

Interactive Television:
A Research Agenda

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Introduction

We are in the midst of a very exciting period of technological and marketplace development of interactive television. Approximately one dozen interactive television systems have been introduced in the marketplace or are scheduled to be launched in the next few years. These include Frox, GTE Main Street, Interactive Network, Interactive Systems, TV Answer, and Videoway, among others. At the same time, there is considerable uncertainty about interactive television and many research questions that need to be addressed. The purpose of this paper is to outline some of these questions and to present a preliminary research agenda. The research agenda covers two broad areas: interactive television in general and advertising on interactive television.

Interactive Television Research Questions

Below, five research questions or areas of study are outlined for interactive television.

1. Lessons From The Past.

Although we think of interactive television as a phenomenon of the 1990s, there have been many attempts to launch interactive television systems and programming over the past forty years. The first of these was an interactive television program on CBS in the early 1950s: Winky Dink And You. In this program for children, a cartoon character experienced many perils. Children

were expected to purchase a special plastic screen from a local stationery store and place it over the screen. When the cartoon character, Winky Dink, ran into trouble (e.g., a tiger was chasing him as he approached a gorge), children were asked to draw on the plastic screen (in this example, a bridge for Winky Dink to cross) and thereby interact with the programming. Unfortunately, some children did not purchase the plastic screen and simply drew with crayons on the TV screen, leading to complaints for this pioneering effort at interactive television.

Winky Dink was followed in the 1960s with tests of interactive television for two-way communications (Picturephone) and in the 1970s with a series of interactive television trials sponsored by the National Science Foundation. In the late 1970s and early 1980s, a number of interactive systems were developed for cable television, including the Warner Amex QUBE system and Cox Cable's INDAX system. At the same time, a number of interactive text and graphics services (e.g., videotex) were tested, some of which used the household television set for display of the information.

What was learned from these trials, tests and actual services? Although the research reports are scattered far and wide, there is a body of knowledge from these earlier services that could be synthesized. While the 1990s context is quite different from the 1960s, '70s and '80s, it is likely that many useful lessons from the earlier experiences could be applied to current interactive television efforts.

2. What do we mean by interactive television and interactive media in general?

Among the many interactive television systems in the marketplace or soon to be launched, there are many differences in system characteristics. Further, there are many additional systems which claim to have some interactive capabilities. For example, some systems that use an 800 telephone number to order

pay-per-view movies on cable television describe themselves as "interactive." How then do we define interactive television and, more generally, interactive media?

One approach to this question might be to avoid a rigid definition for the moment and, instead, to conceive of a spectrum or grid of system characteristics. In developing such a grid, different systems could be classified by the number of characteristics they provide, e.g., single channel or multi-channel, synchronous or asynchronous interaction, upstream capacity, etc.

3. What is the consumer appetite for interactive television?

Interactive television appears to fly in the face of the so-called "couch potato," a stereotype for television viewers. If television viewers are so passive, what interest would they have in interacting with television programs? Of course, the couch potato stereotype is a disputed concept. Some researchers have argued that viewers respond directly or indirectly to what they view. Further, there are many examples of viewers responding in large numbers to interactive telephone response polls in news programming and after major political speeches. In addition, the well-documented channel changing behavior of many viewers may be considered a simple form of interacting with television.

Nonetheless, the basic question of mass consumer appetite for interactive television remains unanswered. Further, what differences will we find among demographic groups? Will interactive television appeal more to males, as have videotex and video games? Will usage skew towards younger audiences? A related question concerns ability to maneuver through interactive systems. Will viewers who have experience with personal computers and automated teller machines find interactive television easier to use than those who do not have experience with other interactive technologies?

4. What is the nature of the interactive television experience?

In developing new services, we tend to conceptualize them in terms of a previous medium. Thus, early television was defined in terms of radio programming, i.e., what it added to the radio experience or how television programming differed from radio programming. Today, we tend to conceptualize interactive television in terms of one-way television. However, as we research the behavior of users, a new conceptual model is likely to emerge - one that is based upon the medium itself rather than a comparison with earlier media.

5. What types of content are appropriate for interactive television and how do we design creative interactive television programs?

It is safe to assume that most consumers will not give a hoot about a black box that has the capability of providing interactive content. Whatever appeal interactive television has will be based upon actual programming and services. However, what types of programming and program formats will have greatest appeal?

There is a large set of issues underneath this general question. Original programming is expensive. In a start-up phase, program providers may be 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? Also, will experimentation lead to any radical new program formats?

Advertising Issues

Below, five questions about interactive television as an advertising environment are outlined.

1. How do we evaluate interactive television as an advertising medium?

Will interactive television serve as a traditional mass audience advertising medium or as a response/telemarketing medium? Two important characteristics of interactive television are the ability to segment audiences (providing different content to different audience segments and/or knowing which audience segments are watching) and to provide instantaneous feedback from audiences, including the direct purchase of products and services. These characteristics may lead system operators to charge advertisers in new ways, including a percentage of sales. Most likely, however, a hybrid model will emerge in which interactive television serves as a traditional mass medium for some applications and a telemarketing medium for others.

2. How will consumers respond to interactive television commercials?

Interactive television commercials can provide many new features for advertisers and consumers alike. For example, consumers could choose which commercial they wish to watch or which version of a commercial to watch. Commercials can offer contests in which a viewer might learn instantly if they have won a prize. Also, consumers can request additional information, instantly, or actually make a purchase during a commercial.

These features may make commercials more appealing to viewers and potentially reduce channel switching behavior during spots. However, there will undoubtedly be a novelty effect with these new forms of commercials. The important issue to research

will be the behavior of viewers after any novelty effects have worn off.

3. How will interactive television advertising be affected by other trends in advertising?

There are many technological and behavioral changes taking place in television, e.g., the development of mega-channel cable television systems, menu driven user interfaces for television in which viewers can navigate through large capacity cable TV systems or program a VCR, and increased channel changing by viewers. The design and placement of commercials has been affected by these trends, e.g., many stations and networks no longer place commercials at the end of local news shows and simply cut directly to the opening of network news in order to reduce channel changing at this break point.

The development of interactive commercials will take place in a context of all these other technological and behavioral changes. Can interactive commercials serve some existing needs, e.g., reduce channel changing during commercials?

Further, can interactive commercials provide a new setting in which advertisers can develop new formats that would be difficult to introduce in a traditional setting? For example, the development of specialized cable channels such as FNN provided a new setting in which it was possible to place program content and a commercial message on the same screen. This would be much more difficult to do in a broadcast network program, simply because a tradition has been established by which content and commercials are separated. Interactive programming may provide another new setting to explore new forms of advertising that would break traditions and expectations of broadcast and cable program settings.

4. What radical new forms of advertising might emerge in an interactive television environment?

British Airways has developed a novel interactive commercial for theatres in the U.K. On-screen, a couple is walking through a park in Paris. Suddenly, a woman in the theatre shouts, "That's my boyfriend. That's Nigel." The on-screen boyfriend turns to the camera and says, "Michelle, I can explain everything." The interaction then continues between the boyfriend on-screen and the woman who was planted in the theatre.

This novel and creative commercial requires considerable logistic support in a theatre environment. However, the concept lends itself quite well to an interactive television environment, i.e., speaking to narrow audience segments (in the near term) and potentially to each individual viewer (in the long term). More importantly, the commercial provides an example of a radical departure from the norm. The question arises, what radical new departures might be possible in interactive television settings? Further, who will take the creative lead in designing radical new commercials?

5. Will each interactive television household become like a Nielsen people meter household?

An important characteristic of many interactive television systems is the ability to track what the household is watching. Further, some systems can be configured to track what each individual household member is watching. This leads to a number of questions. First, will system operators and/or channels sell viewing data and compete with Nielsen? Second, what level of reliability can be expected from interactive television tracking data? As in the case of people meters, a new interactive television system of tracking will be subject to intense scrutiny about reliability.

Third, many questions about privacy are likely to emerge in the new interactive television environment. Here, a historical lesson is worth noting. Warner Amex placated some of the privacy concerns surrounding its QUBE interactive cable service by developing a privacy code and communicating it clearly to subscribers. In the same way, it might be prudent to develop an industry privacy code rather than wait for a legislative or court-based privacy code. Even with such a code, privacy issues will require a great deal of attention.

Conclusions

There are many opportunities and challenges associated with interactive television. From a research perspective, there is an opportunity to explore an exciting new medium of communication. There is also a challenge to understand what consumers want, how the services should be designed and which system(s) is feasible from a business perspective.

Some advertisers will undoubtedly adopt a conservative position and wait for the service to be adopted widely before they become involved. However, there are many arguments for early participation. Chief among these are the opportunity to participate in the business development of the new medium and to discover unplanned/unanticipated possibilities for advertising in this new setting.

Perhaps the strongest need in interactive television is for research and development of content design. Understandably, much of the early effort has been concerned with hardware and other technological issues. However, interactive television will stand or fall on the creativity of content and its appeal to consumers.