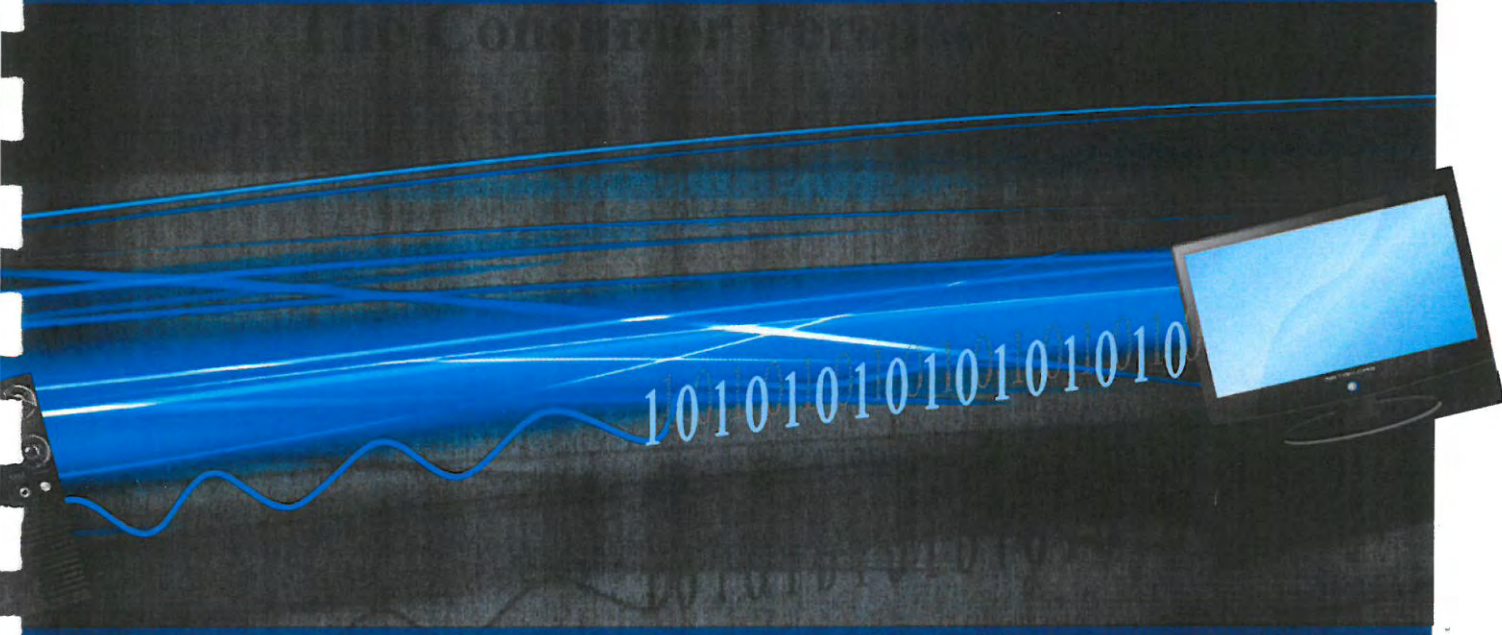


Feasibility of Digital Switchover in Jamaica: The Consumer Perspective



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82.9% *of respondents
are in favour of
digital
switchover*

Revised Draft



Feasibility of Digital Switchover in Jamaica: The Consumer Perspective

2012

Researchers:

Oliver Hylton

Master of Philosophy in Information Systems
Student

University of Technology, Jamaica
ohylton@hotmail.com

Terry-Ann Virtue

Master of Philosophy in Information Systems
Student

University of Technology, Jamaica
t_virtue@yahoo.com

Supervised By:

Dr. Paul Golding

Dean of the College of Business & Management,
University of Technology, Jamaica
pgolding@utech.edu.jm

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Foreword

In 1987, the US Federal Communications Commission began its first inquiry into digital television, what was then called advanced television. Since that time, the real and potential benefits of digital television (DT) have been trumpeted to offer great opportunities to both broadcasters and viewers. Compared to analogue television, DT provides improved quality, and a more captivating TV experience through better voice and sound technology. Viewers are able to get access to additional programme, high-definition TV (HDTV) and the opportunity to watch TV via mobile phones. Moreover, digital television provides new features and interactive services such as electronic programme guide and video-on-demand.

In 2010, the Broadcasting Commission of Jamaica (BCJ) announced that, consistent with the International Telecommunications Union, 2015 was the nation's target date for Digital Television Switchover (DTSO). After DTSO every household that doesn't have cable service but would like to continue watching free-to-air television will be required to acquire a digital TV or purchase a digital set-top box. There is the real possibility that some persons/households will be deprived of watching television because of age, disability or economic conditions. Additionally there are technical and financial risks to consider.

The BCJ as part of its 25th anniversary celebration took the bold step to offer a research scholarship to two young researchers to investigate the "Feasibility of Digital Switchover in Jamaica: The Consumer Perspective." Terry-Ann Virtue and Oliver Hylton have succeeded in completing a very in-depth mixed method research using both qualitative and quantitative techniques to ferret out the pertinent issues relating to consumers and the impending DTSO. They paid particular attention to vulnerable groups including citizens from the deaf community, seniors, rural residents and the poor. The findings will provide a rich resource and guidelines for developing strategy targeting consumers in general and the likely disenfranchised in particular. The research also provides information on consumer propositions that will most likely lead to voluntary take-up of digital television as a country seek to meet the deadline of 2015.

I would like to thank you both (Terry-Ann and Oliver) for this splendid effort and trust the output from this project will have significance to both practice and theory. I would also like to thank the BCJ for giving these two young researchers the opportunity to play their part in furthering the country's effort to accomplish DTSO.



Dr. Paul Golding
Dean/Associate Professor
College of Business and Management
University of Technology, Jamaica
237 Old Hope Road
Kingston 6
Tel: 876-702-2454
E-mail: pgolding@utech.edu.jm

BROADCASTING COMMISSION
5th Floor, Victoria Mutual Building
53 Knutsford Boulevard, Kingston 5
Jamaica, West Indies
Phone: (809) 929-1998
Fax: (809) 929-1997

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This project would not have been possible without the resources, guidance and the assistance of several individuals who in one way or another contributed and extended their valuable assistance in the planning, preparation and completion of this study.

First and foremost, we would like to express utmost gratitude to the Broadcasting Commission of Jamaica who awarded us their 25th Anniversary Research Grant by which this research was made possible. Without this grant the project would not have materialized. We would also like to thank them for their patience throughout the research process.

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To complete the focus group sessions a number of individuals were instrumental in finding the participants and ensuring they were present, providing a meeting place and or being the facilitator. For the Deaf session we would like to thank the Jamaica Association for the Deaf for their role and Ms. Antoinette Aiken for providing interpreting services. For the Senior Citizens session we extend our gratitude to the National Council for Senior Citizens for housing the focus group session meeting and to Ruth Stennett who was our capable facilitator. For the Poor and Rural Area sessions we would like to thank Orlando Brown for his tireless efforts in arranging two successful sessions and the Brown's family of Spaldings, Clarendon who accommodated the researchers. Most importantly we express gratitude to all the focus group participants who made the time to attend and participate in the session.

We would like to thank the survey team; Orlando Brown, Marion Waysome, Leighton Smtih, Allicia Richards, Sadra Sutherland, Nicole Hopkins and Kameisha Tulloch for taking the time to diligently administer the questionnaires, which turned out to be quite a tedious task. Without the team and the survey respondents the completion of the survey would not have been possible.

Last but not the least, our families and friends and the One up above, the omnipresent God, thank you for giving us the strength to persevere and complete the study.

Executive Summary

The Feasibility of Digital Switchover (DSO) in Jamaica was a project funded by the Broadcasting Commission of Jamaica (BCJ). In Jamaica almost eighty percent (80%) of the island is covered by either broadcast and/or subscriber TV. There are close to fifty (50) subscription television operators. And to date there are three (3) free-to-air television stations (Television Jamaica, CVM Television & LOVE Television). The BCJ plans to upgrade the television market by initiating DSO by 2015. However in countries where terrestrial reception is significant (such as Jamaica), high DTTV penetration achieved during the period of voluntary take-up is important as a pre-condition of switchover. This project therefore explored the factors that will influence the consumers' decision to adapt.

The methodology used was a mix of qualitative and quantitative methods; focus group study and subsequent questionnaires. The focus group sessions were held with five (5) groups of persons: residents from rural Jamaica, residents from urban communities, senior citizens, deaf persons and persons from the lower segment of the socio-economic scale. The focus groups proved to be very exploratory and in depth which allowed the researchers to identify various themes of importance to the switch. These themes were used to develop a survey predominantly using the 5-point Likert scale. Along with the 50 focus group participants, 250 Jamaicans island-wide were surveyed.

Currently Jamaican consumers' experiences with television (TV) vary highly especially based on the area (urban vs. rural) and the TV platform (cable vs. free-to-air) with signal reception issues being the area of most concern followed by limited programming choices. With the impending switch, respondents highlighted the elderly, the financially challenged, and the disabled as the groups most likely to be marginalized.

The findings indicate that the value of digital television (DTV), the content and service attraction, the equipment complexity and financial feasibility are the main determinants for the adoption of DTV in Jamaica. Similar to international studies, the researchers used the hierarchy of these determinants to separate the consumer market into four (4) adopters groups; comfortable adopters, marginalized adopters probably adopters, and rejectors.

A DSO proposition was drafted in support of target marketing these groups and specialized initiatives for the possible marginalized groups:

- The comfortable adopters are comprised mainly of younger persons and ideologically are ready to go digital.
- The marginalized adopters form the majority of the consumer market; the approach to these individuals should include mainly cost and ease of use solutions.
- The probable adopters first need to be enticed by the potential content and service packages
- The rejectors need to be convinced of fit of DTV into their value system.

With the marginalized groups interestingly the majority of these groups are willing to adopt and have no additional specialized concerns. With the exception of the deaf who while not saying they won't adopt make the point that if they are not catered for (through mandatory closed caption) it is pointless for them to adopt. The report explores other factors to affect the DSO proposal such as the choice of communication channels, timeliness and other concerns. Also the consumer attitudes toward these are explored in detail with a specific look at the attitudes of those switching to Digital Terrestrial Television (DTTV).

The report closes with recommendations and strategies to increase the voluntary take-up of DTV. A general strategy is suggested based on the advantages and simplicity of DTV, the strategies desired by consumers are reported and target marketing ideas presented.

It is anticipated that these findings will help to advise regulators on strategies to improve the uptake of DTV. It will also help to advise marketers on strategy, communications channel, placement, and content in reaching Jamaicans.

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Introduction

The world is at the cusp of the digital television (DTV) revolution, a revolution that is pregnant with possibilities for broadcasters, cable companies and consumers. Various platforms for accessing DTV include digital cable television (TV), satellite TV or Internet based TV and terrestrial television will also undergo a transformation to Digital Terrestrial Television (DTTV). Digital Switchover (DSO) is the migration process that involves a gradual replacement of analogue broadcasting (transmission and reception) by digital broadcasting (transmission and reception). DTV offers higher picture and sound quality to viewers; including Dolby surround sound which makes TV watching more immersive. It is expected that DTV will allow consumers to do much more than simply watch TV. Many observers are looking towards social TV as the next killer application, something from which operators could derive new revenue streams. Additionally, DTTV allows more efficient use of spectrum with several channels using the same amount of spectrum as a single analogue channel.

The electronic media, subscriber television and broadcast television is monitored and regulated by the Broadcasting Commission of Jamaica (BCJ). They aim to balance the interests of industry, consumers and the creative community in implementing public policy and law. Currently the Commission is piloting DSO in Jamaica with a planned date of 2015. The BCJ, began forging ahead with plans for a 2015 switchover on the premise that if Jamaica takes too long in making the shift, it runs the risk of being placed at an economic disadvantage and ending up on the wrong side of the digital divide. Jamaica currently boasts three (3) free-to-air television stations and over twenty (20) radio stations. There are over forty-five (45) subscription television operators in almost eighty percent (80%) of the island by zone, including two all island licensees: Flow and Digital Media and Entertainment Limited (DMEL)/LIME-mobile. There are also a growing number of local cable channels and other content providers.

To access DTV, consumers may subscribe to digital cable TV, Internet TV or Satellite TV or make provisions to access the new free-to-air, DTTV signals. For free-to-air viewers, the switch will require consumers to move from using analogue TV devices (as seen in Figure 1) to a TV with a digital tuner or at least purchase a converter set-top box to work along with analogue TVs.

The International Telecommunications Union in 2006 stated that by June 17th, 2015 all countries should have completed their transition from analogue to digital transmission. The BCJ began looking at the issue of DSO from 2003 when it convened a Digital Television Forum and currently Jamaica is at a phase where the government regulators now require primary data from feasibility studies before embarking further on the DSO project. By consensus key industry stakeholders from as early as 2008 had agreed that a feasibility study is the first step required.

This research provides answers to many of the feasibility study points raised by the Broadcasting Commission. Based on the diffusion of innovations theory we explored the communication channels used to spread information about DTTV, the likelihood and time when consumers would switch and how they felt about the 2015 deadline, as well as the attitudes of the Jamaican consumers. In line with other international studies the proportion of households to be affected, consumer response to the DSO proposition and the possible digital take-up and timescale were also examined. Based on the expectation that developing countries will be embarking on DSO without elaborate incentives as in wealthier countries (who have already completed DSO), we investigated what would persuade as many persons as possible to voluntarily accept this technology.

*The success of any DSO strategy is
dependent on the voluntary adoption of
DTV, mainly DTTV, by consumers.*

---Michael Starks, International DSO Specialist

Against this backdrop, the purpose of the study is to propose an adoption model with a DSO proposition which will generate voluntary take-up of DTV, mainly DTTV. Current attitudes towards television and the perceived attributes and behavioural intention to use DTV were assessed in order to find the target groups and the determinants that will impact the success of the DSO project. Practical strategies are used to match consumer profiles to the best marketing strategy to assist in formulating the digital switchover policy for Jamaica. The fundamental goal was to recommend an adoption model for DTV which can be used in countries similar to Jamaica, thus affecting DTV policy making within the Caribbean.

Having worked with over three hundred (300) Jamaicans from three counties this report presents the findings of the research team. The remainder of the document is structured into six (6) sections. Section (1) is an explanation of the methodology used to implement the study, (2) the demographics of the study participants, (3) the findings are presented first highlighting the qualitative data then analysing and discussing the quantitative data, (4) recommendations in the form of practical strategies to increase the voluntary adoption of DTV, (5) the limitations of the study are reported and suggestions are made for future studies and (6) the conclusion. There are also three (3) appendices: appendix A presents more in-depth information from the focus group sessions; appendix B presents the survey instrument used to collect quantitative data; and appendix C presents a table showing the consumer content and service attractiveness ratings.

Methodology

Forging ahead with the DSO presents two clear issues as it relates to the consumer. First it is generally accepted that the success of any DSO strategy is dependent on the voluntary adoption of digital TV by consumers. The consumer market is inclusive of several groups of individuals ranging from varying income groups, youth, elderly, disabled, etc. The second point is that vulnerable and or marginalized groups such as the elderly, poor, disabled and those segmented in deep rural communities should be targeted and marketed to separately to increase diffusion among these groups. Based on these issues the scope of this study was restricted to the consumer perspective on DTV at the individual level of analysis. The study applied a mixed methods design, comprising both qualitative and quantitative approaches.

Research Design

Qualitative Approach

The qualitative approach, took the form of focus group sessions with five (5) groups comprising of between nine (9) and twelve (12) persons each, who own a TV or regularly watch TV. The focus group sessions were held in the parishes of St. Andrew and Clarendon. Four (4) of the groups were selected based on recommendations from the Ofcom Consumer Panel which studied the vulnerable consumers in the United Kingdom's DSO. These four (4) groups are as follows:

1. Deaf citizens- persons who are hearing impaired for over two (2) years
2. Poor citizens- persons who earn less than minimum wage for a year
3. Rural area residents- persons who have resided in a rural area for over two (2) years
(A rural area was defined as being mainly characterized by large households with limited access to: (1) Social Services (e.g. potable water, sanitation facilities and

proper infrastructure), (2) Educational Services, (3) Health Services and (4) Jobs in the Manufacturing and Service sectors and with the economic livelihoods supported mainly by jobs in the agricultural sector¹.)

4. Senior citizens- persons 60 years and over.

The fifth group that was added:

5. Urban and Sub-Urban area residents- persons who have resided in an urban or sub-urban area for over two (2) years.

(An urban area was defined as possessing a population of 2,000 or more persons and providing a number of amenities and utilities which indicate modern living².)

There were three (3) main objectives of the focus group sessions: (1) to determine the issues that consumers experienced with Broadcast Television (TV) and Subscriber TV, (2) to explore the consumers' attitudes to DTTV and (3) to uncover the best DSO proposition, possible digital take-up and time requirements for DSO. To guide the focus group discussion there were three (3) themes: (1) Current Experiences with TV, (2) Attitudes toward DTV and DTTV and (3) the DSO Proposition. For each session the key informant selected participants that met the required criteria and would be available for the proposed time. The general format for each session was:

- Registration and Seating
- Opening Remarks & Welcome
- Introductions
- Purpose of the Session and the Review of Participant's Rights & Responsibilities
- DSO Presentations
- Focus Group Discussion, Summary and Closing

¹ Sustainable Development & Regional Planning Division. (2007). The poverty-environment nexus: Establishing an approach for determining special development areas in Jamaica. Retrieved from http://pioj.gov.jm/Portals/0/Sustainable_Development/PovertyEnvironmental%20Vulnerability%20Relationship.pdf

² Population Unit. (2007). Urbanization in Jamaica. Retrieved from http://pioj.gov.jm/Portals/0/Social_Sector/Urbanization%20in%20Jamaica.pdf

For further details, the participant demographic statistics, individual session reports and notes can be found in Appendix A. Additionally all sessions were recorded (an audio copy of the sessions can be found on the accompanying CD).

Quantitative Approach

The focus group recordings were examined based on the themes for the popular and salient points. Based on the findings a survey instrument was constructed for the quantitative portion of the study with questions on the consumer's current TV experiences, attitudes towards DTV and their responses to the DSO proposition³. The survey instrument includes an explanation of DSO and predominantly uses a 5 point Likert scale to explore consumers' thoughts on Jamaican TV going digital. A copy of the survey instrument can be found in Appendix B.

The survey team assisted with the identification of respondents, the distribution and completion of questionnaires. Several respondents were provided with a succinct verbal explanation before completing the questionnaire. Approximately 80% of the survey was completed via face-to-face communication followed by distribution through the Internet.

The aim of the survey was to validate and quantify the points raised in the focus group sessions. We used the survey data as a basis of generalization of consumer interests for the counties of Jamaica.

Sampling

Focus Group Sample

A purposive stratified sample was used for the focus group sessions. First, an individual had to meet the focus group requirement, i.e. for the deaf focus group the participant had to be deaf or hearing impaired for at least two (2) years, for the poor focus group the participant had to earn less than minimum wage for the

³ The salient points arising from the focus group sessions can be seen in Appendix A.

year etc. Secondly, criteria for each stratum within a group were clearly identified to associate individuals with a category from the individual innovativeness theory. In the individual innovativeness theory individuals may be classified on the basis of their innovativeness into five (5) groups; innovators, early adopters, early majority, late majority and laggards⁴. Innovators (venturesome, educated, multiple information sources), early adopters (social leaders, popular, educated), early majority (deliberate, many informal social contacts), late majority (sceptical, traditional, lower socio-economic status) and laggards (neighbours and friends are main information sources, fear of debt). This stratification was chosen to allow the focus groups to be as representative of the interactions that exist in the real world as possible.

Key informants (individuals who are familiar with the target group) were provided with the criteria for their focus group and for each category. They were asked to select two (2) focus group members for each stratum.

Survey Sample

Purposive random sampling was employed for dissemination of the survey. The research team chose respondents appropriate for the study with the aim of capturing the data on persons from all five (5) focus groups and the wider population, from the different counties in Jamaica, from different parts of the economic ladder, from both genders and from different age groups.

Data Analysis

For the focus group aspect, analysis of the data was done during and after the data collection. The audio recordings of the sessions were analyzed to capture the salient points raised under each theme. The salient

⁴ Rogers, E. (1995). *Diffusion of innovations*. (4th ed.). New York: Free Press.

points were then evaluated for correlations and patterns to identify the main determinants for DSO and to explore the relationship between the determinants. The focus group data were explored to find suggestions to militate against the negative determinants. Additionally, the data were mined to underscore pertinent and poignant assertions and suggestions made by respondents, which are in turn recast and presented as major selling points for DSO. Significant quotations from participants were also identified to highlight major concerns.

The data collected from the survey were analyzed using relevant statistical techniques such as frequency, cross tabulation and correlation using the Statistical Package for Social Science (SPSS). A model was also generated to predict the possible adopter categories for the Jamaican consumer market.

Demographics

Focus Group Participants

A total of fifty (50) persons participated in the focus group sessions. There were five (5) groups the deaf, poor, rural citizens, senior citizens and urban citizens.

The deaf focus group session was comprised of ten (10) individuals; four (4) males and six (6) females. Fifty percent (50%) of which were in the age group of forty-six (46) to sixty (60) and the remainder between the ages of eighteen (18) and thirty-five (35). All participants were from Kingston and St. Andrew with sixty percent (60%) of the participants being residents of urban and suburb areas. Of the deaf participants seventy percent (70%) were employed and the remaining participants were students.

The poor citizens focus group session consisted of nine (9) individuals, eight (8) of which were male participants. The majority (44%) of the group were persons between the ages of eighteen (18) and twenty-five (25). All participants resided in rural communities in the parish of Clarendon and the majority of the group was unemployed.

The focus group session for rural area residents was comprised of eleven (11) individuals; with only one (1) male. Majority (72%) of the persons were between the ages of thirty-six (36) to sixty (60). All participants were from rural areas in the parish of Clarendon. Seven (7) of the eleven (11) members were employed; four (4) were un-employed.

The senior citizens focus group session was the largest of the five (5) with a total of twelve (12) persons over the age of sixty (60). Within the group there were only two (2) males. Residents were from the parishes of Kingston and St. Andrew and fifty percent (50%) were unemployed.

The 5th focus group with residents of urban and sub urban areas was comprised of eight (8) individuals; five (5) males and three (3) females. Fifty percent (50%) of which were in the age group of eighteen (18) to twenty five (25) and thirty-eight percent (38%) between the ages of twenty-six (26) and thirty-five (35). All participants were from urban and suburban areas in the parishes of Kingston, St. Andrew and St. Catherine. Majority (63%) of the group was employed and the remaining participants were students.

The complete focus group participant statistics may be found in a tabular form in Appendix A.

Survey Respondents

Three hundred (300) survey instruments were distributed with a response rate of eighty percent (80%). Of the two hundred and forty (240) returned there were one hundred and eighty-five (185) that were fully completed. This sample was comprised of mostly females, approximately sixty-one percent (61%). Of the group of survey respondents sixty-nine percent (69%) were employed. The ages of respondents was distributed over the six (6) age categories as seen below in Table 1.

Table 1. Age distribution of survey respondents

Age Category	Frequency	Percentage
Under 18	7	3.8%
18-25	77	41.6%
26-35	46	24.9%
26-45	31	16.8%
46-60	21	11.4%
Over 60	3	1.6%
Total	185	100.0%

Of the survey respondents, twenty-seven (27) persons resided in the county of Cornwall, sixty-seven (67) in Surrey and the majority, ninety-one (91) in Middlesex. Responses were captured from the parishes of Hanover, Kingston and St. Andrew, Portland, St. Thomas, Westmoreland, St. Elizabeth, St. James, Manchester, St. Ann, Clarendon and St. Catherine.

Further, there was almost a 1:1 ratio of participants from rural areas (82 participants) to those from urban and sub-urban areas (95 participants). The split between urban and sub-urban was also approximately 1:1, forty-seven (47) participants and forty-eight (48) participants respectively.

Findings

Research Themes

The main objectives of the research are: (1) to determine the issues that consumers currently experience with Broadcast Television (TV) and Subscriber TV (STV) (2) to explore consumers' attitudes to DTV and DTTV and (3) to uncover consumers' response to the DSO proposition, considering the possible digital take-up and time factors. From these three (3) themes participants were asked the following seven (7) guiding questions in the focus group discussions:

Current Experiences with TV

1. What is your experience (good and bad) with TV? Broadcast TV and Subscriber TV.
 - a. In terms of signal reception?
 - b. Regarding the number of channels and variety of programs?

Attitudes toward DTV and DTTV

2. Which of your friends and family members will have the most difficulty switching to DTTV, digital cable, Internet TV or satellite TV?
 - a. Please explain why it would be difficult for these persons to switch?

Consumer Responses to the DSO Proposition

3. What aspects of DTV do you find most appealing?
4. Did you hear about DSO before today? If yes how did you hear about it? If no what would have been the best way to tell you about it?
5. Would you switch to DTV or DTTV?

- a. If yes, why and what would let you know you made the right decision by deciding to switch?
 - b. If no, why not and what could make you change your mind to switch?
6. If you are faced with the options of no TV, getting digital cable, Internet TV, or satellite TV which would you select and why?
 7. When would you decide and take the necessary action?

These seven questions were then expounded upon and the answers provided in the focus group sessions used to design the survey questionnaire. The previously mentioned three (3) focal areas along with the developed Determinants of DTV Adoption Model are the main cornerstones of the findings. The data are presented in four (4) main sections:

- The Jamaican Consumers' TV Experience;
- Jamaicans to be Affected by Digital Switchover;
- The Digital Switchover Proposition; and
- The Determinants of DTV Adoption.

In documenting the findings, a rich blend of qualitative and quantitative data are provided. The qualitative responses are first provided and in specific instances triangulated with the quantitative data.

Television in Jamaica

*40% of
those polled
watch only
broadcast TV*

Almost 80% of the island is covered by either broadcast and/or subscriber TV. There are close to fifty (50) subscription television operators. And to date there are three (3) free-to-air television stations (Television Jamaica, CVM Television & LOVE Television), however 40% of the respondents watch only broadcast TV. The other 60% of respondents watch subscriber, Internet or Satellite TV. Interestingly no less than 63% of all TV viewers have analogue TV.

*No
less than
63%
of TV
viewers have
analogue TVs*

Jamaican Consumers' TV Experience

For consumers to buy-in to any new product and or service it has to meet their needs. The first step should therefore be to understand the current Jamaican consumers' TV experiences. This section will present the findings on the current consumer experiences. The data reveals that Jamaicans share many positive views and have a high perceived value as to the necessity and utility of television services.

Positive Experiences

The exploratory qualitative research highlighted the following as the main positives of the current television viewing experiences. When asked the question what is your experience with TV the main points raised are as follows:

- Good quality especially with digital cable; consumers stated:

"Good quality!"

"Good quality with Digital TV (Flow)"

- High entertainment value of HD and 3D viewing; consumers stated:

"Good because of access to HD TV and 3D"

- Extended programming choices available with some packages on subscriber TV; consumers stated:

"Entertained with more options on the cable"

- Good educational and informative products; consumers stated:

"Very good product, educational benefits"

"Good because it keeps you informed"

As it relates to the perceived value of the free-to-air proposition all respondents spoke favourably of the two (2) main free-to-air broadcasters (TVJ & CVM) in terms of the attractiveness of their service. Some of the comments were:

“It’s informative”

“Current and up-to-date news”

“Good product, educational benefits”

While participants agreed on the positives of television. Several persons took issue with some factors as it relates to watching TV.

Negative Experiences

The majority of the concerns especially with analogue transmission and the broadcast services are centred on technical issues of low or no signal reception along with poor audio and video quality and to a lesser extent the issue of limited programming choices. Participants reported the following concerns:

“Too grainy”

“Too blurred”

“Poor signal especially in strong wind or rain”

“Tired of two stations”

“There is both positive and negative content”

“Limited information on current channels and too much advertisements”

In the rural area focus group session it was noted that adverse weather conditions, the position and the level of elevation above ground affect signal reception.

The negative experiences highlighted from the focus group data were corroborated by the quantitative data collection. In further exploring the consumers' experiences the negative bullets were cross tabulated on two (2) variables; the county in which a citizen resides and the community classification (rural, sub-urban and urban).

Generally speaking, as can be seen in Figure 4, rural areas tend to experience more problems in terms of signal reception than urban and sub-urban areas. In all counties rural respondents outweighed urban respondents by strongly agreeing that signal reception is a serious issue. Interestingly, the majority, sixty-three percent (63%), of the respondents from urban communities located in the county of Surrey either disagreed or strongly disagreed that they had any problems with signal reception. This is compared to the rural respondents from the same county who indicated by a majority of sixty-one percent (61%) that they strongly agree that signal reception is a problem to them (see Figure 1 below).

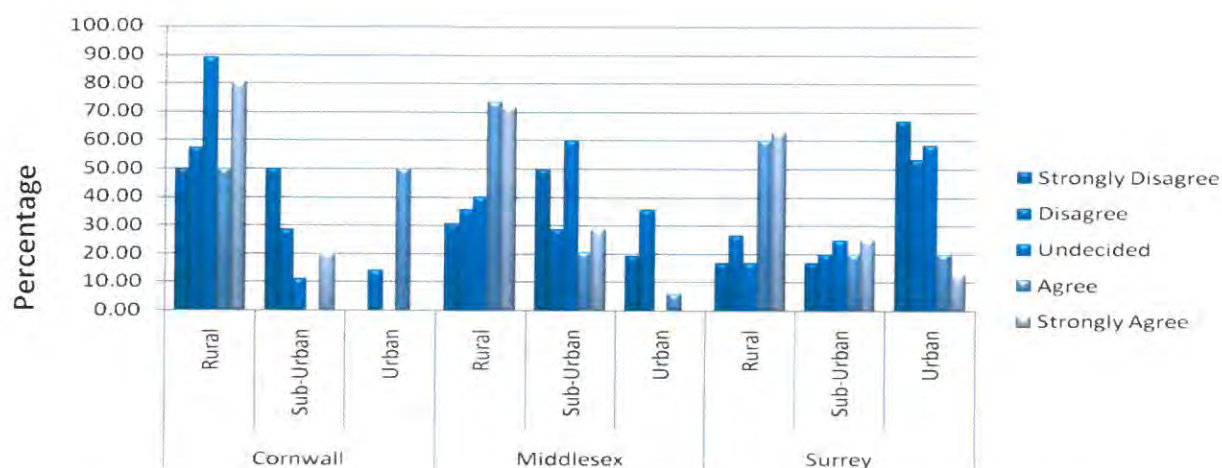


Figure 1. Consumer responses to the issue of low or no signal reception by county & community classification

Similar to the result of the signal reception issue, more rural consumers television experience were adversely affected by the audio quality compared to their urban and sub-urban counterparts. In Cornwall, 80%, and Middlesex, 91%, of the respondents from rural areas strongly agreed that poor audio quality is a problem

they are currently experiencing. As indicated by Figure 2 this accounts for the majority of persons from these areas. Urban respondents from all counties generally expressed disagreement about the proposition of poor audio quality.

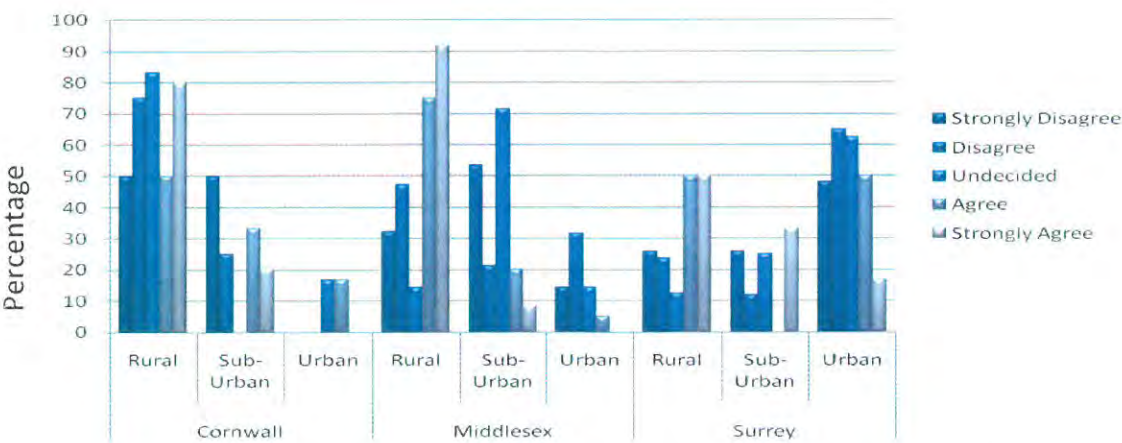


Figure 2. Column chart showing consumer responses to the issue of poor audio quality by county & community classification

Relatively speaking, the complaints for audio quality is proportionately similar to that for video quality as displayed in Figure 3. Urban respondents continue to enjoy less technical issues. Most persons from Surrey followed closely by sub-urban respondents from Middlesex enjoy good quality TV video; while more respondents from rural communities agree or strongly agree to experiencing poor video quality. However, interestingly, the highest level of dissatisfaction is from sub-urban participants in Cornwall. This highlights the fact that the location (parish and county) has a part to play in technical issues and not just whether it is a rural, sub-urban or urban community.

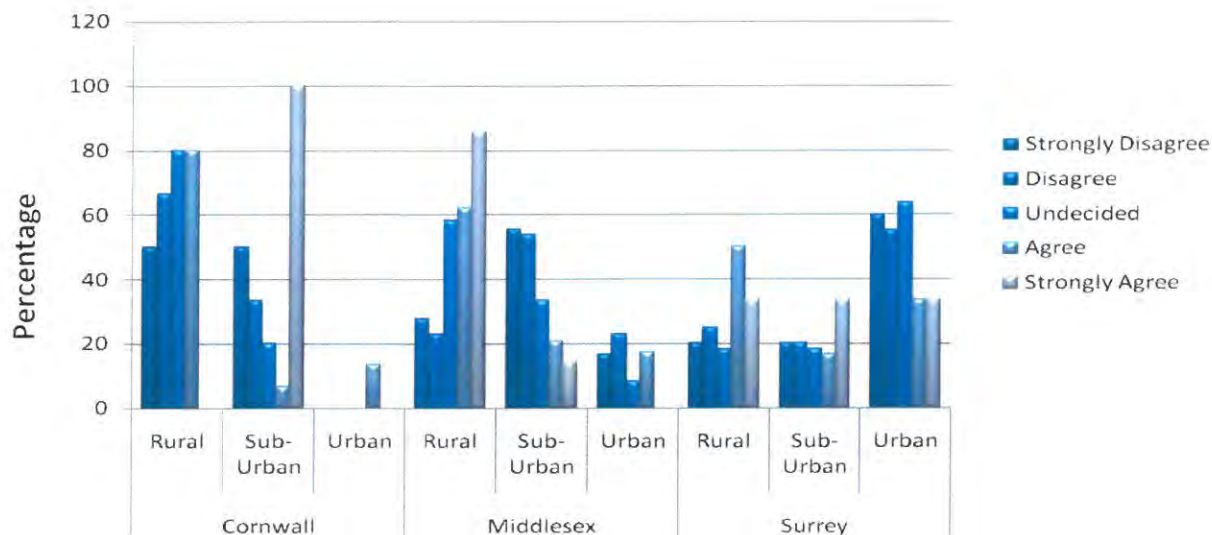


Figure 3. Column chart showing consumer responses to the issue of poor video quality by county & community classification

Aside from the technical complaints, inappropriate content and limited programming choices are also problem areas for some television viewers. As it relates to inappropriate content Figure 4 shows that respondents from sub-urban areas consider inappropriate content as a problem. This is divergent from the views of the majority of persons in rural areas who indicated that inappropriate content is of no particular concern to them. For the most part rural area residents either indicated that they disagreed or strongly disagreed with the proposition. The views of Surrey slightly vary from that of the other counties; urban respondents tended to agree more with the view that inappropriate content is a problem when watching TV.

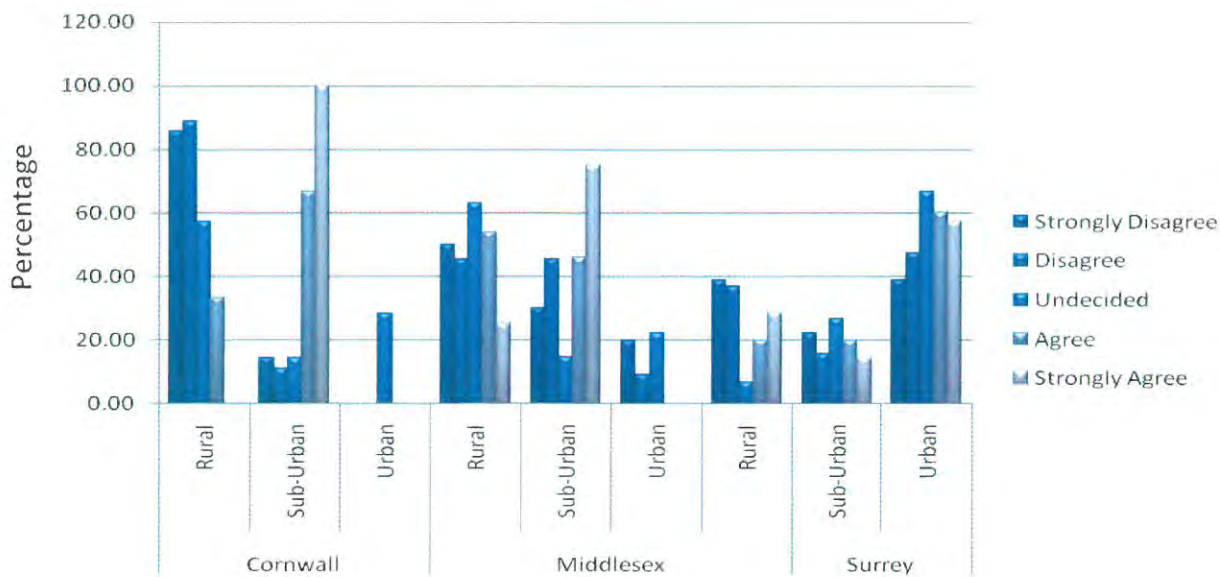


Figure 4. Consumers experiences with inappropriate content by county & community classification

In relation to programming choices, approximately sixty-five percent (65%) of the rural respondents of Cornwall and Middlesex share the opinion that they currently receive limited programming choices. This is sharply contrasted by those persons in the urban areas who mostly strongly disagree or disagree to having limited programming choices. The data from Surrey however show a different trend; it shows an almost equal number of respondents who indicated that they have a problem with limited programming choices. Figure 5 shows the consumer responses as it relates to limited programming choices.

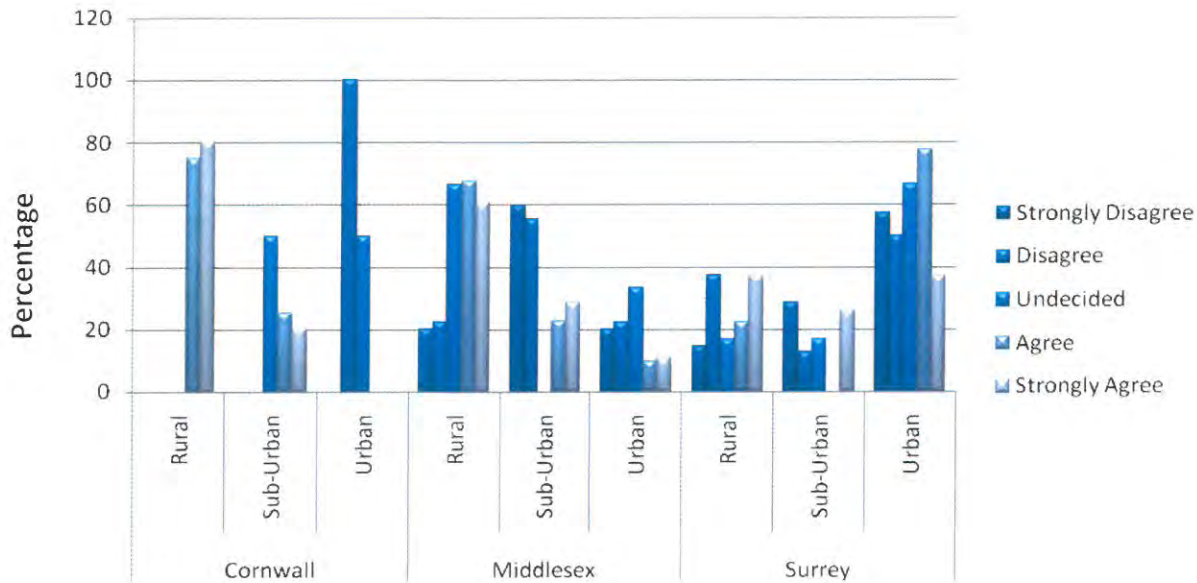


Figure 5. Consumers experiences with limited programming choices by county & community classification

Overall as demonstrated through the findings it is important to note that based on the geographical location and the community classification, different clusters of concerns exist.

Jamaicans to be affected by Digital Switchover

DSO is a mandatory authority-innovation decision which requires action from individual households. Its success is dependent on all persons who will be affected buying into the decision. The entire consumer market now needs to be educated and convinced, especially those to be affected. The consumer market is inclusive of several groups of individuals ranging from varying income groups; the poor, varying ages; the youth, the elderly, varying physical abilities; the deaf, and the disabled, varying locations; counties, parishes and communities and varying residencies; homes, medical facilities, care institutions and prisons.

Who will be affected?

Households or organizations that are not receiving a digital broadcast or subscriber signal will be affected. Analogue TVs with no cable, digital TVs with no cable, and analogue or digital TVs with analogue cable will be affected. According to our findings, as seen in Figure 10, up to ninety-eight percent (98%) of respondents may be affected by the migration in one way or another (all TV set-up excluding Satellite TV and Internet TV).

Forty percent (40%) of Jamaicans fall into the main target group for switching to digital television. This 40% is comprised of those with analogue TV and no Cable (32%) and those with a digital TV and no Cable (8%). These persons currently watch television via over-the-air signals from free-to-air broadcasters and will need to switch to DTTV or even another platform. Persons in this group who will switch to DTTV highlight the critical path for DSO; high voluntary adoption of DTTV is a pre-cursor to a successful DSO. An additional fifty-eight percent (58%) of persons, those with analogue TV with Cable (31%) and a digital TV with Cable (27%), may have to migrate to digital cable if they have not yet done so.

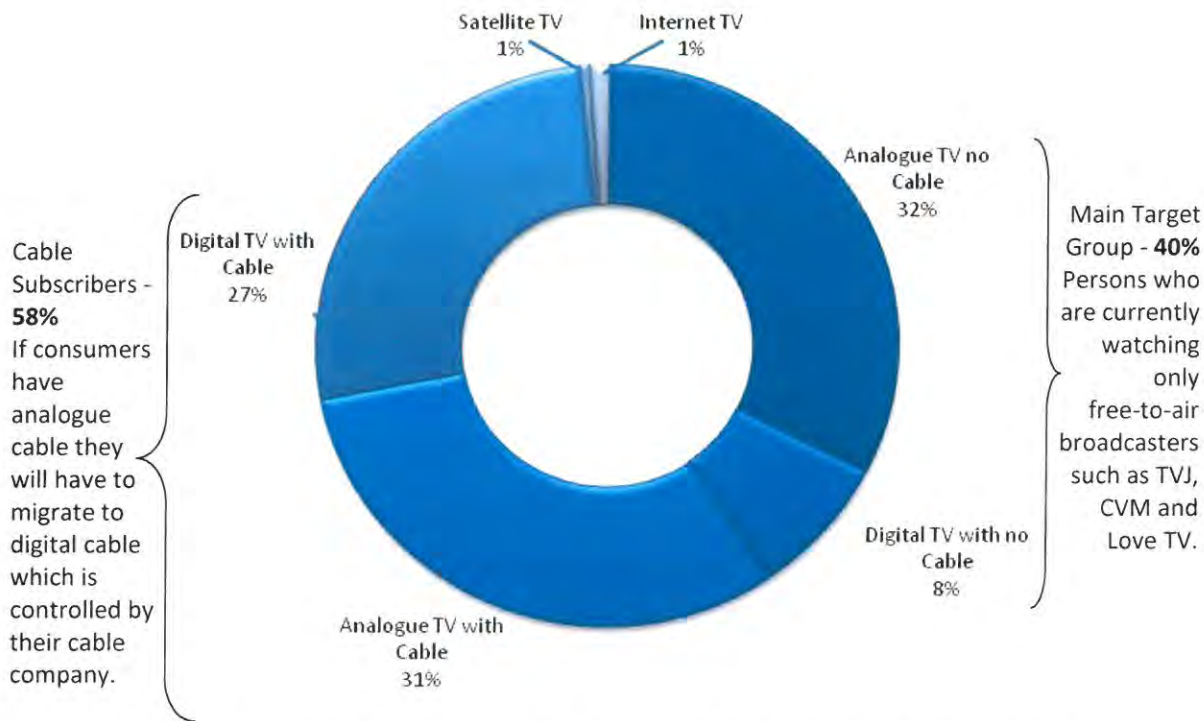


Figure 6. Chart representing the proportion of TV set-up in Jamaica

Groups at Risk of Marginalization

Aside from having to make changes to TV devices there are persons, who will be affected based on their inability to become aware of, understand, implement and afford the switch. We categorized persons who are adversely affected by such factors as vulnerable and or marginalized groups. Similar to studies in Australia and the UK, based on the findings, we conclude that these groups need to be targeted and marketed to separately to increase diffusion among these groups.

In the focus group sessions, it was highlighted that there are persons who are most vulnerable and who are potentially at risk of being marginalized; persons living in deep rural areas and institutions (such as shut-ins, nursing homes, etc.), the elderly, poor residents and the disabled. When asked, “which of your friends and family members will have the most difficulty switching to DTTV, digital cable, Internet TV or satellite TV”, one person responded:

"The elderly because they are close to death and may not see it necessary to switch"

This is similar to DSO projects worldwide where it has been noted that groups of individuals for whom analogue switch-off could be seriously difficult (financially/physically) include the elderly, poor and the disabled. We therefore examined the responses of the marginalized groups from the survey data. Residents in rural areas, institutional residents, the elderly, the poor and the disabled were studied and these findings, as demonstrated below, were supported on a large scale statistically.

Residents in Rural Areas

71.31%

*of rural area residents
strongly agree that signal
reception is a problem*

Residents of rural areas are already experiencing higher levels of signal reception problems; of all

the respondents that agree to experiencing issues of low

signal reception, sixty-one percent (61%) of these respondents are from rural areas and similarly seventy-one percent (71%) of all respondents who strongly agree to experiencing low or no signal reception are from rural areas. It is clear that they will run the risk of being marginalized especially when compared to urban areas where only twenty-five percent (25%) of respondents agree and four percent (4%) strongly agree to experiencing the same problem. To compound matters with digital reception it's either signal or no signal.

What will happen to the profuse grey areas that exist in rural areas?

In focus group sessions with the elderly, two of the ten participants heard about the DSO prior to the session. For the session with the deaf and rural residents, two (2) and three (3) participants respectively, out of ten (10), had prior knowledge of the DSO. Interestingly there is a stark contrast with the urban residents where five (5) of ten (10) had prior knowledge of the DSO process.

Institutional Residents

Institutionalized individuals are likely to have subsets of poor, elderly, homeless and disabled persons. But separate and apart from that fact the management staff of these organizations now become the liaison between the BCJ DSO messages and the persons in the institution. The management and staff also will have to put a budget in place and plan for DSO. During the research the effect of support from management and discussions in a positive group setting were noticed as senior citizens at the National Council for Senior Citizens were much more receptive to the planned switch than senior citizens in the wider community. In fact after the senior citizens session one resident left saying

“I will now go and tell my neighbour about DSO so she can be prepared too.”

We hypothesize that the institutional setting may be used to the benefit of policy makers in educating and enticing persons to switch as the focus group session held at the National Council for Senior Citizens was able to bring about insightful responses from all the senior citizens.

The Elderly

Typically elderly persons are more resistant to change, as was evidence by the elderly persons spoken to outside of the group settings. Some elderly persons were not interested in the survey at all and stated:

“A young people someting dat, mi too old!”

“I don't understand those things yuh know.”

“It's my husband always deal with those or my children will help us.”

Usually the elderly fall within the laggard's category of innovators; persons who are the last to adopt an innovation. Unlike other categories of adopters, laggards typically have an aversion to change. Since DSO represents a technical change the possibility exists that a large proportion of the elderly population (typically laggards) maybe marginalized from partaking in the DSO process. It is for this reason that appropriate marketing and messaging to this group is particularly important.

All the focus group participants unanimously agreed that the elderly would need special attention. Consistent with worldwide approaches, countries have been preparing specially for the elderly, for example the UK's DTV help Scheme was of benefit to seniors. In the UK, the DTV help scheme included the provision of equipment to convert one TV set, help with installation and aerial replacement if deemed necessary.

As displayed, in Figure 7, sixty-seven percent (67%) of the elderly believe the timeline for the completion of DSO is too short. Interestingly eighty-six percent (86%) of persons under 18 believe it is attainable and the remainder believe the deadline of 2015 is too far away.

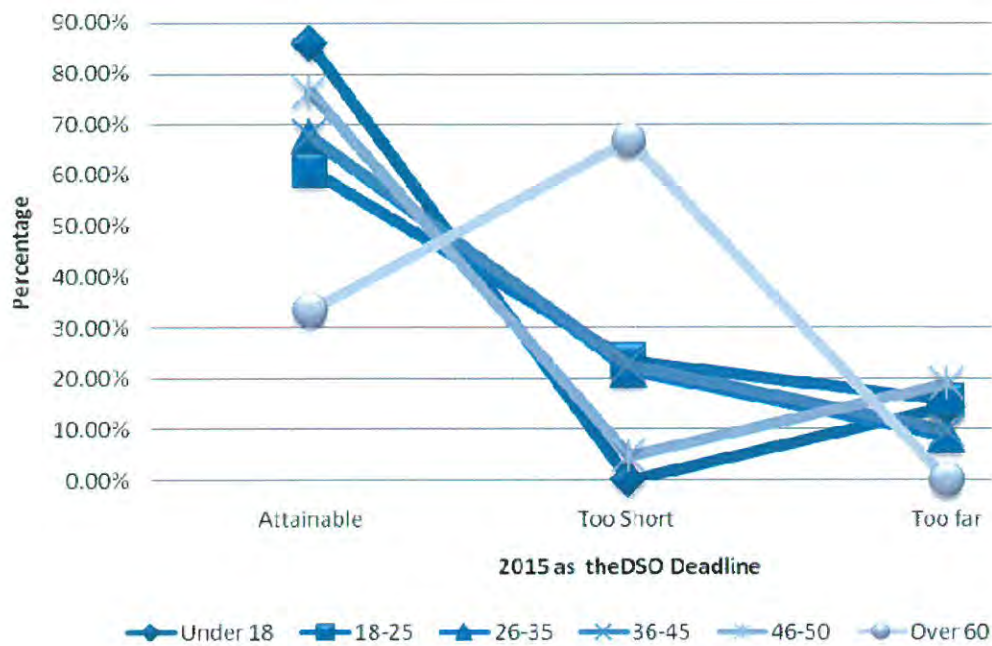


Figure 7. Line graph representing the views on the proposed 2015 DSO timeline by age

Early in the process, concern over the timing is an issue; this is an indication that special attention is urgently needed. In addition to time, cost is another issue.

The Poor

78.9%

of respondents cite cost as an area of concern for DSO

Generally speaking cost is a factor for seventy-nine percent (79%) of respondents. Some sort of expense will be incurred by residents whether to buy a set-top converter box, buy a digital TV, pay for upgrading cable boxes to digital cable

boxes or pay the cost for satellite or Internet TV. When asked about readiness and the date to switch, sixty-one percent (61%) of poor persons and fifty percent (50%) of senior citizens express doubt in meeting the 2015 deadline.

However there is a group of individuals who are excited about the change, the deaf population. Based on the nature of the innovation (dealing with watching TV) this was the main disabled group researched.

The Disabled

Disabled individuals face unique challenges with respect to DSO, and these in turn may translate into higher costs, greater degrees of complexity in enabling their access to digital TV and limitations to their accessing relevant information about the DSO process. In the focus group session with the deaf we explored the main issues affecting them and it seems the DSO process is far more crucial to them than to the remainder of the population. For the deaf, currently the television viewing experience has very little entertainment and informative value as there is little or no closed captioning and when there is closed captioning, it is unreadable as it at times scrolls too fast. Focus group respondents lamented:

"[The TV viewing experience is] not enjoyable because there is little or no closed captioning"

"If the news even has closed captioning, other programs such as Ity and Fancy Cat don't, we want to understand and laugh as well"

"All you see is a pretty picture, sometimes"

It was noted that there is especially a deficiency in closed captioning for local programming and still they are not exempt from the other TV quality issues. It is to be noted that unlike other viewers the deaf population would place a much higher value on DTV with the guarantee of mandatory closed captioning.

The deaf however require special programs to advertise to them, firstly in their first language, Jamaican Sign Language (JSL), and in a print media that they usually read. This by extension will be similar for other disabled populations.

Based on the focus group discussions it is our belief that if the specialized needs of each group of persons are met the likelihood of a successful DSO will be greatly increased. Hence it is recommended that the agencies that promote adoption do not take a 'mass marketing' approach, but rather examine and as a result appeal to different segments of the market accordingly. An integral aspect in the conversion to DTV, especially DTTV is the willingness of individuals to adopt especially in environments where the uptake is voluntary and users are expected to bear the cost. In fact the key elements of any diffusion are the innovation itself, the communication channels, time and the social system. We will now examine the role these elements will play in the DSO process.

The Digital Switchover Proposition

A vital step in both the focus group sessions and collecting the survey data was explaining the DSO proposition – what DSO is, what it has to offer, why it is necessary and how will it affect consumers. Before considering the consumers' responses to the DSO proposition, an examination of the DSO proposition was conducted. Considerations were given to three of the four key elements in diffusion research – the innovation-digital television, the possible communication channels that can be used for public awareness, and the time factor

The Innovation – Digital Television

An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. In the case of DSO, the innovation is Digital Television(DTV). DTV is an advanced broadcasting technology that has transformed the television viewing experience. An important benefit of the switch to all-digital broadcasting is that it frees up parts of the valuable broadcast spectrum. This spectrum may then be used for public safety communications, national messages, or it can be auctioned to companies that will be able to provide consumers with more advanced wireless services.

Consumers also benefit directly as digital broadcasting allows stations to offer improved picture and sound quality. It is also more efficient than analogue. However with digital broadcast, complete signal reception is necessary as it is either a sharp image or has no image. Another benefit is that multicasting becomes an option for broadcasters. Multicasting allows broadcast stations to offer several channels of digital programming at the same time, using the same amount of spectrum required for one analogue program. For example, while a station broadcasting in analogue on channel 7 is only able to offer viewers one program, a station broadcasting in digital on channel 7 can offer viewers one digital program on channel 7-1, a second

digital program on channel 7-2, a third digital program on channel 7-3, and so on. This means more programming choices for viewers.

Further, DTV provides interactive video and data services that were not possible with analogue technology. Examples of these services are Video-on-Demand, VCR-like Pause Rewind and Fast Forward, Commercial Skipping, Interactivity with the TV content, television commerce, two screen solutions, telephone caller ID being displayed on screen, social networking via the television, and a range of other services.

Consumer Assessment of the DTV Innovation

Innovations are usually assessed by individuals in terms of five (5) key attributes:

1. Its relative advantage – The degree to which the innovation is perceived as better than the idea it supersedes
2. Compatibility – The degree to which the innovation is persistent with existing values, past experiences and the needs of potential adopters.
3. Complexity - The degree to which an innovation is perceived as relatively difficult to understand and use.
4. Observability – The degree to which the results of an innovation are observable to others.
5. Trialability – The degree to which an innovation may be experimented with on a limited basis

DTV as an innovation has the required relative advantage over the previous generation (analogue TV) through the plethora of benefits it offers. Additionally, TV is already well assimilated into the lives of most Jamaicans so the change to digital has little issue of compatibility. As it relates to complexity or simplicity based on the level of awareness and the information available in the public domain DSO runs the risk of

sounding more complex. To compound the issue of perceived complexity there is no real triablability with DSO. Individuals will not be provided with a chance to experiment with the innovation by the policy makers. However, based on the feedback from the focus group sessions, once the consumers are properly informed, have a chance to view the set-up of DTTV and are allowed to get their questions answered, it is likely that they will agree to the change. In terms of observability, an innovation that is more visible will drive communication among the peer groups and personal networks. As evidenced in the qualitative data increased awareness is necessary. However policy makers need to ensure that they create more positive reactions.

Communication Channels

Getting clear, concise and timely information to the consumers are important factors that will determine the level of success of the DSO. Over 50% of the consumers strongly agreed that proper public education is a necessity. In total, over 80% agreed that there is a need for proper publication about DSO.

There are several media that may be exploited in conducting these education campaigns. In the survey, respondents were asked which medium would be best for informing them about DTV. Not surprisingly, the television was the highest rated and phone calls the least. Table 2 shows the complete list of the choices and the percentage of respondents who agree to be reachable by that medium.

Table 2. Preferred Communication Medium for DSO Announcements

Communication Medium	Percentage of Respondents who Agree to being Reachable by the Medium
Television	86%
Radio	76%
Billboards	71%
Social Media	68%
Posters	67%
Text Messages	64%
Newspaper	62%
Community Forums	56%
Phone Calls	45%

Time

Even after hearing about an innovation, individuals in society will take some time to decide whether to switch. Several factors may inform this decision. For example, consumers may require a certain amount of time to learn about a technology and to make financial and other preparations. All individuals go through the Decision Innovation Process⁵; it occurs through a series of communication channels over a period of time. Figure 8 displays the steps involved in this decision-making process.

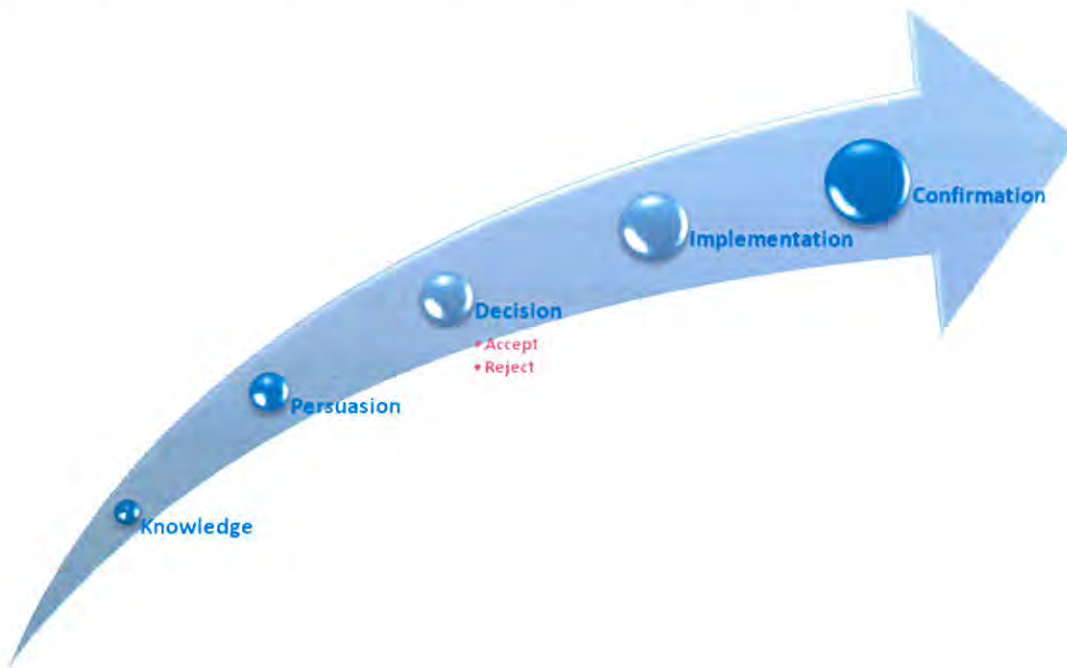


Figure 8. The five stages in the Decision Innovation Process

For DTV, individuals will first have to be exposed to the planned DSO (knowledge). The next step will be up to the individual if they are interested, and that is to follow up and actively seek information about it (persuasion). The individual will then take the concept of the change and weigh the advantages/disadvantages of switching and decide whether to adopt or reject DTV (decision). If one decides

Rogers, E. (1995). *Diffusion of innovations*. (4th ed.). New York: Free Press.

to accept the change, one will go on to implement the DTV platform and assess its usefulness and then finally confirm one's decision whether or not to continue using the innovation.

Assuming that an individual would switch, survey participants were asked to express their views on the proposed timeline. A majority of the respondents (65%) indicated that the proposed timeline is adequate to make all the necessary preparations, 22% thought it was too short and more time should be given in order to adequately prepare for the switch. Thirteen percent thought the amount of time given to switch to DTV is too much and that the date should be sooner.

Participants were taken through the first three (3) steps in the process. They were informed about the switch and DTV then asked questions that allowed them to consider the innovation, the time to prepare, and were finally asked what their decision would be. A majority of the respondents (40%) were waiting on changes in their financial status, either when they can afford it or when they receive an incentive. Another 38% were not sure when they would voluntarily switch; fifteen percent would switch now and seven percent (7%) would switch in 2015.

It is to be noted that in the persuasion stage several factors can inform the decision. The Determinants of DTV Adoption model we used explored these deciding factors with an aim to leverage them to increase voluntary adoption of DTV.

The Determinants of DTV Adoption

A determinant is a factor that decisively affects the nature or outcome of something or an event. Various factors were examined that affect the diffusion and adoption of DTV. The main attributes of DTV highlighted in the focus group sessions and a number of predictor DSO variables were explored. The results are similar to those of the three levels of determinants uncovered in the UK's 2004 consumer study and to the key constructs of Unified Theory of Acceptance and Use of Technology.

Here we posit that the main determinants to the adoption of DTV in Jamaica are represented by three (3) variables. These are:

1. the value an individual places on the digital switch,
2. the content and service attractiveness of the DTV package,
3. the financial feasibility and the ease of use of digital equipment.

Also we theorize that these variables are related hierarchically, meaning that one has to agree to variable 1 before he/she can move on to agreeing with another variable. The focus group sessions allowed us to investigate these variables, to understand some of the reasons behind the choices and assisted in determining exactly how the variables affect DSO in Jamaica. The salient points from the focus group sessions coupled with the three levels of determinants proposed by Klein, Karger, & Sinclair⁶ (see Figure 9) were collated and used to develop the determinants model.

⁶ Klein, J., Karger, S., & Sinclair, K. (2004). Attitudes to digital television preliminary findings on consumer adoption of digital television research. Retrieved from http://www.digitaltelevision.gov.uk/pdf_documents/publications/Attitudes_to_Digital_Television.pdf

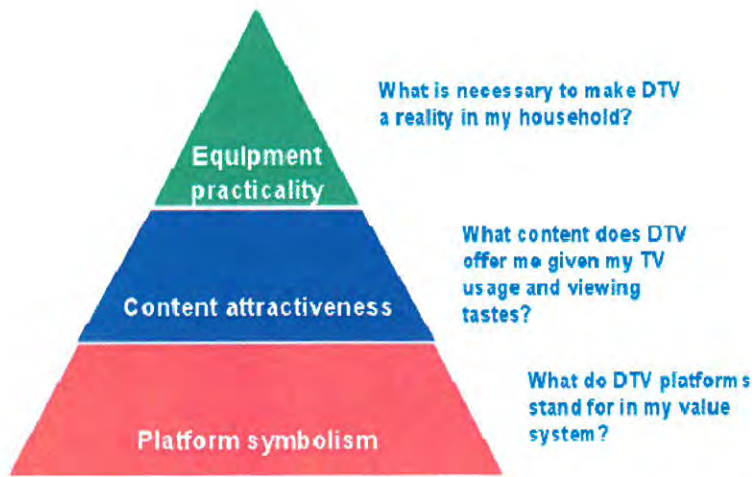


Figure 9. The three levels of determinants proposed by Klein, Karger, & Sinclair (2004)

Figure 9 is a hierarchical model from Klein, Karger, & Sinclair which assumes that consumers make up their minds about DTV by looking at the platform symbolism, content attractiveness and equipment practicality. In this hierarchy persons can only move up the pyramid if they are satisfied with a lower level. From the data we believe a similar hierarchical model can be used to represent the Jamaican situation. Figure 10 illustrates this.

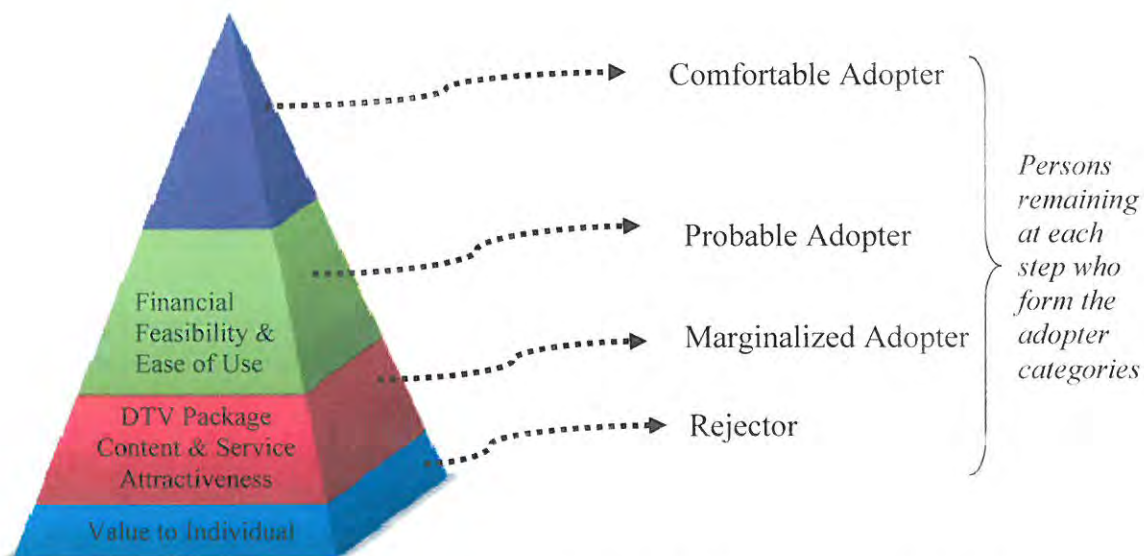


Figure 10. The Determinants Model: showing the levels of Determinants and their Associated Adopter Categories

Each individual in the population will consider the three factors in making a determination as to whether or not to switch. At each step, one may favourably respond to the determinant and progress to the next step or have a problem and remain at that step. Based on the persons remaining at each level the population will be segmented into four (4) categories, the four (4) adopter categories.

The Jamaican Adopter Categories

The four adopter categories are comfortable adopters, marginalized adopters, probable adopters and rejectors. The distribution of the respondents is represented in Figure 14 below. In order to determine which respondents belonged to each of the categories, their response to select questions on the survey instrument was examined. Respondents who answered “no” to the Question 3 where placed in the rejector category; those whose average answer questions thirteen (13) and fourteen (14) was 4 or higher were placed in the marginalized adopter category; respondents who answered question fifteen (15) by indicating four (4) of five (5) and who had an income level of less than \$25000 where categorized as probable adopter; and all others were described as comfortable adopters.

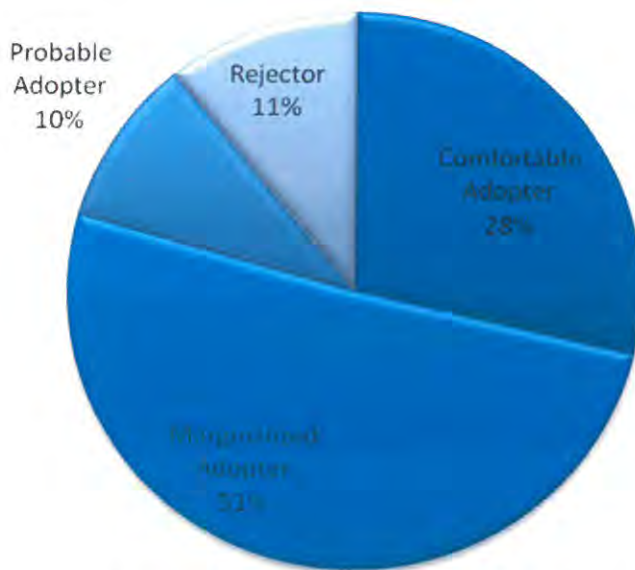


Figure 11. Jamaican DTV Adopter Segments

This segmentation is thought to be representative of the Jamaican population. We posit that approximately half of the population will be marginalized adopters, approximately a quarter comfortable adopters and the remainder of the citizenry either rejectors or probable adopters.

- A comfortable adopter is an individual who perceives value in the DTV platform(s), finds the DTV content and services packages attractive and one who ranks the DTV platform(s) as financially feasible and easy to use.
- The second group, marginalized adopters has an intention to get DTV but may be held back by factors such as cost and complexity.
- The final adopter category is the probable adopter who would switch but first needs to be persuaded further by the content and services provided by DTV, then helped over the financial and ease of use concerns.
- Rejectors form the final group; a rejector is one who is unlikely to get DTV voluntarily. He or she would need to be convinced of the value of the DTV platforms, enticed by DTV services and content and then be assisted to cross the financial and complexity barriers.

To further profile the adopter categories, we stratified the adopters groups based on their community classifications, age and gender. The results of this may be seen in table 3.

Table 3. Demographic Stratification of Adopter Segments

Classification	Category	Adopter Segments			
		Comfortable Adopter	Marginalized Adopter	Probable Adopter	Rejector
Community	Urban	21.28%	59.57%	6.38%	12.77%
	Sub-Urban	33.33%	33.33%	20.83%	12.50%
	Rural	32.93%	53.66%	6.10%	7.32%
	I don't know	0.00%	75.00%	0.00%	25.00%

Age Category	Under 18	71.43%	28.57%	0.00%	0.00%
	18-25	29.87%	51.95%	10.39%	7.79%
	26-35	23.91%	54.35%	4.35%	17.39%
	36-45	38.71%	45.16%	6.45%	9.68%
	46-50	9.52%	57.14%	19.05%	14.29%
	Over 60	0.00%	33.33%	66.67%	0.00%
Gender	Male	32.88%	47.95%	9.59%	9.59%
	Female	25.89%	52.68%	9.82%	11.61%

Based on the findings most adopters (comfortable, marginalized and probable adopters) are:

- From rural communities

Residents in rural areas were reported as being most affected by signal reception issues and poor audio and video quality. This group also has the least issues with inappropriate content and the most persons who believe the TV programs are limited. Rural residents are therefore most likely to perceive DTV as the solution to their problems; DTV means better picture and sound quality, more channels, and more programming choices.

- Are under twenty-five (25) years old

The age ranges and the adopter segments have a statistically significant (0.05 level (2-tailed)) correlation which suggests that the younger a person is the more likely to be closer to the top of the adopter pyramid.

- Are almost evenly distributed by gender: 10% of rejectors are males and (12%) females.

It has been a general perception that men are the early technology adopters and gadget gurus but more and more women are starting to catch up with their male counterparts. To further understand the perception of adopters, detailed reviews were done of the consumer attitudes to DTV. The DSO variables, favourability for the switch, content and service attractiveness, and cost and complexity concerns were studied.

Consumer Attitudes to DTV

The focus group sessions indicated that persons who favour the switch usually do so because of the benefits that will accrue to the television viewing experience. These same

Table 4. Percentage of Respondents in Favour of DSO from each Adopter Segment

persons also value television for entertainment and informative reasons. Of the individuals polled, eighty-three percent (83%) of individuals are in favour of digital switchover. Table 4 highlights the breakdown of individuals who are in favour of DSO by adopter categories. According to the data shown in table 4, thirty-two percent (32%) of the consumers who favour DSO fall into the comfortable adopter category. This means that already a third of the market perceives the value in switching and will switch without any incentives and coercion. The large majority, approximately sixty percent (60%), of adopters fall into the marginalized adopter category who with the right policies and marketing strategies will switch.

In terms of the content and service attractiveness the following variables were studied;

- The possibility for closed captioning
- Interactive TV
- Improvement of the standard of living
- More programming choices
- More channels
- And better picture and sound quality.

Appendix C presents the number of persons from each adopter segment that are interested and uninterested in these DTV features. According to the data only nine percent (9%) of the rejectors and four percent (4%) of the probable adopters find the potential content and service benefits of DTV to be appealing. This is especially the case with the proposition of more channels and interactive TV services. Eighty Seven percent 87% of the top two (2) adopters (comfortable and marginalized) expressed interest in the attractiveness of the

potential

In Favour of DSO	Percentage of Persons in each Adopter Segment			
	Comfortable Adopter	Marginalized Adopter	Probable Adopter	Rejector
Yes	32.12%	56.97%	10.91%	0%
No	0%	0%	0%	100%

content and services. The differences between the top two adopters are consumers' concerns about cost and complexity. Table 5 compares the two (2) segments as it relates to concerns of cost and complexity.

Table 5. Adopter Groups Cost & Complexity Concerns

Rating	Cost		Complexity		Sixty-nine percent (69%) and forty-four percent (44%) of marginalized adopters strongly
	Comfortable Adopter	Marginalized Adopter	Comfortable Adopter	Marginalized Adopter	
Strongly Agree	15.31%	69.39%	0.00%	80.95%	
Agree	43.75%	43.75%	1.89%	73.58%	
Undecided	45.00%	20.00%	12.50%	62.50%	
Disagree	100.00%	0.00%	57.78%	28.89%	
Strongly Disagree	23.08%	0.00%	80.77%	0.00%	

agreed and agreed, respectively that cost was a major concern of theirs. This is in comparison to the one hundred percent (100%) and twenty-three percent (23%) of comfortable adopters who disagreed and strongly disagreed, respectively. In the area of the complexity of the equipment, 81% and 74% of marginalized adopters are concerned and strongly concerned about this factor, respectively when compared to 58% and 81% of comfortable adopters who are not concerned.

From the statistical analysis and data mining the determinants model accurately profiles consumers based on their attitudes toward DTV. However it is important to note that DTV consists of different platforms; DTTV, cable TV, Internet TV and Satellite TV. We also reviewed the attitudes specific to DTTV as DTTV is significantly different from the other platforms. Cable, Internet and Satellite TV are subscriber TV which usually require a fee, comes with a variety of content and service packages and normally have a wide range of channels. DTTV is different as it is free-to-air broadcast. The free-to-air proposition has a unique subset of factors: (1) there is no cost, (2) less channels are offered (3) it is more complicated to offer full signal coverage for the entire island (4) the content is primarily localized (5) several of the services purported by

DTV will not be accessible using free-to-air broadcasts and (6) not all converter boxes can convert digital closed captioning.

Attitudes Specific to DTTV



Of the 185 respondents fifty-seven percent (57%) plan to switch to DTTV. Within the DTTV group fifty-six percent (56%) will buy a digital TV and forty-four percent (44%) will buy a converter box. Potential DTTV candidates may be

profiled as:

- More likely to have cost and ease of use concerns

Figures 13 and 13 display the comparisons of persons who agree that cost and complexity are concerns. It can be seen that more DTTV candidates agree and strongly agree that they will have cost and complexity concerns in comparison to those who will implement other DTV platforms.

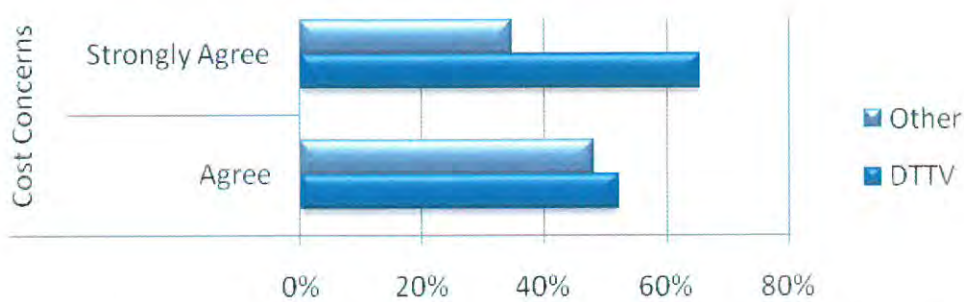


Figure 12. Bar graph showing agreement to cost concerns by DTV Platforms

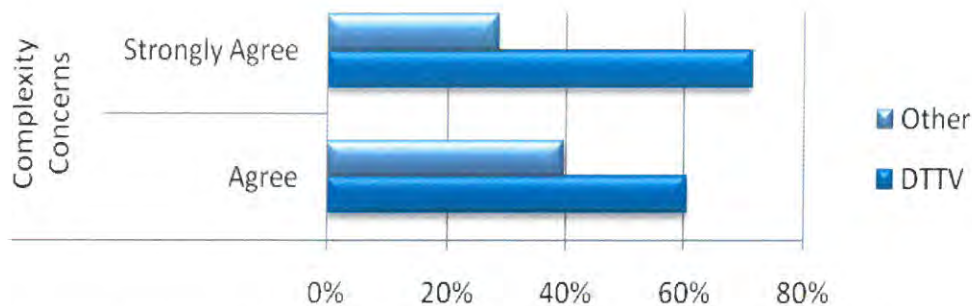


Figure 13. Bar graph showing agreement to complexity concerns by DTV Platforms

- Desirable of more channels

From the data shown in table 6 on average sixty-four percent (64%) of respondents who agree to want more channels are DTTV candidates while on average eighty-five percent (85%) of respondents who disagree to being interested in receiving more channels are candidates for other TV platforms.

Table 6. Desires for More Channels for DTTV & Other DTV Platforms

DSO Switch Strategy	More Channels				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
DTTV	16.67%	12.50%	50.00%	61.76%	66.23%
Others	83.33%	87.50%	50.00%	38.24%	33.77%

- More likely to be already suffering from low or no signal coverage

Based on the data shown in table 7 on average fifty-six percent (56%) of all respondents who agree to experiencing signal issues are DTTV candidates while on average thirteen percent (13%) of the respondents are candidates for other TV platforms who agree to experience the same issue.

Table 7. Signal Reception Concerns for DTTV and Other DTV Platforms

DSO Switch Strategy	Low or No Signal Reception				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
DTTV	49.12%	67.57%	59.26%	60.47%	52.38%
Others	50.88%	32.43%	40.74%	39.53%	47.62%

It should be noted that low or no

signal reception, poor audio quality and poor video quality are all significantly correlated at the 0.01 level (2-tailed). Hence by extension DTTV candidates also experience poorer levels of audio and video quality.

- More likely to currently have an issue with limited programming choices

Table 8 displays the aforementioned fact showing the percentage of respondents for DTTV compared to the percentage of respondents for other DTV platforms in each of the 5-point likert scale categories.

Table 8. Programming Choices Concerns for DTTV & Other DTV Platforms

DTV Platforms	Concerns	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
DTTV	Limited Programming Choices	29.03%	55.56%	45.45%	54.55%	71.60%
	Need More Program Choices	33.33%	9.09%	50.00%	58.33%	65.22%
Others	Limited Programming Choices	70.97%	44.44%	54.55%	45.45%	28.40%
	Need More Program Choices	66.67%	90.91%	50.00%	41.67%	34.78%

Interestingly persons expressing a desire to switch to the other platforms are more likely to disagree and strongly disagree to having limited programming choices and wanting more of the same.

- One (1) in every (2) consumers being interested in the new DTV services

Of all respondents switching to DTTV nineteen percent (19%) more agreed to wanting Video-On-Demand, four percent (4%) more want VCR like features and two percent (2%) more are interested in skipping commercials. For the other services less than half the DTTV candidates are interested. The exact percentages of the respondents switching to DTTV from within each rating for a given service may be seen in table 9.

ble 9. Interest in DTV Services by Persons Switching to the DTTV Platform

Rating	DTV Services					
	Video on Demand	VCR like Pause, Rewind, etc	Commercial Skipping	Interactivity with TV Content	Television Commerce	Two Screen Solution
Strongly Disagree	55.56%	60.00%	57.14%	72.73%	57.89%	44.44%
Disagree	29.41%	50.00%	56.25%	54.55%	52.63%	63.64%
Undecided	55.17%	50.00%	48.00%	65.38%	67.80%	69.57%
Agree	58.18%	56.25%	55.36%	55.88%	57.63%	54.84%
Strongly Agree	64.00%	60.71%	61.73%	46.51%	35.71%	52.08%

- One (1) in every (2) consumers interested in closed captioning.

Overall fifty percent (50%) of respondents are happy with the improved possibility to support closed captioning. Table 9 displays the interest of by persons switching to DTTV compared to those from other platforms.

Table 10. Interest in Closed Captioning

DSO Switch Strategy	Support for Closed Captioning				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
DTTV	46.67%	65.39%	58.82%	48%	64.29%
Others	53.33%	34.61%	41.18%	52%	35.71%

Based on the DSO proposition, collective attitudes towards DTV and the determinants of DTV adoption strategies to increase voluntary adoption of DTV were developed.

Strategies to Increase Voluntary Adoption

A core guiding principle for the switchover is the prioritization of the needs of consumers and the public interest, balanced by commercial and economic interests. To complete the study we summarized the main points into two areas that should be used to spur diffusion and suggested practical strategies to match the target groups to the best marketing strategy. Strategies for targeting the potentially marginalized groups are also presented. It is recommended that these strategies be used in the digital switchover process for the island of Jamaica as they will mitigate the negative determinants and leverage the positive ones.

The Innovation – Digital Television

To spur diffusion of DTV the main points should include:

- The relative advantage digital broadcasting has over analogue broadcasting

Campaigns may be run highlighting the various benefits to be accrued by switching. Note certain niche in the population will be more interested in some benefits than others

- Simplicity

Campaigns should include the ease of transmission from analogue to digital. Firstly persons to be affected should be identified then the different methods for switching identified. For each method it should be made clear what is required of each consumer; what they will need to purchase, how, when and the cost. Warnings should also be made to assist consumers to identify TVs with digital tuners (Digital TVs) different from flat screen televisions. Consumers who will still be receiving over-the-air signals should still be reminded that they will need an antenna. Deaf consumers should be warned that if they are using a converter box they should ensure it has the capability to transmit closed captioning.

- The voice of the consumer should be strongly considered.

In the focus group sessions consumers suggested some financial strategies and possible facilitating conditions. Figure 14 highlights all the strategies suggested and the percentage of respondents who agree or disagree with the proposed strategy. As best as possible policy makers and stakeholders should try to incorporate these measures.

Strategies Favoured by the Consumer

One of the measures suggested by the respondents that would stimulate the voluntary take up is to offer subsidies. However, it was indicated by the Chairman of the Broadcasting Commission, Professor Hopeton Dunn that the government may not be willing to bear the cost almost ruling out the question of subsidies. This could be an unfortunate decision as over forty-five percent (45%) of the respondents strongly agreed with the proposition of subsidies and a further thirty percent (30%) agreed. This is representative of a possible seventy-five percent (75%) of the consumer market. From other international studies agencies in parts of Europe have acknowledged that the DSO process may be hampered if left entirely up to market forces and as a result has suggested interventions such as subsidies, regulation, other financial support, etc. If the policy makers are not willing to offer subsidy to the entire population, a targeted subsidy approach should be considered in which select groups from the population such as the elderly and the disabled are offered subsidies.

Other financial support strategies suggested by the respondents include TV trade-in programs, coupons and tax waivers. Some respondents agreed to trade-in of old television sets for cash or for a discount on the purchase of a digital TV. Trade-in programs are one of the financial measures well supported by consumers; eighty-one percent (81%) of consumers favoured this proposition.

Some of the other measures suggested by consumers include placing a ban on the sale of older, analogue-tuner TVs, conducting comprehensive public education campaigns and putting standards in place to protect

the consumers. The statistics for each strategy may be seen on the facilitating conditions dashboard (Figure 14).

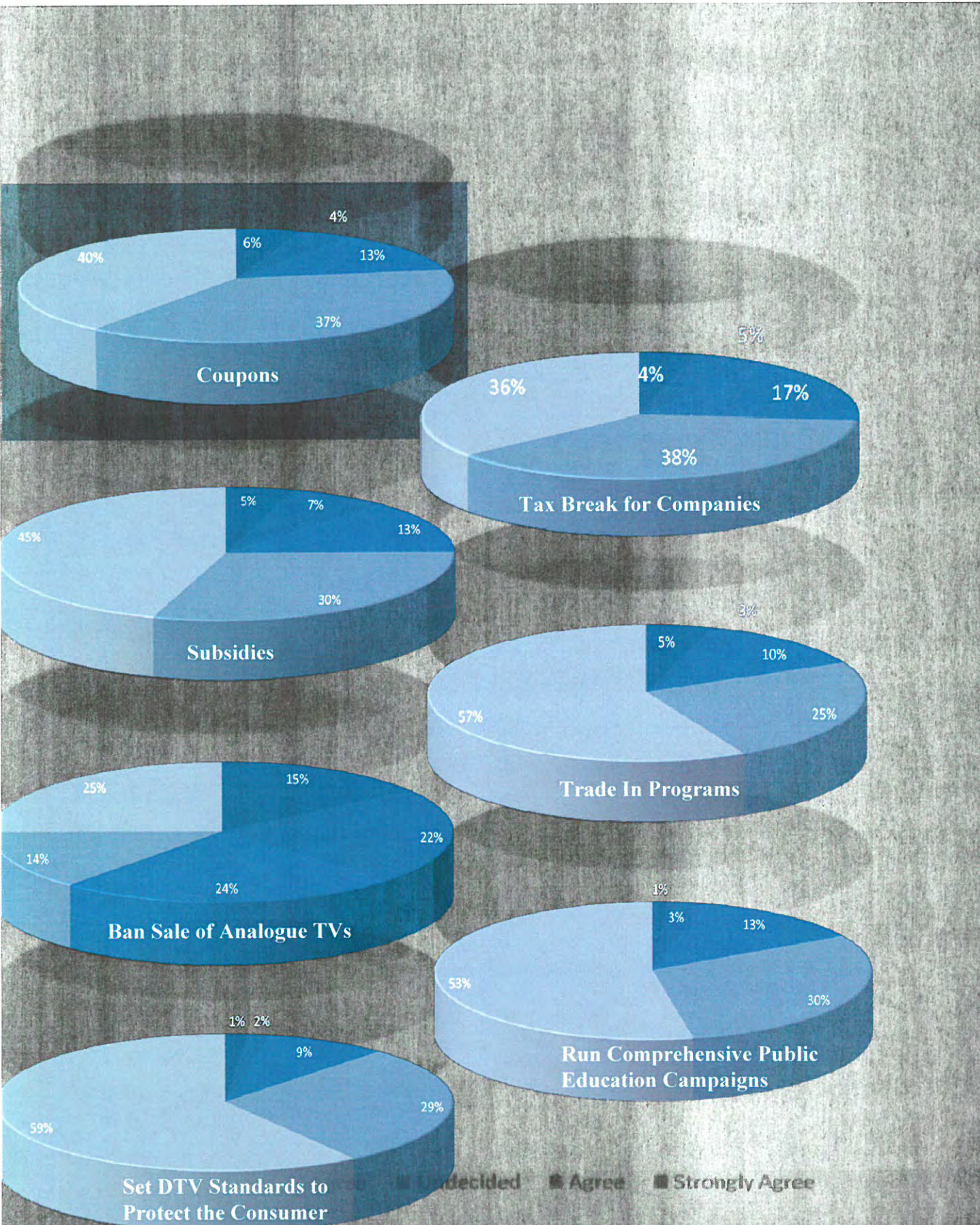


Figure 14. Facilitating Conditions Segmentation Dashboard

Strongly Disagree Disagree Undecided Agree Strongly Agree

Figure 14. Facilitating Conditions Segmentation Dashboard

Along with the messages of the advantages and simplicity and with implementing suggested consumer strategies target marketing should be used. Undertones which address the specific concerns of the adopter categories may be included.

Target Marketing



An exploration of the attitudes of the different adopter segments has shown that they possess different attitudes and views towards DTTV. The research therefore posits that along with the general messages each segmented should be targeted separately. Policy makers and advertisers should be aware of the composition of each adopter segment (as seen in Figure 15) and the strategies that must be employed to increase voluntary adoption among them.

**Figure 15. DSO
Target Groups**

Rejectors

A rejector is one who is unlikely to get DTV voluntarily because they do not believe that DTV fits into their value system and therefore has rejected DSO. According to the data, rejectors have flat out rejected DTV by indicating that they are not in favour of the switch. Additionally, only a few of them find the possible content and services attractive.

In order to reach this group the policy makers must first make clear the ‘necessity’ of the television viewing experience and emphasis that after 2015 if one has not switched they have chosen to discontinue watching their TV. While at the same time being careful to explain that the switch is necessary and will be beneficial to all. Also clarification must be made as to whether DTV stands for just “more TV” as opposed to “better TV”. This will give consumers, especially rejectors, an opportunity to give DTV a place in relation to the

values that they hold. Messages that show that the television can be used to enhance and provide more of what people already value (such as more educational channels) should be included.

Probable Adopters

Probable adopters are those who have accepted DTV's place in their value system but have not found the content and services attractive enough to make the switch. 4.25% of probable adopters find the potential content and service benefits of DTV to be appealing. This segment accounts for the lowest ratings in contents and service attractiveness. This was reflected in the data collected where a large majority of the persons who are not interested in the possible DTV content and services were probable adopters. It therefore means that these persons must be targeted specifically in terms of content and services of DTV.

Also according to Table 3 a large majority of the persons who are probable adopters are over the age of sixty (60). It therefore means that in order to reach this group, content and services tailored specifically for this age group must be offered. In terms of content, persons who are over sixty (60) are interested mainly in sports, global news, education, Jamaican culture and to a lesser extent, movies. In terms of services however, VCR-like functions such as pause, rewind, etc. was the only service of majority interest to the group.

Marginalized Adopters

This group accounts for the majority of the population and is comprised of the persons who value DTV and who find the content and services attractive. These individuals however, still have an issue with the cost and perceived complexity associated with DSO. Because this segment is the largest segment of adopters, this group will need to be vigorously targeted. One of the best ways to target this group would be to offer some form of financial assistance. Approximately 80% of the consumer market perceives cost as an issue that may prohibit the smooth and timely uptake of DTV. It is important therefore to note that the facilitating

conditions instituted by the government will impact the consumers' attitudes towards DSO. Even if none of the financial strategies are implemented stakeholders should implement measure to ensure that the consumers are afforded the lowest possible cost.

Comfortable Adopters

Comfortable adopters are ready to go digital. Based on the findings it can be seen that these persons are usually the younger individuals in the population. Hence they may not necessarily be the purchasers of the household. However marketing research has shown that these individuals in many cases influence the decisions being made in their households even though they don't actually have the purchasing power. These individuals have accepted that DTV is the way to go and therefore if they are specifically targeted to the point where they are so impressed then they will eventually influence the actual purchasers of their household to switch. For comfortable adopters catchy, enticing and popular ad campaigns are the way to go, especially via media commonly visited by the younger generation such as the Internet and Social Networks.

To cover all adopters:

1. Let the consumers value DTV
2. Provide the content & services that the consumers desire
3. Eliminate complexity concerns
4. And ensure consumers are catered to financially

Finally stakeholders must cater for the groups in the society that are at risk of being left out the DSO process (marginalized groups).

Strategies for Potentially Marginalized Groups

These groups include the deaf, elderly, poor and residents in rural areas. As with the adopter categories marginalized groups possess unique needs that have to be met in order for them to voluntarily adopt the technology.

The Deaf

In the 2001 census taken by The Statistical Institute of Jamaica it was reported that there is a total of 2,985 and 4,085 deaf male and female respectively. Due to the nature of their disability the audio component of the TV viewing experience does not benefit these individuals. As such the deaf population has the unique need for constant closed captioning or messages interpreted in Jamaican Sign Language. To increase voluntary take up among this group there has to be an attempt to fulfil their needs where watching TV is concerned. For the deaf, currently the television viewing experience has very little entertainment and informative value as there is little or no closed caption and when there is closed caption, it at times scrolls too fast. There is especially a deficiency in closed captioning for local programming and in addition they are not exempt from the other TV quality issues. It is to be noted that, unlike other viewers, the deaf population would place a much higher value on DTV with the guarantee of mandatory closed captioning. It therefore means that in order to increase the voluntary uptake of DTV among the deaf community, there has to be a guarantee of closed captioning which according to members of this community is the key to them enjoying the benefits of DTV.

The Elderly

Elderly persons are typically said to be more resistant to change; falling typically in the laggard's category of innovators. With DSO being a technical change that will affect the lives of everyone, countries worldwide have been preparing specially for the elderly. For example in the United Kingdom the Government indicated it would offer assistance by means of the DTV Help Scheme. This scheme is targeted to people aged seventy-five (75) years and over and disabled persons, individuals in care homes for more than 6 months and others. In Jamaica all participants from the focus group sessions agreed that the elderly would need special attention. Already sixty-seven percent (67%) of the elderly believe the timeline for the completion of DSO is too short leaving just a third that believes it is attainable.

The Poor

The poorer sector of society runs the risk of being left behind if certain measures are not being put in place to cushion the effect of the impending switch. Forty-one percent (41%) of the respondents make less than JMD\$25, 000 per month. This means that under the prevailing economic conditions it may be difficult to fund the purchase of the necessary digital equipment. Because the main problem experienced by the poor is of a financial nature, it follows reasonable logic that solutions of a financial nature would be most appropriate. Most of the respondents tend to favour subsidizing the cost. This will ease the burden on these particular consumers in terms of purchasing the required equipment.

Limitations & Future Work

It is important to note that this was an exploratory study. Exploratory research is not typically generalizable to the population at large therefore the survey was used to make the findings more representative of the population. There was a reliance on secondary data available in the literature from other countries and from the focus group sessions. The results will, however, be useful for decision-making and have provided significant insight into the consumer perspective of DSO.

During the survey data collection there were several limitations. Based on the choice of a non-probability sampling method (purposive random sampling), not all members of the population had an equal opportunity of being sampled. As a result generalizations about the entire population are not made.

The subject of the study, DSO and DTV, being a relatively new and uncommon topic, extended and complicated the data collection process. Most of the population had little or no knowledge on what DSO was and the fundamental differences between DTV and analogue TV and digital broadcast and analogue broadcast. In order to garner accurate data (both in the focus group sessions and the survey) the participants had to be ‘taught’ about the DSO process in order for them to accurately participate in the study. Based on this, the preferred survey mode of choice was face-to-face communication in order to allow for a very brief dissemination of information and do validity checks to ensure the individuals had a clear understanding. This, however, proved to be too taxing to complete as it took about three (3) hours to complete eight (8) questionnaires. The researchers had to email and deliver some questionnaires. As a result some of the questionnaires were never returned, were incomplete, inconsistent or were late in being returned as they did not have the physical assistance of the researchers who could explain terms and concepts to them.

Due to the lack of intricate knowledge in the subject area among respondents they were not probed on the technical and intricate details of DSO. For example, Consumers were not asked about the DTV standard to

be used, high definition channels, or possible uses of the spectrum. We suggest that further studies be completed for specific areas of DSO.

The limitations of time and budget impacted on all parishes being thoroughly surveyed. Institutional environments and all subsets of persons were not explored. We suggest that a more aggressive public education campaign be implemented island wide and further consumer studies be carried out with more focus on detailed parish stratification on the economic side and in areas underserved by this report.

Conclusion

A number of countries are in the early stages of the DSO revolution, a process which will have universal impact on the population. While possibilities and opportunities abound, the digitally challenged and marginalized groups run the risk of being further marginalized and developing countries are faced with the challenge of successfully implementing DSO without the resources used in the more economically advanced countries.

DTV can be considered a good innovation. There are several advantages over analogue transmitted TV, including better sound, better picture, and the possibility of more channels and interactive services. In order to spread the word to the population, several communication channels may be used mainly the television, radio, billboards, and social media/Internet.

Households or organizations with analogue TVs with no cable, analogue or digital TVs with analogue cable and digital TVs with no cable will be affected. Issues of the value placed on DTV, the desire for the content and services complexity concerns, and cost concerns are the main determinants affecting the choice these individuals make. In addition, the elderly, the disabled, the poor, and residents of rural areas stand a chance of being further marginalized with the pending switch. The elderly need information which will guide them through the change, the deaf requires a guarantee that there will be regulations ensuring closed captioning is provided on at least the local stations, the poor requires financial assistance, and persons in rural areas mostly require financial assistance and the guarantee of better quality television reception.

It is anticipated that data from this study will help to advise regulators on the strategies to improve the uptake of DTV to all groups of persons and thus the general population. It will also help to advise marketers on strategy, communications channel, placement, and content to be used to reach the consumer market.

Appendix A

Focus Group Session Participant Statistics



Deaf Citizens Focus Group Participant Statistics

Number of Participants

10

No Answer

	Total Percentage		Total Percentage		Total Percentage			
Gender	Male	4	40%	Female	6	60%	0	0%
Age	Under 18	0	0%	36-45	0	0%	0	0%
	18-25	3	30%	46-60	5	50%		
	26-35	2	20%	Over 60	0	0%		
Geographic Location	Urban	6	60%	Rural	4	40%	0	0%
Education	Primary	0	0%	Secondary	5	50%	4	40%
	Tertiary	1	10%					
Employed?	Unemployed	3	30%	Self-Employed	0	0%	0	0%
	Employed	7	70%					
Income	Under 6,667	3	30%	50,001-100,000	4	40%	0	0%
	6,668-25,000	1	10%	100,001-200,000	1	10%		
	25,001-50,000	1	10%	Over 200,000		0%		
Source of Income	Parents	2	20%	Job	6	60%	2	20%
Occupation	Accounts Payable	1	10%	Supervisor	1	10%	1	10%
	Student	3	30%	Researcher	1	10%		
	Deaf Culture			Technician				
	Facilitator/Mentor	1	10%	Assistant	1	10%		
	Psychologist	1	10%					
Number of Dependents	0	5	50%	5-6	0	0%	0	0%
	1-2	3	30%	7 & up	0	0%		
	3-4	2	20%					
Analogue Terrestrial TV/Cable?	Yes	8	80%	No	0	0%	2	20%
Digital TV?	Yes	7	70%	No	2	20%	1	10%
Number of Channels	2	2	20%	Above 50	2	20%	3	30%
	3	0	0%	Many	3	30%		
	4-50	0	0%					
Time(s) to Watch TV	On & off during the day	3	21%	Once a week	1	7%	0	0%
	Week nights	7	50%	Less than once a week	1	7%		
	Weekends	2	14%				Total	14
Program(s) Watched	Educational Programmes	2	6%	Series	3	9%	0	0%
	News	6	18%	Documentaries	4	12%		
	Sports	4	12%	Cartoons	4	12%		
	Movies	7	21%	All	3	9%	Total	33

Poor Citizens Focus Group Participant Statistics

Number of Participants

9

No Answer

	Total Percentage		Total Percentage		Total Percentage	
Gender	Male	8	89%	Female	1	11%
Age	Under 18	1	11%	36-45	1	11%
	18-25	4	44%	46-60		0%
	26-35	1	11%	Over 60		0%
Geographic Location	Urban		0%	Rural	9	100%
Education	Primary		0%	Secondary	6	67%
	Tertiary		0%	Vocational	2	22%
Employed?	Unemployed	5	56%	Self-Employed	2	22%
	Employed	2	22%			0%
Income	Under 6,667		0%	50,001-100,000		0%
	6,668-25,000		0%	100,001-200,000		0%
	25,001-50,000		0%	Over 200,000		0%
Source of Income	Job	4	44%			5
Occupation	Farmer	1	11%	Welding	1	11%
	Wood Work	1	11%	Landscaper	1	11%
Number of Dependents	0	5	56%	5-6	1	11%
	1-2		0%	7 & up	1	11%
	3-4	2	22%			0%
Analogue Terrestrial TV/Cable?	Yes	9	100%	No		0%
Digital TV?	Yes		0%	No	5	56%
Number of Channels	2	7	78%	Above 50		0%
	3	2	22%	Many		0%
	4-50		0%			
Time(s) to Watch TV	On & off during the day	6	67%	Once a week		0%
	Week nights	1	11%	Less than once a week	2	22%
	Weekends		0%	Total		9
Program(s) Watched	Educational Programmes	4	13%	Series	1	3%
	News	8	25%	Documentaries	2	6%
	Sports	4	13%	Cartoons	6	19%
	Movies	7	22%	All		0%
				Total		32

Senior Citizens Focus Group Participant Statistics

		Number of Participants		12		No Answer		
		Total Percentage		Total Percentage		Total Percentage		
Gender	Male	2	17%	Female	10	83%	0	0%
Age	Under 18	0	0%	36-45	0	0%	4	33%
	18-25	0	0%	46-60	0	0%		
	26-35	0	0%	Over 60	8	67%		
Geographic Location	Urban	7	58%	Rural	1	8%	4	33%
Education	Primary	3	25%	Secondary	5	42%	4	33%
	Tertiary	0	0%					
Employed?	Unemployed	6	50%	Self-Employed	1	8%	5	42%
	Employed	0	0%					
Income	Under 6,667	0	0%	50,001-100,000	0	0%	9	75%
	6,668-25,000	2	17%	100,001-200,000	1	8%		
	25,001-50,000	0	0%	Over 200,000	0	0%		
Source(s) of Income	Pension	4	67%	Relatives	1	17%	7	58%
	Own Business	1	17%				Total	6
Occupation	Retired Family Counsellor	1	8%	Retired Nurse	1	8%	10	83%
Number of Dependents	0	5	42%	5-6	0	0%	7	58%
	1-2	0	0%	7 & up	0	0%		
	3-4	0	0%					
Analogue Terrestrial TV/Cable?	Yes	7	58%	No	2	17%	3	25%
Digital TV?	Yes	6	50%	No	4	33%	2	17%
Number of Channels	2	1	8%	Above 50	1	8%	7	58%
	3	2	17%	Many	1	8%		
	4-50		0%					
Time(s) to Watch TV	On & off during the day	6	33%	Once a week	1	6%	2	17%
	Week nights	8	44%	Less than once a week	0	0%		
	Weekends	3	17%				Total	18
Program(s) Watched	Educational Programmes	7	16%	Series	3	7%	1	8%
	News	10	23%	Documentaries	7	16%		
	Sports	6	14%	Cartoons	2	5%		
	Movies	8	19%	All	0	0%	Total	43

Urban Residents Focus Group Participant Statistics

Number of Participants

8

No Answer

	Total Percentage		Total Percentage		Total Percentage	
Gender	Male	5 63%	Female	3 38%	0 0%	
Age	Under 18	0 0%	36-45	0 0%	0 0%	
	18-25	4 50%	46-60	1 13%		
	26-35	3 38%	Over 60	0 0%		
Geographic Location	Urban	7 88%	Rural	0 0%	1 13%	
Education	Primary	0 0%	Secondary	0 0%	1 13%	
	Tertiary	7 88%				
Employed?	Unemployed	3 38%	Self-Employed	0 0%	0 0%	
	Employed	5 63%				
Income	Under 6,667	3 38%	50,001-100,000	3 38%	0 0%	
	6,668-25,000	0 0%	100,001-200,000	2 25%		
	25,001-50,000	0 0%	Over 200,000	0 0%		
Source(s) of Income	Own Business	1 14%	Job	5 71%	2 25%	
	Parents	1 14%			Total 7	
Occupation(s)	Teacher	1 11%	Entrepreneur	1 11%	0 0%	
	Administrator	1 11%	Administrative Director	1 11%		
	Student	3 33%	Lecturer	2 22%	Total 9	
Number of Dependents	0	6 75%	5-6	0 0%	2 25%	
	1-2	0 0%	7 & up	0 0%		
	3-4	0 0%				
Analogue Terrestrial TV/Cable?	Yes	7 88%	No	1 13%	0 0%	
Digital TV?	Yes	3 38%	No	5 63%	0 0%	
Number of Channels	2	4 50%	Above 50	3 38%	0 0%	
	3	1 13%	Many	0 0%		
	4-50	0 0%				
Time(s) to Watch TV	On & off during the day	1 9%	Once a week	1 9%	0 0%	
	Week nights	6 55%	Less than once a week	0 0%		
	Weekends	3 27%			Total 11	
Program(s) Watched	Educational Programmes	3 13%	Series	3 13%	0 0%	
	News	4 17%	Documentaries	2 9%		
	Sports	1 4%	Cartoons	3 13%		
	Movies	3 13%	All	4 17%	Total 23	

Rural Area Residents Focus Group Participant Statistics

Number of Participants

11

No Answer

	Total Percentage		Total Percentage		Total Percentage	
Gender	Male	1 9%	Female	10 91%	0 0%	
Age	Under 18	0 0%	36-45	4 36%	1 9%	
	18-25	1 9%	46-60	4 36%		
	26-35	1 9%	Over 60	0 0%		
Geographic Location	Urban	0 0%	Rural	11 100%	0 0%	
Education	Primary	0 0%	Secondary	9 82%	0 0%	
	Tertiary	0 0%	Vocational	2 18%		
Employed?	Unemployed	4 36%	Self-Employed	5 45%	0 0%	
	Employed	2 18%				
Income	Under 6,667	1 9%	50,001-100,000	1 9%	4 36%	
	6,668-25,000	3 27%	100,001-200,000	1 9%		
	25,001-50,000	1 9%	Over 200,000	0 0%		
Source of Income	Husband/Parent	3 27%	Job	5 45%	1 9%	
	Own Business	2 18%				
Occupation	Nail Technician	1 9%	Practical Nurse	2 18%	1 9%	
	Shop Owner	1 9%	Student	1 9%		
	Domesic Helper	2 18%	Farmer	1 9%		
	Teacher	2 18%		0 0%		
Number of Dependents	0	2 18%	5-6	0 0%	1 9%	
	1-2	4 36%	7 & up	0 0%		
	3-4	4 36%				
Analogue Terrestrial TV/Cable?	Yes	11 100%	No	0 0%	0 0%	
Digital TV?	Yes	2 18%	No	7 64%	2 18%	
Number of Channels	2	7 64%	Above 50	2 18%	1 9%	
	3	0 0%	Many	0 0%		
	4-50	1 9%				
Time(s) to Watch TV	On & off during the day	6 55%	Once a week	1 9%		0%
	Week nights	2 18%	Less than once a week	0 0%		
	Weekends	2 18%			Total	11
Program(s) Watched	Educational Programmes	1 5%	Series	0 0%		0%
	News	9 45%	Documentaries	0 0%		
	Sports	1 5%	Cartoons	1 5%		
	Movies	6 30%	All	2 10%	Total	20

Focus Group Session Reports



The main objectives of the focus group sessions were to determine the issues that consumers currently experience with Broadcast Television (TV) and Subscriber TV, to explore the consumers' attitudes to DTTV and to uncover the consumer proposition, possible digital take-up and time scale. To guide the focus group discussion there were seven (7) guiding questions and three (3) themes; Current Experiences with TV, Attitudes toward DTV and DTTV and the DSO Proposition.

For each session the key informant selected participants that met the requested criteria and would be available for the proposed time. The general format for each session was:

- Registration and Seating; where participants were registered and given their name tags.
- Opening Remarks & Welcome; where the project was again explained, participants welcomed and acknowledged for taking the time to be present.
- Introductions; where the facilitator and the researchers were formally introduced to the participants
- Purpose of the Session and the Review of Participant Rights & Responsibilities; where the researchers took great care in ensuring that participants were comfortable with the session, that they understood what was being asked of them and reassured them that their rights to freedom of speech, privacy and confidentiality of their data, etc. will be upheld. After this segment the participant selection questionnaire and consent forms were completing and collected.
- DSO Presentations; as most person did not know what DSO entailed they had to be educated on the subject. This part of the session usually employed a DSO video which walked the participants through what DSO was, who will be affected, how they will be affected, what will be required of the consumers and an example of setting up the set-top converter box.

Majority if not all participants understood the content of the video and thus were able to engage meaningfully in the discussion that followed.

- Focus Group Discussion, Summary and Closing; this was the main focus of the sessions where the facilitator conducted the focus group discussions. This was the only part of the sessions recorded

Below is a report on the Focus Group Discussions for the individual groups.

Deaf Citizens

The Deaf Citizens Focus Group Session was held at the University of Technology, Jamaica with assistance from the Jamaica Association for the Deaf and translator Antoinette Aiken. The atmosphere was pleasant and positive; all participants were attentive for majority of the session and eager to understand the impending change. The innovators and early adopters were more involved in the discussion but they encouraged others to share there opinions and allowed them to participate. A few times during the session aside conversations ensued but on most major points there was a group consensus. Eventually one individual seemed a bit distracted and drowsy.

The predominant issues for this group were;

- the disadvantage the deaf community is placed at by not being provided with proper TV services (closed caption or an on screen interpreter) to allow them to watch television programmes, especially local programming,
- the fact that they have been lobbying for the disadvantage to be rectified for years
- and that majority of deaf persons are unemployed and will face grave difficulty completing a digital TV switch

In conducting the session attempting to explain digital switchover and the technology change proved to be a small challenge; different analogies and diagrams had to be used. Also the researchers had to rely on the

interpreter to understand the participants and to translate the messages back and fro. Participants in this group were the first to ask

- for a technical explanation as to how the new digital signal will reach the TV,
- if when Jamaica goes digital closed captioning will be provided
- about the use of the computer/CPU and the TV
- and if a splitter can within a household transmit a signal from one cable box to multiple TVs

Overall the participants made it clear that Jamaica's broadcast TV though of high value to them is of little use to the deaf population as there is hardly ever any caption or interpreter hence nothing is being conveyed to them but the occasional clear picture.

Poor Citizens

The Poor Citizens Focus Group Session was held in Spaldings, Clarendon. The atmosphere was very pensive and orderly with the residents very happy to hear the news and keen to understand. Majority of the participants were between the ages of 18-25, with one (1) female in the group. All participants were for the most part engaged. The innovator dominated the session at times and two persons were very reserved and majority of the others quite participating mostly when prompted.

This session was balanced between the positives of DSO and the financial issues. Residents agreed that it's a step forward, a technological improvement that will bring better channels and more programs. New points raised were the magnitude of the signal reception problem, using the Internet to watch TV and researchers were asked about the health risk posed by a digital signal.

Even amongst the grave financial difficulties raised all but one participant agreed to the switch. Some agreed in favour of the benefits but most agreed stating that it's not optional. Participants demonstrated much concern for the elderly and unemployed individuals.

Senior Citizens

This focus group session was held at the National Council for Senior Citizens. Unfortunately the discussion was initially met with some amount of scepticism by the participants who initially refused to fill out the participant questionnaires and sign the required consent forms. After a full and detailed explanation as to what the project was really about some of the seniors then settled and filled out the forms. The session got underway with the video clip which served to educate the seniors on the digital switchover process. They were quite receptive to the video and immediately had opinions on the subject and thus almost kick started the discussion without the moderator. Overall, the atmosphere was energetic; most of the seniors participated sometimes to the extent of being disruptive, uncontrollable and straying from the topic at hand. On almost all occasions the facilitator however managed to bring the discussion back on course. Most persons openly expressed their view except one person who seemed a bit shy and had to be coerced. Even though the seniors were a bit apprehensive at first in the end the consensus is to embrace the switchover process.

The main concerns raised were:

- The digital switchover is going to happen regardless of what they think or what they have to say
- Seniors currently experience a problem of not having suitable programming for their age group to watch on TV
- Some sort of incentive should be given to cushion the blow on their pockets

Urban Residents

The urban residents' focus group was one that was very lively and saw the participants actively engaged in the discussion. This session was also held at the University of Technology, Jamaica. All the participants were alert, attentive and cooperative throughout the duration of the session. A number of the participants were also quite opinionated and aided in keeping the flow of the discussion while offering different and sometimes controversial views. This in the end resulted in some amount of divergence in views. Of particular significance is the fact that this group had very little bad experiences with TV and a large majority of them are viewers to subscriber TV.

The main issue that arose from this discussion was that the digital switchover process may cause the consumer additional and unnecessary expense.

Rural Area Residents

The Poor Citizens Focus Group Session was held in deep rural Spaldings, Clarendon. These focus group participants were very focussed, orderly and quiet. Participants waited to be acknowledged before speaking and even in the open question sessions few persons volunteered their opinions. Majority of the group were females (1 male) with most persons over thirty six (36). The main concerns for these residents were affordability and signal reception though they acknowledged the worldwide digital trend (scales, watched, etc are now digital). New points raised were;

- questions about the disposal of old TVs
- the possibility of a trade in program in which persons are compensated for their old TV
- a complaint about the quality of digital TVs, lack of technical support for maintenance and scarcity of the parts

Focus Group Salient Points



Theme: Experiences with TV

Senior Citizens		Urban		Rural		Poor		Deaf	
Good quality		Enough Choices with DTTV		Poor signal reception- affected by weather and position		Very good product, educational benefits		Not enjoyable because there is little or no closed captioning	
Limited programming choices		Satisfied		Poor choice of programs (one of the two main local stations doesn't work)		Positive and negative content (even as it relates to children)		When there is closed captioning is too fast	
Sometimes blurry		Limited Choices		Same content being repeated		Poor signal especially in strong wind or rain		grainy/poor quality	
Not much content to interest Senior citizens		Good quality with Digital TV (Flow)		Entertained with more options on the cable		Limited information on current channels		closed captioning box is sometimes empty	
Lack of Jamaican cultural programs		Good because of access to HD TV and 3D		On the hilltop good signal		Too much advertisements at the moment		Cable is grainy	
Low signal reception				Parliamentarians behave badly and exert bad influence		Good because it keeps you informed		Local stations on cable has no closed captions	
				Need more free-to-air channels		TVJ shows better		Quality is improving	
				Need strictly free-to-air children channels, some of the current content is too sexual or violent		Need more children programs		If news has closed captioning, other programs such as lty and Fancy Cat doesn't	
				Cable boxes are already not strong. They are easily destroyed by lightening		Tired of 2 stations			

Theme: Attitudes towards DTV- Would you switch?

Senior Citizens	Urban	Rural	Poor	Deaf
Depends on the affordability	Depends on affordability	Yes better quality	Want to be progressive, getting rid of the old	Yes because it means better quality
Yes- To move with the technology	Yes – because of the possibility of more channels	Yes better signal & more channels	Yes for more channels	Yes to go with the technology
Yes- There is no choice	Better graphic quality	Yes to be progressive	All switch for better signal and more channels	If closed captioning is offered then go for it
	No I need an incentive such as free converter boxes	Yes there is no other choice	It is not optional	
	Yes, only If assurance is given that energy conservation is sure and that digital is better	Yes but concerned about the expense	Yes as there will be less trouble fighting with the antenna	
	yes to keep up with technology		Yes better picture quality	

Theme: Attitudes towards DTV-Friend and Family that would be at a Disadvantage

Senior Citizens	Urban	Rural	Poor	Deaf
People in the rural areas	Elderly because of what they are accustomed to it	People who are not working	Poor persons	Elderly because they are close to death and may not see it necessary to switch
The shut in and the sick	The poor	Elderly	Elderly persons	Unemployed
The poor	Those of low income	Everyone may be affected depending on the cost	The Homeless & Disabled	Lower class citizens
		Jamaicans will find a way even though they don't have the money	Unemployed	

		People will sacrifice for it	Persons who don't like to spend
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Theme: DSO Proposition-What aspects of DTV do you find most appealing?

Senior Citizens	Urban	Rural	Poor	Deaf
	Energy Efficiency	More channels & program variety (global news, religious stations)	More channels	Clearer Picture quality
	Better quality graphics	Ability to pause TV	Better Signal	The size of the screen
	More Program Choices	Better Signal quality	No more struggles positioning the antenna or having to buy new antennas	The possibility for closed captioning
		The fact that it's progressive	That its progressive	
		Most of the offers make sense	Better picture and sound quality	
			If you use a digital TV other gadgets can work with it and new services	

Theme: DSO Proposition-Where did you hear about it?

Senior Citizens	Urban	Rural	Poor	Deaf
Flow		In the focus group session	In the focus group session	In the news paper
Abroad in the US			On Smile Jamaica TVJ	From BCJ
The broadcasting Commission				Research

Theme: DSO Proposition-What is the best medium to spread the word?

Senior Citizens		Urban		Rural		Poor		Deaf	
In the electronic media	Good marketing strategies to properly put forwards the positives of DTV			Radio		Phone calls			
Print Media	Advertisements through the media introducing DTV and its benefits			TV		TV		TV	
Word of mouth	Engaging the public through discussions			Newspaper		Radio		Newspaper	
News	Public education Campaigns through all media channels					Billboards		Cable companies	
	TV					Posters			
	Newspaper					The Internet			
	Community Forums					Digicel Text			
	Social Media								

Theme: DSO Proposition-What DTV Platform would you choose?

Senior Citizens		Urban		Rural		Poor		Deaf	
TV is a companion so if the DTV is a must then so let it be	Cable			The most affordable one		Cable			
	Anything that has a good mix of quality and cost			The more durable and affordable one		Converter Box			
	Internet TV					Internet TV			
	Cable TV					Digital TV			
	Internet TV								

Theme: DSO Proposition-What should the government do to make the switch and to encourage consumers?

Senior Citizens	Urban			Rural		Poor	Deaf
	Offer incentives such as coupons			Allow one converter box to work with multiple TVs		Explain how the switch affects your health	Provide support for those who are not working
	Offer a tax break waiver on Digital consumer items such as Converter boxes			Get inexpensive converter boxes		Explain the change clearly and help persons to understand that there is no catch	Provide a deaf channel
	Offer some sort of trade-in where consumers can trade old analogue TVs for newer digital ready TVs			Plan the disposal of old TVs			Provide closed captioning TV with local programming
	Clamp down on companies who are now selling analogue TVs in order to force people to buy digital ready TVs			Ensure good quality digital TV and equipment and proper maintenance and support			
	Offer competitive prices for converter boxes			Ensure durable boxes			
	Involve the Bureau of Standards and consumer affairs in the decision			Is a trade in program possible			
	Subsidize the cost						
	Extend the time to switch over						

Theme: DSO Proposition-When would you make the switch?

Senior Citizens		Urban		Rural		Poor		Deaf
		when I can afford it		now before prices go up		Not sure		This year 2012
		When I get the incentive		matching the deadline (2015)		As soon as possible		Next year 2013
		After being convinced		when I can afford it		As digital TV is implemented		When employed
		Voluntary		Have a digital TV already		Now		
		When at least a 85% coupon is offered		Switch already but poor signal		When I can afford it		
				at the deadline		in 3 years		
				when I get a TV		Borrow a loan to switch now		
						Deal with it in 2015		

Appendix B



Digital Switchover (DSO) Consumer Perspective Questionnaire

There will be a change in the way TV signals are sent over the air to be received by TV top and roof top antennas. We're going digital by 2015, your analogue TV will need a converter box, or you may need a digital TV, digital cable, satellite TV or Internet TV. Digital TV- better sound, picture and more possibilities! This questionnaire seeks to explore your thoughts on Jamaican Television going digital.

Please read the questions carefully and select the appropriate answer or fill in the blank.

1. **Age:** ☐ Under 18 ☐ 18 – 25 ☐ 26 - 35
☐ 36 – 45 ☐ 46 – 50 ☐ Over 50
2. **Gender:** ☐ Male ☐ Female
3. **Community:** ☐ Urban ☐ Sub-Urban ☐ Rural ☐ I don't know
4. **Which parish do you live in?** _____
5. **Employment Status:**
☐ Employed ☐ Unemployed ☐ Self - employed
☐ Retired
6. **How much do you earn monthly (gross JMD)?**
☐ 0 - 6,667 ☐ 6,668-25,000 ☐ 25,001-50,000
☐ 50,001-100,000 ☐ 100,001-200,000 ☐ 200,000 and over
7. **Disabilities:** ☐ None ☐ Deaf ☐ Blind ☐ Immobile
8. **Which of the following best describes the main TV in your home?**
☐ Digital TV with Cable ☐ Digital TV with no Cable ☐ Analogue TV with Cable
☐ Satellite TV ☐ Internet TV ☐ Analogue TV no Cable
9. **Are you in favour of digital switchover?** ☐ Yes ☐ No
10. **Should you have to make a decision to switch, what would you do?**
☐ Buy a Digital TV ☐ Buy a converter box ☐ Get Digital Cable TV
☐ Get Satellite TV ☐ Get Internet TV

Answer questions 11 - 17 by circling the number that corresponds with your choice
(1- Strongly disagree, 2 -Disagree, 3 -Undecided, 4 -Agree, 5- Strongly agree)

11. I currently experience the following problems when watching TV:

Low or No Signal Reception	1	2	3	4	5
Poor Audio Quality	1	2	3	4	5
Inappropriate Content	1	2	3	4	5
Poor Video Quality	1	2	3	4	5
Limited Program Choices	1	2	3	4	5

12. I am impressed with the following aspect of Digital TV:

Better Picture & Sound Quality	1	2	3	4	5
More Programming Choices	1	2	3	4	5
Interactive TV	1	2	3	4	5
More Channels	1	2	3	4	5
Improved Standard of Living	1	2	3	4	5
More Support for Closed Captioning	1	2	3	4	5

13. I am interested in the following possible new digital TV services:

Video-on-demand	1	2	3	4	5
VCR-like Pause, Rewind, and Fast Forward	1	2	3	4	5
Commercial Skipping	1	2	3	4	5
Interactivity with TV content	1	2	3	4	5
Television Commerce	1	2	3	4	5
Two Screen Solutions	1	2	3	4	5

14. I am interested in the following possible new channels:

Jamaican Culture Channel	1	2	3	4	5
Educational Channel	1	2	3	4	5
Children's Program Channel	1	2	3	4	5
Religious Channel	1	2	3	4	5
Sports Channel	1	2	3	4	5
Movie Channel	1	2	3	4	5
Global News Chanel	1	2	3	4	5

15. I am concerned about the following aspects of digital switchover:

Cost	1	2	3	4	5
Complexity of the Equipment	1	2	3	4	5
Disposal of Old TV	1	2	3	4	5
Health Issues from the Digital Signal	1	2	3	4	5

16. The government should _____ to make the switch easier for me.

Offer discount coupons	1	2	3	4	5
Offer a tax break/waiver	1	2	3	4	5
Subsidize the cost	1	2	3	4	5
Offer trade-ins on old TVs for cash	1	2	3	4	5
Stop companies from selling analogue TVs now	1	2	3	4	5
Ensure proper public education	1	2	3	4	5
Put standards in place to protect the consumer	1	2	3	4	5

17. The following medium would be best in informing me about Digital TV:

Radio	1	2	3	4	5
Television	1	2	3	4	5
Newspaper	1	2	3	4	5
Community Forums	1	2	3	4	5
Phone Calls	1	2	3	4	5
Billboards	1	2	3	4	5
Posters	1	2	3	4	5
Text Messages	1	2	3	4	5
Social Media/The Internet	1	2	3	4	5

18. The proposed timeline (2015) for the completion of the DSO in Jamaica is:

☐ Attainable ☐ Too short ☐ Too far

19. When will you make the switch?

☐ Now before the prices go up ☐ When I can afford it
☐ When I get an incentive ☐ At the deadline (2015)
☐ Not sure when

Appendix C

Table 11. Adopter Groups Content and Service Attractiveness Ratings

Content Attractiveness Variables	Rating	Percentage of Persons in each Adopter Segment			
		Comfortable Adopter	Marginalized Adopter	Probable Adopter	Rejector
Closed Captioning	Strongly Agree	30.95%	61.90%	4.76%	2.38%
	Agree	24.00%	52.00%	10.00%	14.00%
	Undecided	35.29%	47.06%	7.84%	9.80%
	Disagree	30.77%	46.15%	3.85%	19.23%
	Strongly Disagree	13.33%	40.00%	40.00%	6.67%
Improved Standard of Living	Strongly Agree	23.53%	64.71%	2.94%	8.82%
	Agree	34.78%	39.13%	13.04%	13.04%
	Undecided	32.69%	57.69%	7.69%	1.92%
	Disagree	25.93%	48.15%	14.81%	11.11%
	Strongly Disagree	20.00%	44.00%	12.00%	24.00%
More Channels	Strongly Agree	29.87%	64.94%	0.00%	5.19%
	Agree	41.18%	45.59%	1.47%	11.76%
	Undecided	12.50%	37.50%	31.25%	18.75%
	Disagree	0.00%	31.25%	50.00%	18.75%
	Strongly Disagree	0.00%	16.67%	66.67%	16.67%
Interactive TV	Strongly Agree	36.73%	57.14%	4.08%	2.04%
	Agree	33.33%	53.33%	5.33%	8.00%
	Undecided	24.32%	51.35%	8.11%	16.22%
	Disagree	10.00%	50.00%	30.00%	10.00%
	Strongly Disagree	0.00%	15.38%	46.15%	38.46%
More Program Choices	Strongly Agree	28.26%	65.22%	1.09%	5.43%
	Agree	40.00%	43.33%	3.33%	13.33%
	Undecided	18.75%	43.75%	25.00%	12.50%
	Disagree	0.00%	9.09%	72.73%	18.18%
	Strongly Disagree	0.00%	0.00%	50.00%	50.00%
Better Picture & Sound Quality	Strongly Agree	27.36%	65.09%	0.94%	6.60%
	Agree	38.00%	44.00%	4.00%	14.00%
	Undecided	10.00%	30.00%	40.00%	20.00%
	Disagree	25.00%	0.00%	66.67%	8.33%
	Strongly Disagree	14.29%	0.00%	42.86%	42.86%

