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The Challenges of Interactive Television

**A Thesis Submitted in Partial Fulfillment of the
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Approval Certificate

IMPLEMENTATION OF INTERACTIVE TELEVISION IN
THE MIDDLE EAST AND LEBANON

BY

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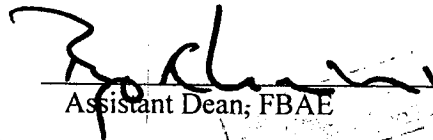
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DECLARATION

I hereby declare that this Thesis is entirely my own work and that it has not been submitted as an exercise for a degree at any other University.

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ABSTRACT

The explosive growth of wireless as a communication medium offering exciting new business opportunities and demanding that wireless become a new channel of the marketing Communication mix. A study of the technology of the interactive television will be interesting because it helps researchers to understand the contribution of a new information technology for doing business. The aim of this thesis is to gain a better understanding of how companies use interactive television in doing business. I will study the advantages and disadvantages of the interactive television and recommend its implementation in the Lebanese market. In order to fulfill the purpose of this research, I will explore, describe and try to find out factors related to advertising and programming that influence interactive television adoption. Three persons were interviewed who are academics and professionals in the field through an empirical research comparing their experience in the existing markets. The results of this study support the theoretical framework as well as clarify and extend it. The findings also include some suggestions for companies on how to use this kind of new emerging technological medium which combines the traditional telephone, the television and the internet.

Keywords: Interactive Television, advertising, programming, information technology.

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Chapter 1

Introduction

In this chapter an introduction to formulate and state the chosen topic for the thesis is provided. The chapter begins with a short background to the research area followed by a problem area discussion that will guide the reader to the overall purpose. For this purpose, specific research questions are asked followed by analysis and demarcations and outline.

1.1 Background

Interactive television (ITV), or enhanced television (ETV), is any television or video programming that incorporates enhanced content or some style of user interactivity, such as, providing synchronized trivia content during a broadcast, allowing viewers to vote on the outcome of a show, or digitally recording video onto a hard drive so viewers can time-shift while watching a program. ITV is also used as an umbrella term to cover the convergence of television with digital media technologies such as computers, personal video recorders, game consoles, mobile and wireless devices, enabling user interactivity.

The terms interactive television (ITV) and enhanced television (ETV) are often used interchangeably. For the sake of consistency, I will be using the term interactive television, or ITV, throughout this document.

The first interactive television program was aired in the United States in 1953. Today, despite the mainstream success of a few interactive programs such as FOX's *American Idol*, and despite improving bandwidth capabilities and the increasing availability of digital technologies, the move toward widespread adoption of ITV programming in the U.S. remains slow, unlike in western Europe, where ITV is already beginning to drive mainstream consumer services. In a 2001 Statistical Research, Inc. study on "How People Use Interactive Television," 72% of U.S. consumers reported that they were not interested in interacting with television programs (Bartlett, 2001).

However, it is clear that television is increasingly shifting away from a broadcast, passive, linear, entertainment viewing experience; instead, it is fast becoming an on demand, participatory, non-linear, infotainment, advertising targeted, broadband,

two way communications platform (Swedlow, 2001). As viewers become accustomed to the “lean forward” (active) model of viewing instead of the traditional “lean back” (passive) model, as well as to the habit of processing more information simultaneously (e.g., using computers or mobile devices while watching television), they are beginning to gain and demand more control over their viewing experiences than ever before. Figure 1.1 provides an overview of these shifting models as we move from traditional to interactive television.

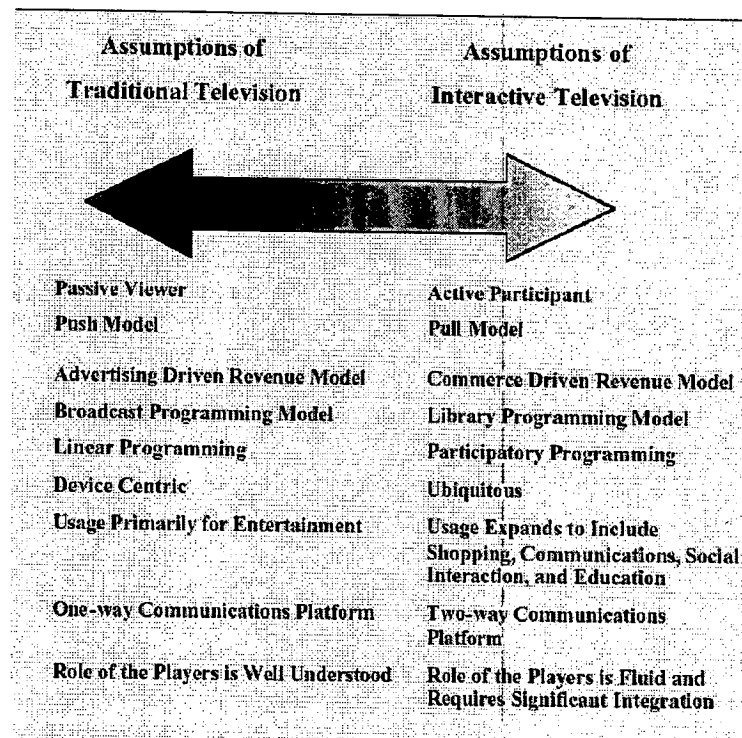


Figure 1.1 Traditional Television vs. Interactive Television
Source: Adams, Anand & Fox, 2001

1.2 History of interactive Television

As it appears from the above, interactive television has a long and rich history behind it with numerous changing phases characterized by different dominant strategies, technological forms, and types of content and services. The majority of these versions of interactive television, however, failed or only had a limited amount of success, and the far majority were taken off the market again fairly quickly. Thus, interactive television has been arriving for the past 50 years.

Overall, the history of interactive television as a novel technology, as a novel media or a novel service is, hence, the history of a failure. A history of a long list of 'false starts' of a media technology that yet could not manage to succeed in the market because: it was not technologically mature and was not supported by viable business models. The context of other concurrent, competing technologies and supply were unfavorable; content and services did not have enough added value in relation to competing content and services to drive the demand forward, etc. Hence, after five decades of experiments with interactive television and commercial roll-outs, there is still no sure model for establishing interactivity in connection with television viewing, let alone any sure knowledge on what the user demand is.

In spite of this all but glorious past history, there is still much that now indicates that interactive television as well as digital television will enter into a growth phase in the years to come. According to projections from, among others, Forrester Research, the proliferation of digital television in Europe will increase by 50 percent in 2009.

So, to the question of whether interactive television has the status of either a 'holy grail' or 'vaporware', the straight answer probably has to be: neither one nor the other. On the one hand, there is nothing that indicates that suddenly it will be managed to find the irresistible, magical killer application that can power a swift mass proliferation of the technology. Interactive television is, on the other hand, already more than just an ephemeral figment of the imagination – it is out there in multiple variants and early formats such as SMS-TV, programs with web communities, and actual digital and interactive television platforms and services.

1.3 Interactive television trials

During the 1970s, there were many trials and tests for interactive television. The National Science Foundation sponsored three major trials utilizing interactive cable television for education, community services and worker training; the U.S. Department of Health, Education and Welfare (DHEW) supported a number of tests and services utilizing interactive television for health care; and a large commercial test of interactive cable TV (Warner Amex's Qube system in Columbus, Ohio) received considerable publicity. It is difficult to succinctly summarize the results of these tests and services. However, a few lessons can be drawn. First, there were many technical problems. Equipment were often in a prototype stage of development

and were not consistently reliable. This had a negative impact on many tests. Second, equipment were generally expensive. Often, the user group could not afford the equipment without the aid of a federal or foundation sponsor. Third, there were many organizational problems associated with implementation of the service that had little to do with the interactive technology as such. Some organizations forgot that technological innovations are also social innovations. They require changes in behavior and often meet resistance by those with entrenched habits. Nonetheless, many needed and wanted services did emerge. They were adopted directly by organizations and communities or evolved into permanent services. In this sense, the results of these trials and tests were mixed, not a dismal failure as is sometimes attributed to them.

Qube deserves special mention since it is cited frequently as an example of failed interactive technology. Qube technology was very expensive, particularly in the 1970s context. The Qube terminal in homes did cost approximately \$200, or, four times the cost of standard decoders at that time, and Qube equipment at the cable head end added approximately \$2–3 million in plant costs. In addition, it was expensive and difficult to maintain the upstream or return data path from homes. This introduced reliability problems for the interactive service (John Carey, p. 208). Production costs and interactive program design presented further obstacles. Budgets for Qube programs were very low compared to broadcast network programming budgets.

“Interactivity” with low production values could not compete with network programming.

Moreover, those producing interactive programs were starting from scratch: there was little previous experience in designing interactive programs (John Carey, p.208). While many households subscribed to Qube, actual use of Qube programming was generally low. However, there were a few exceptions. Some game format programs achieved moderate viewership and strong interactive participation from those watching. Qube also demonstrated that pay-per-view programming was potentially viable—if the cost of promoting and processing pay-per-view orders could be reduced. And, Qube introduced a number of interactive formats that have since evolved and been adopted as components in cable and broadcast programming. In this sense, Qube was an important programming laboratory—MTV and Nickelodeon both trace their roots to Qube programming.

Cost of the technology, low production values and problems in maintaining the upstream data path were sufficient to doom Qube in a late 1970s—early 1980s context. In addition, Qube had served as a franchising tool for Warner Amex: the promise of interactive programming helped them to win many franchises. After the franchising wars of the early 1980s ended, the marketing value of Qube for Warner Amex was nul.

During the 1980s in the U.S., there was a movement away from high-end ITV services like Qube and towards simpler services like interactive text on TV, interactive games over cable and opinion polling during regular TV programs via special 900 number telephone services . Many of these services were videotex precursors to online services for the personal computer. However, in the early and mid 1980s, the television set remained prominent as a display device since relatively few households had a personal computer.

In the cable environment, Cox Cable developed a service in the early 1980s, Indax, that was intended to compete with Qube as a franchising tool. Indax was really a videotext service over two-way cable. It offered home banking, shopping, information services and education content but it contained no video—only text and simple graphics. Indax was tested in Omaha and San Diego but never entered the broad marketplace. During this same period, Time Inc. developed Time Teletext and tested it in Orlando and San Diego. Time Teletext was a one-way teletext service but since it used an entire cable channel, it could transmit a few thousand frames in several seconds and simulate interactivity, e.g., for games and quizzes. Time Teletext experienced the same fate as Indax. It was withdrawn after field testing. In both cases, the cost of the technology was very high and the marketplace response was lukewarm. For example, Time Teletext required a special decoder that cost over \$500 and a large staff to update content. Users indicated that they liked Time Teletext but would pay only \$5–7 per month for both the service and the box (McCarthy, 1985). In this sense, Time Teletext was an attractive service for many consumers but it was not a viable business.

During the 1980s, many specialized cable channels were created but there was relatively little space available on the existing cable systems. Two of the new channels offered interactive games: Play Cable and Nabu Network. They did not succeed in gaining space on large numbers of cable systems, nor they received sufficient market exposure to determine if consumers really wanted them.

Qube, Time Teletext, Indax and other commercial services received a great deal of attention in the popular press during the 1980s. Meanwhile, a large set of very simple interactive television services was emerging quietly in education. In a few cases, the services utilized full two-way video between teachers and students who were at a distance. However, in most instances the model involved one-way video instruction via satellite, cable or ITFS (Instructional Television Fixed Service, a microwave frequency) with return audio via a regular telephone call. Later, electronic mail, fax and dedicated data terminals were added as return paths to the instructor. These services reached thousands of students in the 1980s at primary, secondary and university levels. Typically, they provided courses that would not otherwise be available in rural areas or small school districts, e.g., Russian and Japanese language courses and advanced mathematics. The Satellite Educational Resources Consortium, Public Broadcasting Service, National Technology University and several state education networks were among the groups that developed these services in the U.S. Outside the U.S., there were a number of interactive television projects during the 1980s.

Two notable projects were Hi Ovis in Japan and the Biarritz project (Gerin, De Tanernost, 1994) in France. Both were quite similar in design and findings. They started in the late 1970s and continued through the 1980s, using fiber optic cable to provide video phone calls, interactive text services, better TV reception and extra cable channels, including movies. In both instances, the strong appeal of the services was in providing better TV reception and extra cable channels; the videophones and other interactive services received low usage. However, in both cases much more effort and financial resources went into the development of the technology than in developing interactive programming. The projects were highly visible showcases for advanced technologies that each country was developing.

During 1992–1994 there were a number of interactive television trials and a few actual services in the marketplace. Most utilized a limited form of ITV or provided a limited array of services. Nonetheless, their experiences are informative.

AT&T and Bell Atlantic conducted interactive television trials with groups of employees (AT&T in Chicago and Bell Atlantic in a Virginia suburb of Washington D.C.) to gain experience in operating ITV networks and to get feedback about the attractiveness of services.

Both indicated that reactions to the services were positive, while acknowledging that these were preliminary dress rehearsals for larger trials ahead. AT&T reported strong interest by trial homes in interactive educational programs for children, sports, and games where households competed against each other (Keller, 1993). TCI, AT&T and US West conducted a trial of movies-on-demand in Denver. The 300 test homes purchased 2.5 movies per month, much higher than the national average of 0.26 for pay-per-view homes. However, many homes dropped pay services such as HBO to pay for the movies-on-demand (Bulkeley, Wilke, 1994). This may be significant. It appears that people did not increase entertainment spending for interactive services. Rather, they moved spending from one category of the household's entertainment budget to another.

Bell Atlantic reported similar positive results from a large consumer test of its Stargazer video-on-demand service. During a six-month trial in 1,000 homes, the buy rate was 3.3 movies per month. Here too, it appears that consumers shifted money within the household entertainment budget. In this case, they shifted money from video rentals to video-on-demand (Mitchell, 1996).

A video-on-demand trial in Japan achieved similar results: a buy rate of 3.5 movies per month. However, a different set of conclusions was drawn from the data. This buy rate was judged too low to support the cost of providing video-on-demand infrastructure to homes (Jessel, 1995).

A trial by GTE in Cerritos, California appears to have been less successful. Their test service, Main Street, consisted of still video images and sound organized like a database with little updating. Services included access to the Mobil Travel Guide, Grolier's Encyclopedia, Money Manager software and other content that changed little day to day. Overall usage of Main Street was reported to have been low (Lipman, 1993). However, the project generated some useful research findings. GTE found that movies-on-demand were very attractive but consumers were willing to pay only a small increment (\$1 extra) for a movie-on-demand over what they paid to rent a movie at a videocassette shop. Further, consumers balked at paying hundreds of dollars for an ITV set-top box and indicated that they would prefer to pay a small rental fee that is part of their cable bill (Bulkeley and Wilke, 1993).

Two interactive television services were introduced into the marketplace during the early 1990s: Interactive Network (in California and Illinois); and Videoway (in Montreal and Quebec City). Interactive Network required a special terminal costing a

few hundred dollars. It also had high monthly charges and the interaction took place not on the TV screen but on a small display attached to the terminal. Services consisted of playing along with TV game shows and trying to anticipate the next play in sporting events. It utilized a multiple choice format and there was no original content. The number of subscribers was modest but this group was reported to be quite enthusiastic about the service. Interactive Network struggled to increase its subscriber base but its death knell came not from subscribers but marketing agreements that brought onboard new company overseers who decided to pull the plug on the service rather than support new marketing efforts (Keller, 1993).

Video way has no hardware costs for the consumer and a low monthly fee (under \$10).

Interaction takes place on the TV screen and there is much original content, including daily interactive news programming, games, interactive ads and original programming for children.

The service utilizes four channels on the cable system. Much of the interaction takes place by switching from one channel to another where different program components are located. For example, Videoway allows users to choose from four camera angles during coverage of sporting events. Each camera is located on a different channel. They have developed a large subscriber base of more than 230,000 households or more than 20 percent of cable households in the markets where Videoway is available. Usage of Videoway has been reported to be high: subscribing households use the service for 13 hours per week. Approximately half the usage is for games and half for interactive programming (Robichaux, 1993). The Videoway service has also been implemented in the United Kingdom. A similar service, developed by ACTV, has been tested in California and is expected to rollout in the U.S. during 1997.

A large number of interactive television trials were announced for both cable and telephone environments in the 1994–1996 time frame. These involved a broad range of cable, telephone and computer companies and many different strategies for delivering services. A half dozen interactive cable TV trials were announced including AT&T and Viacom in Castro Valley; SW Bell and Cox Enterprises in Omaha; IBM, Videotron and Hearst in Quebec; and Time Warner in Orlando. All of these trials were either cut back sharply from their original plans or cancelled. At the same time, more than 30 major tests of interactive television in a telephone environment were announced, including Ameritech in Chicago; Bell South in North

Carolina; GTE in Virginia; US West in Omaha; and SNET in Connecticut. Similarly, each of these trials was either cut back sharply or cancelled. What happened? It appears that many groups were caught up in a frenzy of trying to corner the interactive television market. They did not carefully examine cost issues. These included very expensive set-top boxes that ranged between \$2,000 and \$5,000 for the planned trials (Cerverka, 1996) and the high cost per household to develop the infrastructure for the trials in a mid 1990s time frame. Costs for original interactive content were equally high and none existed.

Time Warner stood alone in offering a high-end interactive TV service with shopping, news, and games as well as video-on-demand in its Full Service Network trial in Orlando.

In the trial with 4,000 test homes, users have been able to order-on-demand from a list of over 100 movies and have the same control over the movies as provided by a VCR, e.g., pause, rewind and fast forward. They have also been able to choose from a group of news stories and watch only those which they want to view. In addition, households can play games against other households. However, Time Warner pulled back from a more ambitious set of service offerings that was announced earlier and has cancelled plans to roll out the service in other markets (Maney, 1996).

As a more realistic picture of costs and technological requirements for ITV emerged, a new strategy was born: evolution. Under this strategy, both cable and telephone companies would develop simpler services with less costly technology and wait for the necessary infrastructure upgrading to take place. This might occur through the natural process of replacing old plant with new equipment or through an accelerated process that would be paid for by demand for other services such as high speed data applications.

There have been many variations on the evolutionary strategy. Some telephone companies decided to develop POCS (Plain Old Cable Service) first, then add interactive services. A number of other telephone companies began to explore so-called wireless cable or ADSL (Asymmetrical Digital Subscriber Line) as relatively inexpensive ways to enter the television service market, while waiting for their telephone plant to be upgraded at a more realistic pace.

In the cable environment, many companies decided to offer Internet services through cable modems and evolve over time to interactive video. Others have begun to offer interactive program guides and other low-end interactive services such as still frame

interactive content similar to GTE's Main Street, e.g., UBI in Quebec Province, Canada. A few cable companies, in addition to Time Warner, have conducted trials of movies-on-demand and video programs on-demand. However, the current planning atmosphere is more conservative than a few years earlier.

In Europe, many companies watched the withdrawal of high-end interactive television trials in the U.S. and moved to implement more cost-effective ITV trials, principally offering video-on-demand. British Telecommunications conducted a robust 2,000-home trial with movies-on-demand, home shopping, electronic banking and games in Ipswich and Colchester during 1995–1996. The results were sufficiently positive to encourage them to move forward with an ITV service in London, using British Telecommunications' Westminster cable company. ITV trials have also been conducted in Sweden by Telia AB and in Italy by Telecom Italia. Telia announced a much larger trial for 1997 and plans to deliver interactive multimedia services to nearly all of Sweden by 2004 (Schenker, 1996). In Germany, Deutsche Telekom AG pulled back from its plan for a large scale 4,000-home ITV trial and replaced it with a smaller test of 50 homes in Berlin, to be followed by a modest scale trial in Stuttgart. France Telecom, which conducted an ITV trial in Biarritz during the 1980s, has adopted a conservative wait-and-see attitude. At the same time, France Telecom has conducted a modest 200-home ITV trial in Paris.

The approach to ITV in Europe parallels efforts by cable and telephone companies in the U.S. Companies have been exploiting the existing telecommunications infrastructure, with modest upgrades, to support video-on-demand and other forms of ITV that do not require very expensive home terminals or major network overhauls. As the telecommunication, cable and satellite networks are upgraded over time, they will consider higher-end ITV.

1.4 Service providers

The broad mix of service providers in the ITV arena—cable operators, telephone and computer companies, movie studios, traditional broadcast networks, etc.—may lead to different mixes of services for consumers. There are strong differences in service philosophies among these groups as well as alternative assumptions about what consumers want. These differences are apparent in discussions by service groups about what they will provide. Many traditional broadcasters and cable channels see

interactive television as a way for consumers to have more choice and control over what they view; some computer companies perceive ITV as a video database; and many telephone companies believe that communication should be an integral component in ITV services. Indeed, many telephone companies have struggled with the concept of program content. It has not been part of their corporate culture. The telephone after all does not have content. Content is created by the behavior of people who use the telephone (John Carey, p. 213).

New content raises the question of cost. Original interactive programming will be expensive.

In a start-up phase, program providers have been reluctant to invest heavily in original content that can be used by a relatively small number of viewers. At the same time, some programming can be adapted to interactive formats with only modest increases in production costs. These include news, sports and game shows. However, original content will be required to fully exploit the new medium. Who will provide this? Will experimentation lead to any radical new program formats?

1.5 Problem discussion

In this section, fundamental issues about content providers and programming are discussed. The study is based on those existing content and programs.

Hence, designing tools (e.g., prototyping) and after-run time issues (e.g., evaluation) are out of the scope of the discussion. Background literature include the extensive research about user interface and tools and development done by Myers and Olsen (Jessel, 1995).

First, after inspecting different platforms (e.g., digital television receivers, interactive programs, shopping, game consoles), from a user interface point of view, the user interface requirements for graphical multimedia system architectures are identified. Then, based on the background literature, the advantages of interactive television is explained that will lead to the change of the future of television industry. Through this changes I will try demonstrate the economics of interactive television through interviews about advertising and programming. Finally, the implementation of interactive television in the Arab world in general and Lebanon in specific will be discussed.

1.6 Research purpose, research questions and hypothesis

Based on the above presentation, the purpose of this study is to *gain a better understanding of the implementation of Interactive television in the Middle East and Lebanon from the programming and advertising point of view.*

In order to reach the research purpose for this study the following questions are offered:

RQ 1: What are the prospects for interactive TV as a viable medium. and (theoretically) in what kind of timeframe?

RQ 2: Can interactive TV alleviate the problem of audience fragmentation?

RQ 3: How will traditional TV advertising model change (will advertisers demand a rate-card based on click-through, as with the Web)?

RQ 4: How can interactivity open up new marketing opportunities (e.g. direct sales channels, direct advertiser-costumer marketing relationships, discount-led marketing, leads-generation, data capture)?

RQ 5: Who will take lead in developing content for interactive TV, both in terms of production and creative execution? Will it be broadcasters, who can exact greater control over the environment they actually built? Or will this be agency led?

RQ 6: Who actually has the best expertise to develop interactive advertising? Is it the traditional advertising agency, or the interactive specialist agencies, up to now more accustomed to build for the Web? Or will a new form of specialist agency emerge which combines all world views? Will the advertisers themselves be able to more directly control these aspects and set up their own production unit?

RQ 7: To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns?

There are three hypotheses that must be pointed out here as well, so that they can be studied during the data analysis and either validated or invalidated by the conclusion of the study.

They are presented here in bullet form:

Hypothesis One – The convergence of television, telephone and the internet will be beneficial and practical to the users of interactive television.

Hypothesis Two – The expertise involved in creating the advertisements and programs is done by advertising agencies or the content providers.

Hypothesis Three – The interactivity can open new marketing opportunities to sell products over the interactive television through interoperability.

These three hypotheses will be tested through the literature information that will be collected in Chapter Two and the data analysis that will be conducted in Chapter Four. Then, in Chapter Five, the conclusions and summary of the study can show whether these hypotheses are valid or invalid, and whether there are other hypothetical issues that were largely overlooked and should be addressed in the future.

1.7 Demarcation

Because Interactive television is very broad and extensive, and also due to limited time allocated for undertaking this research, this thesis will only focus on examining the implementation and use of Interactive television with its programming and advertising in the Middle East and Lebanon.

1.8 Outline of the research

This thesis is divided into six chapters. The first chapter is introduction with the purpose to bring the background to the reader about the research area; problem discussion and research purpose as well as research question are also presented. The second chapter provides the reader with overview of the literature, related to seven research questions of the study and then the emerged frame of reference is provided. Chapter 3 is methodology which provides the method which is used in this study. Chapter 4 is data analysis. In chapter 5, the findings are applied to Lebanon and the Middle East. The conclusion drawn from this study will be present a summary with recommendations as well as evaluation of the future trends.

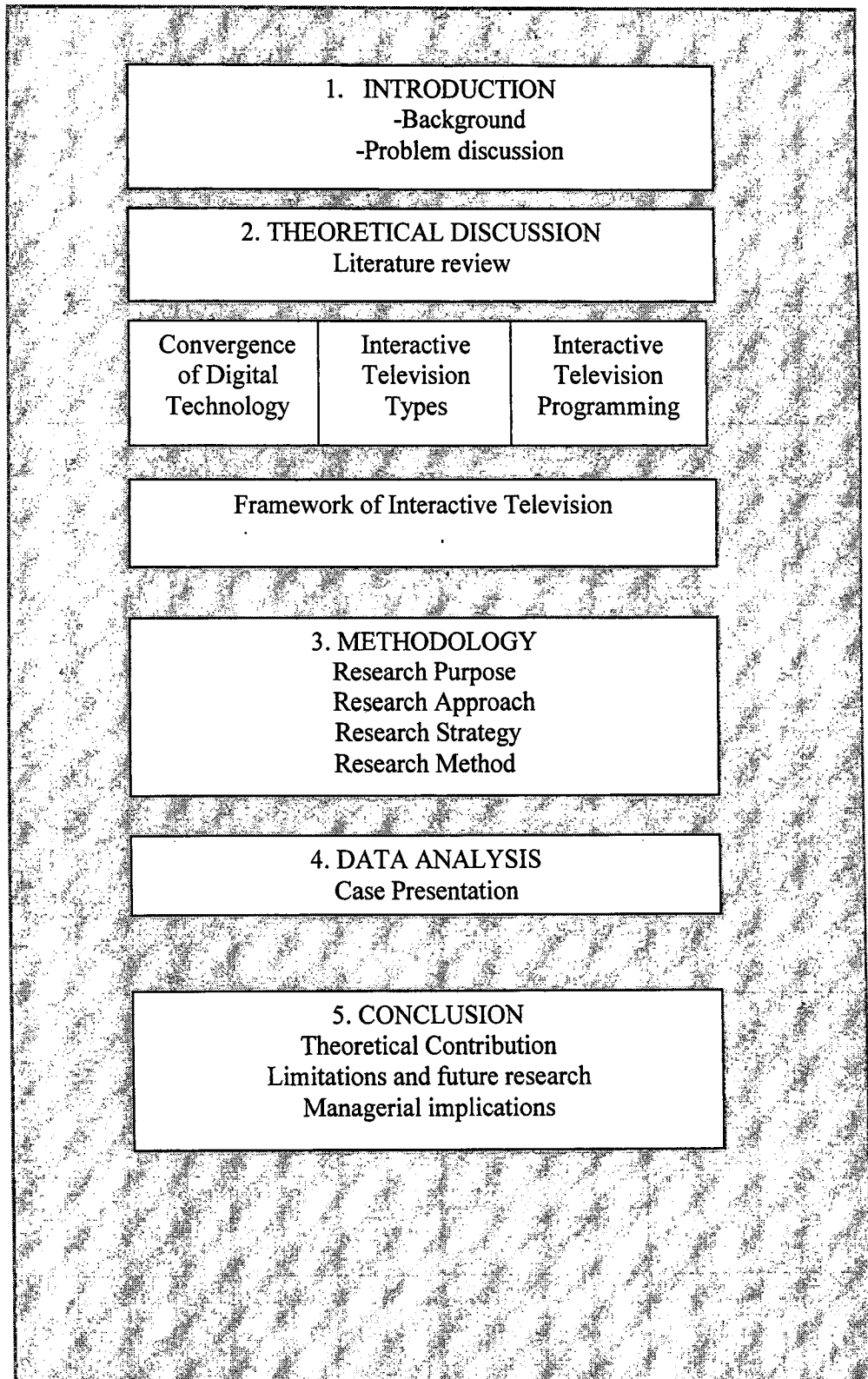


Figure 1.2: Structure of the study

Chapter 2

REVIEW OF LITERATURE

The previous chapter provided the background and the problem in the area, leading to several research questions. This chapter reviews earlier studies and data by various scholars. The aim is to tackle and become acquainted with relevant literature about Digital satellite broadcasting and interactive media technology.

2.1 Convergence of television and the internet

Seen from a mid- and late-90's perspective, there seems to be three (information) highways that interactive television could travel down. The first is – what could be called – the B-ISDN/Full Service Network; the second is digital broadcasting; and last as third the internet.

ITV and the story of the internet are in many ways diametrically opposed. As the internet came into existence from the end of the 60s to the mid-90s, it more or less happened by sheer luck. From the beginning, no one had planned for the internet as it appears now. No media concerns operated with massive investments and development projects in order to further it, and no one believed in it as a medium and commercial possibility. After the launch of the (WWW) and the introduction of the graphic browser in 1993, the internet grew at an incredible rate. By the latter 1/3 of the 90s, the internet and (WWW) reached growth rates that surpass all earlier known media technologies.

If ITV can be seen as the greatest technological failure of the last fifty years, then the internet is the foremost success of the 90s – maybe even of the entire twentieth century. In many ways, these developments are more or less connected, since the inert development of ITV and repeated setbacks during the 90s. To some extent, this can be seen as an expression of the fact that the technology, regarding contents development and contents supply was overtaken by the internet media.

An obvious strategy for ITV was therefore to follow in the footsteps of the internet and profit from some of the headway produced by the internet's incredible drive. During this phase, a prominent concept for interactive television was therefore the convergence of broadcasting and internet. M. Krantz's article in 1997 constitutes a

significant sign of the times. Under the heading: “Marriage of convenience”, he wrote: “interactive television, once a mighty idea, which has resulted in a long line of failures, is back ... a mixture of computers, television, and World Wide Web is the recipe for an actual success” (Krantz, 1997).

Internet on television or television based internet access should make it possible for the users to carry out many activities via the television set, which are normally carried out on a personal computer connected to the internet, including reading and writing emails, participating in chat and discussions groups, searching the internet by keywords or category etc.

In the late 90s, to grant access to popular web pages via the television set was seen by several television service providers as a service that would be very attractive for the consumers. The idea was as follows: If we combine the universal market spread of television and the anarchistic multimedia contents of the web, we have the ultimate business killer application. Or, put differently: It is the internet itself that is the killer application. And all that is required is to bring the Web to the ‘non-connected’ majority of the public who are situated where they already sit and wait – on the couch (Jens F. Jensen, 2005).

2.1.2 Digital services

The Telecommunications Act of 1996 mandates that all cable industry providers offer digital services including HDTV (high definition television), video on demand, and high-speed Internet access by 2006. Since 2002, major cable companies such as Comcast, Time Warner, and Cox Communications have been offering HDTV in dozens of markets across the country. As of the fourth quarter of 2004, more than one-third of U.S. cable customers (approximately 24.3 million) subscribed to digital cable services, which provide an array of interactive features including digital video recorders (DVR), video on demand (VOD), interactive program guides (IPG), among others. As of September 1, 2004, HDTV was available in 90 million American households (NCTA, 2004). On the content side, cable programmers including HBO, Showtime, ESPN, and Discovery have become leading providers of high definition programming.

For viewers with analog television sets, a set-top box is necessary to receive and decode digital television broadcasts. It is estimated that 35 million homes will use digital set-top boxes by the end of 2006. (Table 2.1) shows the top eleven digital TV

platforms in the U.S. and the number of subscribers each, respectively, as of August 2004 (Broadband Bananas).

Platform Name	SAT/CAB	Number of Subscribers
DISH (Echostar)	SAT	9 million digital subscribers. 1 million of these have DVR.
AT&T Broadband	CAB	13,750,001 subscribers. Deployed digital 3,933,000.
DirecTV	SAT	10,400,000 subscribers.
Comcast Cable Communications	CAB	21,289,200 analog subscribers. Deployed digital 6,618,700.
Charter Communications	CAB	6,578,800 analog subscribers. 2,682,800 digital subscribers.
AOL Time Warner	CAB	10,938,000 analog subscribers. 4,082 digital subscribers.
Cox Communications	CAB	6,206,700 subscribers. Deployed digital 841,824.
Cablevision (iO)	CAB	2,988,600 subscribers. 46,200 digital subscribers.
Adelphia Communications	CAB	2,300,000 subscribers.
Mediacom LLC	CAB	1,585,000 subscribers. Deployed digital 200,000.
Insight Communications	CAB	1,361,300 subscribers. Approximately 150,000 digital subscribers.

Table 2.1 Top 11 U.S. digital TV platforms and subscribers

Source: U.S. Department of Commerce, 2004

2.1.3 Mobile devices

More and more Americans are becoming cellular and wireless subscribers.

Popular shows such as FOX's *American Idol* have encouraged millions of people to interact with television shows by utilizing their cellular devices. According to AT&T, more than 7.5 million *American Idol*-related text messages were sent by AT&T Wireless customers throughout the 2003 season. At one point during the voting, over 2,300 text messages per second were processed (AT&T Press Release, 2003).

According to the Cellular Telephone Industry Association (CTIA), there are currently over 170 million wireless subscribers in the U.S. In addition, CTIA estimates that nearly 46,000 more become subscribers each day. As Figure 2.1.3 illustrates, the number of handsets in the U.S. is projected to shoot up from about 3.3 million in 2003 to 34.8 million in 2006. In 2003, an estimated 92% of wireless

subscribers were digital. Statistics from the Wireless World Forum indicate that in 2003, 126 million Java phones were deployed worldwide. That number is estimated to reach 32 million in the U.S. by 2006.

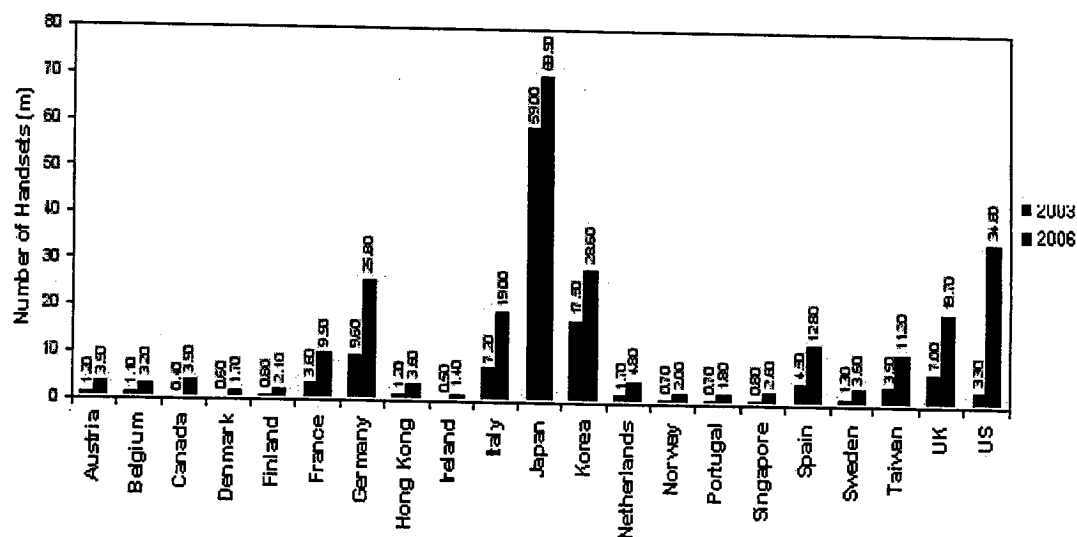


Figure 2.1 Number of Handsets, 2003 and 2006
Source: Wireless World Forum

Interactive television has already proven to be a significant enabler in driving mobile SMS transactions in Europe as well as parts of Asia such as China, Hong Kong, and Korea. Today's 3G mobile and wireless devices now have the capacity to capture and stream high quality audio and video. These devices are fast becoming the first true personal computer in many ways, and will likely play a key role in ITV interaction in the near future.

2.2 Internet television in the United States vs. abroad

As a new convergent medium, standards for ITV programming and interaction remain largely undefined in the United States. In many European countries, however, particularly in the U.K., ITV programming is much more prevalent, structured, and successful. Figure 2.2 provides an overview of ITV user demographics in various European countries.

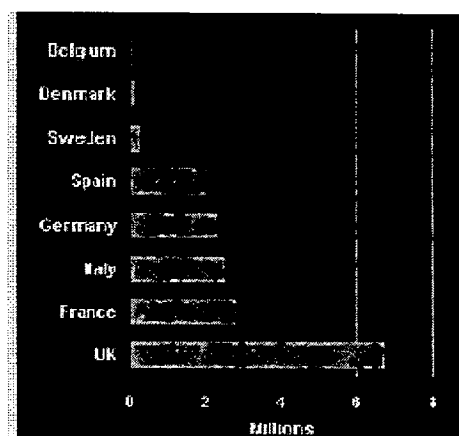


Figure 2.2 Interactive TV users in Europe

Source: <http://www.celent.com/PressReleases/20010426/iTV.htm>

2.3 Video on Demand

Video on demand (VOD) systems allow viewers to select and watch video content on their television over a network. VOD systems are either streaming, in which viewing can start as the video streams over the network, or download, in which the program is downloaded in its entirety to a set-top box before viewing starts. All download and some streaming VOD systems have time-shifting capabilities, allowing viewers to pause, fast forward, rewind, and jump to a specific frame. Viewers can watch the selected content as many times as they wish within a specified time period, usually 24 hours. Most require a fee. Near Video on Demand (NVOD) systems are streaming systems in which viewers wanting to watch a program are batched up for the next start time, which occurs in staggered intervals. True VOD operates on a pull model, where consumers choose what they want to watch and when they want to watch it. NVOD, on the other hand, is more like the traditional broadcast push model, with programming determined by the networks and content providers (Beros, 2004).

2.3.1 Representative Example: Comcast ON DEMAND



Figure 2.3 Provides examples of the Comcast ON DEMAND interface (a), (b), (c), and (d)

Source: <http://www.comcast-ne.com/vod.html>

2.3.2 Affordances

As with DVRs, viewers have a high degree of control over their viewing experiences. Instead of waiting for a favorite program to air, viewers can simply choose what they want to watch at any given time. With Comcast ON DEMAND, for example, viewers can choose from hundreds of films and programs, and watch them whenever they want, as many times as they want, for up to 24 hours. Video on demand systems also allow users to time-shift, with the ability to pause, rewind, fast forward, or stop and resume a program any time.

These affordances also relate to key aspects of good interaction design by giving users the ability to customize and control their viewing experiences.

2.3.3 Constraints

Programs available through VOD systems are only offered to users on a limited availability. On the Comcast system, for example, viewers can only view them for up to 24 hours. Although Comcast organizes its on demand content into categories for

the viewer, there are a limited number of choices available, determined in part by what cable networks the user subscribes to and by what the networks themselves offer. Finally, in many cases, on demand systems function as a pay-per-view service, where users must pay a fee in order to access the desired content.

2.4 Web TV

A Web TV is a television set especially designed (or connected using a set-top box) to allow an Internet connection. The most popular Web TV operator in the U.S. is currently MSN TV (formerly WebTV). The most recent version, MSN TV 2, allows users to send email, chat, and surf the Internet from their televisions. Hardware requirements include a TV, a phone line or home network, MSN TV service, and a MSN TV Internet & Media Player unit.

Television is a medium that offers high quality video and audio. The Internet, on the other hand, with its capacity for information propagation and interactivity, does not provide the quality of television broadcasts and programming content. In developing a hybrid successor to these two technologies, a number of challenges must be overcome.

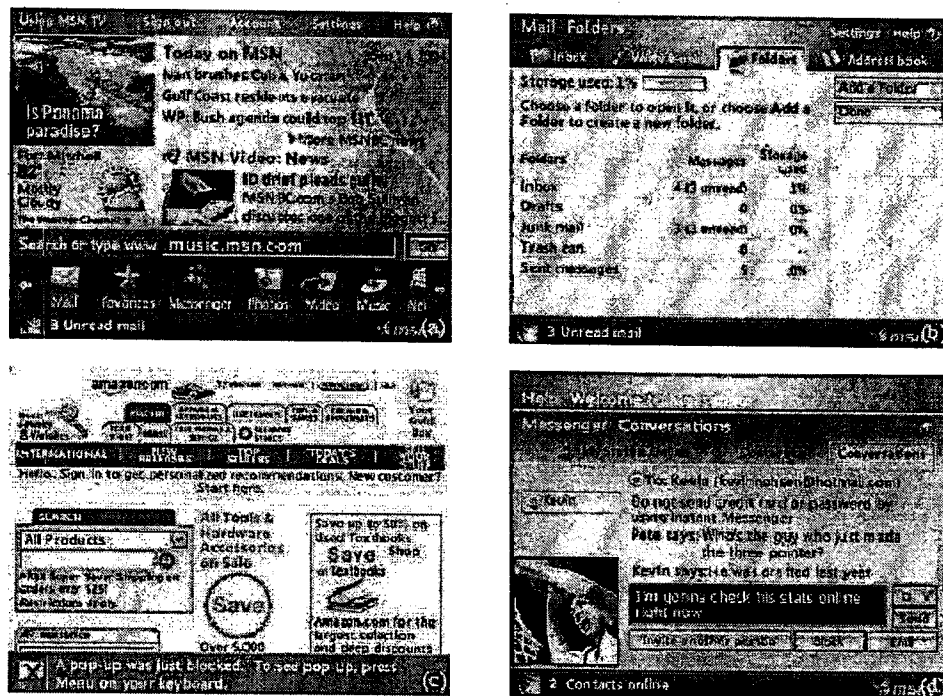


Figure 2.4 Provides examples of the MSN TV interface (a), (b), (c), and (d)
 Source: <http://msntv.com/pc/>

2.5 Future platforms

Different platforms offer different affordances for interactive television. The functionalities offered by many of these platforms speak to key features that ITV users are getting increasingly accustomed to and will most likely demand in the future, regardless of platform. Many of the observations arising from the examples presented in this chapter are key contributors to the principles that are laid out in chapter five. I offer some observations deducted out of thinking about ITV-enabling platforms abstractly in application to successful ITV programming:

- Viewers enjoy having control over their viewing experiences. For example, DVRs and VOD systems allow viewers to watch what they want, and when they desire. Viewers can also time-shift through media, skipping directly to parts of interest.
- Television is increasingly becoming an on demand experience.
- Viewers enjoy being able to customize their viewing experiences. The TiVo Wish List, for example, by taking advantage of metadata already associated with programs, allows users to sort by and record every program or film by actor, director, category, a keyword, or title.
- Platforms that engage the audience in activities such as voting are popular.
- Content that is “pushed” by the networks, such as the synchronized delivery of trivia, has not been effective. Users prefer to “pull” desired content.
- Interactivity must be tied to original programming content in order to motivate users to act.
- Web-based asynchronous applications have the disadvantage of being removed from the primary medium; however, the Web may become an alternate vehicle for on demand content in the future.
- There is a strong correlation between the popularity of a platform and its usability. The examples we have seen from Web TV and EPGs are examples of applications that are not user- friendly.
- The ability to navigate easily through an application is important. Different platforms allow for different methods of navigation. Navigation on any Web TV platform, for example, is more difficult due to the constraints of the remote control.
- Platforms are converging. Devices such as the Microsoft Media Center and the Sony PSP incorporate the functionalities of many platforms into one-platform.

People will most likely demand all of these capabilities from their devices in the future.

- Networked platforms will allow for greater community building among TV viewers. The following questions would shed more light on future trends.
- What role should existing guidelines play when integrating television and PC functionalities into the same platform?
- What role will mobile devices and game consoles in the ITV experience in the future?

Successful ITV deployment must leverage the functionalities afforded by each of these platforms to its advantage. These functionalities are shaping, in part, the viewing habits of television viewers, making them more active participants as they become increasingly amenable to the “lean forward” model of viewing. The effective interface and usability design of these platforms will play an important role in making these platforms as successful as possible.

2.6 Broad categories of ITV programming

Platforms will continue to evolve and converge with the advent of faster bandwidths and new technologies, I will categorize ITV programming by television genres and general types of programming, which offer a more stable and persistent modality for analysis.

I will be examining five genres of popular programming (sports, entertainment, reality programming, awards shows, documentaries) that have been most developed or experimented with for interactive television in the United States, as well as three genres (shopping, talk shows, dramas) that seem to offer the most potential, despite the current lack of ITV programming for these genres. For each of these genres, I will provide a representative example prototyped for or deployed in the U.S.

Clearly, different programming genres lend themselves to different forms of interactivity. The BBC identifies six types of programming that have proven successful for ITV: multi-stream sport, multi-stream factual, play-along quizzes, voting, charity donations, and entertainment. Similarly, ABC Enhanced TV, a leader of enhanced programming in the U.S., states that ITV programming works best for sports, reality, awards shows and game shows. Scott Gronmark, head of ITV at BBC

New Media, predicts that “the future will be more about finding which facets of interactivity genuinely enhance each genre, and concentrating on those aspects” in order to create the most successful ITV programming (quoted in Gawlinski, 2003).

I have identified eight genres to examine in greater detail: Sports, Entertainment, Reality Programming, Awards Shows, Documentaries, Shopping, Talk Shows, and Dramas. The last three categories (shopping, talk shows, and dramas) have not been extensively developed for ITV to date, but I will discuss their potentials in the Middle East.

These eight genres were selected based upon three elements – depth of information, contest, and participation – that make programs within these genres particularly well suited for ITV programming; that is, effective ITV programming can leverage these basic characteristics of television programs to create more participatory, interesting, and compelling viewing experiences for consumers. Table 2.2 outlines these elements as they relate to each genre.

	Depth of Information	Contest	Participation
Sports	X	X	X
Entertainment		X	X
Reality Programming		X	X
Awards Shows		X	X
Documentaries	X		
Shopping			X
Talk Shows			X
Dramas	X		X

Table 2.2 Elements of Television Genres Conducive to ITV Programming

Depth of information refers to the sheer quantity of information that exist behind the program, much of which is typically lost during the broadcast itself. For example, a two-hour documentary must leave out hundreds of hours of extra footage, interview material, and supporting documentation. Likewise, extra footage captured from multiple cameras at sporting competitions is often lost to the viewers. An effective ITV application can make these materials available to viewers, giving them to access to greater depth of information about the topic at hand, and offering them greater freedom to customize their viewing experiences.

The second element, contest, is an inherent element in most sporting broadcasts,

game shows, and some reality shows that makes such programs highly conducive to ITV programming. Such programs are characterized by real-time contests, with game-like qualities, where the outcome is open-ended. Viewers typically rally behind favorite individuals or teams, and love to weigh in with their opinions. Producers can leverage the game-like elements of these programs and engage the audience with activities such as polling and voting.

Finally, the majority of television genres afford participation in some way. For programs with contest or game-like elements, for example, viewers are always eager to play along at home or to guess the winner. For this reason, simple ITV applications such as voting, trivia, and polling often enjoy high levels of participation. Another aspect of participation relates to convening a community. Many types of television programs enjoy a loyal following, or a community that convenes around the show. Sports, reality shows, talk shows, and dramas are good examples of such types of programs where viewers love submitting input. ITV programming can put viewers more directly in touch with the community of existing viewers loyal to the program, and “remediate” the experience of watching television alone (Bolter & Grusin, 1999). For example, an application as simple as a poll, with live and near-instantaneous feedback, allows any viewer to see how his/her opinion falls in relation to the hundreds or thousands of other viewers also watching the broadcast at that moment. Unsurprisingly, this element appears to be the most important factor related to successful ITV programming.

These three elements are clearly not mutually exclusive from one another. For example, although it is possible for a program to enjoy a loyal following without having competitive elements, programs with strong competitive elements often draw a strong community, whether for the duration of a single event or through a prolonged series of episodes. These two elements combined can then be leveraged to engineer an even more successful ITV deployment. Major sporting events, which have typically enjoyed the most success in the ITV realm, may well be so successful because they offer a great deal of information, are driven by competition, and consistently have a large, loyal fan base.

However, it is also important to note that these elements themselves do not lead naturally to successful ITV applications. Many other factors must fall into place – e.g., clean design, compelling interaction, good navigational scheme – before an ITV

deployment might be successful. These three elements can only be thought of as inherent factors that make certain television genres more likely candidates for successful ITV programming.

2.6.1 Sports

Major sporting events currently comprise the most popular and successful arena for interactive television programming. ITV applications can provide multi stream viewing, trivia games, polling, on-demand access to statistics and other relevant information, and allow viewers to predict plays and calls. ABC Enhanced TV currently offers or has plans to offer interactivity for events such as Monday Night Football, The Bowl Championship Series, College Football, The Indianapolis 500, and The Super Bowl. During Super Bowl XXXIV, ABC's Enhanced TV page attracted 650,000 visitors. In a subsequent survey conducted by ABC, 96 percent of viewers who visited the site said they would do so again in the future (Swann, 2000). Similarly, Fox Sports has, for multiple seasons, added mobile enhancements to FOX Sports NFL, MLB, and NASCAR programming. FOX Sports' broadcast of the 2002 Super Bowl was the first use of mobile phones in the U.S. for ITV.

2.6.2 Entertainment

Entertainment programs, in particular game shows, are highly conducive to viewer interactivity because of their competitive nature. During a game show on television, ITV programming can allow viewers to play along by participating via a synchronous application on the Internet or by using a mobile device. Broadcasters can take the top ITV player scores and feed them back into the live TV broadcast in order to create a sense of community among players at home. This sense of community can be enhanced by allowing mobile players to chat with one another. Finally, a 24/7 version of the game can be made available to cultivate the community between broadcasts.

2.6.3 Reality

Reality shows, which are engineered to be suspenseful from episode to episode, lend themselves extremely well to viewer interaction, as they typically amass a loyal

audience base through the season. In many reality programs, contestants on the show are pitted against one another. Audiences have been eager to speculate, for example, which suitor the bachelor/bachelorette will eliminate next, who will be fired from the job, who will win the ultimate prize, etc. Some reality programs allow votes from viewers to determine, in part, the path of future episodes. Within this genre, ABC Enhanced TV has offered interactivity for *Super Millionaire*, *The Bachelor*, *The Bachelorette*, and *Celebrity Mole: Yucatan*, among others.

2.6.4 Awards

Similar to entertainment and reality programming, awards shows are highly conducive for ITV programming because they engage the audience by allowing viewers to vote on and discuss topics such as potential winners, fashion trends, and celebrity gossip. Awards shows typically draw large numbers of viewers; the telecast of the 76th annual Academy Awards, for example, attracted 43.5 million viewers. As with other voting and polling applications, effective ITV programming within this genre can foster a sense of community among viewers of the program.

In 2002, ABC reported that over 460,000 users enjoyed Enhanced TV's coverage of the 73rd Annual Academy Awards, staying connected to the application for an average of 39 minutes. Rick Mandler, Vice President and General Manager of ABC Enhanced TV, noted that "The numerous interactive opportunities offered to viewers, including the friendly competition of the 'Guess the Winner' game, help keep those at home glued to the ABC telecast throughout the evening" (ABC Enhanced TV Press Release, March 18, 2002).

2.6.5 Documentaries

Documentaries lend themselves well to interactive programming due to the encyclopedic nature of their content. Documentaries are meant to be informative, educational, and engaging. While documentaries traditionally do attract viewers with competitive elements, nor do they draw large communities of viewers who are eager to interact in real time, the incredible depth of information available – that is, the hundreds of hours of extra footage and archival materials that would otherwise never be available to viewers – can be strategically leveraged by ITV producers to produce a more personalized and compelling viewing experience. By giving the viewer

options to explore various aspects of the subject matter more deeply, he/she can play an active role in “determining how the documentary is represented and how much information is conveyed, as much as producers and directors do when filming” (Curran, 2003).

In particular, WGBH, the public broadcasting company that invented closed captioning in the 1970s, has looked to ITV features to build upon what its audience has come to expect from its programs. Two possibilities include multiple language offerings and content aimed at different learning levels (Pignetti & Capria, 2001). These options will allow viewers to gain a great degree of personalization over their viewing experiences.

2.6.6 Shopping

Shopping, or purchasing goods and services through the television, is also known as “t-commerce.” According to Digitsoft.tv, T-Commerce is attractive to consumers because they do not need to purchase any additional equipment or learn a new technology: “The ITV experience is simple, uses the familiar remote control and potentially reaches a wider audience than the Internet. Gallup research found that 42% of respondents over the age of 50 would be interested in purchasing items via ITV although they may be uncomfortable using PC technology” (<http://www.digisoft.tv>). Similarly, research out of Murdoch University in Australia indicates that “it’s not about how the ITV technology is technically superior or in some way safer than the Internet. It’s about the social context through which ITV transactions are facilitated... people trust their TV more than the computer” (Kingsford-Smith, 2003).

Adams, Anand & Fox forecast that the following three types of t-commerce will emerge (2001):

Push Commerce: Push commerce will give users special offers through commercials or programs. For instance, WebTV viewers in San Francisco were recently offered a 30% off coupon for Melissa Etheridge CDs from CDNow. This interactive ad’s response rate was 22%, as compared to the typical >1% online response rate.

Enhanced Shopping Channels: Enhanced shopping channels will give consumers the opportunity to make a purchase online. Enhanced shopping channels are

expected to increase impulse buying.

Virtual Mall: The virtual mall will give consumers access to a catalog of products that users can browse, access, and place an order in, at any time.

In 1999, twenty percent of U.S. households made purchases from a home shopping network. According to TechTrendes, 46% of U.S. consumers are interested in t-commerce, and 80% of active home shopping network users are interested in t-commerce, among whom 27% are willing to pay a monthly fee for the service (Adams, Anand & Fox, 2001).

2.6.7 Talk shows

Talk shows, as a genre, have not been widely developed for ITV programming, although there seems to be great potential in this arena. Talk shows in general enjoy a loyal following, and audience participation – particularly in shows that are debate oriented – can be a key entrant into successful interactive programming. Successful ITV programming for talk shows can foster a sense of community among its viewers by allowing them to send questions, comments, and polling data into the TV broadcast. Viewers can also chat with other viewers, purchase featured products, or receive additional information relating to the subject at hand.

The Interactive Channel, a new 24/7 cross-media ITV cable channel in Hong Kong, features a talk show called “I-Talk.” According to its creator, Robert Chua, ITV enabled talk shows are “appropriate for any country, because what it does is simply ensure that a talk show is topical and driven by the interests of the audience, whatever those might be” (quoted in Swedlow, 2005). As illustrated by Figure 2.5, I-Talk allows viewers to text in their questions, chat in the chat-room section of the screen, or call in with their videophone or 3G cellular phone and have their picture displayed on the television screen as they interact with the show’s host and guests. Internet users can also text in messages to the chat room and appear on TV using their Webcams. Real-time voting allows the audience and the hosts to know instantly where the votes are going for the discussion subject (Swedlow, 2005b).



Figure 2.5 I-Talk on the Interactive Channel
Source: Swedlow, 2005b

The rise of the political talk show genre on cable TV during the mid-1990s cleverly tapped into populist political rhetoric through an emphasis on interactive technologies. The prominent display of viewer faxes and e-mails and remote video conferences provided a new relationship to the audience as well as a more vivid presentational style (Rose, 2003). As we see from the example below, these tactics still work.

2.6.8 Dramas

Dramas as a genre have not been widely developed for ITV programming. Respond TV's Rebecca Stefanac notes that "Dramas are probably the least friendly type of program for ITV. People really just want to submit to the narrative and don't generally want a lot of background or commentary" (quoted in Pignetti & Capria, 2001). However, few programs possess more long-term loyal viewing communities than dramatic series, and effective ITV programming can allow dramatic programs to extend the broadcast beyond the hour of showing each week.

A notable application in this genre is *C.S.I. Interactive*, developed by H Design for the Microsoft ITV platform. H Design had the unique opportunity to conceptualize the feature set and framework for the ITV component and to write, produce, and design original interactive content for the entire first season. According to Curran, "Much of the content in the application is presented to the viewer in a

carefully choreographed manner that enhances the story line of the show by providing, for example, a sense of place, explanations of forensic techniques shown, or detail shots of scenes for closer observation. Viewers can view additional content like cast-member bios, maps of locations around Las Vegas, information on specific forensic techniques and terminology, and synopses of previous episodes. Viewers can also participate in the investigative process by answering questions presented in the lower part of the screen” (2003). (Figure 2.6) provides examples of the *C.S.I. Interactive* application.

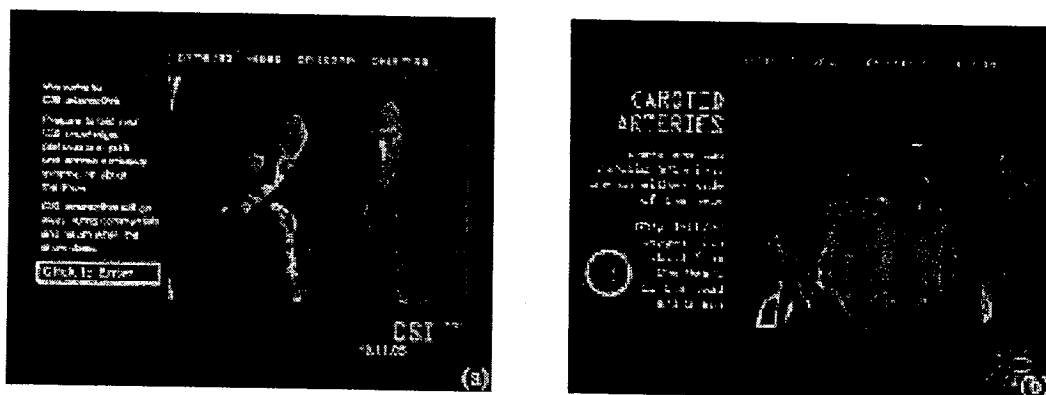


Figure 2.6 C.S.I. Interactive (a) and (b)
Source: <http://www.pvrcompare.com/utvimages.html>

2.7 Conclusion

Unlike platforms that continually evolve and converge based on technological advancements, television genres have existed for decades and offer a more stable modality for analysis. In fact, as noted by Gronmark earlier in this chapter, the success of future ITV programming will depend upon finding those aspects of interactivity that appropriately enhance each genre.

Depth of information, contest, and participation are three elements inherent to many genres of television programs that make them particularly well poised to take advantage of what ITV can offer. Many of the observations arising from the examples presented in this chapter are key contributors to the principles that are laid out in chapter five. I offer some observations and questions arising out of thinking about television genres abstractly in application to successful ITV programming:

- Programs with a high depth of information can benefit from ITV as a vehicle to

meaningfully deliver the additional content. The use of multiple camera angles and audio streams for sports and documentaries are examples of effective applications.

- Viewers enjoy the ability to customize their viewing experiences, as evident by the success of multi-stream sports offerings around the world.
- Programs with an element of contest allow viewers to experience a greater sense of agency, of even being a player in the game itself.
- The simplest of interaction models, such as voting, polling, and trivia often garner the highest levels of audience participation. These methods work by tapping into the contest and participatory aspects of the programs.
- The participatory aspect of many programs can be harnessed by ITV to convene existing communities or to create new viewing communities surrounding programs.
- Not all programs are effectively enhanced. The *C.S.I. Interactive* provides a good example in that enhancements must be intimately tied to the primary video content in order to be compelling for users.

Successful ITV programming must leverage the depth of information, contest, and participatory elements inherent to television programs to its advantage. ITV applications can extend the life and range of programs beyond their airing time, draw audiences by enabling participation, communication, and fostering the growth of viewing communities surrounding each program.

Chapter 3

Methodology of research

This chapter should give the reader detailed and sufficient information in order to make an estimate of the reliability and validity of the methods used. I will explain and justify the choices of methodology approaches that I have adapted in order to answer the research question posed.

3.1. Research Purpose

According to Robert Yin (2003), the purpose of an academic study can be exploratory,

descriptive, or explanatory.

- *Exploratory studies* are practical if you wish to clarify your understanding of a problem (Saunders, Lewis & Thornhill, 2000). Robson (1993, cited by Saunders, Lewis & Thornhill, 2000) describes exploratory studies as a method of finding out “what is happening; to seek new insights; ask questions and assess phenomena in a new light”
- *Descriptive studies* are appropriate when you wish to portray phenomenon such as events, situations or process. Furthermore, a descriptive is also appropriate when problem is clearly structured, but the intention is not to conduct research about the connections between causes and symptoms.
- *Explanatory studies* are useful when you wish to establish causal relationships between variables. The emphasis in this sort of study is to examine a situation or a problem in order to explain the relationships between variables (Saunders, Lewis & Thornhill, 2000).

The purpose of my thesis is somewhat exploratory since I wish to assess an interactive television implementation in light of critical success factors and understand what is happening in an interactive implementation case. My research is partly descriptive because it is necessary to have clear picture of the phenomena about which I wish to collect data. Prior to the collection of data my research purpose is clearly structured. Also it is somehow explanatory, because sometimes it examines

a situation or a problem in order to explain the relationships between variables. But it is mostly descriptive.

3.2. Research Approach

According to Martyn Denscombe (2000) a qualitative research is practical when a researcher wants to transform what has been observed, reported or registered into written words and not numbers. Qualitative research tends to rely on detailed and through descriptions of events or people. They are often associated with small-scale studies, and due to its ability to penetrate a situation or problem it is considered to be an excellent tool to handle multifaceted situations. In regards to this previous discussion I have decided to rely on a qualitative approach in this study. The aim of this study is to recognize Interactive implementation critical success factors and compare them with theory. My aim is not to make generalization. Instead, by using interviews I could investigate certain variables in depth and thus, provide a better understanding of my research area.

3.3. Research Strategy

Colin Robson (1993) defines case study as the ‘development of detailed, intensive knowledge about a single “case”, or a small number of related “cases”.’ This strategy will be of particular interest to you if you wish to gain a rich understanding of the context of the research and the process being enacted (Morris and Wood, 1991). Case studies further contribute uniquely to our knowledge of individual, organizational, social and political occurrence and it allows an investigator to retain the holistic and meaningful characteristics of real-life events, such as individual life cycles and organizational and managerial processes. The case study approach also has considerable ability to generate answers to the question ‘why’ as well as ‘what’ and ‘how’ questions (Robson, 1993). Case study can be very worthwhile way of exploring existing theory. In addition, a simple well constructed case study can enable you to challenge an existing theory and also provide a source of new hypotheses. The design of case study can be either a single-case study or a multiple case study. A single case study investigates a single entity in form of one industry, company, or district in depth. However, a multiple case study allows the researcher two or more entities to be studied and compared, which increases the validity of the

study. Each case within a multiple case study will however not be investigated in the same depth.

The purpose of my study was to find information to answer my “how” and “what” questions. The study did not require control over behavioral events. Further, I wanted to collect and analyze new data, comparing it to existing theories and find out if there are differences between my case success factors and those provided in literature.

3.4. Data Collection Method

According to Yin (2003) no source of information is better than others. In fact they should be considered complementary, and therefore a good case study will rely on as many sources as possible. When gathering information for case studies a major strength is the opportunity to use many different sources of evidence. The use of several sources of evidence means that the researcher has the opportunity to obtain multiple measures of the same phenomenon that adds validity to the scientific study. According to Yin (2003) interviews are the most important sources for case study information.

Telephone interview and personal interview can be used as potential techniques.

An interview is a purposeful discussion between two or more people (Kahn and Cannel, 1957 cited by Saunders, Lewis & Thornhill, 2000). The use of interviews can help you gather valid and reliable data that are relevant to your research question(s) and objectives (Saunders, Lewis & Thornhill, 2000).

Structured interviews use questionnaires based on a predetermined and standardized or identical set of questions. You read out each question and then record the response on a standardized schedule, usually with pre-coded answers (Saunders, Lewis & Thornhill, 2000).

By comparison, semi-structured and unstructured interviews are non-standardized.

In semi-structured interviews, the researcher will have a list of themes and questions to be covered although these may vary from interview to interview. This means that you may omit some questions in particular interviews, given the specific organizational context which is encountered in relation to the research topic. The order of questions may also be varied depending on the flow of conversation. On the other hand, additional questions may be required to explore your research question and objectives given the nature of events within particular organization. The nature of questions and the ensuing discussion mean that data will be recorded by note

taking, or perhaps by tape recording the conversation (Saunders, Lewis & Thornhill, 2000).

Unstructured interviews are informal. You would use these to explore in depth a general area in which you are interested. There is no predetermined list of questions to work through in this situation, although you need to have a clear idea about the aspects you want to explore (Saunders, Lewis & Thornhill, 2000).

Each type of interview has a different purpose. According to Saunders and Thornhill (2000) Structured or standardized interviews can be used in survey research to gather data, which will then be the subject of quantitative analysis. Semi-structured and in-depth, or non-standardized, interviews are used in qualitative research in order to conduct exploratory discussions not only to reveal and understand the “what” and the “how” but also to place more emphasis on exploring the “why” (Saunders, Lewis & Thornhill, 2000).

Because of the nature of my research and my purpose to answer “what” and “how” questions, I chose semi-structured interviews. The interview guide developed from my conceptual framework to guide our discussion. I had a certain set of questions that needed to be answered in order to obtain relevant data to my research questions. Furthermore, I wanted to keep the interview open ended to some extent. This in order to preserve the flexibility of the interview and to make room for additional information not thought of.

3.5. Sample Selection

Sampling techniques provide a range of methods that enable you to reduce the amount of data you need to collect by considering only data from a sub-group rather than all possible cases or elements (Saunders and Thornhill, 2000). Non-probability sampling is done without chance selection procedures. Purposive sampling or judgmental sampling is a non-probability sampling method that basically allows a researcher to select cases that seems to be best suited to answer the research questions. This form of sampling is often used when working with small samples, especially in a case study when a researcher is looking for cases that are particularly informative.

My sample selection is based on a judgmental sampling, which is non-probability sampling. Miles and Huberman (1990) suggest that investigating contrasting cases will help understand a single case finding, by specifying how, where and possible.

why it proceed as it does. Based on this reasoning, I have chosen to interview three professionals who have great experience and a long career in the field of advertising and who are familiar with the problems of interactive television.

Three interviews were done for collecting data for this case.

3.6. Data Analysis

The data analysis was a continuous iterative process (Figure 3-1) where each component entered successively as the study continued. The analysis was developed based on procedures for analyzing qualitative data suggested by Miles and Huberman (1994). Data collection and analysis have overlapped to reveal useful adjustments to data collection (Eisenhardt, 1989), even though most of the analysis was done after finishing data collection. Reading literature generates ideas making the researcher theoretically sensitive to the collected material.

When analyzing the data collected, the intensions were to find answers to the previously stated objectives. Miles and Huberman (1994) present the following three parallel flows of activity to explain the analysis (Figure 3-1).

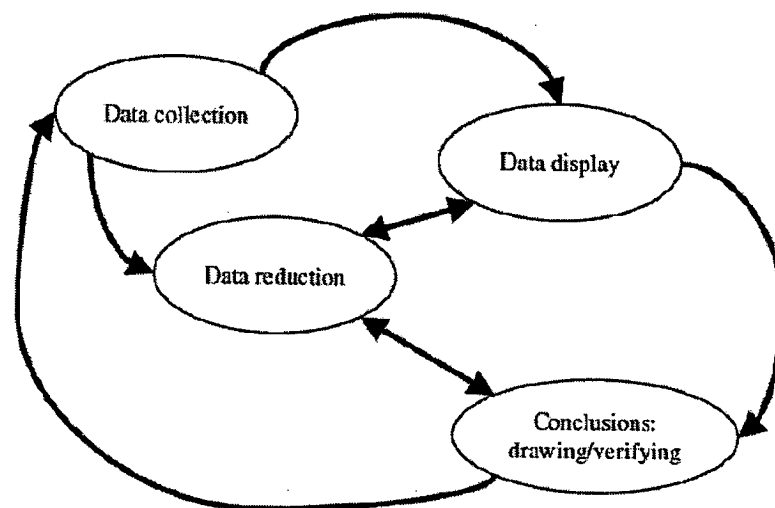


Figure 3.1 Components of data analysis: Interactive Model (Miles and Huberman, 1994)

- Data reduction: The process of selecting, focusing, simplifying, abstracting, and

transforming the data. The purpose is to organize the data so that the final conclusion can be drawn and verified. Data reduction actually occurs throughout the entirety of any project involving qualitative data: during basic project design, during data collection itself, and during preliminary and final analysis.

- **Data display:** Taking the reduced data and displaying it in an organized compressed way so that conclusions can be more easily drawn.
- **Conclusion drawing/verification:** Deciding what things mean, noting regularities, patterns, explanations, possible configurations, casual flows, and propositions.

The large amounts of data, mainly from interviews were systematically organized. The interviews have been analyzed by categorizing, clustering based on an approach suggested by Miles and Huberman (1994). The same sentences in an interview could be given several different codes since the same information could shed light upon different aspects.

3.7. Validity and Reliability

Validity and reliability have to be considered to reduce the risk of obtaining incorrect answers to research questions (Chisnall, 1997).

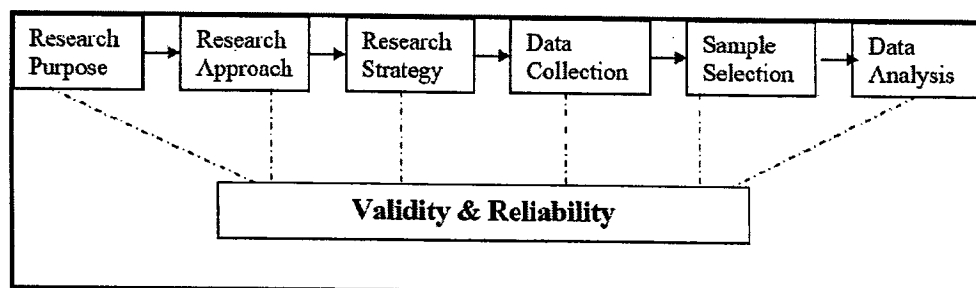


Figure 3.2 Research Methodology
Source: Adapted from Foster, 1988, p.81

3.7.1. Validity

Validity is the quality of fit between an observation and the basis on which it is made according to Kirk and Miller (1987). Validity is concerned with whether the findings are really about what they appear to be about (Saunders and Thornhill, 2000). It refers to how well a specific research method measures what it claims to measure (Chisnall, 1997). According to Yin (2003) there are three tests for researcher to test the validity.

- Construct validity
- Internal validity
- External validity

According to Yin (2003) internal validity is only used for explanatory or causal studies. Because this study is mainly descriptive the test will not be dealt with. Yin (2003) also states that external validity deals with the problem of making generalization of the case study. This study is not aiming to make any generalization, thus this will not be taken into consideration.

3.7.2. Construct validity

For construct validity there are three tactics: Use multiple sources of evidence; Establish chain of evidence; Have key informants review draft case study report (Yin, 2003). In my research I have used interviews and documents as sources of evidence.

But documents are not included in analysis and only have used as complementary sources. According to Yin (2003) establishing a chain of evidence is to allow the derivation of any evidence, from initial research question to ultimate case study conclusion. In this study I have made references to all the sources from which evidence has been collected.

3.7.3. Reliability

The objective with this final test is to be sure that another researcher will acquire the same results if he would repeat the study. However, the condition is that the other researcher follows the exact same procedures as the earlier investigator, and studies the same case, not a similar one by replicating the results. The goal of reliability is to minimize the errors and biases in a study (Yin, 1994).

Reliability refers to the stability and consistency of the results derived from research. It is the probability that the same results could be obtained if the measures used in the research were simulated. One factor that might run the risk of affecting reliability of the study is the respondent's lack of knowledge. It is further suggested that if respondent at the moments is tired or stressed, or have negative attitudes toward the interview it can impact negatively on the reliability of the study.

I tried to select best respondents with best knowledge for doing interview. Also the interview time was scheduled by respondents in order to reduce stress factor. It is

however possible that they might be stressed by other factors. My impression was that they were relaxed and enjoyed the interview.

Yin (2003) has suggested that the use of a case study protocol and development of a case study database are techniques, which increase research reliability. I have throughout this report explained the procedures of my research. I have also designed an interview guide, which reflects the conceptualization of my research question. I have organized the thesis in a way so that any researcher can retrieve any desired material.

By reading this report, it is possible to repeat the work and reach the same conclusions.

3.8 Limitations of the Research

As with any study, this research has some limitations that must be dealt with. All studies have their problems and limitations that surface. Tackling them and discussing them do not indicate weakness, but rather they show the strength of understanding possessed by the researcher when looking at the chosen field for the study. It is with this in mind that the limitations of the study will be discussed here, so that it can be shown that the researcher has a full and complete understanding of the problems inherent in doing a study such as this with the limited resources that are available. Any biases that the researcher might have can also be considered as limitations.

The main limitation of this study, and the only one that is significant to discuss here, other than the biases of the researcher, is that the study is largely subjective. Some may not see this as a limitation, but others will view it that way, and so it is important to discuss it and clear up any concerns early on. Objective studies are analytical and deal with facts and figures. Subjective studies deal more with perceptions and feelings, as well as thoughts and beliefs. While both are correct ways of studying things, the kind of study that is being performed often dictates which way the study is conducted.

For this particular study, being able to be objective and provide facts and figures about companies and television networks would have been beneficial, and could have provided some very significant data that would be important for future study. However, when dealing with issues such as this where individuals answer surveys,

there are few facts and figures that can be used and relied on with high degree of certainty. This is why the study is subjective – not because there are no figures provided, but because the figures provided are based on answers to questions with seven limited points, and these types of answers are largely subjective and based on the perceptions of the individual answering the survey. As has been mentioned, not all scholars will see this as a limitation or a weakness of the study, but it is mentioned here so those that do view it that way will be aware of it.

Chapter 4

Data analysis

In this chapter the data analysis will be presented. First within case analysis will be look at where data from each interviewee are separately analyzed. Secondly, a cross case analyses are presented where comparison is made between the three interviewees based on the data collected. The analyses are presented in a way of addressing the research questions, during the analyses; we will explain and discuss possible tendencies and trend that are found in the empirical data.

4.1 Interview no. 1

In case one, Mr. Darouni says that, the future of advertising have to go to interactivity it will become the most important viable medium, it will replace over almost all the traditional media. A new media which is interactive will be operational very soon in the Middle East. The time frame would be an improvement on a yearly basis. He also says that the media or the audience have become already fragmented. Because most of the televisions are becoming specialized televisions. The media in terms of mass media has been abolished. All the products are becoming specific for certain categories of groups. It will alleviate the problem because it will become more audience oriented. He says that the advertisers worldwide are asking for the number of clicks per view. Television normally is more difficult than the web because the web is personalized and the TV is normally for families or group audiences. Who will check? Who will communicate? Who will interact? The people meter is used somehow in the Middle East, but it is more sophisticated in the U.S. and Europe. The rate card has to be charged according to the number of viewers who have interacted.

Marketing such as e-marketing or e-advertising have changed tremendously in tactics and in strategies. To understand this, the role of the ITV and the marketing effects of television it becomes one to one marketing such as direct sales, discount plans. The question here is simply that he thinks that it will be a new technique or a new educational system that will form new people specialized in this field. There will be new type of people who will be formed to create such production and creative

execution technique. In specific probably you have to use much more public relations and to influence the customers which are a bit sophisticated. This is a new field which has to be developed.

And finally, he says that it is the job of the web designers and the producers who are able to do that. Computer specialists can do the job too. Additionally, the traditional advertising agencies cannot do this job. The Interactive specialized agencies may be able to help. The Interactive television requires other techniques and specialty programs, which has to be learned, developed and experimented. Interactivity is a new field that you have to experience. This is the new form of advertising because media people, advertising agencies and the advertisers are looking for direct responses, to justify their advertising costs and ensure a good return on advertising.

4.2 Interview no. 2

Mr. Karam says that it helps people to develop their skills through interactivity. Even the educators are relying on interactivity. It is not based on content. The audience will decide what type of program to watch. There will be fragmentation. There will be a need for a rate card. In the interactive business they can monitor electronically the number of viewers. They will have accurate statistics. It is not like traditional television where they have approximate statistics. He says you can decide and you can order. You don't have to wait for the next day. It is direct without losing time. The tension is high. The direct sales decide. The rational will dominate, but the emotional is difficult to be promoted in the interactive television. The data capture is very important. It is ideal for security payment issues and for personalization. In ITV you cannot create brand awareness. In case of brand awareness you need the emotional approach. The ITV is not important for brand awareness. If you are selling a product it is very good and you can feel the action.

Since the process is interactive there will be collaboration between the broadcaster and the agency. The investment plan is very high. This is difficult for the television station.

When it comes to advertising agencies he says we can create ideas but we cannot develop. It will be a collaborative work. The production houses don't have a previously prepared strategy. The advertising agency will have a big role. We will

decide the emotional and the rational. We will decide the channels of communication. It will be a B2B.

In the Framework Directive interoperability, perceived from the perspective of the consumer, relates to the capability of receiving, regardless of the transmission mode, all digital interactive television services. It is however also recognized that interoperability is an evolving concept in dynamic markets, indicating that it is a process, in which different levels can be identified. Taking this point of view, interoperability can be defined as the degree to which end users are capable of experiencing all content and functionality that has been incorporated in applications by broadcasters and service providers. Here he says there are two types of consequences. First, a certain level of non-interoperability, related to the specific design of the application, the specific intentions of the broadcaster or the specific capabilities of the transmission network, will remain as broadcasters and service providers will want to optimize their applications for a specific business model or transmission platform. Second, depending on the existing organization of the broadcast chain and the relationship between different players, (technical & economic) circumstances may either call for temporary solutions, improving interoperability levels only at one specific point in the chain.

This implies that the best tools to achieve a maximum level of interoperability under given circumstances may vary between markets, despite the fact that they may all lead to a single standard (and may consequently lead to a single interpretation and application of the concept 'interoperability') at a given time in the future.

4.3 Interview no. 3

Mr. Nehme says that interactive television will be the future of television, when everything will converge together. The fragmentation will stay. It can clarify. The audience will decide which channel to watch. When at home they will decide which program to select. He says, there is no code of ethics in certain governmental institutions regarding censorship. The advertising agency has code of ethics. They can control the viewers. The advertising will be more expensive. The rate card will transform to the number of clicks. They have monitoring, numbers and statistics. You will have exact number of clicks this is why it will be expensive and cheaper at the same time.

New direct sales channels exist and can increase more. You can register as a user for security reasons, payment issues and for personalization. This is usually done only once.

He says that , developing content for ITV is a specialization. The universities will have a great role in the education of specialists. The investment is very high. It will be a mixture of online agencies, web developers and advertising agencies. You will have a new business which is a mixture of both. Their job is purely in the interactive domain.

It will be less of a barrier. In Lebanon it is short term. In the Arab world, some countries are working on long term investment. Qatar, Emirates, Saudi Arabia may have money and they work on long term. Medium and small enterprises they will go beyond the interactive. They will work on brand awareness and quick results. Television takes the bigger budgets. The big businesses in the market will go to television. It will take and give in order to enlarge the market.

4.4 Cross-case analysis

From the three interviews we can conclude the following with respect to the seven questions asked, the questions are taken separately:

RQ 1: What are the prospects for interactive TV as a viable medium. And (theoretically) in what kind of timeframe?

All the three respondents have agreed that The ITV related to the future of advertising have to go to interactivity and it will become the most important viable medium. It will replace over almost all the traditional media.

RQ 2: Can interactive TV alleviate the problem of audience fragmentation?

They said that the media or the audience have become already fragmented, because most of the televisions are becoming specialized televisions. The media in terms of mass media has been abolished. There will be fragmentation.

RQ 3: How will traditional TV advertising model change (will advertisers demand a rate-card based on click-through, as with the Web)?

They have agreed that in the interactive business they can monitor electronically the number of viewers. They will be able to know who is watching a specific program or an advertisement. It is like the web sites. They will have accurate statistics. It is not like traditional television where they have approximate statistics. Through the number of clicks they will be able to know the viewer statistics.

RQ 4: How can interactivity open up new marketing opportunities?

They have also said that marketing such as e-marketing or e-advertising have changed tremendously in tactics and in strategies. The direct sales channels are already operational. Direct marketing channels already exist in the U.S. and Europe. Still it is not yet implemented in Lebanon and the Middle East.

RQ 5: Who will take lead in developing content for interactive TV, both in terms of production and creative execution?

Developing content for ITV is a specialization. The universities will have a great role in the education of specialists. The investment is very high. The advertising agency has a pre-strategy. The production house does not have the same type of pre-strategy. The right investment for the right customer. Some agencies are classical they cannot change. Since the process is interactive there will be collaboration between the broadcaster and the agency.

RQ 6: Who actually has the best expertise to develop interactive advertising?

The first respondent says that it will be the web designers, computer specialists and the producers who are able to do that. The traditional advertising agencies cannot do this job. The Interactive specialized agencies may be able to help.

The second respondent says that advertising agencies can create ideas but they cannot develop. It will be a collaborative work. The production houses don't have a previously prepared strategy. The advertising agency will have a big role.

The third respondent says, it will be a mixture of online agencies, web developers and advertising agencies. You will have a new business which is a mixture of both. Their job is purely in the interactive domain.

RQ 7: To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns?

According to the first respondent this is the new form of advertising because media people, advertising agencies and the advertisers are looking for direct responses, to justify their advertising costs and ensure a good return on advertising.

The second respondent says, it is however also recognized that interoperability is an evolving concept in dynamic markets, indicating that it is a process, in which different levels can be identified. Taking this point of view, interoperability can be defined as the degree to which end users are capable of experiencing all content and functionality that has been incorporated in applications by broadcasters and service providers.

The third respondent says it will be less of a barrier. In Lebanon it is short term. In the Arab world, some countries are working on long term investment. Medium and small enterprises they will go beyond the interactive. They will work on brand awareness and quick results. Television takes the bigger budgets. The big businesses in the market will go to television. It will take and give in order to enlarge the market.

4.5 The business side of the media

The first use of electronic commerce is to provide product information to customers, through on-line electronic brochures or buying guides. This can be seen as an additional marketing channel, allowing to reach a maximum number of customers. The advantages of electronic commerce as a way to deliver product information is its availability anytime, anywhere, provided the customer has the right infrastructure (e.g. PC, modem, online service) to access this information.

But using an electronic medium also allows for interactivity and customization. Different ways to customize the advertising content, based on the customer profile or

input, are to change the content description (simple or complex), display only a range of products which are relevant to the particular customer, change the price (e.g. discount for club members), allow for new functionalities in some cases (e.g. coupon available only in certain conditions) or change the path used to navigate in the service.

For instance, an electronic supermarket could provide different graphical user interfaces for kids, teenagers or housewives, with a look appealing to each of these segments. The advertisements appearing on the pages would also be different, with toys for the kids, music for the teens and jewelry for the housewives. This is coherent with trends in marketing, such as micro-marketing or one-to-one marketing (Peppers and Rogers, 1993) which try and target each consumer with a specific message, according to his needs and desires.

4.6 Competitive advantage

Successfully implemented strategies will lift a firm to superior performance by facilitating the firm with competitive advantage to outperform current or potential players (Passemard and Calantone 2000, p. 18). Possibility of having a virtual catalog of all kinds of goods and services sorted by category, transforming the buying process in a simple and intuitive way, much more effective than the purchase through a computer or a telephone call. The ability to create special spaces for different types of products. Virtual Supermarkets, Virtual Tour Housing, Video Presentation, Entertainment, all completely measurable and segmented for evaluation on media strategies.

4.7 The investment (ROI)

The failure of conventional advertising to sell products means that new methods of two-way communication have to be developed. These new methods must use interactivity to successfully re-personalize and re-humanize the communication experience. Commercial broadcasters and other content providers serving the US market are constrained from adopting advanced interactive technologies because they must serve the desires of their customers, earn a level of return on investment for their investors, and are dependent on the penetration of interactive technology into viewers' homes. In association with many factors such as

- requirements for backward compatibility of TV content formats, form factors and Customer Premise Equipment (CPE)
- the 'cable monopoly' laws that are in force in many communities served by cable TV operators
- consumer acceptance of the pricing structure for new TV-delivered services. Over the air (broadcasted) TV is FREE in the US, free of taxes or usage fees.
- proprietary coding of set top boxes by cable operators and box manufacturers
- the ability to implement 'return path' interaction in rural areas that have low, or no technology infrastructure
- the competition from Internet-based content and service providers for the consumers' attention and budget
- and many other technical and business road blocks

Chapter 5

Conclusions and Recommendations

In the previous chapter an analysis was conducted where the collected data was compared to the theories in the conceptual framework that was presented in chapter two. This chapter will present the main finding and conclusions based on research conducted in this thesis. The purpose of these conclusions is to answer the seven research questions. Finally implications for management, theory and future research are presented.

5.1 Digital platforms in the Middle East

The Middle East has no fewer than four competing digital television platforms fighting for viewer loyalty: ART/1st NET, Orbit, Star Select, and Gulf DTH/Showtime.

Four years ago there was no subscription TV. The few direct-to-home (DTH) satellite channels were all free-to-air and offered little threat to the monopoly state-run national TV channels. Over the past four years, four different digital satellite pay-TV platforms have emerged, but at the same time analogue (conventional) free-to-air satellite channels have also mushroomed. A walk through almost any Middle Eastern city will show how enthusiastically viewers have adopted the new broadcast technology.

The first two Arab pay-TV platforms have Rome as their operational bases--Orbit and Arab Radio and Television (ART). Both have substantial new facilities, including studios and play out centers. Both ventures are backed by substantial capital investment. Orbit is undoubtedly the market leader of all the competing platforms, thanks to the seemingly bottomless pockets of the Saudi Arabian al-Mawared group. In June 1998 Orbit confirmed it had taken studio space at Egypt's giant Media Production City, pointing to dramatically increased local production.

ART is funded by two very wealthy Saudis—Sheikh Saleh Kamel of the Dallah al-Baraka conglomerate, and Prince al-Waleed bin Talal, an investor in News Corporation and Netscape, among others. ART, in barely four years, has gone from a

single free-to-air analogue DTH channel to a 20-plus pay-channel platform (although not all are ART-supplied) with plans for expansion to 18 or more of its own channels in an attempt to wrest the leading Arabic digital broadcasting position from Orbit's twenty-TV-channel package.

Currently Orbit is the clear market leader in Middle Eastern digital television broadcasting. It transmits 13 Orbit TV channels and some 25 audio channels uplinked from Rome. Orbit's DTH platform launched in May 1994, making it the world's first digital broadcast platform. Orbit claims around 180,000 "viewing points," as of June 1998, though independent estimates put the subscriber base figure nearer 80,000.

The third platform is News Corporation's Star Select package, which in 1996 placed itself firmly in alliance with the Orbit platform. Star Select and Orbit share the same decoder in much the same way as DirecTV and USSB do in the United States, but remain separate packages. Star Select transmits 12 channels targeting Western and Asian expatriates, principally in the Gulf states.

The fourth pay platform comes from Gulf DTH, which trades as Showtime, backed with English-language programming by Viacom Inc. and co-financed by Kuwait Investment Projects Co. (KIPCO), a Kuwaiti conglomerate. Showtime, originally broadcasting from PAS-4, has recently added Nilesat to its capacity, and it has developed (in conjunction with Samsung/Galaxis) a decoder box capable of receiving digital signals from more than one satellite.

ART/1st NET and Showtime were originally established with the intention of satisfying both linguistic factions, Arabic speakers and international/English-speaking viewers. It would be fair to say that not all initially went well for 1st Net and Showtime, but 1998 has seen these squabbles repaired and good relations restored. If this cooperation continues there can only be added benefits for viewers and platform owners alike.

However, these four different digital satellite pay-TV platforms have led to a highly competitive broadcasting environment. Large sums are being invested in programming and studio equipment; there are some high disposable incomes to be

targeted and a mass market to be captured. These factors, combined with a complete lack of high-quality Arabic-language entertainment programming, suggest that the prospects for digital TV are positive.

Stricter regulatory content constraints from some countries may mean that local distribution is more likely to flourish in an MMDS environment than a satellite one, although primary distribution to MMDS head ends will be from satellite. This is certainly the situation in Qatar and may prove to be the case in Saudi Arabia. In the long term, there is unlikely to be room for so many rival digital pay-TV platforms, and consolidation is inevitable. However, in the meantime, competition will keep prices keen—so initial enthusiasm is obvious.

The one negative in this story is also a positive! Satellite broadcasting has led to the emergence of excellent pan-regional free-to-air broadcasters, in particular appealing to the very mass market originally targeted by the satellite platforms. MBC (the Middle East Broadcasting Centre), LBC (Lebanese Broadcasting Corporation) and Future have all developed into "super-stations" that Ted Turner would be proud of. There will be others. This highly competitive environment can only be good for broadcasting, program makers, and ultimately the viewer. It will lead to fresh programs being made, greater openness in the sort of discussion programs that are aired, and greater creativity from directors and producers.

The reason is that viewers (of free-to-air channels) will not watch rubbish. Advertisers will not sponsor old material; they will constantly be looking for modern, appealing entertainment. Nor will subscribers pay for encrypted channels that show tired old movies or 1950s musical shows, unless they have some historical or cultural relevance.

Instead I suggest that from this explosion of choice, from the new studios, from the universities and media schools, will come a fresh enthusiasm for broadcasting. New broadcasting ideas from the West and the East will be incorporated into the Arab way of life, with adjustment made for Islam's natural conservatism.

Which is not to say everything will grow and prosper in this garden. Like in any business environment there will be failures, and Arab public broadcasters need to

improve their product to match the imaginative efforts coming from the new satellite channels. If they do not match the satellite product, they will die

5.2 Limitation of the research

In this study due to the ability and time limitation this research is done to focus on the Middle East and Lebanon. This topic will be more interesting when it considers and finds the similarities and differences from other markets such as Asia or US. Especially when interactive technology can reach people from all over the world as well as business can do across border. The research has done with the main focus on B2C application. In order to deeper understand the effectiveness of this new technological medium more research can be done with the application from B2B point of view.

5.3 Managerial implications

It seems that the commerce associated with the ITV can be conceptualized in the following three perspectives:

1. from the tool perspective – the firm uses the ITV as a vehicle for the B2C commerce;
2. from the viewer perspective – the ITV viewers can easily online get/pass more information, order products, request services, and make the payment; and
3. from the corporate perspective – the application of the ITV is the providing of products/services and the conduct of marketing, pre-sale, transaction, and post-sale activities through the channel of ITV to viewers.

As Weill and Broadbent (1998) mentioned, there are four fundamentally different management objectives involved with investing in information technology:

1. infrastructure;
2. transactional;
3. informational; and
4. strategic.

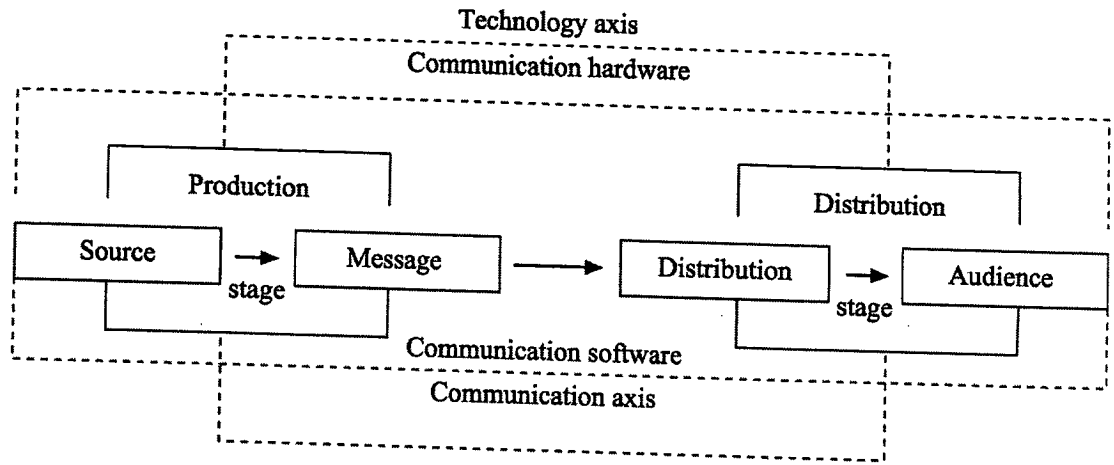
The firm that is the first mover of investing the ITV in its industry can gain the strategic competitive advantage. Sooner or later, the competitors will copy the ITV arrangement and have the me-too effect. The ITV then becomes the transactional one in the industry, and then the infrastructure for the industry; that is, shared service. At the transactional and infrastructural stages, to have further competitive advantages, the firm should make a differentiation based upon the distinct leverage of the value drivers of the ITV from its competitors.

The e-commerce experience told us any traditional value chain can be disaggregated and re-aggregated to nurture the true core of the business (Kalakota and Robinson, 2001; Murillo, 2001; Kao and Decou, 2003). We envision a potential commerce boom based upon the proposed ITV business concept and an evolution on value chains of all industries.

The ITV issue is new to all academic fields which are not involved in the TV/ITV value chain. Thus, there are lots of studies need to be done in order to provide a clear understanding of the ITV and the corresponding business concept. We agree that these studies should cover not only the viewer and the media industry but all consumers and all industries. Here we merely provide an introduction of the ITV business concept to all industries. The other studies are future work.

For example, the discussion of technological barriers to media commercials' information systems and firms' web sites and corresponding solutions is an important issue for the MIS professional. We recognize it as a future work since there are lots of involved factors, including the viewer viewing, browsing and buying behaviors.

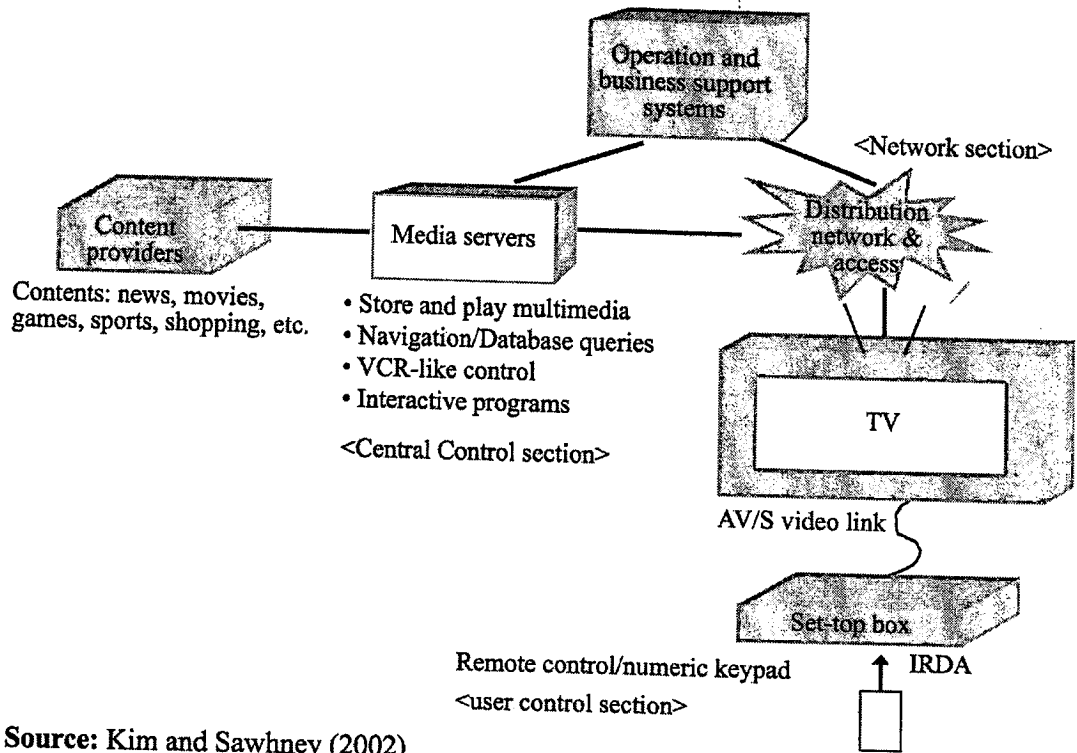
The differentiation based upon the unique leverage of value drivers does not lead to a competitive advantage unless it is valuable to the buyer. A successful differentiator should try to create values for viewers that yield a price premium in excess of the extra cost which are required for a delicate arrangement of ITV contents. The discussion of controlling the extra cost associated with leveraging value drivers is not under the scope of this study, but should be done in the future.



Source: Kim and Sawhney (2002)

Figure 5.1. The TV model

Source: Kim and Sawhney (2002)



Source: Kim and Sawhney (2002)

Figure 5.2. The current ITV architecture

Source: Kim and Sawhney (2002)

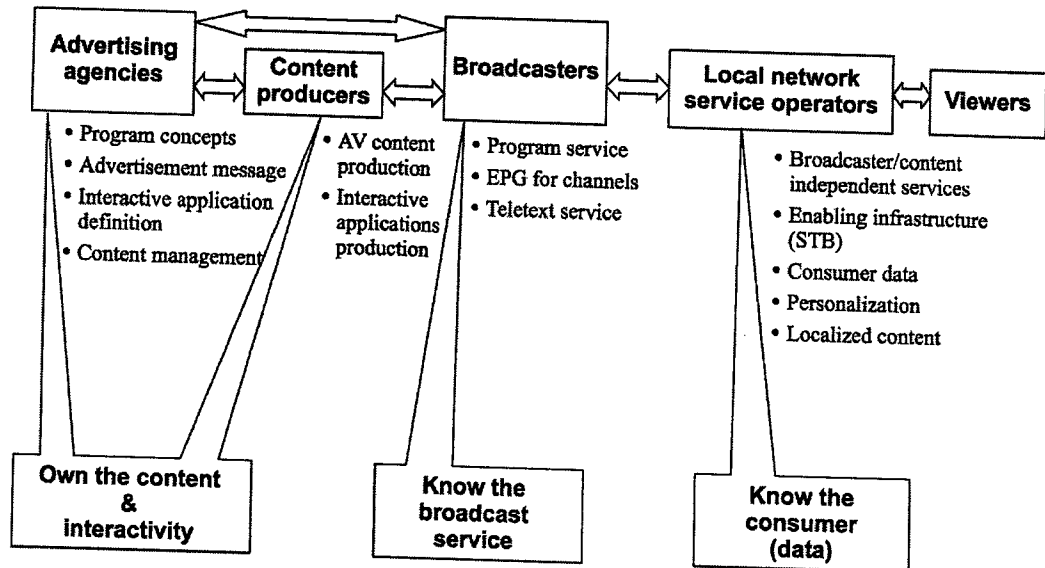


Figure 5.3 The ITV value chain
Source: Kim and Sawhney (2002)

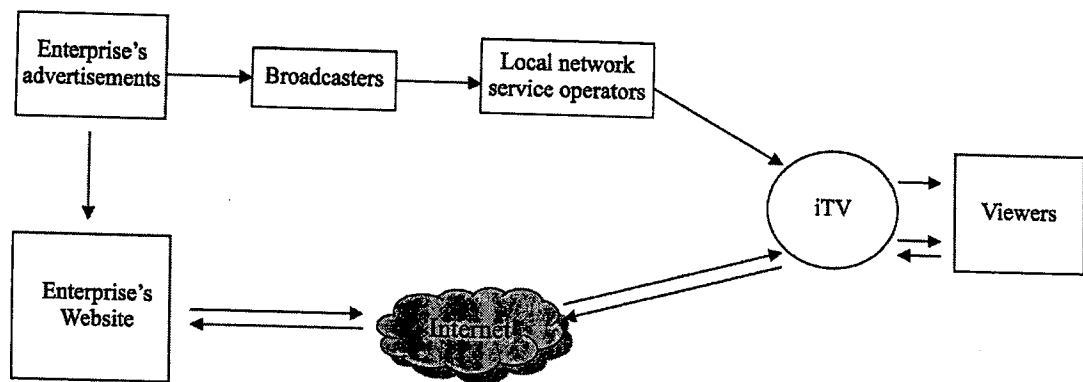


Figure 5.4 The semantics of the communication between the firms and the ITV viewers.

Source: Kim and Sawhney (2002)

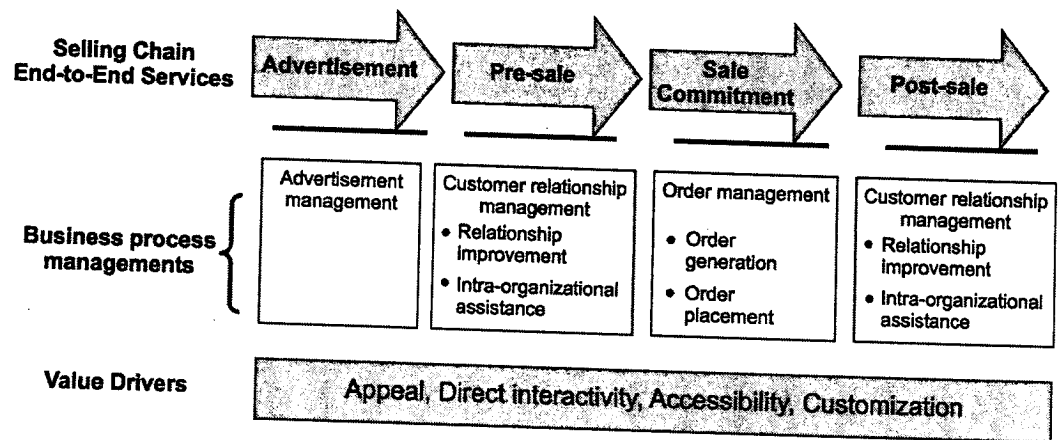


Figure 5.5 The firm's end-to-end service management of selling chain associated with the ITV

Source: Kim and Sawhney (2002)

5.4 Future Trends

The ITV industry is in a very challenging phase currently. Penetration levels are still rather low, and this has diverse effects for the industry. The industry is in a *treadmill* that is very common for many new emerging technologies. If there are no set-top-boxes and services there are no users and vice versa. Slowly progressing penetration has a negative industry wide effect in the form of hard market conditions for interactive content and application developers, advertising sales and increased broadcaster operating expenses in form of two simultaneous broadcasting networks. However, if there are no delays in penetration and growth rates develop as expected this will lead the industry to *high market growth figures* in the coming years. Demand for interactive content, application and advertising production would create activity and healthy competition among industry players, broadcasters could plan new investments after the analog network shutdown and end users could enjoy high quality content services.

The size of the whole ITV business is anyhow limited, yet the market has many local actors and only a few international ones. This is especially the case with content and ITV software developers. The software business is also by its very nature an international business so the market environment is immediately all of Europe. There is a danger that many companies will not gain market share, and that they will face either consolidation or market exit.

On the other hand *some trends support small and innovative companies* in their internationalization activities. These trends include content formats, media

convergence, and universality of software development. Creative and innovative companies may well break through on a European level.

Standardization is still in an early phase. Open TV has got a head start in platform business and they have got time to further develop the platform based on real customer experiences. MHP and other minor standards are in a challenger's position and it remains to be seen who will win the *battle of the standards*. However, it is quite obvious that there will be only one or a few future standards in Europe as it has been demonstrated already in home computer (Windows vs. Mac) and mobile markets (Symbian vs. Microsoft).

Standards have wide ranging effects for the markets. Only the biggest companies are able to support multiple standards and smaller companies are constrained to one platform. Depending on the decisions on standards companies may be either *winner*s or *losers* unless various standards become compatible.

New delivery channels create again pros and cons for the ITV industry. First, these channels (i.e. DVB-H for handheld and IPTV) provide *new ways to deliver content* for end users. Content may be richer (IPTV), the end user has enhanced possibilities to access the content (DVB-H), and it enables new ways to serve and charge the user. Secondly, these channels create potentially *bigger markets* as time and location free usage reaches a wider audience. New channels and bigger audience mean also *increased competition*. The development of distribution models makes the ITV market tempting for new market entrants from other industry segments. Entry to market opportunities may occur at the broadcaster, content provider (e.g. mobile content) and ITV software development level (e.g. mobile software companies).

Device convergence creates also challenges for the ITV industry actors. Media convergence in home terminals is a *widely accepted future vision* among markets. It is not clear yet in what form the competition will emerge and who will be the winner. Set-top-box manufacturers and middleware developers have basically two options: develop set-top-boxes more towards media centers or license middleware for media centre and game console manufacturers. Media centers enable more innovative content and service creation and therefore provide new business opportunities for ITV software vendors and content providers.

The philosophy of media convergence raises ever-increasing *competition over the end user's time consumption*. If in the near future most of the home entertainment is

served from only one source, which will then be the preferred entertainment type, and how will the end user make his/her choice? Currently, TV viewing takes on average a big share of the end users' time but other media are gaining share rapidly. How ITV can secure its place in the end users' life and differentiate positively against radio, game consoles, Internet, and other media is still an open question.

5.5 Recommendations

The implementation of ITV in the Middle East and Lebanon will take time and money. In this study we have learned from the expert's point of view that the television industry has to be re-structured to implement advertising and programming issues. Two contributions from this research are an information systems artifact that specifies an interactive advertisement design architecture and an empirical measurement of effectiveness for the prototype. For research domains such as marketing and communications, the results of this study imply that traditional TV advertisement should be redefined to embrace emerging dynamic-interactive advertising formats. Interactive advertising is expected to play a key role in TV-commerce or t-commerce because this new advertisement will be perceived as more informative and less intrusive to viewers. Interactive advertising using intelligent agent technology has potential to change customers' attitude toward TV advertising in general.

In contrast to traditional TV advertisement, which is a mass-marketing tool, interactive advertisement supported by IS technology can be used as a micromarketing tool targeted to individual customers.

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APPENDICES

Appendix A. Acronyms

B-ISDN: Broadband Integrated Services Digital Network

ITV: Interactive Television

HDTV: High Definition Television

C.S.I. Interactive: Crime Scene Investigation Interactive

DDB: Doyle, Dane, and Bernbach

Appendix B. Interview questions

RQ 1: What are the prospects for interactive TV as a viable medium, and (theoretically) in what kind of timeframe?

RQ 2: Can interactive TV alleviate the problem of audience fragmentation?

RQ 3: How will traditional TV advertising model change?

-Will advertisers demand a rate-card based on click-through as with the Web?

RQ 4: How can interactivity open up new marketing opportunities?

- direct sales channels
- direct advertiser-customer marketing relationships
- discount-led marketing
- lead-generation
- data capture

RQ 5: Who will take lead in developing content for interactive TV, both in terms of production and creative execution?

- Will it be broadcasters, who can exert greater control over the environment they actually built?

-Or will this be agency led?

RQ 6: Who actually has the best expertise to develop interactive advertising?

- Is it the traditional advertising agency, or the interactive specialist agencies, up to now more accustomed to build for the Web?

-Or will a new form of specialized agency emerge which combines all world views?

- Will the advertisers themselves be able to more directly control these aspects and set up their own production unit?

RQ 7: To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns

Interview no. 1

An interview was conducted with Mr. Kamal Darouni, CEO Infomarkets International, Board of Directors of DDB advertising agency Lebanon, affiliate to DDB Worldwide, Executive member of AAA(Advertising Agencies Association). Assistant Professor at the Notre Dame University, Louaize and author of the book "Advertising and Marketing Communications in the Middle East".

RQ 1. What are the prospects for interactive TV as a viable medium, and (theoretically) in what kind of timeframe?

The ITV related to the future of advertising has to go to interactivity. It will become the most important viable medium. It will replace almost all the traditional media. A new media which is interactive will be operational very soon in the Middle East. The time frame would be very slow on a yearly basis. The ad agencies and advertisers are looking now at an accountability plan which means that for every budget spent they need to know how many people have directly responded. It will eliminate the waste of time and contact among audiences. The advertisers will be limiting their budgets to interactive TV to get as much responding as possible from the people.

RQ 2. Can interactive TV alleviate the problem of audience fragmentation?

The media and the audience have become already fragmented, because most of the televisions are becoming specialized televisions. The media in terms of mass media has been vanishing. All the products are becoming specific for certain categories of groups. In terms of threats analysis, most of the products are directing their advertising to specific target groups who are buying their products and respectively watching special specific TV programs. ITV will alleviate the problem because it will become more audience oriented. What we see today in terms of non-traditional media is that the multi-media will be the name of the game which means integrating television, radio, telephone and the internet into one component. Definitely the new generation will adapt its understanding, its usage and its communication through the new multimedia system.

RQ 3. How will traditional TV advertising model change (will advertisers demand a rate-card based on click-through, as with the Web)?

Definitely this is the name of the game as already the advertisers worldwide are asking for the number of clicks per view. Television normally is more difficult than the web because the web is personalized and the TV is normally for families or group audiences. Who will check? Who will communicate? Who will interact? Who is watching? Either it has to be checked by means of an agenda, or by asking questions on the telephone. Here it is good to mention the "people meter" that allows advertisers and media to know who is watching which program at what time. The people meter is used somehow in the Middle East, but it is more sophisticated in the U.S. and Europe. The rate card has to be charged according to the number of viewers who have interacted.

RQ 4. How can interactivity open up new marketing opportunities?

Marketing such as e-marketing or e-advertising have changed tremendously in tactics and in strategies. The direct sales channels already are operational. Direct marketing channels already exist in the U.S. and Europe. Still they are not yet implemented in Lebanon and the Middle East. We witness some products creating their own channels, i.e. Lifelong, Zein Al Atat etc. . Fatafeet television as they demonstrate their products on television.

To understand this, the role of the ITV and the marketing effects of television has become one to one marketing such as direct sales, and discount plans. The same principles are applicable in the retail service or in the marketing systems which are not using television. It is a personal salesmanship through communication. Definitely all the marketing information or marketing expertise used in the field will be applicable in communication and marketing.

RQ 5. Who will take lead in developing content for interactive TV, both in terms of production and creative execution?

I think, the question here is simply that it will be a new technique or a new educational system that will form new kinds of people specialized in this field. Neither the broadcaster nor the advertising agency, at this stage, are well equipped or informed how to communicate. There will be new types of people who will be formed to create such productive and creative execution techniques. Probably, you

have to use more public relations and to influence the customers that are sophisticated. This is a new field which has to be developed.

RQ 6. Who actually has the best expertise to develop interactive advertising?

Definitely, the web designers and producers are able to do that. Computer specialists can do the job too. The traditional advertising agencies cannot do this job while the Interactive specialized agencies may be able to help. But, as I said it will be through the help of the web. The Interactive television requires other techniques and specialized programs, which have to be learned, developed and experimented. Interactivity is a new field that you have to experiment with.

RQ 7. To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns?

As previously stated that the local media will soon die, and the break in-break out, on television will disappear. They will be replaced by interactive television. Advertisers want to know how many persons have clicked or communicated directly with the advertising spot. This is the new form of advertising because media people, advertising agencies and the advertisers are looking for direct responses, to justify their advertising costs and ensure a good return on advertising.

Interview no. 2

An interview was conducted with Mr. Daniel Wilson Karam , CEO Feedback, Advertising and Marketing agency in Lebanon and General Secretary of Advertising Agencies Association in Lebanon.

RQ 1. What are the prospects for interactive TV as a viable medium, and (theoretically) in what kind of timeframe?

It helps people to develop their skills through interactivity. Even the academic educators are relying on interactivity.

RQ 2. Can interactive TV alleviate the problem of audience fragmentation?

It is the division of audiences into small groups due to the wide spectrum of media outlets. Audience fragmentation is not based on content. The audience will decide what type of program to watch. There will be fragmentation in advertising and programming. This situation creates an economic problem for advertisers who need to reach large audiences to make their advertising dollars cost-effective. In addition, since the number of viewers determines the advertising rates, audience fragmentation will affect the networks' revenues as the audience size diminishes. As audiences become more fragmented, the major networks will need to create new revenue sources.

RQ 3. How will traditional TV advertising model change (will advertisers demand a rate-card based on click-through, as with the Web)?

This question is generated from question one, which means there is fragmentation. Definitely there will be a demand for a rate card (A **rate card** is a document containing prices and descriptions for the various ad placement options available from a media outlet). In the interactive business they can monitor electronically the number of viewers. They will be able to know who is watching a specific program or an advertisement. It is like the web sites. They will have accurate statistics. It is not like traditional television where they have approximate statistics.

RQ 4. How can interactivity open up new marketing opportunities?

You can decide and you can order. You don't have to wait for the next day. It is direct without losing time. The tension is high. The direct sales decide. The rational will dominate, but the emotional is difficult to be promoted in the interactive

television. In certain places like safe promotions you can go emotional. If your product's mission is sales promotion both emotional and rational they don't have a problem. If you are doing an activity for a brand the ITV won't work.

The data capture is very important. It is ideal for security payment issues and for personalization. You log in and you are recognized. All this information is in the database. It is not applicable to all kinds of businesses. Here comes the role of category of businesses and the advertising of ITV.

In ITV you cannot create brand awareness. In case of brand awareness you need the emotional approach. The ITV is not important for brand awareness. If you are selling a product, it is very good and you can feel the action.

RQ 5. Who will take lead in developing content for interactive TV, both in terms of production and creative execution?

Since the process is interactive, there will be collaboration between the broadcaster and the agency. This is a specialization by itself. There is no time to lose. They don't go to purchase programs. The investment plan is very high. This is difficult for the television station.

RQ 6. Who actually has the best expertise to develop interactive advertising?

We can create ideas but we cannot develop. It will be a collaborative work. The production houses don't have a previously prepared strategy. The advertising agency will have a big role. The advertising decide the emotional and the rational. We will decide the channels of communication. It will be a B2B.

RQ 7. To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns?

In the Framework Directive interoperability, perceived from the perspective of the consumer, relates to the capability of receiving, regardless of the transmission mode, all digital interactive television services. It is however also recognized that interoperability is an evolving concept in dynamic markets, indicating that it is a process, in which different levels can be identified. Taking this point of view,

interoperability can be defined as the degree to which end users are capable of experiencing all content and functionality that has been incorporated in applications by broadcasters and service providers.

Taking a consumer perspective does not mean however, that interoperability issues solely occur at the receiver level. Looking at the entire broadcast chain, there are several points, notably when the application itself is developed, when it is broadcasted, and when it is transmitted via a specific network, where interoperability issues are of concern, in addition to reception at the terminal level. This has two types of consequences:

- i) a certain level of non-interoperability, related to the specific design of the application, the specific intentions of the broadcaster or the specific capabilities of the transmission network, will remain as broadcasters and service providers will want to optimize their applications for a specific business model or transmission platform.
- ii) depending on the existing organization of the broadcast chain and the relationship between different players, (technical & economic) circumstances may either call for temporary solutions, improving interoperability levels only at one specific point in the chain.

This implies that the best tools to achieve a maximum level of interoperability under given circumstances may vary between markets, despite the fact that they may all lead to a single standard (and may consequently lead to a single interpretation and application of the concept 'interoperability') at a given time in the future.

Interview no. 3

A third interview was conducted with Mr. Ghassan Nehme who is a creative director at Feedback, Advertising and Marketing agency. He has several years of experience in design, animation and broadcasting.

RQ 1. What are the prospects for interactive TV as a viable medium, and (theoretically) in what kind of timeframe?

It will be the future of television, when everything will converge together.

4.3.2 RQ 2. Can interactive TV alleviate the problem of audience fragmentation?

The fragmentation will stay. I can choose any program at any time and interact with it. I can be the decision maker. It can clarify. The audience will decide which channel to watch. When the viewers are at home, they will decide which program to select.

RQ 3. How will traditional TV advertising model change (will advertisers demand a rate-card based on click-through, as with the Web)?

I don't watch a program if I am not satisfied with it. You switch to another program and watch a different advertisement. There is no code of ethics in certain governmental institutions regarding censorship. The advertising agency has code of ethics. They can control the viewers. The advertising will be more expensive. The rate card will transform to the number of clicks. They have monitoring, numbers and statistics. You will have the exact number of clicks. This is why it will be expensive and cheaper at the same time.

RQ 4. How can interactivity open up new marketing opportunities?

New direct sales channels exist and can increase more. You can register as a user for security reasons, payment issues and for personalization. This is usually done only once. When you fill up the form, on the television, you will be recognized. Interactivity will be good for TV shopping and direct marketing. In the communication mix you cannot use advertising and sales promotion. Instead you have to go to public relation in order to conclude trustful information. Because, in the interactive television I am putting the selective advertisement and not the

nonselective. For example, you cannot use a political program and ask people to interact.

RQ 5. Who will take lead in developing content for interactive TV, both in terms of production and creative execution?

Developing content for ITV is a specialization by itself. The universities will have a great role in the education of specialists. The investment is very high. The advertising agency has a pre-strategy. The production house does not have the same type of pre-strategy. There is the right investment for the right customer. Some agencies are classical they cannot change.

RQ 6. Who actually has the best expertise to develop interactive advertising?

It will be a mixture of online agencies, web developers and advertising agencies. You will have a new business which is a mixture of both. Their job is purely in the interactive domain.

RQ 7. To what extent will the non-interoperability of digital TV platforms actually act as a barrier to advertisers embarking on interactive advertising campaigns?

It will be less of a barrier. In Lebanon it is a short term. In the Arab world, some countries are working on long term investment. Qatar, Emirates, Saudi Arabia may have money and they work on long term. Medium and small enterprises will go beyond the interactive. They will work on brand awareness for quick results. Television takes the bigger budgets. The big businesses in the market will go to television. It will take and give in order to enlarge the market.

Appendix C.

1957	Zenith "Space Command" Remote Control - with 13 VHF channels, the viewer could sit back in a Lazy Boy Lounger and switch stations without getting up from the TV Dinner.
1972	Cable TV - cable expands as HBO is launched, satellite distribution becomes viable, and regulations loosen. Cable allows the potential of over 75 channels, giving us the Set Top Box (STB) and making the remote control man's (and woman's) best friend.
1977	Qube Warner Cable debuts iTV service in Columbus, Ohio. A limited amount of customers can now get additional information while watching a program and can participate in live polls. The system is dropped as additional benefits can not justify the cost of the equipment.
1984	1984 Cable Act - deregulation accelerates cable penetration. Cable homes increase to over 50M homes by the end of the decade.
1994	Full Service Network - Time Warner launches iTV services in Orlando FL. It works fine, but nobody wanted to pay for the \$5,000 digital STB's. The newly rediscovered Internet looks more promising.
1995	Digital Satellite - TV expands to 500 channels. Almost 12M 18" dishes are sold by the end of the 1990's. The enhanced program guide becomes a necessity.
1997	WebTV - the Internet converges on the TV screen. WorldGate and AOLTV get into the act as well. Their combined base soon exceeds 1.5M.
1998	Digital Cable - MSOs start expanding the digital infrastructure to over 1.5M homes, giving customers potential access to iTV services. By end of 1990's, that number will expand past 5M.
1999	Digital Video Recorders - TiVo and ReplayTV change how we watch and interact with the TV. Including Dish Network and UltimateTV, over 3M PVRs have been sold.
2001	iTV Deployment - iTV programs started by every MSO and DBS system. Wink is available in over 6M homes. OpenTV, Liberate, Canal+, and WorldGate make important strategic alliances. Over 20M homes have boxes capable of some form of interactivity.
Today	Video On Demand (VOD) deployments are expanding in the cable world, laying the digital infrastructure necessary for new interactive applications. Satellite providers are pushing new iTV enabled projects and PVR's. Two-screen synchronous programming is becoming a necessary option to sports and event programming. Over 40M homes have boxes capable of some form of interactivity.

Appendix D.

Cable Television

Dramatic changes in rate structures and oversight contained within the Telecommunications Act of 1996 are meant to provide new opportunities and flexibility as well as new competition for cable service providers. Under the provisions of the act, uniform rate structure requirements will no longer apply to cable operators where there is effective competition from other service providers including the telephone company, multichannel video, direct broadcast satellites and wireless cable systems. However, for the new effective competition standards to apply, comparable video programming services would have to be available to the franchise community. For smaller cable companies, programming tier rates and basic tier rates would be deregulated in franchise areas where there are fewer than 50,000 subscribers. Additionally, states and local franchise authorities are barred from setting technical standards, or placing specific requirements on customer premise equipment and transmission equipment. Sale or transfer of licenses are expedited under the act. Franchise authorities are required to act upon requests for approval to sell or transfer cable systems within 120 days. Failure to comply with the 120 window will provide an "automatic" approval of the sale unless interested parties agree to an extension.

Common carriers and other operators that utilize radio communications to provide video programming will not be regulated under cable rules if the services are provided under a common carriage scheme. Common carriers who choose programming for their video services will be regulated as cable operators unless the services are provided under the "open video systems" provision of the Telecommunications Act. Open video systems operators can apply to the Commission for certification under section 653 of the act which will provide the operator with reduced regulatory burdens. Local Exchange Carriers (LECs) can provide video services under the open video provisions. Further, LECs are not required to make space on their open video systems available on a non-discriminatory basis. Joint ventures and partnerships between local exchange carriers and cable operators are generally barred unless the services qualify under provisions

for rural exemptions, or LECs are purchasing a smaller cable system in a market with more than one cable provider, or the systems are not in the top 25 markets.

In an attempt to spur competition between cable operators and local exchange carriers, Congress provided incentives for cable operators to compete with local telecommunications companies. Under the act, cable systems operators are not required to obtain additional franchise approval for offering telecommunications services.