An On-Demand Advertising Model
For Interactive Television

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Table of Contents

Table of Figures ............................................................................................................. 3

1. Project Summary ........................................................................................................ 4
2. Background .................................................................................................................. 5
   2.1. Existing Television Advertising Conventions ..................................................... 6
       2.1.1. Commercial Spot ......................................................................................... 6
              i. Brand Image ................................................................................................. 6
              ii. Hard-sell / Promotion ................................................................................. 7
       2.1.2. Content Sponsorship .................................................................................. 7
       2.1.3. Product Placement ...................................................................................... 7
       2.1.4. Infomercial ................................................................................................... 7
   2.2. Interactive Television Advertising Examples .................................................... 8
       2.2.1. Enhanced Product Information .................................................................... 8
       2.2.2. Immediate Shopping ................................................................................... 9
       2.2.3. Brand Image ............................................................................................... 9
       2.2.4. Customer Data Collection .......................................................................... 10
       2.2.5. Branching Narrative .................................................................................. 10
3. Audience Definition ................................................................................................... 12
   3.1. Early Adopters ..................................................................................................... 12
   3.2. Early Majority ..................................................................................................... 13
4. Problem Statement ..................................................................................................... 14
5. Solution: A User-friendly Advertising Interface .................................................... 15
6. Technology .................................................................................................................. 18
   6.1. Metadata in Programming Content .................................................................... 18
   6.2. Multimedia Home Platform .............................................................................. 19
7. Interface Design ......................................................................................................... 20
   7.1. Resolution as Screen Size .................................................................................. 20
   7.2. Resolution as Sharpness ..................................................................................... 21
   7.3. Typography ........................................................................................................ 21
8. Functionality ............................................................................................................... 23
   8.1. Bookmarking ....................................................................................................... 23
   8.2. Sample Remote Design ...................................................................................... 23
   8.3. Navigation .......................................................................................................... 24
   8.4. Bookmarking Action Feedback ......................................................................... 25
   8.5. Product Vault ..................................................................................................... 26
   8.6. Product Information Screens .............................................................................. 27
9. Further Development ................................................................................................ 29
   9.1. User Testing for Bookmarking ............................................................................ 29
   9.3. Compatibility with Programming Genres ........................................................ 29
   9.4. Product Metadata Integration ............................................................................ 30
10. Conclusion .................................................................................................................. 31

Notes ............................................................................................................................... 32
References ...................................................................................................................... 34
Table of Figures

Figure 2.1 – Interactive TV ad for Renault Clio .................................................. 8
Figure 2.2 – Interactive TV ad for Dominos Pizza ........................................... 9
Figure 2.3 – Interactive TV ad for Pampers ...................................................... 9
Figure 2.4 – Interactive TV ad for Skip ............................................................. 10
Figure 2.5 – Interactive TV ad for DePaul Trust ............................................ 10
Figure 5.1 – Interaction scenario ..................................................................... 16
Figure 5.2 – Current TV broadcast and proposed TV broadcast ..................... 17
Figure 7.1 – Screen size ................................................................................... 20
Figure 7.2 – Tiresias characters ...................................................................... 22
Figure 8.1 – Bookmarking functionality ........................................................... 23
Figure 8.2 – Sample remote controller design ................................................ 24
Figure 8.3 – Primary navigation ...................................................................... 25
Figure 8.4 – Instructions for navigation ........................................................... 25
Figure 8.5 – Scrolling and highlighting ............................................................. 25
Figure 8.6 – Transparent notification layer ..................................................... 26
Figure 8.7 – Product vault .............................................................................. 27
Figure 8.8 – Product information screen ......................................................... 28
1. Project Summary

"You have to take it as it happens, but you should try to make it happen the way you want to take it." - German Proverb

As television broadcasting technologies evolve with interactive services, traditional television advertising is losing its effectiveness and a new advertising model is needed for commercialization of television content. This prototype addresses this problem and demonstrates an on-demand, user-friendly advertising model for television, where the ads are visible if and only if they are triggered by the viewers.

Television advertising is the most preferred method for promoting products and services since it provides high visibility and could potentially be more pleasing to watch. According to Advertising Age’s survey, television advertising in the US amounted to $41.1 billion, out of a total of $79.5 billion; more than half of all advertising [1].

As the viewer gains more control of the medium with the new interactive and digital television services, however, traditional television advertising seems to be coming to an end. Companies such as TiVo became major players in the industry simply by offering the viewers the opportunity to skipping advertisements [2]. Why do we hate ads so much? And then, why do people look forward to watching Super Bowl commercials? Or why do we visit product web sites? Aren't they all produced for the purpose of promoting products and services?

Current television advertising formats interrupt programming content and therefore are likely to be skipped by the viewers. However, consumers may seek out product information in other contexts where the information is presented in a more user-friendly way. From an information design perspective, television advertisements and especially commercial breaks are not user-friendly and are often designed to be deceptive. Commercial breaks consist of commercials that are targeted based on the audience demographics, and they are the most expensive television advertising method in terms of both production and broadcasting. A commercial break by definition interrupts programming content, resulting in the viewer switching channels or taking a break from the activity of watching television. Thus, it is not surprising to witness an increasing number of advertisers become skeptical to television advertising, since the audience is missing.

This project is motivated by the core definition of advertising, information about products. The accompanying prototype attempts to introduce a user-friendly interface for television advertising from which richer advertising formats potentially could arise.
2. Background

Interactive Television is television with interactive content and enhancements. It provides richer entertainment, interaction and more information pertaining to the shows, props and people involved in its creation. In a sense, it combines traditional television viewing with the interactivity enjoyed by those communicating through a network, such as the internet. Programming can include richer graphics, links to websites, electronic communication with others and online commerce through a back channel. As the increased broadband resources evolve into place as well as increased use of personal video recorders, video-on-demand options, electronic program guides, etc., interactive television will continue to become more commonplace. Interactive television’s future looks good as research shows that people want additional facts pertaining to programming, alternative commentaries, and web support as enhancements to the programming content.

There are three primary forms to experience interactivity with television programming: set-top box-based, 2-screen television (see the call for interactivity during the show and go to your computer to interact with the show) and using your mobile phone (and to a lesser extent PDA). However, interactive television is still in its development phase; most of the conventions on how to create, present, and use the medium have not been established yet. Just like any new medium, interactive television tends to borrow conventions from older established media such as traditional television and the internet [3].

Interactive television is primarily influenced by traditional television but the advertising conventions of traditional television cannot fulfill the potential that interactive television offers. Commercial breaks, for example, which are the set of commercials that interrupt programmed content on television, are currently the most common way of advertising on television. The commercial break is not the most efficient convention for interactive television for a number of reasons. First, commercial breaks do not define niche target audiences; they are vaguely targeted for the audience of the programming content, which is not the most effective method. Second, television commercials are presented in commercial breaks, which interrupt programming content and therefore not user-friendly. Viewers cannot browse but have to watch ads in order of appearance. Third, the current metric methods for television audiences are wildly questionable [4]. Finally, viewers do not have control over commercial breaks, which are initiated not by the viewer but by the medium itself, which is one of the primary reasons why commercial breaks are often ignored, usually with channel zapping. If advertising is thought of as a monologue that communicates the benefits of certain products, then in order for it to be effective, viewers must be eager to listen to the ads to get the message.

Recent on-demand technologies enable viewers to record the television segments that they want and to skip commercials. This technology made advertisers question the effectiveness of television advertising because television is the most expensive medium for advertising both in terms of production and broadcasting. In addition, the concept of ad-skipping formed such a powerful trend that it became the unique selling proposition of TiVo, one of the leading players in the industry. However, this trend is a primitive
reaction to unorganized, untargeted advertising on traditional television. It cannot be a permanent trend because advertising is one of the major driving forces of interactive television, just like it is for other media [5]. In fact, TiVo is now looking for new ways to deliver advertisements in more user-friendly ways instead of encouraging viewers to skip ads [6]. The concept of ad-skipping ushers in the end of advertising, which is unlikely to happen in any medium; instead, the methods of advertising must be redefined.

One of the areas of advertising that has exploded in growth is known as product placement. Product placement integrates an advertiser's product into movies and television shows for clear, on-screen visibility [7]. In the early periods of interactive television, developers explored opportunities for interactive product placement. Throughout these attempts, however, it was assumed that viewers would volunteer to interrupt the content to explore product benefits (for example, a viewer would interrupt watching “Friends” to find out more about the t-shirt Jennifer Aniston wears), which proved to be a very optimistic and unrealistic approach [8].

2.1. Existing Television Advertising Conventions

2.1.1. Commercial spot

Often referred as a 30-second spot, the commercial spots are the most common way of advertising on television. Commercial spots may appear either in between television programs or during a program where multiple spots are lined up as a commercial break. Commercial spots can be targeted to the programming content’s audience. For example, one could expect to see a beauty product commercial in a commercial break during Oprah Show.

Commercial spots fall into two distinct categories according to the way they present a product/service:

i. Brand Image

Brand image commercials are often intended to construct a style for the product and tell a story that revolves around it. Rather than trying to hard-sell the product, brand image commercials adopt an indirect way of making a selling point that proposes a long term relationship between the company or the brand and the target audience. In fact, a brand image commercial could communicate a company’s vision and philosophy as well as it could announce a newly launched product, or a new line of an existing product. Analyzed through a storytelling lens, it would be fair to say that brand image commercials are the shortest and the most condensed convention for storytelling by the means of moving image. Most Super-Bowl commercials fall into this category.
ii. Hard-sell / promotion

This type of commercial communicates time sensitive promotions, discounts, and store deals. Using a hard-sell tone, the content focuses on the price advantages. Usually, the goal is to have a boost in product sales in short-term, and it is common to see comparisons with competing products. These commercials are shorter than brand image commercials, and cheaper to produce and broadcast as well. It would be very unusual to see a considerable story line in this category. A pizza store running a deal on certain menu items, a car dealership trying to liquidate its stock, or a retail store having a holiday discount would be good examples for hard-sell / promotion commercials.

2.1.2. Content sponsorship

Content sponsorship is an advertising opportunity when the programming content is relevant to the target audience of a product. Sponsorships are intended to establish an association in consumer’s mind between the programming content and the product. Also, they provide high visibility for the brand name if the program has high ratings. In the content sponsorships examples, the program often carries the message that the program was brought to the audience by a certain advertiser. Also, the advertiser’s commercial spots might accompany content sponsorship.

Content sponsorship does not provide too much space for companies to communicate product benefits. That is probably the reason why a brand image commercial would usually accompany a content sponsorship as part of the television network’s deal with the company that sponsors the content.

2.1.3. Product placement

Having the advantage of not interrupting the programming content like a commercial spot does, product placement became a widely preferred advertising method on television. Well-done product placement provides a natural context and it practices one of the most recent advertising trends: High visibility without looking like an advertisement. Viewer research indicates that modality of presentation (visual and auditory) of the placements and the degree of connection between a brand and the plot of the show interact to influence memory and attitude change [9].

2.1.4. Infomercial

Infomercials are hard-sell television commercials that run as long as a television program (from ten minutes to an hour). The word Infomercial is the combination information and commercial, and it provides extensive information about the benefits of a product with a direct selling tone of voice. Unlike 30-second spots which brand a product in the market, infomercials are intended to solicit a direct response from the viewer. Infomercials, also known as paid programming, are normally shown outside of peak hours, such as late at
night or early in the morning. Infomercials may make use of flashy catchphrases, repetition of basic ideas, testimonials, and the use of accredited scientists or celebrities.

2.2. Interactive television advertising examples

Below are a set of interactive television advertising examples mostly aired on European television networks. Although the technological infrastructures may vary, European examples provide a good starting point of the utilization of interactive television conventions for advertising.

In Europe particularly in the UK, remote controls feature four color-coded buttons: red, green, yellow and blue. These were originally employed as an enhancement for teletext services to provide shortcut navigation known as fastext. In order to simplify the message to viewers, the BBC and other broadcasters have adopted the convention of using the red key as the means of accessing interactive services on other platforms. During commercial breaks, an on-screen prompt may provide a visual or verbal call to action inviting the viewer to press red to enter an interactive portion of the advertisement. This method, however, is based on the assumption that the viewer is paying attention to the commercials that appear during the commercial break.

Advertising examples on interactive television could be divided into several categories based on the purpose of advertisement.

2.2.1 Enhanced product information
The interactive advertisement consists of a dedicated advertising location designed for television screen that features product highlights. When the viewers respond to the call to action by pressing the red button, they are taken to the dedicated advertising location where they can explore the product in detail using the remote controller. This method is used multiple times for new product launches.

Figure 2.1 – Interactive TV ad for Renault Clio
2.2.2. Immediate shopping
Domino’s Pizza in the UK had a successful interactive television campaign where viewers could order pizza from their televisions for delivery. According to Sky, the service provider, Domino’s use of interactive ads has led to a 27% increase in pizza orders through the interactive television platform [10].

![Interactive TV ad for Dominos Pizza](image1)

2.2.3. Brand image
In the examples where the primary purpose is to build/maintain the brand image, it’s hard to tell the distinction between advertiser and content provider. In the Pampers example, the company intends to educate its customers by providing expert opinion about babies. The viewers can select a topic (such as feeding, locomotion, toilet training, and communication with the baby) from the menu and get detailed information about the selected topic. The branding is distinct but not distracting, and advertisement looks like an informative television program more than promotional content for the company.

![Interactive TV ad for Pampers](image2)
2.2.4. Customer Data Collection
Advertisers also approach interactive television as an opportunity to build potential target audiences, and collect information. Unilever’s *Skip* campaign offered the first 5000 respondents the opportunity to receive a free sample pack or price reductions providing they answered qualifying questions - the data then being captured by TPS on behalf of Unilever. Upon pressing the OK button during Skip commercial, the viewers are taken to a questionnaire, where they are rewarded by a free sample after answering questions including sex, age, detergent currently used, how many washing done weekly, and how many people there are in the household. This type of target audience information is used for building customer database and prospective direct marketing activities.

![Figure 2.4 – Interactive TV ad for Skip](image)

2.2.5. Branching Narrative

Homeless charity the DePaul Trust briefed Publicis Networks for a twofold strategy: to create awareness and generate donations, by explaining how young people end up homeless, and showing how consumers can help by depicting the cyclical story of one young man.

The campaign used Kingston Interactive Technology's broadband video on demand to allow the viewer to make narrative choices through their remote to control the direction of the ad. At the end of the ad, viewers can simply push the red button upon a visual call-to-action to enter a dedicated advertiser location where they can donate money or volunteer for charity.

![Figure 2.5 – Interactive TV ad for DePaul Trust](image)
The ad delivered, on a percentage basis, almost twice as many interactive donations in two minutes as Children in Need delivered in a whole evening of viewing, equating to 50,000 donations via a micropayment facility in two minutes (One in 10 people pushed their interact buttons, with 20 percent going to a donation screen. One in 10 of these donated.) [11].

DePaul Trust interactive advertisement stands out among various examples, since it combines simple interactivity with branching narrative structure.
3. Audience definition

From an advertising perspective, the audience for the proposed model covers all television viewers. However, such an audience definition would be too broad for the scope of this project. Therefore, the primary audience profile is outlined based on the user profile of interactive television.

Interactive television users are television viewers first and interactive users second. Interactivity can potentially increase their engagement, however, it can not be the end goal. According to Netpoll’s *Hands On Television* interactive television consumer report, there are several phases through which the life cycle of new technology goes:

- Early Adopters
- Early Majority
- Late Majority
- Mass Market

This categorization helps us understand not only the user demographics, but possible responses to new products and services. For this project, the first two groups are taken into consideration, since interactive television is still in its early adoption stage.

3.1. Early Adopters

Early Adopters consist of three subgroups:

- Socially active teenagers
- Sports fans
- Gadget guys.

Socially active teenagers are driven by what is ‘cool’. They are technically confident and tend to benefit from all the available communication platforms. They know what to watch and when, and their behaviors are likely to influence others. Applications such as SMS voting in the television show *American Idol* are good examples for demonstrating their participation potential.

Sports fans are usually male, and passionate about their favorite sports. Their decisions on new technologies are highly influenced by what the offerings add to their experience. Having different camera angles for a football game or watching NASCAR from their favorite driver’s point of view could motivate them to get more interested in interactive television.

Gadget guys are the consumers who are particularly interested in exploring new technology. Owning and being able to use the most recent devices is an important part of their lives, and they are driven by their curiosity towards gadgets.
3.2. Early Majority

Netpoll’s *Hands On Television* interactive television consumer report divides Early Majority group into the following distinct subgroups:

- Early Clickers – young children with pester power.
- Daytime Dabblers – usually female, at home during the day.
- i-Potato – recumbent channel-hopper.
- Silver Sofas – 50+ with time on their hands.

Early Clickers are children whose age range from three to ten. They are familiar with interactivity through either school or a computer, and their parents tend to be tech-savvy. Games are usually the route to interactive access for this user group.

Daytime Dabblers are pre-dominantly female, and generally use interactive services because there is an existing subscription in the house. Often the spouse of a Gadget Guy or a Sports Fan, they might seem like a secondary audience. However, Daytime Dabblers tend to improve their own pattern of use and they are one of the major target audiences for interactive television services.

The i-Potato is characterized as male, who can not only spend an entire day channel surfing, but also can order pizza using the television set. Television is an important part of i-Potato’s life, and there is always something to watch. Yet, interactivity represents more choice and greater convenience.

Silver Sofas are usually above 50 years of age, and have a lot of spare time primarily due to retirement or being alone at home. They tend to have some gained experience from work in terms of using technology and they usually can use the internet. Silver Sofas are intrigued by exploring appealing functions of television.

Early Adopters and Early Majority groups is the key to early adoption for the proposed model because of their two important characteristics. The first one is the curiosity and being comfortable with new technology since interactive television could be considered as a new concept for most people. For example, socially active teenagers in the Early Adopters are also the primary adopters of rising trends associated with brand names. If information to cool products could be reached through technology, they probably will use that technology. The second characteristic is the time that the audience spends on exploring and getting used to new technology. The common aspect of different user groups under Early Majority is that they have relatively more time to spare on exploring new things. For example, Daytime Dabblers, primarily consisting of housewives, watch television more than most audiences throughout the day. Therefore, they are more likely to dedicate time for discovering new ways of entertainment with television.
4. Problem Statement

"Advertising is a non-moral force, like electricity, which not only illuminates but electrocutes. Its worth to civilization depends upon how it is used." - J. Walter Thompson

My project centers on the problem that a broadly effective advertising interface for interactive television has not yet been developed. Although advertising is one of the most powerful tools for the commercialization of television content, because of the way it is presented, advertising is perceived as an intruder by the audience. However, advertising can be regulated on interactive television platforms to work in harmony with content, blending in the medium as a user-friendly interface with appropriate information architecture while adopting and maximizing the medium’s usability conventions.
5. Solution: A user-friendly advertising interface

The solution offered by this prototype is a user-centered design that is on-demand and personalized. In the prototype, advertising begins after people start wondering more about a product. The prototype intends to mimic how we approach consumer products when we are interested. For example, John likes Ashley’s new cell phone and he asks her what brand it is. Then he examines how heavy it is or if it has a camera or how long its battery lasts. If he gets more interested, he asks her how much she paid for it. If he is busy with something else at that moment, John stops by a cell-phone shop when he has some time in order to take a closer look at the cell phone or he browses the product website. John learns more about the cell phone because he wants to learn more, not because Ashley keeps talking about the cell phone’s features and price. Information is on-demand.

Similarly, the prototype gives the viewers the opportunity to bookmark a product that they like while watching television (See Section 8.1 for a detailed explanation of bookmarking). The viewers can bookmark the products by using their remote, without interrupting the programming content. They can explore the product's features, learn its price or watch product videos by navigating to their personalized advertising space, the product vault, whenever they like (Figure 5.1).

In the prototype, 3 samples of programming content are used to demonstrate the functionality:

- James Bond / The World Is Not Enough (Movie)
- Real World / Road Rules The Inferno (TV reality show)
- Jennifer Lopez – Get Right (Music video)

The primary criterion for selecting sample content is the flexibility to integrate products in the content. For example, James Bond movies are good media for product placement because of their appeal to the young and old. The 60-40 male-female ratio among Bond audiences is appealing to many advertisers. Many advertisers associated their products with James Bond’s hi-tech world and action-packed scenes [12]. To name a few, Aston Martin and BMW are two companies that introduced new product lines in recent James Bond movies. Real World is an unscripted reality show that provides a natural context for content-product association. Unscripted shows offer more opportunities for product placement compared to scripted shows. The contestans in Real World get their task descriptions sent to their SideKick II, T-Mobile’s recently launched handheld device. Get Right music video is a good venue for product placement, especially for Jennifer Lopez fans.
**Figure 5.1 – Interaction scenario**

**Bookmarking the product**

The viewer sees a product in the program. She likes the product and bookmarks it in her product vault (personalized advertising space).

**Notification**

A notification message pops up on the screen informing the viewer that the product is successfully bookmarked.

**Exploring product vault**

Any time the viewer would like, she can visit her product vault using the remote, and explore bookmarked products.

**Product Information**

Product Information section may include product's features and commercial. Also, comparisons with similar products and purchasing options could be included.
The prototype suggests tagging all the products that appear in the programming content and having two dedicated buttons on the remote controller for bookmarking products and reviewing personalized product vaults. When the viewer presses bookmark button on the remote, the tagged products on screen are saved in the viewer's personal advertising space, referred as the product vault in this project. The product vault is the index page where bookmarked products are listed and categorized.

**CURRENT TV BROADCAST**

![Current TV Broadcast Diagram]

Adverting ratio: 17mins/hour  
Source: Forrester Research

**PROPOSED TV BROADCAST**

![Proposed TV Broadcast Diagram]

No pre-defined advertising interruptions/commercial breaks.  
(Visible products are tagged in the content.)

Figure 5.2 – Current TV broadcast and proposed TV broadcast

In this approach, products are not made more visible by means of highlighting or similar indicators. In other words, the experience of watching is not different. However, it is important to keep viewers aware at all times that there are commercial products integrated into the programming content for further exploration. The product placements could be announced at the beginning credits and again at the end of the programs.
6. Technology

6.1. Metadata in Programming Content

The bookmarking functionality assumes that all products in the programming content are tagged. The bookmarking action takes a snapshot of the broadcast metadata at that moment, parses the product information, and saves the appropriate link to the enhanced product information. This link is displayed as a new item in the product vault.

The concept of metadata conveys the idea of accompanying data with their descriptions. As data about data, metadata can provide an insight into syntactically and semantically complex data by distilling their essence into a set of descriptors. Metadata also helps to structure and manage information in diverse settings. In broadcast multimedia, metadata covers both the description of services and multimedia content. Metadata integrates fully into broadcasting value-chain with considerations for each step in the development of a digital television broadcast service [13].

Attributes described by program related metadata can include anything from simple electronic programming guide data (show name, actors, genre rating etc), to a complete index of different scenes and associated enhancement content with in-depth rights information detailing how the content package may be displayed, copied, or sold. In the context of interactive television, metadata can enable anything from URL pointers for non-synchronous download of enhancement content, to incorporation of advanced searching and parsing of video content and descriptions of the enhancements themselves.

There have been several initiatives to establish metadata standards for interactive television. OCAP video-on-demand metadata has been developed by CableLabs, a research consortium of US multiple system operators. It is oriented towards deployment of content within video-on-demand systems. TV Anytime Forum is a collection of manufactures, primarily from the consumer electronics industry, working to define standards around consumer electronics devices with on board storage (such as personal video recorders), and the emerging home media center products. MPEG-7, the Multimedia Content Description Interface, is a standard developed by Moving Picture Experts Group, the committee that developed the widely used MPEG-1, MPEG-2, and MPEG-4 standards. MPEG-7 supports descriptions of all forms of content, including still pictures, graphics, 3D models, audio, speech, video, as well as information about how they are related and integrated into a complete pieces or "scenarios." There is also the iTV Production Standards Initiative, which focuses on defining server side implementation of interactive television applications. It defines a common way of writing XML code to describe components of common enhanced television programming such as trivia questions, polls, and interactive advertising [14].
6.2. Multimedia Home Platform

The multimedia home platform adds a technical solution for the consumer receiver or set-top box enabling the reception and presentation of applications in an open and vendor, author and broadcaster neutral framework. Applications from various service providers will be interoperable with different multimedia home platform implementations in a horizontal market, where applications, networks and multimedia home platform terminals can be made available by independent providers.

The multimedia home platform covers three profiles: enhanced broadcasting, interactive broadcasting, and internet access. Enhanced broadcasting combines digital broadcast of video/audio services with downloaded applications that may use local interactivity. A feedback channel is not required in this profile. The product information screens in the prototype are designed to operate as enhanced broadcasting. Interactive broadcasting enables a range of interactive services associated with or independent of broadcast services. This application area requires a feedback channel. The management of the product vault in the prototype could be built upon interactive broadcasting. Internet access is intended for the provision of internet services. It also includes links between internet services and broadcast services [15]. For example in the prototype, if the viewer wants to purchase a product, the transaction requires a backchannel through which the viewers can send their billing information. This transaction would be a combination of interactive broadcasting and internet access.
7. Interface Design

Designing an application for television involves different constraints than designing for computer screen for three fundamental reasons. First, interactivity on television is accomplished by the remote control from an average of 10-foot distance, rather than the 2-foot average distance for computer screens. Second, the remote is not as capable as the mouse or the keyboard thus limits the interactive functionality. Third, the resolution of standard television screen is not as high and as crisp as computer screens. This technical handicap introduces color and font limitations.

7.1. Resolution as Screen Size

Computer monitors and television screens both rely on the same cathode ray tube (CRT) technology first developed over a century ago. However, the images are generated for each medium in very different ways.

The computer monitor generates an image in pixels, or points made up of the intersection of vertical and horizontal lines. So a monitor with a resolution of 800 × 600 would have 800 horizontal lines, 600 vertical lines, and 480,000 pixels. The computer monitor resolution is limited only by the number of pixels built into the actual tube.

In contrast, television images are drawn in horizontal lines of varying color. The television resolution is limited by the fixed transmission signal. The National Television System Committee (NTSC) has set the broadcast transmission size at 525 lines. However, the “safe area” for developers is actually 544 × 372 pixels [16].

Figure 7.1 – Screen size
7.2. Resolution as Sharpness

While the figure of $544 \times 372$ gives a rough idea of the size of the television display when viewing Web pages on a receiver, it does not accurately reflect the true number of discernable pixels because of interlacing. Televisions use interlacing, a method of displaying images on a raster-scanned display device such as a cathode ray tube (CRT), to reduce the bandwidth required for broadcast. An interlaced display draws first all the even-numbered lines on screen, leaving spaces between them for all the odd-numbered lines which it fills in afterwards to complete the frame. This results in the display being refreshed from top to bottom twice as frequently as in the non-interlaced case. While this makes the transmission more efficient, it tends to blur the image. Some user studies report as much as a 30 percent degradation in the perceived resolution.

7.3. Typography

Text poses difficult challenges on television screens, as viewers are not accustomed to reading static blocks of text on screen and because the display quality of still images is poor. Several rules can improve legibility on screen:

- Body text should not generally be smaller than 24 point
- No text should ever be smaller than 18 point in any circumstance
- Light text on a dark background is slightly easier to read on screen
- Text on screen needs greater line spacing than in print
- When technically possible, tracking should be increased by up to 30%
- A full screen of text should contain a rough maximum of 90 words
- Text should be broken into small chunks that can be read almost instantly

In the prototype, Tiresias is used as the typeface. Tiresias is specifically developed for television in conjunction with the Royal National Institute for the Blind, and adopted as a standard by the United Kingdom Digital Television Group as the resident font for interactive television [17].
This block of text contains roughly the maximum number of words (90) that most viewers can comfortably read on one television screen. If a text block significantly exceeds this amount, viewers will find it exhausting and irritating. When accompanied by motion video in full or quarter screen, text should be cut to approximately half this length to avoid distracting the viewer too much from the video content. On the other hand, as viewers choose to delve deeper into interactive services, and select stories, their tolerance for greater amounts of text can go up.
8. Functionality

8.1. Bookmarking

The main functionality of the proposed application is bookmarking. Bookmarking action accomplishes the process of grabbing a product in the broadcast content and saving it at the Product Vault. The Product Vault is the personalized space dedicated to all bookmarked products. Bookmarking functionality is inspired by the bookmarking convention of the World Wide Web, which is the action of collecting links to favorite web pages in a dedicated local folder for fast and convenient access in the future.

![Diagram of Bookmarking Functionality]

Figure 8.1 – Bookmarking functionality

8.2. The Remote

The proposed remote controller for television has 3 buttons which are dedicated to bookmarking, navigating to the product vault, and going back to television broadcast.
8.3. Navigation

Number keys are used as primary navigation in the prototype whenever possible for two reasons. First, user research indicates that navigation by numbers works particularly well since existing experience with television remote controls revolves around this kind of control and input [18]. Also, users tend to be more confident using the interface when visual cues on the screen and visual cues on the remote control match. Second, number keys provide fast one-press navigation, whereas scrolling and selecting is two-step navigation. On the top menu, active section is underlined.
The top and bottom portions of interactive screens in the prototype are consistently reserved for screen information, instructions for interaction, and primary navigation. On every screen, brief and clear instructions on possible user actions are provided.

When scrolling the sub-menus, active bar is highlighted and unselected items are presented uniformly to clearly distinguish the highlighted option. The viewer is also scripted by two small triangular icons representing the arrow keys and indicating which direction the highlight moves. In the product vault, unexplored items are marked with a * sign indicating they are new items in the product vault.

8.4. Bookmarking Action Feedback

Once the viewer bookmarks a product, a notification message pops up on the screen informing the viewer that the product is successfully saved in the product vault. The notification is a transparent layer. Transparency supports social viewing and allows programming content to be monitored in the background when the notification layer is active.
8.5. Product Vault

Product Vault is the landing screen that indexes the bookmarked products. The interface design for Product Vault is a convention borrowed from the inbox display format of web-based and local e-mail applications. Using such a common format helps the viewer recognize the interface more quickly, thus enhances usability.

The products are listed by date, the most recent on top. Viewers can sort products alphabetically by name, category, and the source (“From”). Unexplored products, just like unread e-mails, are marked with a “*” sign, and this sign is removed once the viewer explores these products.

The viewer can navigate the Product Vault using the arrow keys, and the current selection is highlighted. Color coding aids the viewer with figuring out interactive components on the screen as well as the instructions on the bottom of the screen, providing brief and clear directions.
Product information screens are created based on the Online ITV Dictionary’s definition of *walled garden*, a limited number of Web pages or similar content that a content provider offers their customers [19]. These screens provide space for the advertisers to promote their products and services.

Walled gardens are the gateways to enhanced product information and instant purchase opportunity. Also, advertisers can use more comprehensive product videos that are not as limited as 30-second commercial spots. Such usage of video could potentially result in the birth of new advertising conventions, such as BMW short films [20].

Although the branding of the product information screens is not within the scope of this project, sample screens are designed for real products for demonstration. There is already significant effort in industry to maximize the outcome of walled gardens. One of the design principles of walled gardens is to use a minimum amount of text, and maximum amount of visual material such as videos and pictures.

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**Product Vault**

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Category</th>
<th>From</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BMW 3 Series</td>
<td>Car</td>
<td>Tomorrow Never Dies</td>
<td>02/28</td>
</tr>
<tr>
<td>2</td>
<td>T-Mobile Sidekick II</td>
<td>Handheld</td>
<td>The Real World</td>
<td>02/28</td>
</tr>
<tr>
<td>3</td>
<td>Dolce &amp; Gabbana</td>
<td>Pants</td>
<td>J. Lopez - Get Right</td>
<td>02/23</td>
</tr>
<tr>
<td>4</td>
<td>Rebirth</td>
<td>Music</td>
<td>J. Lopez - Get Right</td>
<td>02/23</td>
</tr>
<tr>
<td>5</td>
<td>iPod Mini</td>
<td>MP3 player</td>
<td>Blade Trinity</td>
<td>02/21</td>
</tr>
<tr>
<td>6</td>
<td>Duff</td>
<td>Beer</td>
<td>Simpsons</td>
<td>02/18</td>
</tr>
<tr>
<td>7</td>
<td>Prada</td>
<td>Shoes</td>
<td>Sex and the City</td>
<td>02/16</td>
</tr>
<tr>
<td>8</td>
<td>Banana Republic</td>
<td>Sweater</td>
<td>The Apprentice</td>
<td>02/12</td>
</tr>
</tbody>
</table>

Use UP/DOWN to navigate and OK to select
Use number keys to sort and DEL to delete

Figure 8.7 – Product vault

8.6. Product Information Screens

Product information screens are created based on the Online ITV Dictionary’s definition of *walled garden*, a limited number of Web pages or similar content that a content provider offers their customers [19]. These screens provide space for the advertisers to promote their products and services.

Walled gardens are the gateways to enhanced product information and instant purchase opportunity. Also, advertisers can use more comprehensive product videos that are not as limited as 30-second commercial spots. Such usage of video could potentially result in the birth of new advertising conventions, such as BMW short films [20].

Although the branding of the product information screens is not within the scope of this project, sample screens are designed for real products for demonstration. There is already significant effort in industry to maximize the outcome of walled gardens. One of the design principles of walled gardens is to use a minimum amount of text, and maximum amount of visual material such as videos and pictures.
We began with building a car, we ended up with a dynasty.

Use your number keys to explore the new BMW 3 Series

Figure 8.8 – Product information screen (Dedicated advertising location)
9. Further development

9.1. User Testing for Bookmarking

The on-demand advertising model requires products to be tagged in television programming content for access to enhanced product information and other opportunities such as purchasing. Some immediate concerns about this proposition might be the integrated products dictating content or advertisers wanting to place too many products in the content. In this model, one should keep in mind that placing more products does not mean viewers will bookmark and explore all of them. In fact, viewers may not notice some of the placed products at all. Also, visual cues (blinking, highlighting etc.) for indicating the products that are available for bookmarking are not used in the prototype. The prototype is designed with the assumption that there would be many products available for bookmarking throughout the programming content. Therefore, such visual indications would be too distracting.

The questions of how viewers will know which products are available for bookmarking, how products can be associated into programs without dictating content, and how many products can be integrated are all related to each other and they bring up the importance of a thorough user testing for the proposed model. For example, the question of how many products could be placed in the programming content can be answered by finding out the average number of placed products that users recall in the study. How users respond to different product placement examples throughout the user study might be the key to figuring out the most reasonable ways of associating products with the plot. Also, it is important to conduct the user testing according to different audience segments since the findings for different audiences may vary significantly. In short, an ultimate balance of the amount of products that could be perceived by different audiences within a certain time segment should be defined with user research.

9.2. Compatibility with Programming Genres

The prototype demonstrates the on-demand advertising concept using a movie, a reality show, and a music video as sample television programming content. Entertainment content on television particularly works well with the prototype because entertainment shows often target broad audiences. Also, it is easier to associate products with contemporary television content, which is common in most entertainment programs.

An important further development issue is how the model would perform with other types of television programs such as sporting events, re-runs of old movies, documentaries etc., where product integration is more challenging. A possible path to the resolution of this issue may be enhancing the description of the bookmarking function. In this model, bookmarking is described as capturing a product in a program. Bookmarking could be extended onto capturing the moment rather than just the product, and brand personalities could be associated with those moments.
The advertisement tone and purpose also are important when evaluating compatibility. For example, P&G educates its customers and promotes communities that are mediated by its products; the tone in their ads is informative. Therefore, P&G might want to explore the opportunities of enhanced content sponsorship by associating its products with talk-shows where relevant issues are discussed and the audience is informed on these issues. Incentives for bookmarking could also open new realms for the proposed model. For example, bookmarking could capture a travel agency’s discounted trip offer to an exotic location during an informative television program featuring that location or a similar destination.

9.3. Product Metadata Integration

Ideally, having product metadata in programming content requires advertisers getting involved in content production for optimum integration. Optimum product integration could be defined as providing maximum visibility and a natural context without forcing the content to solely revolve around the product. Since content production and advertising production are isolated from each other, it is a challenge to utilize on-demand advertising on current business models.

With an on-demand advertising model, creative process in television advertising extends from writing commercial scripts to creative integration of products into programming content. Also, dedicated advertising locations bring up new opportunities for developing new advertising formats. In other words, advertisers do not need to limit themselves to thirty-second spots. They can build their brand image by using more engaging narrative structures, such as the DePaul Trust example mentioned in section 2.2.5.
10. Conclusion

With this project, I have attempted to design and on-demand advertising model for interactive television. Although the scope of interactivity on television has not yet been clearly outlined, television viewing is evolving into a richer experience under the influence of interactive media. As television becomes more participatory, the current advertising formats which are developed upon the linear nature of the medium lose their effectiveness. Therefore, the proposed model moves from product integration rather than interruption of programming content. The prototype demonstrates how product information could be integrated into programming content and how products could be indexed for more user-friendly, personalized, and effective advertising.
Notes


2. [2] In 2001, eMarketer reported that skipping ads would be the main motivation of switching to interactive television for 67.1% of the US consumers.


4. [4] For example, *Don’t Count Us Out*, a coalition formed by minority leaders, community groups, producers, directors, and actors, states that *Nielsen Media Research* is an unregulated monopoly and Nielsen’s *Local People Meter* technology is not sampling the audience accurately. For a detailed explanation, visit http://www.dontcountusout.com/

5. [5] Perhaps the most outspoken critic of ad-skipping was Jamie Kellner, chairman of Turner Broadcasting System, who was quoted in *Cable World* magazine saying that viewers who zap commercials are stealing programming (*Cable World*, April 29, 2002). Kellner later said his comment was misinterpreted and was quoted explaining, “Before we damage the economics of this industry, which are fairly frail on the network side … before the American people go off and think that this whole thing can go on without them watching commercials, we should all understand what the cost is going to be” (*Denver Post*, July 16, 2002)


12. [12] In *Die Another Day*, the James Bond movie which is released in 2002, twenty companies integrated their products, having paid between them $70m for the privilege of placing products in the movie.


18. [15] Interactive Television Services Research (Serco Usability Services)

19. [16] The Online ITV Dictionary

20. [17] When BMW launched its first batch of internet films centered on its cars in 2001, a new advertising genre was born. The short movies, directed by well-known Hollywood directors such as Tony Scott and John Woo, featured edgy actors, including Mickey Rourke and Gary Oldham. The films, known now as *branded entertainment*, shattered expectations for viewership and were even reviewed as "cinema" by Time and The New York Times. BMW short films could be viewed at http://www.bmwfilms.com
References


Broadband Bananas (http://www.broadbandbananas.com/)


ETV Cookbook (http://www.etvcookbook.org)


ITV dictionary (http://www.itvdictionary.com)


MSN TV Developer Support Site (http://developer.msntv.com/)


