

Development and Current Issues of Interactive Television in the UK

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Abstract

This paper gives a brief history of television and the development of interactivity on TV. It also describes how the different platforms for digital television evolved and discusses the technical differences between them and what those mean for interactive applications. The author describes and discusses the different interactive applications in regard to viewer usage supported by data from the BMRB's 'Audience Interaction Monitor' studies. After looking at facts and figures of interactive TV to date, industry issues and problems are discussed, including the many uncertainties inherent to the early stages of a new medium. The author concludes that despite all the problems and critiques, interactive TV has achieved a lot in the few years it has been around and is certainly heading for a brighter future.

Keywords

History of interactive television, development of the TV platforms, digital and interactive technologies, interactive applications, take-up and usage of digital and interactive TV

Introduction

History of Interactive Television (iTV)

'Interactive Television' – a broad term that even now still means different things to different people. If defined as a viewer's ability to directly affect what happens on the screen, it is safe to say that iTV has been around in primitive forms since the 1950s. But just what was understood by the term 'interactivity' differs widely during those five decades.

In that sense, the remote control was the first step towards convenient interactivity and it had a major impact on commercial viewership. Instead of watching commercials, people could now use the station breaks to channel surf. Then, of course, came the VCR, which made it possible for the viewers to interact on a higher level. People could now record shows and watch them later at their convenience, zipping through the commercials. The first type of interactivity for commercials was the use of telephone numbers or direct response television(DRTV). In the US the trend towards

the 900 numbers was tremendous during the 90s. In an article in 1989, Slutsker uses the term 'interactive television' when referring to two new technologies: a special-purpose computer that can respond to hundreds of calls in the space of an half hour show and a new style of software called 'relational databases', a powerful tool for organising facts about millions of customers. According to Gawlinski [2003], telephone call-ins were first used on the Today show from NBC in 1959.

The next step in the interactivity development is teletext – the viewdata pages broadcast in parallel over the vertical blanking interval (VBI) – the hidden data stream or side channel of the existing TV signal. The first public demonstration of a teletext system called Ceefax was held in 1973 in the UK [Gawlinski, 2003]. This system was developed by the BBC and allowed text and simple graphics to be transmitted alongside the broadcast signal. The viewer interacts with the screen via the remote control but it is a one-way interaction as the viewer is not able to send any information back

to the broadcaster. During the mid to late 1990s, after the development of the WWW and PC Internet, a number of channels like MTV in the US and Channel 4 in the UK put live computer chat rooms on screen during television programmes [Gawlinski, 2003]. These are the first example of so-called two-screened interactive television, where viewers use a computer at the same time as watching television.

True interactivity via the red button as we know it today did not appear before the development of the digital transmission technologies, which made it possible to send the data for the interactive service alongside the broadcast stream and the introduction of a return path. This gave the viewer the means to not only interact with their television set but the broadcaster directly through sending data back without picking up a phone or using the Internet via a computer. The UK for this matter is the most well developed television market in the world due to its extensive rollout of digital television. At the end of 2003, according to Ofcom 50.2% of UK Homes had digital TV and thus the technical abilities to interact with programmes, commercials, use the EPG (Electronic Programme Guide), enter the walled gardens and so forth.

Development of the Digital Platforms

There are three different digital transmission platforms that carry interactive television in the UK. Digital satellite is provided by BSkyB, digital cable from Telewest and NTL and since the collapse of ITV Digital there are now the 30 odd free-to-air digital terrestrial channels provided by Freeview – the consortium consisting of the BBC, Crown Castle International and BSkyB – since October last year. Satellite has always been ahead in national coverage and subscriber numbers but in regard to interactivity, at least in the beginning, most people favoured cable over satellite and terrestrial for the simple reasons of an existing return path and higher bandwidth. Cable's optimism went far and even led Steven Carter, Managing Director and COO at NTL in 2001 to say "there will be a balance between Sky and NTL in the next 18 to 24 months"¹. Today, more than 30 months later we know that this goal was more than optimistic.

¹ He made this statement during a speech at a conference, The Third Annual European Media & Entertainment Summit, in London in April 2001.

Sky launched their walled garden with 'Open' in October 1999 in the hope that t-commerce² would take off but had to close it two years later as their business model proved to be untenable. It re-launched as Sky Active in May 2001 and they added red-button interactivity to their service portfolio, which gave them a great advantage over their competitors. ONdigital, later re-branded as ITV Digital, established itself as the leader in web-based interactive TV at first but that obviously was not the right business plan either as they went into liquidation and took their digital channels off air on May 1st 2002. NTL was the third platform provider to launch their interactive services. They offer a huge walled garden with a large number of Content Partners offering a vast number of services. Telewest launched their interactive services on the 20th of April 2001 but is also restricted to the walled garden as both NTL and Telewest do not have red-button interactivity yet as that would depend on an upgrade of their Liberate middleware technology.

The Different Technologies

Theoretically it is possible to get interactive television to work on analogue TV but there tends to be less bandwidth available, according to Gawlinski [2003]. This is why interactive TV has been associated with digital TV as digital television data can be compressed, thus freeing up bandwidth and making room for more channels or interactive services.

The advantage of cable platforms for iTV is that it offers very high bandwidth not only for the broadcast channel but there is also enough capacity for a high-bandwidth two-way return path making way for high speed communication between the viewers and the cable companies. The disadvantage is that the iTV producers only reach viewers that have cable in their street and NTL and Telewest currently only reach about 50% of the UK households [ITC, 2003].

Satellite has the advantage that it can potentially be received by almost everybody (98% of UK households, according to the ITC, 2003) via a satellite dish but can suffer from signal interference by bad weather and also lacks the return path. To get around the latter problem, satellite set-top-boxes contractually must be plugged into the phone network and allow two-way communication this way although at a relatively low bandwidth. This is very annoying for the viewer as it takes quite a

² T-commerce is the term for electronic transactions conducted via digital TV,.

while for the interactive service to make the connection in order to send data back. There are also the additional costs for this – good for the platform or service provider as this is an additional source of revenue, but bad for the viewer as they have to pay extra for something that sometimes takes longer than expected. A future solution to this is SATMODE – a low-cost two-way communication channel by satellite for the satellite TV users, which will be an ‘always on’ return path similar to the cable one. Its development is led by ASTRA and currently in the early design stage but is expected to be up and running in April 2005³.

The advantage for the digital terrestrial platform is that it can potentially be received via the existing aerials on people’s roofs by about 80% of UK households [ITC, 2003]. One problem though is that it easily suffers from signal problems, which was one of the reasons why ITV Digital had to fold as people were leaving the service as they had problems getting a good picture. Freeview carries fewer channels thus suffering less from picture problems. The other problem of DTT (Digital Terrestrial Television) is that there is no inherent return path and as with satellite, the telephone line could be used to circumvent this, as did ITV Digital but Freeview is not interested in offering that. Additionally, there tends to be less bandwidth available in the terrestrial spectrum meaning that DTT platforms tend to have less channels and interactive services than satellite or cable.

For all three digital platforms you have to have a set-top-box (STB) to decode the digital signal. In the case of cable and satellite those boxes also include a smart card, which has stored the information about the channels and interactive services to which the user has subscribed and paid for. Other than that STBs contain hardware, an operating system, the middleware and applications. Without getting too technical, it is important to know that in the UK the different platform providers are using two different types of middleware – Sky is using OpenTV whereas NTL and Telewest are using the Liberate TV Navigator. This causes problems and additional costs for companies wanting to run interactive services on both platforms, as they have to be programmed differently. WTVML (also known as WML), the

new kid in town that everybody seems to be talking about, is not another middleware but a virtual machine/engine that sits on the middleware and helps making the system easier to use and allows programmers to use a markup standard they know. WTVML stands for ‘wireless television markup language’ and was originally designed for mobile phones but also works well in the TV space, as the data required only needs very little bandwidth.

Interactive Applications – Details and Facts

Today’s interactive applications can be put in 7 broad categories: The Electronic Programme Guides (EPG), Digital teletext, Walled Gardens, enhanced TV or interactive programming, interactive advertising, video-on-demand/near-video-on-demand and finally Personal Video Recorders (PVRs).

EPGs developed out of the mere necessity of having to deal with the increasing number of channels and is now one of the most useful and used interactive applications. 72% of MCH viewers have used their EPG and 76% of those use it regularly it [BMRB, AIM, November 2003]. It replaces paper based television guides by displaying the schedules on the TV screen and the viewers can choose what to watch directly from the on-screen list. EPGs in the UK now range from a very basic one on Freeview to a very advanced and detailed one on the Sky platform.

Digital teletext works similar to the analogue one but with interactive technology photographs, hundreds of colours and even functionality like email and text messaging are possible and replace the old bulky graphics of analogue teletext. Some digital teletext services can still be accessed by pressing a button while watching a specific channel, others through the EPG. Some have kept the concept of page numbers where others have changed the navigation completely. Unfortunately, it is not as popular as EPGs with only 55% of digital viewers being aware that they can receive digital text services and only 38% of those ever using it [BMRB, AIM, May 2003].

A Walled Garden is like a very limited ‘Internet’ with menus from where you can click through to advertisers’ ‘sites’ that can be compared with different stores in a shopping mall. These range from shopping, holidays, entertainment,

³ According to a presentation by SES Global at the ‘5th Annual Interactive TV Show Europe’ in Barcelona in October 2003.

banking, sport, and news to email and chat. The most popular activity is playing games with 59% of digital viewers that ever interacted having played games on iTV. 18% have used the email service, 16% have ever bought something using the remote control, whereas only 7% are using an interactive banking service and only 3% ever placed a bet it [BMRB, AIM, November 2003].

Enhanced television, or interactive programming as it is often referred to, can be described as any interactive television service that makes a programme better during or after it is broadcast. Typically it comes in the form of overlays, text and graphics that viewers can interact with while watching the programme. Some examples are *Who Wants To Be A Millionaire* and several sports programmes like the Football World Cup or interactive channels such as Challenge. Another form of enhanced TV is video switching where viewers can switch between a selection of different video and audio streams based around a single event. Sky Digital pioneered video switching in the UK with Sky News Active and Sky Sports Active, where the viewers can choose to stay with a press conference or a certain match during a big tournament. Other examples are Big Brother and Walking with Beasts.

Video-on-demand is like an in-house video rental store. The viewer can choose a film or programme from an on-screen list and watch it whenever they want for a certain fee. An example in the UK is Front Row on the NTL and Telewest platform. Near-video-on-demand only differs in that the viewer cannot choose the exact start time of a film. Here, the same programme is played out repeatedly on different channels with staggered starting times. Popular movies can start every 15 minutes others every two hours. In the UK, 59% of Sky Digital and cable customers have paid to watch any pay-per-view channel and spent an average of £22 in the last 6 months. Very popular are films (82%) but also sporting events like football (32%), boxing (12%) and wrestling (6%) are on the list [BMRB, AIM, May 2003].

Personal Video Recorders (PVRs) are advanced VCRs without the videocassettes. You can record hours of your favourite programmes to a hard drive and the smart thing is even able to learn what you like and starts recording automatically. Some even have an option of

cutting out ads entirely when recording. You can even stop, rewind and fast forward live TV and it can play and record at the same time. TiVo was the first company to launch PVRs in the UK in October 2000 but had to withdraw from the UK market after very poor sales. Since September 2001 you can get Sky+, the PVR from BSkyB, which has similar functions except that you cannot skip the commercials when recording.

There are several forms of interactive advertising opportunities around. It all started with the 'walled gardens' and the opportunity to become a Content Partner or have a banner much like on the Internet on one of the main menus. Being a Content Partner on either one of the platforms walled garden means having a permanent location much like a website with several layers to which people can click through using their remote control. This also offers the option of t-commerce, giving the viewer the opportunity to order and buy a product via their TV. Other options are 'Dedicated Advertiser Locations' (DALs) and Mini DALs. DALs are sites built specifically for, and in order to meet, the particular needs of an advertiser and are quite costly. A simpler version is the Mini DAL, which has a templated structure and is thus easily created and put on air and therefore much cheaper. With the introduction of WML there are now also easy to built Impulse Response ads and Microsites. Impulse Response ads are pop-ups that appear over the advert. It can be used to gather information about the viewer and to request a follow-up in the form of a brochure, a phone call or test drive. The WML technology allows a very wide range of data gathering options. Microsites work with the same principles only that they are full screen with the TV picture in ¼ of the screen and thus allow for more creative and text. Additionally, there are also sponsorship opportunities of games or other interactive services such as e-mail, sports quiz and programme enhancements. Since September 2002, Sky also offers interactive advertising opportunities on Sky Text, their digital teletext service. There are Dedicated Advertisers Text Sites (DATS), Banners and Sponsorships available at comparatively low costs. They can be used to provide more information about a product or service but are

non-transactional and do not have a return path.

In the early stages of interactive advertising people were very excited about content partnerships on the walled gardens. Forecasts for t-commerce revenues were very optimistic and companies were standing in line to offer their products or services via the TV. By now, it became clear that viewers are not too interested in actually purchasing products via the TV but are quite willing to leave their details in return for a brochure, sample or test drive. Therefore, especially with the introduction of WML, impulse response ads and microsites are amongst the most popular applications these days.

The Gamble

Interactive TV was a gamble from the start. The big hype in the beginning made quite a few agencies open their own iTV department and invest a lot of money into it, much like during the boom of the Internet in the late 90's. Unfortunately, iTV has not taken off quite as strongly as expected – yet – and several companies have lost out. Reading through issues of 'New TV Strategies' from about 3 years ago, most of the agencies named then are not around anymore such as Entranet, Energis Interactive and Future TV. Others who managed to survive such as Channelbay, eMuse and Press Red are offering their services for almost nothing just to get a foot in the door and their products used by the industry.

Then there was the question of the different technologies and the hope for a cross platform standard. With WTVML being adopted by more and more platforms and broadcasters this seems to be closer than ever. A few companies like Channelbay, Press Red and Tamblin have developed applications with which impulse response ads and microsites can be created within 10 minutes. The creator can choose whether he wants the end product to be in the satellite or cable version, taking away the problem of having to develop two different ones for the different platforms.

Where Are We Now?

Even if iTV did not take off as quickly and successfully as expected in the beginning and the iTV industry went through a very tough time in 2002 and early 2003, there are many signs now that iTV will live up to its potential. More and more people are interacting with programmes and ads and more and more

companies are adding iTV to their media portfolio.

To date, Sky has run about 400 interactive campaigns and ids (Interactive Digital Sales) about 200. In 2003, 1.96% (compared to 0.66% in 2002) of ads on IDS channels⁴ were interactive and 10.35% of breaks had an interactive ad in them (compared to 3.33% last year). At ids, the number of interactive campaigns in 2003 is up 33% compared to last year and revenues in 2003 are up 208%.

Much has happened since the very first interactive campaign by Chicken Tonight. Technology has developed, creative and design has improved, prices have gone down and everybody has gained a fair bit of experience. There are plenty of case studies around and some research studies are showing positive results of interactive advertising. An example is the Sales Tracker by Zip TV, which can show the long-term sales effects of an interactive campaign. Interactive advertising is more accountable than most media. Other research by BMRB and Zip TV shows that both consumers and advertisers still need some more 'iTV education'. BMRB's AIM study [November 2003] shows that about 50% of digital viewers still do not know what iTV can offer them and Zip TV's study [January 2003] amongst advertisers showed that about 70% of them still would like to know more about advertising opportunities.

These are some of the areas that still have to be improved. Generally, there is still a great need for more research – in all areas of interactive TV. But with ITV coming on board, having launched its interactive services on the 1st November, and Five following suit some time in early 2004, there is finally a big enough audience to make more investments in research as well as technological advancements and better creative feasible and more necessary than ever. Some broadcasters are already putting more efforts into 'interactive education', which starts with advertising interactivity – such as the BBC and Sky. More needs to be done though, for example make ads advertise their interactivity more actively, to get more of those 'interaction refuseniks' to finally press the red

⁴ The IDS channels are Living, Challenge, Trouble, Bravo, FTN, UK Gold, UK Style, UK Food, UK Bright Ideas, UK Drama, UK History, UK Horizons and Extreme Sports.

button. Considering, though, how young interactive television is it has already achieved a lot and just imagine what it will be like in the future!

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