The Development of Video Dialtone Networks by Large Telephone and Cable Companies and Its Impact on Their Small Counterparts

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What Video Dialtone Means for the Personal User

Video dialtone is a new telecommunications technology developed at the laboratories of the large American telephone companies. As the name suggests, it can be visualised as allowing a customer to pick up his telephone and, in addition to obtaining the tone to dial a telephone number, receive images such as those that he receives by turning on his television set. Likewise, video dialtone supports the transmission of text and data, so that together with sound and video it offers a multimedia package. That in itself would not impress the customer as a revolutionary development because he can already receive fundamentally the same package through a computer or a TV. Both of these pieces of equipment allow him to receive images and, particularly in England, cable TV delivers telephone service too.

What constitutes a much more remarkable development is that video dialtone technology enables the customer to interact with those images in a similar way to her interaction with the verbal and non-verbal sounds that she can send and receive over the phone. For instance, when she is on the phone she can hear a human voice, music, or the buzzing sounds used to transmit data or a fax, and then she can react by sending in turn any of those sounds. By contrast, TV is not interactive because the customer can only passively sit and watch the images, and hear the sounds being broadcast at the time. She can take no more action than to switch to another channel, turn the volume up and down, and turn off the TV. Even if she has a cable TV connection she cannot engage in two-way communication. The most she can experience is a primitive and indirect form of responding to the information received if she has a cable TV remote control with an “Auth” or authorisation button. In that case, she can see on her cable TV the advertisement of a pay-per-view program and then order it by pressing the button rather than by dialing a phone number. Her capacity to response is limited to its minimum expression.

However, video dialtone provides interactivity by allowing the customer to use a remote control to make choices based on the sounds and images received – that is, electronic audio-visual information – and to notify that choice back to the information provider, after which she can receive more information corresponding to her previous choice, on the basis of which she can make new choices, and so on. This means that a two-way communication can be established between the customer and the provider of audio-visual information.

Moreover, this new technology improves the nature itself of the audio-visual information that the customer can receive because it significantly diversifies its content and enriches its usefulness. In addition to including the usual fare of news, live shows, and movies, video dialtone technology also offers a whole range of new services. Among them are access to retailers and financial institutions...
offering their merchandise and services; to libraries and educational institutions offering the text of their book and magazine holdings as well as their learning programs; to government offices that enable citizens to obtain forms, licenses, records, and the text of regulations; to medical facilities conducting telediagnosis; to the means for engaging in teleconferencing; ...

"Wait!", one may wonder, "this looks like déjà vu: is this not just another version of the Internet or another commercial online service - such as America Online, Compuserve, and GEnie - providing access to data banks?" Well, it is true that video dialtone shares with these means of communication some distinguishing and important features. Foremost among them are that the number of information providers to which it affords access is substantially increased by comparison to the number of transmitting channels on broadcast or cable TV; and that access is not constrained by any time schedule. Yet, the new technology is qualitatively and quantitatively superior to them. For one thing, neither the Internet nor online services can offer a continuous flow of TV-like moving images, whether live or recorded. This means that they cannot deliver broadcast-quality, full-motion pictures at 30 frames per second, a rate which they do not come anywhere close to attaining. The best they can do is provide movie clips that play for just a few seconds but take forever to download from the information provider to one's computer. They also require a computer, a modem, etc.

These pieces of equipment are not only many times more expensive than a TV set or a telephone, but are also intimidatingly more difficult to use for many people. It has been estimated that in 1994 only 23.3% of American households had computers. But this is by no means the percentage of households that can access the Internet or online services. Many computers are only a few years old but are already obsolete to the extent that they are incompatible with the new software necessary for, among other things, online access to multimedia information. For such access the computer needs a fast enough processor, a modem, multimedia capability, a telephone connection, a subscription to an Internet service provider or to an online service as well as appropriate software. Indeed, even after adding 1.7 million new customers in 1994 alone, which represented a 37% increase, at the end of that year the online industry's total number of subscribers was only 6.3 million. Because of their difficulty of use, high cost, and the more intellectual pursuits rather than entertainment purposes that they serve, computers, and consequently online subscriptions, are still found overwhelmingly concentrated among the younger, more educated and affluent members of American households.

By contrast, video dialtone technology has been designed with TV owners as the principal market - and for good reason: By 1993 telephones were found in 94.2% of all American households, not to mention all businesses, and TVs in 98.3%

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3Mike Mills, Sharper Rivalry Looms for Fast-Growing America Online, The Washington Post, January 17, 1995. It was also reported in this article that "America Online reached a total of 1.5 million subscribers after adding 500,000 new subscribers since October [1994]," and expects to end 1995 with a total of 2.5 million.
4The main online services, soon to be joined by Microsoft Network and AT&T's Interchange, are the following, as found by the census conducted by the Information & Interactive Services Report, based in Washington:

<table>
<thead>
<tr>
<th>Service</th>
<th>Subscribers</th>
<th>Change since October</th>
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<tbody>
<tr>
<td>CompuServe</td>
<td>2.45 million</td>
<td>up 9%</td>
</tr>
<tr>
<td>America Online</td>
<td>1.5 million</td>
<td>up 50%</td>
</tr>
<tr>
<td>Prodigy</td>
<td>1.2 million</td>
<td>no change</td>
</tr>
<tr>
<td>Delphi</td>
<td>100,000</td>
<td>down 17%</td>
</tr>
<tr>
<td>GEnie</td>
<td>75,000</td>
<td>(new tally method)</td>
</tr>
<tr>
<td>Apple's e-World</td>
<td>65,000</td>
<td>(new tally method)</td>
</tr>
</tbody>
</table>

In all, the census counted 55 services, including the rapidly growing electronic newspaper segment, but not local Internet access providers. Mike Mills, Sharper Rivalry Looms for Fast-Growing America Online, The Washington Post, January 17, 1995.

5Of interest here are the findings of Ogilvy & Mather Direct, a New York ad agency that tracked the demographic profile of the users of the Internet, which is also an online communications system: gender, 80% are male; median income, $54,000; hours per day spent on-line, one or more. Ira Sager, The Internet: How It Will Change The Way You Do Business, Business Week, November 14, 1994. Cf. Compare with Notes 32 and 33 and accompanying text.

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