Mobile Digital Television In Taiwan: A Preliminary Review Of Ratings And Lead User Response

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ABSTRACT

This is the first study to explore viewing habits and content selection of mobile digital TV lead users who install MDTV in their vehicles. The study was carried out in two stages. The first stage employed a questionnaire to ascertain the viewing habits and content selection from 614 valid respondents, whereas the second stage employed a follow-up phone interview to determine the viewer opinions of different channels and programs. The results indicated that MDTV viewers, as opposed to traditional stationary TV viewers, preferred news channels and expected more traffic information, variety shows and music. They also reported a significant lack of program choice. The inconvenience of switching channels while on the move hence contributed to the retained loyalty of MDTV. Above all, the popularity of MDTV is growing, and has surpassed some older technologies such as listening to radio or CDs, or watching DVDs as their favorite drive-time activity.

Keywords: mobile digital television, stationary television, standard digital television, lead users

INTRODUCTION

EU-specification DVB-T wavelength digital TV (DTV) channels have been available throughout Taiwan since July 2004, allowing viewers to watch TV while on the move at speeds up to 130 kph. It represents a radical departure from the decades-old rule that TV must be watched from a fixed location. It is a so-called dynamically continuous innovation of TV, according to Schiffman & Kanuk (2000), as watching on the move is regarded as a new pattern of communication that has changed viewers' behavior to some extent. It has definitely provoked new market opportunities for commercial mobile digital devices.

The emergence of mobile digital TV (MDTV) has also generated public concern about safety implications and has polarized opinion because MDTV is most commonly installed in passenger cars in Taiwan. The main concern expressed by those opposing the installation of MDTV in traveling vehicles is that when drivers watch MDTV from their front seat they must execute two tasks at the same time - distracting their attention from the road and also preventing them from focusing on the MDTV programming.

However, MDTV sales volume has increased steadily from quarter to quarter. According to distributors' rough estimates, 30,000-40,000 units were shipped as of July 2004, 124,400 as of the first quarter of 2005, and 225,420 as of the fourth quarter of 2006. Market share accounted for 3.84% (percentage of passenger cars). According to the new product user classification scheme proposed by Rogers (2003), which is made on the basis of the penetration percentage (0-2.5% innovators; 2.5-16% early adopters; 16-50% early majority; 50-84% late majority; 84-100% laggards), at three percent, MDTV users are shifting from innovators to early adopters. MDTV user types have already begun moving from the category of innovators (3%) to the early adopters (Table 1). Early adopters tend to be opinion leaders who may influence the pattern of use of an innovation (Barthes, 1983; Rogers, 2003).

Previous research has indicated that lead users have an extremely important effect in setting the course of a product, whether in the introduction of a new product or developing new uses for existing products. If firms are able to gain a good understanding of this lead user group and assimilate their innovations in a timely fashion, it may help them to ensure widespread use of their product (Morrison, Roberts, & von Hippel, 2000; Lilien et al., 2002), push innovation of their product lines, and develop products with greater market appeal (Von Hipple, 1986; Franke, von Hippel, & Schreier, 2006; Piller & Walcher, 2006). So the needs and actual usage behaviors of these lead users do matter. What exactly do these lead users think of the content on MDTV? and how do they evaluate it? This has become an important academic as well as practical issue, and is the topic of this study.

Table 1: Taiwan MDTV Market Statistics, 2004-2006

	2005.3	2005.6	2005.9	2005.12	2006.3	2006.6	2006.9	2006.12
Cumulative MDTV shipment volume	124,400	147,900	157,192	174,997	197,531	215,031	221,708	225,420
Of passenger cars %	2.257	2.673	2.809	3.105	3.489	3.59	3.72	3.84
Of DTV receivers%	28.138	26.509	23.460	20.632	19.126	18.72	18.97	18.23

Source: Reconstructed from Taiwan Digital Television Commission (http://www.dtvc.org.tw/9-1.htm) and Chunghwa Telecom Co.'s data communications subsidiary (http://www.dgbas.gov.tw/public/Data/66916562471.pdf)

CONTENT ON DIGITAL CHANNELS

Five of Taiwan's terrestrial television stations (four private plus one public), with assistance and guidance from the Taiwan government, led the way in turning analog television transmission signals into digital ones. All the analog systems will have been completely replaced by digital programming by 2011. During this crucial incubation period, the 15 digital channels being broadcast by the five television companies are a kind of pilot program, and so the opinions of innovators and early adopters who are watching MDTV during this stage are valuable reference, and their evaluation of digital programming will have an important impact on the future promotion of MDTV.

Because digital signals are compressed, the volume of material that can be transmitted is increased. After wireless digital television began broadcasting in July of 2004 the five television stations used the six MHz channel to turn each original channel into three standard digital television (SDTV) channels, giving Taiwan a total of 15 digital channels.

The programming went from four mixed and one public before the switch to digital, to five mixed, three public, three information, two news, one drama and one financial afterwards.

RESEARCH METHODOLOGY

Two stages of surveys were conducted in order to obtain sufficient information from MDTV lead users. In the first stage, a field survey was conducted using a paper questionnaire to ascertain the viewing habits and content selection of drivers watching TV in their vehicles, and to compare this result to the preferences of traditional stationary television viewers watching TV from their homes. In order to reflect the characteristics of drivers in different regions of Taiwan, a regional quota sampling method was employed. With assistance from two auto manufacturers and 67 auto stereo dealers throughout all counties and cities of Taiwan, surveys were conducted from July 6-20, 2006. A total of 614 valid questionnaires were obtained (Table 2).

The second stage used a follow-up phone interview to acquire the viewers' opinions towards digital channels and programs. 60 of the 614 respondents were randomly selected for a follow-up phone interview in order to understand their needs and opinions regarding digital programming.

Table 2: Regional Driver Questionnaire Quotas

Area	Northern Taiwan	Central Taiwan	Southern Taiwan	Eastern Taiwan
Percentage	42.5%	27.5%	27.6%	2.4%
Quota	261	169	169	15
Total	614			

RESULTS

Basic Information on MDTV Users

Of the 614 respondents, 528 were male and 86 were female; 525 were regular drivers, while 89 were taxi drivers. Their average age was 37.63 years (SD 21.34). Based on these initial results it appears that male users of MDTV far outnumber female users. The average amount daily vehicle time for respondents was 178.28 minutes (SD 138.5 minutes) and the average amount of time using MDTV was 100.5 minutes (SD 91.26 minutes). The average length of time since installation of MDTV was about one year (11.66 months, SD 8.49 months). The above values indicate that the collected data was not overly concentrated.

The respondents using MDTV for an average of 77.6% of total drive time, indicated that these users were using MDTV rather than their car stereo for more than half of their drive time. Only 22.4% of drive time was unaccounted for, proving that MDTV has successfully replaced the radio, CD listening and VCD viewing as the favorite drive-time activity for these users.

Table 3: Basic Data for MDTV Users

Variable	Mean	S.D.
Age:	37.63	21.34
Total Daily Drive Time:	178.28 minutes	138.5
Total Daily MDTV Usage:	106.5 minutes	91.26
Time Since MDTV Installation	11.66 months	8.45
Gender	Male 528	Female 86
Groups	ordinary 525	Taxi 89

Market Share for Each Channel

Respondents were asked to write down which channel they watched most, and these figures were compiled with data collected through the phone interview. According to this study, most users tend not to change channels, and drivers who are in their vehicles for less than two hours tend to almost always just watch one channel (the number watching two or more channels is extremely small).

A further analysis of viewing habits was conducted to compare the ratings of the 15 SDTV channels based on the type of programming offered. The rankings are as follows: Up-to-date News (42.45%), Mixed Programming (29.23%), Informational Programming (15.82%), Public Television (8.67%), Drama (2.14%) and Finance (1.68%). Further comparison shows that dramatic differences exist between home TV and MDTV viewing habits.

According to AGB Nielson statistics (AGB Nielson, 2006), mixed programming channels lead the way in home ratings, but according to this study up-to-date news was the most popular choice for MDTV users and mixed programming was far less popular in comparison. Informational programming, as well as public television, which emphasizes the high quality of its programming, both saw significant gains when compared to home viewing ratings. This preliminary data suggests that the needs of MDTV users are different from stationary TV viewers.

It is also notable that the viewing habits of taxi drivers who have MDTV installed in their vehicles are different from those of regular drivers. Taxi drivers are in their cars for 8-12 hours a day, and so they are more likely to change channels. However, their top two choices are still the same, up-to-date news and mixed programming,

while public television, which broadcasts American major league baseball games, finished a surprising third.

This study followed up on the questionnaires during the second stage by randomly selecting 60 respondents for a follow-up phone survey in order to find out the level of satisfaction towards the 15 MDTV channels. Users were also asked about favorite programs as well as perceived areas of future need.

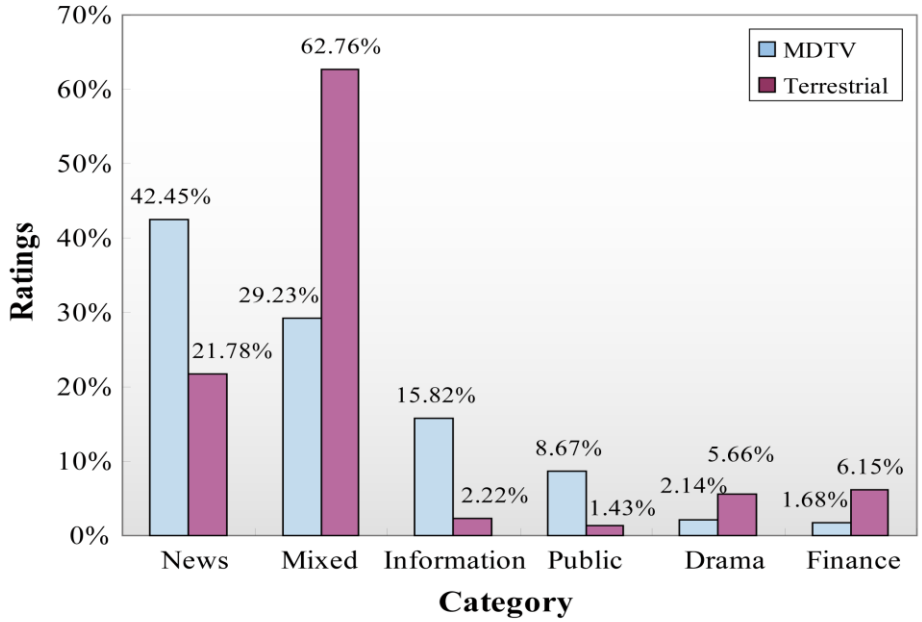

Figure 1: Comparison of Ratings for MDTV and Terrestrial Channel Category

Table 4: Comparison of Rankings for MDTV and Terrestrial Channel Category

Channel:		News	Mixed	Information	Public	Drama	Finance
Rankings:	MDTV:	1	2	3	4	5	6
	Terrestrial:	2	1	5	6	4	3

Information Source: The ratings for MDTV users come from this study.
Terrestrial ratings were compiled using AGB Nielson data (2006.10).

Table 5: Favorite Program Types

Type of Program	Number (out of 60)	Percent
Up-to-date News	53	88.3
Traffic Conditions	45	75.0
Variety Shows	31	51.6
Music Programs	31	51.6
Finance Programs	21	35.0
Science Programs	17	28.3
Drama Programs	13	21.6
Educational Programs	12	20.0
Health and Medical Programs	7	11.6
Shopping Channels	6	10.0
Other	9	15.0

Favorite Programs of MDTV Users

Users were asked to select the programs they would like to watch on MDTV (these programs did not have to be currently available on MDTV).The first program choice among users was "up-to-date news," which was selected by 53 out of the 60 respondents, or 88%. This finding was consistent with findings from the first part of the study. The second highest rated choice was "traffic conditions," which was chosen by 45 of 60, or 75% of respondents. This reflects the desire of MDTV users to understand traffic conditions in their area.

Variety shows were the third highest rated program type, with 31 out of 60 respondents, or 52%, saying they would like to see this type of show on MDTV. Although more than half of the respondents responded positively to this category, the percentage lagged far behind the number interested in up-to-date news and traffic conditions, showing that users have a greater interest in these types of programming.

Evaluation of MDTV Channels

After integrating the opinions expressed by users during the 60 telephone interviews, general user response can be summarized as follows:

- MDTV content is not varied enough yet. Most respondents said they wished there were more channels and programs to choose from.
- It is difficult to receive MDTV signals in some areas while on the move, leading to a reduction of interest.
- While driving, users hope that they can receive "newer" information. They hope that news channels can provide the most up-to-date information—even if the user can't watch the program, they can still hear it, making news channels their top choice.
- The phone interviews provided the following explanation for why public television ratings on MDTV were far higher than for terrestrial ratings: public television doesn't play commercials and so you can enjoy the programs more; the quality of public television programs is better; children are in the car and so one would rather play programs that are sure to be of a high quality for them to watch; an interest in watching star Taiwanese pitcher Wang Chien-Ming play in Yankee of American major league baseball games.

DISCUSSION AND CONCLUSION

Taiwan is currently promoting the digitalization of television, and it is predicted that by 2011 the analog system will have been completely replaced by digital programming. The 15 digital channels being broadcast by the five television companies are a kind of pilot program, and so the opinions of innovators and early adopters who are watching MDTV during this stage are valuable as reference, and their evaluation of digital programming will have an important impact on the future promotion of MDTV. This study used a survey method to gather data about the programming needs and actual viewing habits of MDTV users during this crucial incubation period.

The results revealed that drivers use MDTV for more than 77% of the time they are in their vehicles, showing that for these people MDTV has already replaced listening to the radio or CDs and watching VCDs as their favorite drive-time activity. Even so, users said they were not satisfied with the current selection of MDTV programming, and hope that more programs are available in the future.

This study also discovered that MDTV users are unlikely to switch channels, and hence will watch a given channel for a longer period of time than at home. Furthermore, their choice of channels while using MDTV varies significantly from stationary viewing habits. Sometimes, they are likely to just switch to a directly adjoining channel due to the inconvenience of searching for specific programs.

Variety shows are the highest ranked programs for home viewing, but these programs were not favored by MDTV users because they need to focus their attention on changing road conditions and are thus unable to fully enjoy the shows. On the other hand, channels that provide news and information that can be absorbed only by listening were received much better.

Public television was favored by MDTV users because it has higher quality programming, broadcasts American Major League Baseball games, and doesn't have advertisements. Ratings for public television were much higher for MDTV users than for regular home viewers.

More than half of the respondents said that they would like traffic information and music programming, even though these types of programming are not currently offered by the 15 SDTV channels. This represents an important opportunity for future expansion.

MANAGERIAL IMPLICATIONS

The results of this study provide a number of reminders and recommendations for the TV industry in general, and content providers in particular:

- Whenever installed, MDTV is likely to replace older forms of entertainment/information equipment (radio, CD/DVD, etc.), in particular since MDTV can integrate most of the functions of older stereo/CD systems in one single unit, thus making it a very attractive choice. MDTV can be forecasted to increase its market share, and gradually become the standard entertainment/information equipment in passenger cars.
- The results of this research have shown that MDTV viewers have different viewing demands than stationary TV viewers. Therefore it is recommended that TV stations consider the establishment of special channels exclusively for mobile viewing, so as to better serve the needs of this segment of viewers and develop a feasible MDTV operational model.
- Respondents voiced a clear demand for topical/current affairs/news programs, audio information and traffic updates, while at the same time expressing their view that such programs were currently in highly insufficient supply. In other terms, there is a huge market potential for the development of these types of programs.
- Since it is more difficult to switch channels while driving a vehicle, MDTV viewers (especially where the driver is alone) tend to display a higher degree of loyalty to specific channels, whereas stationary TV viewers usually switch channels during commercial breaks, etc. In other words, MDTV viewers tend to spend more continuous time watching one specific channel, which makes MDTV a lucrative market deserving special attention.
- A new competition strategy emerges in light of the fact that MDTV users are less likely to switch channels than home viewers, especially given the tendency of users to select directly adjoining channel. It is beneficial for weaker or newer channels to stick next to the main popular channels. Therefore, if each digital TV station is unable to fully develop all three of its channels, it is recommended that they first develop one channel that wins the viewers' trust, identification, and acceptance in order to establish a good reputation for a high standard of programming in the growing MDTV market.
- A proportion of respondents expressed anti-advertisement sentiments, and would rather choose non-advertisement channels for viewing (such as public TV). The fact remains, however, that advertising is the main source of income for TV stations, and thus cannot be entirely avoided. It is therefore suggested that advertisers consider increasing the use of more flexible and less obtrusive forms of advertising, such as product placement.

AUTHOR INFORMATION

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