technical quality of HDTV in the United States may be compromised and its cost increased” (4). Such results could also have negative consequences on future competition.
Gupta, Jain and Sawhney (1999) further suggested that regulatory bodies and industry experts underestimated the delays associated with the digital transition. The FCC may have been overly optimistic in its policy decisions; perhaps a reason that the conversion deadline was delayed so many times. The delays were also a result of the difficulty in agreeing upon technology standards and “resolving regulatory debates” (396). In ordering corrections to its digital policy in 2001, even the FCC acknowledged that “it was concerned that some of its initial requirements may be having the unintended consequence of hindering, rather than furthering, the DTV transition” (“FCC acts,” 2001).

Hypotheses, Research Questions and Methodology

Based on the theoretical background and the literature, the following hypotheses and research questions were derived and tested through a survey of television station managers:

H1: Television news managers are more likely to believe that FCC regulation of the digital transition resulted in a reduction in the expected profits associated with the transition compared to profits that would have occurred without regulation.

H2: Television news managers are more likely to believe that FCC regulation of the digital transition resulted in an increase in the direct costs associated with the transition compared to costs that would have occurred without regulation.

H3: Television news managers are more likely to believe that FCC delays associated with regulating the digital transition reduced the value of digital television compared to the value that would have occurred without regulation.

H4: Television news managers are likely to believe that FCC regulation of digital television will be difficult to get rid of even after the conversion deadline has passed.

RQ1: Given that digital television was mandated by the government and not through free market forces, what value does it hold for television managers?

RQ2: Are there important differences between different groups of television station
managers, such as between public and commercial or large-market and small-market?

These were tested through a survey of television managers throughout the U.S. in January, 2009. For convenience, all respondents were referred to simply as managers, even though their official title could be general manager, station manager or operations manager; many also carried titles such as station president or vice president. Regardless of title, the respondents needed to have decision-making authority for planning, strategy, budgeting and/or implementation of digital television.

Given that not all stations had to convert to digital transmission, the universe consisted of those full-power stations required to convert by the FCC. Eliminating situations where multiple stations shared a common management system (such as with a limited marketing agreement) reduced the universe size to 918 stations (“Station index,” 2008). The researchers determined the name of the manager and his or her contact information by visiting each station web site and through other industry sources (“Broadcasting & Cable,” 2007; “Network affiliate,” 2007). All managers were invited to take part by either electronic mail (when identifiable) or postal mail; both invitations directed respondents to an online questionnaire.

Initial contact began the first week of January, 2009. This time frame was chosen so as not to conflict with the television ratings periods of November and February, and also to avoid the December holiday season. Managers were contacted again two weeks later following the comments made by Obama, Kennard and Powell. Of the 918 managers contacted, 121 completed the questionnaire for a response rate of 13%.

The questionnaire contained 25 questions designed to gauge manager attitudes related to the hypotheses and research questions. Several questions were framed on a 5-point Likert scale.
where 1 represented “extremely disagree” and 5 represented “extremely agree.” Some of these questions included, “FCC regulation of the digital transition resulted in a reduction in the expected profit associated with the transition compared to profits that would have occurred without regulation,” and “FCC regulation of digital television will be difficult to get rid of even after the conversion deadline has passed.” Other questions assessed managerial attitudes about the role of the FCC in the conversion process, the ability of stations to meet conversion deadlines, the value of digital television in comparison to analog, and managers’ future plans for the additional digital bandwidth. Managers were also given the opportunity to answer open-ended questions that sought to expand their answers to these issues. Several demographic issues were addressed, such as station size, manager age and experience, network affiliation and annual station revenue.

Results

In terms of overall response, the average age of respondents was 53.4 years, with the plurality of respondents (42%) reporting more than 20 years of managerial experience. Other demographic areas included gender of respondent (male = 91%, female = 9%), primary source of station revenue (advertising = 68%, viewer support = 21%, government funding = 11%), station ownership (corporation = 45%, public = 25%, individual or family = 22%, other = 8%), and market size. Market size was defined by Designated Market Area, where DMA 1-50 was considered large market (27% of respondents), DMA 51-119 was considered medium market (37%) and DMA 120-210 was considered small market (36%).

Most managers (57%) said their station converted to digital between 5-9 years ago; 34% converted only 2-4 years ago, 4% more than 10 years ago, 3% in the last year and another 2%
still had not converted. Roughly 65% of respondents said their station was ahead of other stations in the conversion process, while less than 3% admitted to being behind other stations. Nearly 87% said their station had met all FCC conversion deadlines, and 12% said they had met most deadlines. If the FCC had not forced stations to convert, 56% of managers said they would still have converted but taken more time, while 22% said they would not have converted at all.

According to Walker (2002), a one-sample t-test can be used to determine whether a known population mean differs from the hypothesized mean. Given that the scales used were all five-point Likert scales where 1 = extreme negative position and 5 = extreme positive position, 3 was used as the hypothesized mean to test the hypotheses. If results of the one-sample t-test showed significant variance from the neutral position it would suggest either support or rejection of the particular hypothesis.

For H<sub>1</sub>, the result was \( t(117) = 0.60, p = .55 \). The mean response for this question was 3.05 (\( SD = .92 \)), fractionally above the neutral position. Thus, H<sub>1</sub> was not supported and managers do not believe that FCC regulation of the transition resulted in a reduction of expected profits. However, when the same t-test was run for H<sub>2</sub>, \( t(120) = 2.84, p < .005 \). The mean response of 3.28 (\( SD = 1.09 \)) was significantly higher than the neutral test value, on a scale where the higher value meant higher agreement. Managers believed that FCC regulation resulted in an increase in direct costs associated with the transition and H<sub>2</sub> was supported.

Using the same test value of 3, H<sub>3</sub> was not supported, \( t(115) = 0.77, p = .44 \) (\( M = 3.07, SD = .97 \)). Managers did not believe that delays associated with the regulation of the transition would hurt the value of their digital property. H<sub>4</sub> predicted that managers believed that FCC regulation of digital television would be difficult to get rid of after the conversion deadline. This
was strongly supported with a one-sample t-test, $t(115) = 9.21, p < .001 (M = 3.79, SD = .93)$. Managers were also asked to assess how the FCC handled the overall conversion. With 1 representing ‘extremely poor’ and 5 representing ‘extremely well,’ most managers believed the FCC did a poor job, $t(117) = -4.72, p < .001 (M = 2.61, SD = .90)$.

RQ$_1$ asked what value digital television holds for managers. More than 38% responded that they defined value in terms of additional bandwidth. Another 25% cited signal clarity, while 11% indicated profits or the potential for future profits. When asked what they would do with this additional bandwidth, managers overwhelmingly (77%) said it would be used for more programming and content. Around 71% said they would program a combination of standard definition, high definition and enhanced definition channels.

Based on their definition of value, managers were asked to quantify the present and future value of digital television. On a scale where 1 represented ‘extreme lack of value’ and 5 represented ‘extreme value,’ a one-sample t-test with a test value of 3 indicated that managers significantly valued digital television both for the present, $t(118) = 4.37, p < .001 (M = 3.43, SD = 1.07)$ and the future, $t(118) = 17.04, p < .001 (M = 4.18, SD = .76)$. In addition, 72% of managers said they believed digital television would eventually increase station revenue. That compares to 25% who expected revenue to remain unchanged and 2% who said revenue would decline. The concept of value was also related to regulation (Tables 1 and 2). Linear regression revealed that those managers who believed regulation would be difficult to get rid of after the conversion saw little current value, $\beta = -.30, t(112) = -3.17, p < .002 (R^2 = .12)$, or future value, $\beta = -.30, t(112) = -3.13, p = .002 (R^2 = .14)$ in digital television.

Age, managerial experience, gender, primary revenue, and station ownership returned no
significant differences for the main dependent variables under analysis (RQ2). For market size, an ANOVA suggested that managers in small markets ($M = 2.95$) were more likely than managers in medium ($M = 3.57$) and large markets ($M = 3.34$) to believe that FCC regulation resulted in higher costs, $F(2, 116) = 3.62, p < .03$.

Discussion

The application of the Prieger model to the FCC regulation of digital television seemed like a good fit, at least in three key areas—cost, performance and duration. Primarily, television managers viewed regulation through an economic lens, especially for smaller market stations. This was reinforced in the qualitative data that accompanied the managerial response. According to one small market, public station manager, “We have spent more than $2 million on digital conversion at the expense of other station needs. The return of investment with digital is not there.” Another small market station manager noted, “The cost associated with digital will never make sense in a small market. We will probably never recoup the money spent.”

Managers similarly believed that regulatory intervention increased their costs because it ignored free-market forces that would have spread out the costs over a longer period of time. “We are small PBS stations and would have waited for market conditions to dictate the conversion,” said one respondent. “We would not have invested the dollars required until the market drove the decision.” One small-market station manager said, “Had we been able to do it on our own time frame prices would have been down in my estimation by more than 35%.” A manager from a large-market station added, “Conversion only makes sense if it is market driven. The government has forced this, not consumer demand, so we would not have done it.”

The negative comments from many public broadcasters seem to contradict previous research
(Picard, 2007) which suggests public service broadcasters would be more supportive of the digital conversion because it would create more niche, local and interactive channels. That there was no significant difference between public and commercial broadcasters in terms of their perception of the conversion relates to the regulatory realities of the U.S. system and supports the observation that while the European conversion was driven by government policy, the U.S. conversion was influenced more by company interests.

Allowing digital television to develop through market forces would also have given managers more time to understand its uses, benefits and applications. According to managers, regulation forced them to develop and implement an unproven, untested and in some cases unwanted technology. “This is uncharted territory, no one really knows,” said one respondent. “Digital is so new we won't know the value of it until well after the digital conversion is completed.” Another manager commented, “There are future revenue opportunities in digital. I'm not sure we can currently identify what the revenue potential will be.”

The second key area is performance, or how the FCC handled the transition. Quantitative results suggested that managers were critical of the FCC’s role in the process and that was supported in their comments. One manager said the FCC had called to check on his station’s situation less than 40 days before the conversion deadline, even though the manager had filed regular progress reports. “I have lost faith in the FCC,” he went on to say. “It is nothing more than a bunch of bureaucrats who pile on extra work for the broadcasters. They do not know what they have in their own house.” A manager from a large market station said, “The arrogance of the FCC was stunning. Chairman (Kevin) Martin was a disappointment.”

Station managers were particularly disappointed that the government pushed the deadline
beyond February 17, 2009. “A delay in the transition will be devastating to many TV stations,” said one respondent, while another admitted that “extending the transition further will cause severe confusion with viewers.” A small-market station manager observed, “February 17, 2009, should (have been) a firm, hard date. Our station has a great deal invested in turning off our analog signal and has already budgeted accordingly. Additional delays will create financial problems for us.” As just one example of how the delay would affect stations, Univision affiliate WUNI in Boston will spend $10,000 per month in unbudgeted funds to keep its analog transmitter going beyond the February deadline (Nickisch, 2009).

A final area is duration, or how long FCC regulation would last. To managers, the concept of value was directly connected to regulation. The minority of managers who favored FCC regulation or thought the FCC did a good job handling the transition had a much higher perception of value. But on the whole, respondents were pessimistic that the FCC would eventually turn over management of digital television to free-market forces, and this subsequently caused them to devalue the technology. One manager of a commercial station in a medium market said, “Once regulation is in, it’s in. That won’t change for at least a generation—the beast must be fed and no one likes to give up power.” Another commented, “I don’t see digital regulations going away once the conversion is complete.”

Limitations and Future Research

The researchers were obviously concerned with the low response rate, but still believe the data are generalizable to the entire population of managers. The lack of significant differences between the demographic subgroups of managers suggests that the group as a whole is fairly homogeneous. Thus, adding more response would not necessarily change the results. In
addition, the demographics of the response were fairly close to the demographics of the entire managerial universe, even for such seemingly underrepresented groups as females (Papper, 2008).

Because of the timing of the response, which somewhat coincided with the statements of Obama, Kennard and Powell, it is possible that response was skewed toward the negative responders, those angry about a threatened delay in the transition date. However, timing may also have underreported some negative managerial attitudes, specifically related to the effects of delay ($H_3$). Those managers who returned the questionnaire before Congress debated delaying the transition may have changed their minds on the issue. The researchers accepted both possibilities, believing that response would be improved because of increased interest among managers.

An obvious area of future research would be to replicate the design at a future date. That would allow for more reflective and contemplative answers on the part of managers. It is also believed that research needs to be conducted regarding the effect of the digital conversion on low-power (LPTV), Class A and translator stations. These stations were not required to convert to digital and remain broadcasting in analog, but many of their managers believe they have still suffered. The manager of one LPTV station accidentally filled out the online questionnaire. Even though the response was not included in the overall data, the comments are still informing:

The low-power television stations, Class A and translator stations have been dealt an unfair burden by Congress. While the rest of the industry will broadcast digital, we remain analog. We could have applied for a digital co-channel (one day filing window), but in many markets because of full power stations dual broadcasting there are no channels available until after their transition date. The economic burden to the LPTV, Class A and translator stations is excessive.
Finally, the researchers would suggest studying the Prieger model from the perspective of the digital television consumer. Consumers have also had suffer higher costs to convert to digital; as of the end of January 2009 there were still 2.6 million households on the waiting list for coupons to help pay for digital converter boxes (Teinowitz, 2009).

**Conclusion**

It is important to note that not all managers thought the FCC did a poor job in the transition process. One manager said, “The FCC forced (the) broadcasters hand, but it (the transition) would have happened anyway. I don't think the cost has really been affected by regulations, (but) when the money was spent.” Others blamed the actions of Congress, the NTIA and even broadcasters themselves. “Broadcasters dragged their feet when it came to implementation, partly because they believed that Congress and the FCC would never get around to implementing the new system,” said one manager. “We took in earnest Congress and the FCC and were spared the pain and suffering by most broadcasters. The transition did not have to be so painful.”

However, there is no doubt that most of the pain suffered by broadcasters has been blamed on the FCC. The issue then becomes whether these are problems are endemic to the U.S. regulatory system or if the FCC simply did a poor job. Galperin (2004) argues that the U.S. system retards change and policy innovations because “fragmentation of policy authority favors fragmentation of interest representation” (p. 12). Thus, the U.S. experienced a much more difficult transition than stations in Europe. But it must also be acknowledged that the transition in Europe has not necessarily been easier. Picard (2007) notes that only four countries (Finland,
Sweden, Britain and Italy) are leading in digital implementation, compared to 16 neighboring countries that are lagging behind. Aslama, Hellman and Sauri (2002) admit that for many of these countries “structural regulation might not suffice (and) some degree of re-regulation” is already underway (p. 159).

The embarrassment of having to postpone the deadline yet one more time to June 2009 certainly does not argue in the FCC’s favor, but it may be more accurate to call the U.S. experience a combined failure. Congress ultimately voted to extend the deadline, based partly on problems with the coupon program run by the NTIA through the Commerce Department. And some parts of the process, such as regulation related to promotion and consumer awareness, seemed to work well. Only 6% of all U.S. households were considered totally unready for the conversion in late January 2009 (Teiowitz, 2009). “Whenever the transition takes place some people will be left behind,” noted one respondent. “More time (and) more marketing won't change the fact that those same people won't be ready now, or in four months.”

Finally, managers must consider whether or not they would have been better served with no FCC regulation. While the majority of managers believe regulation has been harmful in the short term, there are suggestions that regulation may eventually prove to be of great benefit. Managers themselves indicated that while they placed a high present value on digital television, their perception of its future value was even higher. One manager said that without FCC intervention digital television would be in the same place as high definition (HD) Radio, which has developed mainly through free market forces. A recent report indicated that public awareness of HD Radio has failed to gain momentum, with only 24% saying they had heard or read anything recently about the new technology, and that has stalled its development (“The
infinite,” 2008). The implication is that digital television would still be relatively unknown, and years from implementation, if the FCC had not intervened into the process. This was supported by the data, which indicated that 78% of managers would have waited to convert to digital or not converted at all.

The perceptions of U.S. television managers in the conversion process reflected the unique regulatory framework and industry environment in which the conversion took place. In a different environment and with different regulation—such as in Europe—the experience would have been different but not necessarily better or even less painful. And whether or not broadcasters and station managers liked or hated the FCC’s performance in the digital television conversion, the agency will likely continue to play an active role in how the technology is managed. The most insightful comment along these lines belonged to a manager of a public station in a medium market: “I liken broadcast TV to the railroads. We are now at the end of our life cycle. We need to reinvent ourselves or die. Broadcasters spend all their time trying to stop regulation and progress. Frankly, I would rather spend effort trying to find the killer application that will make it relevant in the future.”
References


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Ames, IA: Iowa State University Press.


Table 1: Linear Regression of Manager Perception of Current Value of Digital Television

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation will be difficult to get rid of after the conversion deadline</td>
<td>-.35</td>
<td>.11</td>
<td>-.30**</td>
</tr>
<tr>
<td>Regulation reduced our profit associated with the conversion</td>
<td>.06</td>
<td>.16</td>
<td>.05</td>
</tr>
<tr>
<td>Regulation increased our costs associated with the conversion</td>
<td>-.005</td>
<td>.13</td>
<td>-.005</td>
</tr>
<tr>
<td>Regulation caused transition delays</td>
<td>-.15</td>
<td>.12</td>
<td>-.14</td>
</tr>
<tr>
<td>Age of respondent</td>
<td>.001</td>
<td>.02</td>
<td>.006</td>
</tr>
<tr>
<td>Experience of respondent</td>
<td>.02</td>
<td>.08</td>
<td>.03</td>
</tr>
<tr>
<td>Constant</td>
<td>4.97</td>
<td>.94</td>
<td></td>
</tr>
</tbody>
</table>

Note: First four variables based on a 5-point Likert scale where 1 represented ‘strongly disagree’ and 5 represented ‘strongly agree.’

$R^2 = .12$

** $p = .01$
Table 2: Linear Regression of Manager Perception of Future Value of Digital Television

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation will be difficult to get rid of after the conversion deadline</td>
<td>-.24</td>
<td>.08</td>
<td>-.30**</td>
</tr>
<tr>
<td>Regulation reduced our profit associated with the conversion</td>
<td>-.05</td>
<td>.11</td>
<td>-.06</td>
</tr>
<tr>
<td>Regulation increased our costs associated with the conversion</td>
<td>.09</td>
<td>.09</td>
<td>.14</td>
</tr>
<tr>
<td>Regulation caused transition delays</td>
<td>-.04</td>
<td>.08</td>
<td>-.05</td>
</tr>
<tr>
<td>Age of respondent</td>
<td>.009</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Experience of respondent</td>
<td>-.02</td>
<td>.06</td>
<td>-.04</td>
</tr>
<tr>
<td>Constant</td>
<td>4.27</td>
<td>.70</td>
<td></td>
</tr>
</tbody>
</table>

Note: First four variables based on a 5-point Likert scale where 1 represented ‘strongly disagree’ and 5 represented ‘strongly agree.’ ‘How the FCC handled the transition’ variable based on 5-point Likert-scale where 1 represented ‘extremely poorly’ and 5 represented ‘extremely well.’

\[ R = .37 \]

\[ R^2 = .14 \]

** \[ p = .002 \]