

# **The Economic Viability of Teletext and its Implications for the Growing Interactive Television Market**

**By: Claudia Kienzle**  
**For: Cahners In-Stat Group.**

As broadcasters enter the Interactive Television era, it's natural to wonder if the American public will be receptive to the delivery of data services to their television sets. Will they appreciate having information displays enhance their viewing experience? Will they use a remote control to interact with the information? And will they respond to Interactive Television's advertising offers and promotions?

Since Interactive Television is a new, albeit exciting, trend here in the United States, there is a lack of practical experience with which to determine its potential risks and rewards. However, a study of the established Teletext business, largely in Europe and Asia, can provide useful insight into how Interactive Television services are likely to be received and used in the U.S.

## What Is Teletext?

With roots in the 1970's, Teletext is a one-way system for the transmission of text and graphics via over-the-air broadcasting or cable channels for display on Teletext-capable TV sets and set-top boxes. Since the Teletext data is tucked into spare TV Lines in the Vertical Blanking Interval (VBI) of the broadcast television signal, the service is always accessible to viewers with Teletext-capable TV sets and set-top boxes. Teletext is free to end-users. Commercial Teletext services rely entirely on advertising revenues, while Teletext on Public Broadcasting Networks is sustained by government funds.

When viewers want to see Teletext content, they simply press a "text" button on their remote controls, and a "Main Index" page appears over top of, or in place of, their television picture (depending on their type of receiving/decoding hardware). By 1984, when the World System Teletext (WST) specification was established, Teletext hardware became universal, and viewers could expect any Teletext service to work the same way, using the same remote control.

The "Main Index" gives a list of the services available, and a three-digit page number. By punching in the three digits using the number pads on the TV remote control, viewers "jump" to the desired Teletext page where they can read the information at their own pace.

If a viewer is interested in a particular promotional offer, conventional Teletext does not offer a "return path" whereby an instantaneous response can be sent-- using the remote control, television or digital set-top box-- the way it will likely

be handled by American broadband cable systems. Instead, viewers must jot down the contact information on the Teletext display, and respond by making a telephone call, sending a post card, fax, or email.

Also, since Teletext is limited to the spare bandwidth in the VBI (about 100 kilobits per second), Teletext displays consist of small, blocky characters limited to eight colors (red, green, blue, yellow, magenta, light blue, black and white.)

In contrast, Interactive Television services delivered over broadband cable networks are able to offer multimedia-rich displays, complete with 3D graphics and animation. And, instead of Teletext's rudimentary multi-color text displays, Interactive Television promises eye-catching displays, including on-screen menus and navigation for interactivity.

#### Why Teletext Is Germane to Interactive Television:

Since Interactive Television promises to far exceed Teletext's display quality, often with immediate two-way interactivity, this report suggests that studying the Teletext model and track record has merit as an indicator of how Interactive Television will fare. This is because, despite its simplistic look and feel, Teletext appears to have been a profitable and popular service for about 25 years, especially in the United Kingdom (UK) where it has become part of the broadcast fabric. And, in spite of the growing influence and pervasiveness of the Internet, Teletext appears to hold its own as a popular, well-regarded data service for the television environment.

The reason that this report must be qualified with the phrase "appears to be successful" is that Teletext viewership has never been formally evaluated the way that broadcast television has been. Statistics related to audience size, like the Nielsen ratings, and the effectiveness of advertising, have never been gathered for Teletext.

This is because, when Teletext first permeated the UK in 1974, the British public was captivated by it, and regarded it as a novelty. Teletext quickly caught on, and became part of the British television culture. The British media doesn't focus on the Teletext business, and it's rarely discussed or publicized because it's like water from the tap. The British expect to see Teletext services on their channels. They've become accustomed to having that service at their fingertips.

And British broadcasters have learned how to use Teletext to support their on-air operations. Teletext is used to promote their programming, to convey lengthy information that would otherwise slow a TV show down, to reinforce the impact of commercial spots, and to inform viewers of information that is easily and frequently freshened and updated.

### A Brief History of Teletext:

Teletext was developed by engineers at The British Broadcasting Company (The BBC), the public broadcasting entity in the UK, working in cooperation with engineers affiliated with the Independent Television Commission (which is like our FCC.) However, the British never patented the technology.

The BBC's research and development efforts were underwritten by government funds and designed to fulfill its obligation to inform, educate, and entertain the British public. Each year, The BBC receives two million pounds, with which it supports its entire operation, including its Teletext service, called CEEFAX. That operating capital is derived from the annual "TV Set License Fee"—about 120 pounds paid by U.K. citizens for a license to operate a color television.

CEEFAX enjoys editorial support from 100 BBC journalists who contribute copy, as well as a small staff dedicated to the CEEFAX management and technical operations, at the BBC's Television Center in London.

Since The BBC may not make a profit, there are no commercials of any kind on CEEFAX.

The most popular services on CEEFAX are News, Weather, Sports, TV Guide Listings, and Stock Prices.

### The Rise of Teletext Limited:

One of the most confusing aspects to the Teletext business is the fact that the leading provider of commercial Teletext services is called Teletext Limited. Majority shareholders in Teletext Limited are The Daily Mail and General Trust (owners of Associated Newspapers) in London, and Philips, the consumer electronics giant in The Netherlands.

Teletext Limited currently provides the Teletext services for Channel 4, and for ITV (Independent Television), also known as Channel 3, which is comprised of a network of regional affiliates.

In 1986, Teletext Limited reported that 2.5 million UK Households had access to Teletext.

In 1999, Teletext Limited reported that over 20 million UK Households have access to Teletext (which is a 64% market penetration.)

Of this 20 million household figure, Teletext Limited indicates that:

29.6 million adults (age 15 and older) have Teletext at home.

20.6 million adults view Teletext each week.

1.8 million children (ages 7-14) view Teletext each week.

13.2 million adults view Teletext each day.

Usage among Adults is:

Men: 18.1 minutes/day

Women: 15.2 minutes/day

Overall: 17.0 minutes/day

The most popular timeslots for Teletext viewing are:

1. 6:30-8:30pm
2. 3:30-6:30pm

Adult Average Weekly Audience- Top 10 Sections for Teletext Limited:

TV Plus (Listings)	14.5 million
News	12.3 million
Sports	11.9 million
Weather	9.6 million
Lottery	9.3 million
Holidays (Travel Deals)	6.2 million
Entertainment	5.2 million
Financial	4.9 million
Travel (roads, transport)	4.0 million
Fun & Games	2.8 million

#### Teletext Limited's Financial Performance:

The British Government auctions off the spare capacity in the VBI of the broadcast signal the same way that it auctions off TV channels in the broadcast spectrum. The auction for the public Teletext license is held every ten years. The last time it was held was in 1992. Teletext Limited was formed by a consortium of small companies, in 1992, to bid for the public analogue Teletext license for Channels 3 and 4, and the license was awarded on January 1, 1993.

While there were four other contenders for that license, Teletext Limited submitted the highest bid, which was 8.2 million pounds. David Crawford, a

freelance engineer on assignment with The BBC's CEEFAX service, worked at Teletext Limited at that time. He points out the significance of the 2.8 million pounds bid this way:

“Teletext Limited bid surprisingly high because they felt there was a lot of advertising revenue that was not being tapped (by previous license holders). While many in the Teletext business believe that Teletext profits have reached a plateau, Teletext Limited felt that it could dramatically increase profits over what had been generated by previous license holders.”

In its Annual Profit and Loss Statements which included Teletext Limited, The Daily Mail and General Trust reported:

In September 1997: “Teletext again showed good growth, but the rapid growth of previous years is inevitably slowing.”

In September 1998: “Teletext has had another good period with continued growth in its key holiday advertising revenue. Its results are included as a subsidiary for six months this year, as against only two months last year. Teletext is now preparing for the launch in December 1998 of Digital Teletext, the costs of which are likely to restrict profit growth in the short term.”

In April 1999: “Teletext's traditional analogue service has had an excellent half-year, with weekly audiences now exceeding 23 million people and a complimentary annual report received from the ITC. Its revenues, dominated by holiday advertising have shown good growth over the last year. The Digital service, due to launch in December 1998, was delayed due to software problems encountered by the multiplex operator. An initial service should appear before long, but it is likely to be some months before software is available that is capable of receiving the full service.”

In its 1999 “Annual Performance Review of Teletext Limited,” the ITC concluded

“Teletext goes from strength to strength. At the end of 1998, 22 million viewers were using the service at least once a week compared to 20 million the previous year and 13 million when the service first began.”

Also, it added:

“The total number of all main pages transmitted rose during the year, and a new ‘Magazine’ (called Magazine 500 on Channel 3) of 30 pages was introduced to provide expanded sport and travel information. During the year improvements and refinements were made in almost every category in the service. And no

complaints of a serious nature were received. Seen especially against an ever-growing audience and service, this is an impressive record.”

The ITC review concluded with an agreement to increase Teletext Limited’s VBI Line capacity on Channels 3 and 4 to pave the way for expanded travel services, such as current flight arrival times.

#### Small Community of Teletext Operators in the United Kingdom:

The community of Teletext providers in the UK is very small, with just a handful of active companies. While CEEFAX and Teletext Limited are the two major Teletext providers, there are several smaller providers, including Sky Broadcasting, Intelfax, and Data Design.

In 1996, Sky Five Text Limited (affiliated with Sky Broadcasting which owns major satellite broadcaster BSkyB) submitted a bid of 1,500,557 pounds for Channel 5’s Teletext License, and in July 1997, the ITC awarded Sky Five Text Ltd. the license. This high bid is another indication of the advertising potential of Teletext.

Intelfax is unique in that it provides an end to end solution, from script to screen, rather than outsourcing the technical operation as many others do. Currently, Intelfax delivers Teletext services to its broadcast clientele for inclusion in their broadcast signals to some 30 TV Channels in the UK.

And Data Design provides Teletext to MTV, National Geographic, and CNBC, all three American cable networks, which now run European operations from London. Sue Greene, the IT Manager for Data Design, in London, explained that it’s been very difficult getting American companies initiated to the concept of Teletext.

“We’ve just started dealing with American companies, and it’s been very difficult to get them to offer Teletext services on their channels, or to place advertising on Teletext channels. They find it difficult to justify spending any money on it because there are no proven audience and usage statistics. But, we have grown up with it, and it’s always been around. I use it regularly to check football scores on ITV, and TV Guide listings. I have certain services that I like and I just automatically go to my favorite pages.”

National Geographic and CNBC now offer Teletext, but just the bare minimum effort. The National Geographic channel simply offers its program listings, a catalogue of its books, videos, and CD-ROMs, and instructions for joining the National Geographic Society. However, Sue Greene added that CNBC only posts its program lineup:

“CNBC at the moment has the attitude of, ‘Face it. Why should we have a Teletext service when everybody uses the Internet to find TV listings anyway?’ That’s a typical American attitude. In the UK, 30 percent of our population has PCs and access to the Internet. But Teletext serves a different need. When you’re watching TV in your living room, you’re not likely to get up and go over to your PC just to check TV listings.”

#### The Ins and Outs of Teletext Advertising:

Most Teletext operators admit to selling advertising space on “blind faith” to hopefully open-minded companies. After 25 years of business-as-usual, it doesn’t make sense to now spend hundreds of millions of pounds to generate regular audience surveys. But they do feel that people are watching, as evidenced by phone calls made to special premium phone numbers (like our toll-free numbers); and by complaints and other unsolicited viewer feedback.

At Data Design, the most brisk advertising business targets MTV’s channel. And MTV often offers appealing concert ticket giveaways, CDs, and MTV-branded merchandise. Because of the importance of MTV’s brand, MTV micromanages the Teletext program content. And, because of the appeal of the offers, viewer response is usually very strong, especially when the Teletext page is promoted by on-camera VJ’s (MTV’s video disk jockey announcers).

#### Sample Advertising Rates on MTV/UK

Below are the Name, Rate, and Description of Teletext advertising options on the MTV channel:

Name: Source Page

Rate: 125 pounds per week, with a minimum two-week booking, totaling 250 pounds.

Description:

For a Source Page, advertisers are allocated a full page identified by a three-digit number (usually in the 300’s, like page 3-3-3). This is accompanied by a listing in the Advertisers Index on page 300, the first in that section. Additional sub-pages (up to 4) can be associated with that source page and carousel around beginning with whichever page appears on screen first—eg. 3/5, 4/5, 5/5, 1/5, and 2/5—and they keep cycling around until the viewer switches elsewhere.

Name: Interleaf

Rate: 135 pounds per week, with a minimum 2 week booking, totaling 270 pounds.

Description:

An Interleaf is a page that is split 50/50, with advertising and editorial copy, that guarantees that visitors to that page will see that ad. Interleaves are essentially four Teletext lines, or two two-line Signposts grouped together. (MTV does not offer Interleaf pages, but typically, on other services, up to 3 carousel pages are thrown in for that price.)

Name: Sign Post

Rate: 25 to 75 pounds/week, depending upon the popularity of the placement location, with a minimum two-week booking, totaling about 150 pounds.

Description:

Two Teletext lines, usually at the bottom of the screen, with a catchy one-liner promotional phrase, like “Win a Football Shirt on page 333” to draw attention to another page where the full advertisement has been placed. (Data Design considers it unethical to have signposts on one channel directing viewers to another, eg. directing viewers of The National Geographic Channel to go to a Teletext page on the MTV Channel.)

Name: Sponsorship

Rate: 175 pounds per week, with a two-week minimum booking, totaling 350 pounds.

A small advertisement, usually just the company name, which appears prominently on a key page. Logos present a problem because rounded graphics tend to look jagged due to Teletext’s limited display capability.

Analysis of Teletext Advertising Sales:

Teletext advertising is essential to Teletext because it supports the service and allows it to remain free to all audience members. But, while Teletext has generated considerable advertising revenue, most of that advertising has come from holiday operators (like our Travel Agents.) According to Bill Skirrow, Managing Director for Intelfax, in London:

“The market for Teletext advertising in the UK is about 60 million pounds a year, and about 80 to 85% of that comes from holiday advertising. This is by far the largest sector within Teletext advertising.”



Since Teletext pages can be updated quickly, holiday operators find it to be an ideal medium to post the details of travel packages. David Crawford, freelance Teletext engineer (now with CEEFAX) agrees:

“Holiday advertising on Teletext has been particularly successful because people who want a week’s holiday somewhere in Europe might want to decide where to go with only a few days notice. Also, holiday operators with travel deals that are about to expire find Teletext to be a rapid clearinghouse for those specials.”

And the immense popularity of holiday advertising on Teletext also holds true for most Teletext services in Europe. Crawford added however, that classified advertising is also very important for Teletext, especially in regions like Scandinavia where small population centers are spread apart by great distances. He said, “To TV viewers there, Teletext has greater reach than the local newspapers, so people can sell real estate and other property to a much broader audience.”

#### Teletext Expansion into Europe:

While Teletext is most often associated with the UK (England, Wales, and Scotland), Teletext has become a mass medium in Europe. There are also small Teletext communities in The Middle East, Asia, Australia, New Zealand, and South Africa, among others.

The following is a list of the top European countries by Name, By TV Sets Per Person, and Percentage of Teletext Saturation in the market

Austria... 1 per 2.8; Teletext 41%  
Belgium... 1 per 2.4; Teletext 31%  
Denmark... 1 per 2.7; Teletext 60%  
Finland... 1 per 2.7; Teletext 47%  
France... 1 per 2.6; Teletext 55%  
Germany... 1 per 2.6; Teletext 52%  
Greece... 1 per 4.5; Teletext 30%  
Ireland... 1 per 3.8; Teletext 23%  
Italy... 1 per 3.8; Teletext 15%  
Luxembourg... 1 per 4; Teletext 25%  
Netherlands... 1 per 3.2; Teletext 65%  
Norway... 1 per 2.9; Teletext 60%  
Portugal... 1 per 5.8; Teletext 30%  
Spain... 1 per 2.6; Teletext 22%  
Sweden... 1 per 2.4; Teletext 63%  
Switzerland... 1 per 2.9; Teletext 51%  
United Kingdom... 1 per 3; Teletext 50% (now 65%)

While this survey was published in 1997 (by New Life Network, Inc., in Muellheim, Germany, on [http://www.webcom.com/nlnnet/euro\\_tv.html](http://www.webcom.com/nlnnet/euro_tv.html)), it is widely-respected and frequently referred to by Teletext experts.

#### Three Prominent Teletext Operators Outside the UK:

BRTN, in Belgium. BRTN is one of the few in the world to broadcast Teletext as well as Interactive Teletext. BRTN supports many realtime feeds, the most active being the Stock Exchange, which peaks at more than 30 updates a minute.

NOS Teletekst, in Holland, The Netherlands. With over a decade of experience broadcasting Teletext, NOS has a large technical operations center that frequently updates their Teletext service which is carried on three channels.

SVT, Sveriges Television, in Stockholm, Sweden. As the national broadcaster of Sweden, SV broadcasts Teletext on two channels, which are set up to share page content automatically.

#### Eight Other Large Teletext Operations Outside of UK:

Aertel, by RTE's Teletext Service, in Ireland

NDR, in Germany

VRT (Vlaanderen) in Belgium

RAI Televideo, in Italy

CCTV Teletext, China Central Television, in Beijing, China

Seven Text, Channel 7, in Australia

TRT, the national broadcaster of Turkey

ARD Videtext, in Germany

Many Teletext operators outside the UK buy their Teletext equipment from hardware vendors in the UK. The most prominent of these vendors are: Softel Limited, in Reading, Berkshire, England; and Sysmedia Limited, in London, England.

Teletext operators outside the UK have been actively upgrading their Teletext infrastructure to support Hi-Text, the new Level 2.5 specification for Enhanced Teletext, with better, higher resolution graphics and display capability. Level 2.5 has not attracted similar interest inside the UK since Digital Television trials have just begun (at the BBC), and DTV's greater bandwidth, and multiplexing of services, is thought to essentially supercede the need for an enhanced analogue Teletext capability.

The British Government has mandated that its broadcasters shift to DTV, and the migration is expected to finalize between 2006 and 2010. At that time, Teletext will cease to exist since it is an analogue service. That's why Teletext Limited has

begun developing a new Digital Teletext service, based upon the MHEG-5 Interactive Television hypermedia language platform, which offers viewers far greater utility and interactivity.

Under the terms of the 1996 Broadcasting Act, Teletext Limited was assigned capacity (in the digital terrestrial broadcasting spectrum) on the same multiplex (or frequency block) as ITV and Channel 4, and equivalent to 3% of the total multiplex capacity. Interactive Teletext systems, like the PRISM Versatile Interactive Teletext Service Management Platform by Sysmedia, combine the two most popular appliances in the home, the Television and the touch-tone Telephone, to create a return path enabling more effective commerce, games, and online databases like phone directories.

#### A Word about Teletext PC Cards:

Another new development in Teletext is the PC card that enables Teletext to be viewed at the desktop. Typically, this capability involves installing a relatively inexpensive (about 50 U.S. dollars) Teletext Decoder card into a PC slot, then connecting the computer to a video input signal—from a TV or VCR. The card then extracts just the Teletext from the VBI and captures it into the PC environment where it can now be archived, manipulated in database and word processing applications, or printed out on paper.

While there are no hard core numbers readily available to quantify the popularity of receiving televised Teletext on the PC, the vast array of vendors—including ELSAT, Optimum Technology, and Universal Software of New Zealand—suggest that worldwide demand is sufficient to motivate them.

But the primary application that they all seem to zero in on is the ability to obtain up-to-the-minute Financial Information (like stock prices) at the desktop during work hours (when watching television is not appropriate.) This application suggests that people have come to depend upon Teletext for checking stock prices (and other statistics like betting odds and lottery numbers), and continue to do so in the computer environment even though the Internet has become a good alternative source for this information.

Teletext Limited has pioneered a new direction for Teletext, namely a Teletext website containing similar content to that which is broadcast. While it began in 1994 as a source for general information about the company, the website, at <http://www.teletext.co.uk>, was redesigned in 1995 to meet the improved modem and browser standards, and Teletext services like Holidays, News, and Sports became searchable databases. By 1997, the website was voted Best Online Production in the official UK Web Awards.

However, Bill Skirrow, Managing Director of Intelfax, indicated that the Internet is a completely different and separate market for Teletext providers:

“Our niche is broadcast data services. It’s not advisable to just dump Teletext onto the Internet, or to dump the content of a website onto the TV because television and the Internet serve entirely different markets.”

He added that the Interactive Television opportunities on Digital Television are very compelling:

“E-commerce through Interactive Television is going to be an absolutely huge market. And the experience of Teletext will be dwarfed by the commercial prospects of E-commerce on Interactive Television. It’s already happening. People are already buying products through their TV sets (on Interactive TV services like OpenTV). We’re on the cusp of a revolution—possibly the biggest since the invention of the TV itself. And Teletext, in some form, will be part of that revolution. ”

Conclusion:

On the basis of this research, Teletext can be considered an economic success. Teletext providers have expanded the number of pages they produce; manufacturers continue to develop next-generation Teletext hardware and software; and merchandise, especially travel packages, have sold effectively via Teletext.

The market would not have expanded the way it did, over 25 years, if the profits were insufficient to justify further investment. Since there are many similarities to Interactive Television, Teletext can serve as a good indicator of the potential performance of Interactive Television services in the United States.

However, the findings of this study suggest that:

1. Like Teletext, Interactive Television Services must be free to users, and must utilize relatively inexpensive hardware on the consumer end.
2. Interactive Television Services must adopt an industry standard that promotes interoperability of professional authoring hardware and software as well as consumer electronics.
3. Like Teletext, advertisers must be willing to support the services even before there is hard evidence measuring audience viewership and usage.
4. Like Teletext, Interactive Television Services must be allowed sufficient time to seep into the fabric of the American television culture.

In the late 1970’s and early 1980’s, Teletext was instituted briefly here in the United States. The first U.S. Teletext service was conducted in 1978, by KSL-TV, in Salt Lake City, followed by WFLD, in Chicago, in 1981. Also, in 1981, three Los Angeles TV stations, KNXT, KCET, and KNBC, tested the French-

developed Antiope software (which has since yielded to Minitel technology now popular in France.) These pioneering efforts were very short-lived, abandoned as failures dead on arrival.

Compared to those isolated American attempts, Teletext in the UK was endorsed by the British Government, which devoted tax dollars to its development and supported its widespread deployment. And by paving the way for everyone to have it for free, as a public service, Teletext was able to evolve into a successful mass medium.

Executive Summary:

Based on the findings of this report, we feel that the British and European experience with Teletext proves that people are willing to interact with their television sets to seek out information of value to them. And advertisers, who have long recognized the value of the Teletext medium, support it with ad dollars even when there is no hard evidence measuring audience viewership and usage.

However, because of the unique circumstances surrounding Teletext, this survey cannot serve as an apples to apples comparison. While Teletext has been in existence for 25 years, Interactive Television is germinating in the Internet Age, where many data channels are competing for the public's attention. And while Teletext was supported and deployed by British Government mandate, Interactive Television is a market-driven technology that relies upon carriage by cable and satellite system operators. But, in terms of whether consumers will want to use a data service associated with their television sets, Teletext is a good indicator that they will.

Abstract:

Abstract for Teletext Report:

"The Growing Interactive TV Market: Teletext Shows the Way."  
Document # DT9913NW

Anxious to capitalize on the convergence of PC and TV technologies, many companies have announced plans to transmit one-way data or interactive services that viewers can access using their television sets. The hope is that data, like program information, will

enrich the TV viewing experience, and that two-way service, like electronic shopping and banking via TV, will offer viewers unprecedented convenience.

However, there has been much industry debate as to whether the public will in fact use PC-like data services delivered to the television set. While isolated cases of Interactive Television failed in the 1980's, new well-financed, broad-based efforts in the growing high-bandwidth climate may now succeed.

To better predict how these new Interactive Television services are likely to be received and used by the American consumer, a study of the economic viability of the European Teletext business can provide useful insight since Teletext has been broadcasting data services to the TV set for over 25 years. And its longevity has largely been attributed to the generation of advertising revenue, a resource that will be vital to any commercial Interactive Television effort here in the United States.

This report describes the business model of Teletext, and analyzes the financial performance of top commercial Teletext providers based in the United Kingdom. It includes details on Teletext penetration throughout Europe, and compares advertising rates for select broadcast television and cable networks.

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