

# The Importance of Connecting Editorial and Engineering in Teletext/Videotex adoption in the UK

## Discussion Paper for Archives of IT Forum January 2024

Dr Simon Rowberry, Department of Information Studies, University College London  
[s.rowberry@ucl.ac.uk](mailto:s.rowberry@ucl.ac.uk)

In the 1970s and 1980s, the United Kingdom was at the cutting edge of teletext and videotex<sup>1</sup> development, with the former remaining an important part of British IT culture until it was switched off in 2012. Prominent public corporations including the BBC and the British Post Office (later partially spun off as British Telecommunications, or BT) invested heavily in infrastructure for Ceefax and Prestel respectively. Despite the rich culture that developed on these platforms, they are often footnotes in histories of the Internet and computing, overshadowed by the longer-term success of Minitel, the French equivalent of Prestel.

There are two main reasons for this disappearance: First, internet histories have pivoted towards sociality online (for example, Kevin Driscoll's work on the *Modem World* and Minitel<sup>2</sup>) that emphasises the ancestors of social media rather than more static text-based precursors to the Web. Second, there is a paucity of extant evidence of activity on teletext and videotex systems. Hobbyist groups who extract teletext data from video cassettes have been more active in preserving this content than institutional archives but there is a limit to their ability to reconstruct substantial bodies of material.<sup>3</sup>

Building upon archival research from the BBC Written Archives, Independent Broadcasting Association (IBA, an ancestor of OFCOM), Channel 4 and BT, as well as contemporary industry and academic discussions, in this paper I offer a revisionist history of these proto-Internet technologies that helped prime the British public for the arrival of the Web in the 1990s. Through case studies of the BBC's Ceefax service, Channel 4's 4-Tel, and BT's Prestel, I explore the importance of integrating engineering prowess with effective editorial and content moderation policies.

### Teletext and Videotex: The future of electronic publishing

Normative internet histories can focus on the rise of a monolithic Internet with a clear lineage from ARPANET through to the rise of the World Wide Web and social media networks. Recent corrective work has challenged that perspective from two angles: First, through demonstrating the existence of alternative networks and digital infrastructure across geographical regions, such as Ben Peters' work on the nascent Soviet internet.<sup>4</sup> Second, excavating other networks that existing concurrently with ARPANET in the United States and elsewhere that were eventually amalgamated into the Web.<sup>5</sup>

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<sup>11</sup> A note on terminology: teletext is the generic name for one-way transmission, videotex for two-way transmission through the telephone, and Teletext is the service provided by the Independent Broadcasters Association (IBA). For the simplicity of reading, I use the generic 'teletext' to refer to both teletext and videotex interchangeably.

<sup>2</sup> Kevin Driscoll, *The Modem World: A Prehistory of Social Media* (New Haven: Yale University Press, 2022); Julien Mailland and Kevin Driscoll, *Minitel: Welcome to the Internet* (Cambridge: MIT Press, 2017).

<sup>3</sup> Jason Robertson, "Software," *The Teletext Archaeologist* (blog), accessed November 8, 2022, <https://teletextarchaeologist.org/software/>.

<sup>4</sup> Benjamin Peters, *How Not to Network a Nation: The Uneasy History of the Soviet Internet* (Cambridge: MIT Press, 2016).

<sup>5</sup> Joy Lisi Rankin, *A People's History of Computing in the United States* (Cambridge: Harvard University Press, 2018); Driscoll, *Modem World*.

Teletext and videotex fall into both of these categories. While there were some attempts to create viable networks in the United States and Canada, the media regulatory landscape and geographical challenges of North America ensured they were largely unsuccessful.<sup>6</sup> Conversely, teletext/videotex services flourished across Europe, including in my chosen case study of the United Kingdom.<sup>7</sup> Teletext also relied on different infrastructure to the Internet and its more commonly known precursors, which is why it is often not viewed within the development of the Internet. The largely broadcast system of teletext bootstrapped on television transmission, while two-way videotex systems relied on telephone lines.

Sources such as the Publishers Association referred to these services as a nascent form of “electronic publishing.”<sup>8</sup> While the term has largely fallen out of use within discussions of trade publishing in favour of “digital publishing,” it remains persistent in scholarly communication (for example, the *Journal of Electronic Publishing*). Nonetheless, the term remains useful for separating teletext and videotex from digital publications through noting a distinction between the modes of transmission. Electronic publishing is a broader term that helps us move away from the normative narratives introduced at the beginning of this section to instead consider other forms of textual transmission for reading on-screen that influenced the rise of the Web.

### How Teletext Works

Teletext has been derided as a simplistic service in hindsight, but it is difficult to overstate its achievements within the United Kingdom between 1970 and 2000. Teletext was a relatively straightforward service that worked within the material limits of Cathode Ray Tube (CRT) televisions. In the 1960s, BBC Engineers experimented with the Vertical Blanking Interval (VBI) for transmitting text and data. The VBI was the result of the material constraints of both CRT televisions and terrestrial broadcast technology. CRT televisions processed frames on a line-by-line basis. To handle the uncertainties of TV transmission and minimize glitches by avoiding excessive compression, a small section of the 625-line signal, known as the Vertical Blanking Interval (VBI), was left empty between frames. As the television infrastructure improved, engineers’ reliance on the VBI decreased so there was a potential to re-use this blank space for other purposes. Initial suggestions included using the VBI to transmit captions for the deaf<sup>9</sup> or to remotely send data to a printer,<sup>10</sup> but it morphed into a fully-fledged information retrieval service that was instantly updated including breaking news, longer-form magazines, and a variety of other content. The service was cost efficient as it bootstrapped on television signal thus only requiring editorial costs.

Successful implementation of teletext services depended on an understanding of two core factors of distribution. First, *engineering* was a vital part of ensuring text could be served through telephone networks or television transmissions. While the infrastructure for both services in the United Kingdom was mature, changing the type of data to text and basic mosaic images required innovative solutions and the companies who had that expertise in-house were more likely to thrive than those who

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<sup>6</sup> Leonard R. Grazioplene, *Teletext: Its Promise and Demise* (Bethlehem: Lehigh University Press, 2000).

<sup>7</sup> Hallvard Moe and Hilde Van den Bulck, eds., *Teletext in Europe: From the Analog to the Digital Era* (Göteborg: Mprdocp, 2016).

<sup>8</sup> The Publishers Association, “Electronic Publishing - an Introductory Guide” (The Publishers Association, February 1981).

<sup>9</sup> Philip Schlesinger, “From Public Service to Commodity: The Political Economy of Teletext in the UK,” *Media, Culture & Society* 7 (1985): 471–85.

<sup>10</sup> Jay Kelly McKinnon, “Post-Modemism: The Role of User Adoption of Teletext, Videotext & Bulletin Board Systems in the History of the Internet” (British Columbia, Simon Fraser University, 2012), 41.

outsourced this. The second factor, *editorial*, encapsulates the ability to create *bespoke* content for the services that suited the format of the transmission and consumption.

The editorial aspects of teletext cannot be understated. As Michael Tyler argued in 1979:

The 'editorial' aspect of electronic publishing is proving more complex, and more problematic, than originally expected. For example, material from existing printed media cannot simply be copied on to a Videotex system: an acceptable result requires novel editorial skills.<sup>11</sup>

Rather than a full precursor of the Web, it is more useful instead to see teletext a more constrained platform akin to the early years of Twitter. Low resolution television displays and the limitations on transmitting content ensured that only a certain amount of information could be displayed on screen at any one time. As a result, the design of each page needed to be intentional to ensure relevant information was displayed in an engaging, lively manner that might refresh at any minute.

## Case Studies

In the following three sections, I outline three different case studies to explore the importance of the relationship between editorial and engineering concerns. The first, BBC's Ceefax, was built upon the BBC's engineering strengths with a clear editorial identity. The second case study moves to focus on Channel 4's 4-Tel services, which outsourced engineering concerns to the pre-existing ORACLE/Teletext service and consequently struggled to convey what was otherwise a strong brand identity. Finally, I explore British Telecommunication's Prestel service, that failed to gain a large audience despite BT's engineering prowess, in part due to the lack of a strong editorial identity.

### Ceefax

Despite some teething issues, the Ceefax service was a triumph in expanding the BBC's ability to act as a public-interest media broadcaster through exploiting under-used parts of the television transmission signal. This was achieved through robust integration of the service throughout the BBC's offering, from work on transmission and signal fidelity through to applying a strong editorial voice to the service.

The BBC Written Archives' records on Ceefax exemplify the importance of editorial and engineering as the materials focus almost entirely on technical documentation of incorporating teletext into the television transmission signal and style guides for the service including how to cover elections. There's very little documentation of the service itself. Partially this reflects an institutional policy in preserving records for what accounted for a very small volume of BBC activities but also the ephemerality of the material transmitted. BBC guidance suggested that Ceefax material should be archive for two weeks before being destroyed so the Written Archives contain no records of teletext content.<sup>12</sup>

Nonetheless, as the flagship teletext service in the United Kingdom, Ceefax deployed a strong editorial identity, to the extent that it was often used synonymously with teletext despite the complexity of the UK landscape, and the prominence of ORACLE, the provider of Teletext. Ceefax use peaked in the 1990s with up to 20 million users checking the content at least once a day.<sup>13</sup> Even as late as 11

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<sup>11</sup> Michael Tyler, "Videotex, Prestel and Teletext: The Economics and Politics of Some Electronic Publishing Media," *Telecommunications Policy*, March 1979, 44.

<sup>12</sup> Planning and Installation Department [Television], "Ceefax - New System Specification [01/03/1987 to 31/03/1987] MM2/63/1," 1987. BBC Written Archives

<sup>13</sup> Hilde Van den Bulck and Hallvard Moe, "Why Media Researchers Don't Care About Teletext" in Moe and Van den Bulck, *Teletext in Europe: From the Analog to the Digital Era*, 25.

September 2001, teletext was a reliable option for many to follow breaking news.<sup>14</sup> Internet and Web adoption in the UK therefore does not follow a linear pathway from Ceefax and teletext through to the Web. Instead, the infrastructure of teletext (instant retrieval of information from a television with a single button) and lack of additional cost ensured that the two services were used concurrently until Ceefax was shut down in 2012.

#### 4-Tel

Channel 4's 4-Tel teletext service provides a useful counterexample to most of Ceefax's core strengths. The Channel launched in 1982 rather than acting as a long-running and much-loved broadcaster. This also meant that it was the first terrestrial television channel to be launched in the age of teletext. As a result, the 4-Tel service was conceived as an integral part of the programming, with the content closely connected to the television schedules.

There was a snag with this approach, however, as a start-up with some government support, the company did not have the same level of engineering prowess as the Independent Broadcasters Association or BBC. Instead the 4-Tel service would make use of ORACLE's pre-existing infrastructure. As a result, Channel 4 would have to use the same pages as Teletext and any changes would have to be directed through the more established service.

This severely restricted Channel 4's ability to curate and monetise the content on 4-Tel. Advertising and competition offer just two examples of these challenges in practice. First, since Channel 4 was allocated a limited number of pages as it was using the same part of the television transmission signal as the ITV suite of channels, there was less room for advertisements compared to other services. Where advertising did appear, this would often benefit Teletext operations, creating a feedback loop of limited funds for Channel 4.

Editorial decisions were also limited by this partnership. Channel 4 wanted 4-Tel to have a strong editorial identity, which meant that the service did not offer some of ORACLE or Ceefax's most popular content: news. Instead, Channel 4 were keen to integrate materials related to its television programming. This meant a range of dedicated 'magazines' connected to television shows. Nonetheless, despite this clear connection, due to Teletext's more omnivorous attitude to editorial practices, there were occasionally clashes between the two providers on issues such as top 40 music charts.

ORACLE's Blue Suede Views and 4-Tel's 4 O'Clock Rock were two magazines that were seen to be in competition with one another, with both initially publishing the most popular singles, a gig guide, and opinion letters.<sup>15</sup> After negotiations with ORACLE, in 1986 Channel 4 narrowed the remit of 4 O'Clock Rock to focus on advertising Channel 4 programming at the expense of its much broader editorial content.<sup>16</sup>

Tensions between ORACLE and 4-Tel were never resolved, with 4-Tel remaining the inferior service as Channel 4 never owned the infrastructure required to run the service effectively. In contemporary media scholarship, we might call this the consequence of platformisation, whereby there is a

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<sup>14</sup> Piërrre van de Laar and Teun Hendriks, "A Retrospective Analysis of Teletext: An Interoperability Standard Evolving Already over 30 Years," *Advanced Engineering Informatics*, *Evolvability of Complex Systems*, 26, no. 3 (2012): 518.

<sup>15</sup> Peter Bailey and Frank McGettigan to David Glencross, September 6, 1985, ARCH-DGM-11-2. Channel 4 Archives.

<sup>16</sup> Julian Newby to David Klein, "4 O'Clock Rock," October 17, 1986, ARCH-DGM-11-2. Channel 4 Archives.

disconnect between the platform, in this case ORACLE's implementation of teletext, and the publisher, Channel 4. Without 'owning the wires', Channel 4 could not implement their full editorial policy.

## Prestel

My final case study, Prestel, presents the reverse scenario to 4-Tel. The BPO, and then BT, were instrumental in providing the infrastructure for Prestel but they were unable to capitalise on this in relation to the content available on the platform for two reasons: First, there was no clear editorial identity as BT initially targeted both corporations and consumers that made it confusing to understand how to best use Prestel. This was exacerbated through users not seizing the initiative in shaping the direction of the platform as was the case with Minitel in France where the service was remembered for its messaging functionality.<sup>17</sup> Second, the service was confused with more widely available teletext services.

Given the level of success Teletext and Ceefax had achieved in the UK, Prestel faced an uphill challenge in terms of differentiating itself from these other consumer-based services. Equally, Prestel attempted to bridge the gap between consumer and business uses, while leaning harder on the latter over the former. BT's overarching ambition was very similar to what the Internet became – a pervasive technology that would shape every aspect of our lives.

Unfortunately, given the lack of clear editorial direction, Prestel met a strong amount of criticism. For example, Anthony Easton's 1980 article "Viewdata – a product in search of a market?" was a scathing indictment.<sup>18</sup> Beyond the editorial-engineering divide, the cost of Prestel was another barrier for access. A terminal cost £1500, far in excess of the rental or outright purchase costs of a teletext-compatible television.<sup>19</sup> Conversely, others praised Prestel as an open platform that stood in stark contrast to the closed ecosystems of the teletext services.<sup>20</sup> Systems such as Prestel, and the far more successful Minitel, offered a blueprint for moving from publishers to platforms.

Editorial direction would instead come from the publishers on the platforms, who would pay a year subscription fee to become the custodians of 100 pages.<sup>21</sup> Unlike teletext, since data for Prestel was requested on an ad hoc basis rather than downloaded and cycled constantly, there was a higher limit on the number of possible pages. Equally, this meant that if the number of pages rapidly grew, discovering relevant information became more difficult. Unfortunately, publishers never bought in to this service, leaving Prestel with little useful content for consumers.

Eventually BT cut their losses and sold Prestel to the Financial Times in the early 1990s.<sup>22</sup> The service never gained sufficient traction and was particularly vulnerable to the rise of alternate Internet services during the 1990s. Ignoring editorial concerns at the expense of providing the infrastructure for what was otherwise a difficult to grasp concept ensured that Prestel never gained the prominence of Teletext or Ceefax.

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<sup>17</sup> Mailland and Driscoll, *Minitel*.

<sup>18</sup> Anthony Easton, "Viewdata - a Product in Search of a Market?," *Telecommunications Policy*, September 1980, 221–25.

<sup>19</sup> John Tisdall, "Teletext and Viewdata," June 22, 1979, 2.

<sup>20</sup> Ederyn Williams, "Strengths and Weaknesses of Prestel," *Computer Communications* 2, no. 2 (1979): 56.

<sup>21</sup> Eric Somers, "A User's View of Prestel," *Creative Computing* 9, no. 5 (May 1983): 123.

<sup>22</sup> Christopher H. Sterling, "Pioneering Risk: Lessons from the US Teletext/Videotex Failure," *IEEE Annals of the History of Computing* 28, no. 3 (2006): 42.

## Conclusion

The UK's implementation of various teletext and videotext services offers a useful counterpoint to the traditional narratives around the rise of the Internet. Rather than waiting for ARPANET, the UK instead developed its own rich ecosystem of text-based mass communication systems that leveraged the country's strong television infrastructure. While this was based on strong engineering prowess of institutions such as the BBC, the differences between Ceefax, 4-Tel and Prestel demonstrate the importance of maintaining a clear editorial identity.

Despite the limitations of the format, there is a high degree of nostalgia for teletext transmission due to the editorial identity. The institutional archives I consulted for this research offered useful insights into both the engineering and brand identity aspects of this ecosystem, but there were fewer concrete examples of actual material. This has instead fallen to "folk archivists" who both look to preserve historical examples of the service and remediate contemporary web sources through the aesthetics of teletext.

Teletext services in the UK have therefore been seen as important enough to preserve by the audience and the communities that developed around them. This remains an uphill battle though. The most common approach to preservation is extracting the teletext data from video cassette recordings, which often results in poor quality archives and can only document material from some moments. This is not a fault of these individuals but a recurrent problem within digital/electronic culture, whereby we do not necessarily save what audiences value until it is too late. The fate of teletext content, and the connections or gaps between publishers and their platforms, can provide valuable lessons for considering both the history and future of the Web.

## Bibliography

### Primary Sources

BBC Written Archives

Channel 4 Archives

### Secondary Sources

Driscoll, Kevin. *The Modem World: A Prehistory of Social Media*. New Haven: Yale University Press, 2022.

Easton, Anthony. "Viewdata - a Product in Search of a Market?" *Telecommunications Policy*, September 1980, 221–25.

Graziplene, Leonard R. *Teletext: Its Promise and Demise*. Bethlehem: Lehigh University Press, 2000.

Laar, Piërrre van de, and Teun Hendriks. "A Retrospective Analysis of Teletext: An Interoperability Standard Evolving Already over 30 Years." *Advanced Engineering Informatics*, Evolvability of Complex Systems, 26, no. 3 (2012): 516–28.

Lisi Rankin, Joy. *A People's History of Computing in the United States*. Cambridge: Harvard University Press, 2018.

Mailland, Julien, and Kevin Driscoll. *Minitel: Welcome to the Internet*. Cambridge: MIT Press, 2017.

McKinnon, Jay Kelly. "Post-Modemism: The Role of User Adoption of Teletext, Videotext & Bulletin Board Systems in the History of the Internet." Simon Fraser University, 2012.

Moe, Hallvard, and Hilde Van den Bulck, eds. *Teletext in Europe: From the Analog to the Digital Era*. Göteborg: Mprdocp, 2016.

Peters, Benjamin. *How Not to Network a Nation: The Uneasy History of the Soviet Internet*. Cambridge: MIT Press, 2016.

Robertson, Jason. "Software." *The Teletext Archaeologist* (blog). Accessed November 8, 2022. <https://teletextarchaeologist.org/software/>.

- Schlesinger, Philip. "From Public Service to Commodity: The Political Economy of Teletext in the UK." *Media, Culture & Society* 7 (1985): 471–85.
- Somers, Eric. "A User's View of Prestel." *Creative Computing* 9, no. 5 (May 1983): 123.
- Sterling, Christopher H. "Pioneering Risk: Lessons from the US Teletext/Videotex Failure." *IEEE Annals of the History of Computing* 28, no. 3 (2006): 41–47.
- The Publishers Association. "Electronic Publishing - an Introductory Guide." The Publishers Association, February 1981.
- Tisdall, John. "Teletext and Viewdata," June 22, 1979.
- Tyler, Michael. "Videotex, Prestel and Teletext: The Economics and Politics of Some Electronic Publishing Media." *Telecommunications Policy*, March 1979, 37–51.
- Williams, Ederyn. "Strengths and Weaknesses of Prestel." *Computer Communications* 2, no. 2 (1979): 56–59.