
RESEARCH REPORT

THE EFFECT OF NEW TELEPHONE TECHNOLOGIES
ON BIRCH SCARBOROUGH RESPONSE RATES

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Executive Summary

New telephone technologies present a new set of challenges to telephone survey research companies, including Birch Scarborough. This paper reviews the services available to consumers now and in the future and briefly discusses the possible effect on Birch Scarborough response rates.

Key findings include:

- New technologies are a double-edged sword. While some new services do make it more difficult to reach respondents, others make it easier to reach individuals by phone.
- At present, caller ID is a local service. If caller ID penetration increases greatly, it will have no effect on the Birch Scarborough methodology.

I. Introduction

The divestiture of AT&T in the early 1980s, which helped increase competition within the telephone industry, and advances in computer technology have led to new telephone services that may affect the telephone survey industry in general and Birch Scarborough in particular. The sources of these services vary; some are offered by the carriers themselves and others are offered through equipment leased or sold by the carriers or other vendors. The effects of these services on Birch Scarborough also vary because some of the services increase the chances of reaching a respondent and others decrease those chances. This report provides a short background of the organization of the telephone industry followed by descriptions of those services that might affect telephone survey research and what Birch Scarborough is doing to maintain high response rates in light of these changes.

II. Background of the Telephone Industry

In January 1984, the divestiture of AT&T became effective and the company was reorganized. As part of the Modified Final Judgment,¹ the court decree approving the reorganization, AT&T retained its vertical monopoly, including its long distance service,

¹United States v. American Telephone and Telegraph Co., 552 F. Supp. 131 (1982).

research labs and equipment manufacturing company. However, the 22 Bell Operating Companies under the AT&T umbrella that previously had provided local telephone service across the country were divested. Those companies reorganized into the seven Regional Bell Operating Companies (RBOCs) that function as holding companies for the several local telephone companies once part of the Bell system.²

Also part of the AT&T divestiture was the formation of new geographic areas called LATAs (Local Access Transport Areas) that would distinguish local service areas from long distance areas. The operating companies offering local service, called local exchange carriers (LEC), are restricted to handling only telephone calls within a LATA. Telephone calls between LATAs are handled by interexchange carriers (IXC), the largest of which are AT&T, U.S. Sprint and MCI.

Finally, as a result of the AT&T break-up, telephone equipment now comes from a number of sources. AT&T continues to manufacture and sell its own equipment. The RBOCs, however, are not allowed to manufacture equipment but can sell equipment obtained from a variety of vendors. Several companies now compete in offering telephone services and equipment to residences and businesses.

III. New Service Offerings Affecting Birch Scarborough

Several new service offerings might affect Birch Scarborough by either increasing or decreasing the chances of an interviewer reaching a potential respondent. However, although

²The RBOCs are NYNEX, Bell Atlantic, BellSouth, Ameritech, Southwestern Bell Corporation, US West and Pacific Telesis.

many of these services are available to residential users, they are primarily used in business environments. The services can be classified, with some overlap, into single line services, PBX services and enhanced voice services.³

A. Single Line Services

A single line telephone system consists of an individual line attached to one or more telephones and is typically found in residences or small businesses. The LEC provides a number of special services to single line customers, many of which are called custom calling features. These services are made available for a fee either individually or as a package.

Two custom calling features that might affect the ability of Birch Scarborough to reach respondents are "call waiting" and "call forwarding." Call waiting allows a person using the line to be signalled when another call is waiting on the line. The second caller hears a ring rather than a busy signal even though the line being called is engaged. The party being called hears a signal that a call is waiting and has the option to pick up on that second call. Should a Birch Scarborough interviewer call a number that has call waiting, there is an increased chance of connecting with a potential respondent even when someone is already using that telephone line.

Call forwarding also increases the chances of being connected. Call forwarding allows incoming calls to be automatically forwarded to another telephone number.

³For information regarding other service offerings, see Blyth, W. John and Mary Blyth, Telecommunications: Concepts, Development and Management, 2nd ed., Glencoe (1990).

B. Customer Provided Equipment

The most notable piece of customer provided equipment is the answering machine. Certainly, answering machine penetration has reached significant proportions in the United States and has the potential to present problems for the Birch Scarborough system. A study conducted by Birch Scarborough on answering machine usage⁴ showed that approximately five percent of all calls reached answering machines and that nearly 40 percent of these answering machines' numbers resulted in completed interviews at a later time. Current experience at Birch Scarborough has led us to conclude that while many homes have answering machines, few use them to screen calls. The major purpose of the machine is to answer calls while the occupants of the household are away.

Not all customer provided equipment yields a negative effect on response rate. As consumers have moved from one plain black phone in their homes to numerous extensions and cordless phones, individuals have the ability to answer the phone more quickly, reducing the possibility that they will not reach the phone in time.

C. PBX Services

A PBX, or private branch exchange, is a switching system, the earliest form of which was a manually operated switchboard. Today, PBX systems are computerized and automatic and

⁴ Seidell, Patrick M. and Gregory R. Johnson, "Improving Response Rates of Answering Machine Users in a Telephone Based Survey," Birch Scarborough Research, Coral Springs, FL, 1990.

are purchased or leased from the LEC or another vendor for the exclusive use of a single organization and usually installed on the customer's premises. The PBX handles calls within the organization and also connects calls to the public network.

PBX features vary depending on customer needs, but popular features include call waiting and call forwarding. When offered through a PBX, these services are similar to those offered directly by the LEC and would affect telephone surveys in much the same way.

Another PBX service that is growing in popularity is "voice mail," sometimes called "voice messaging" or "voice storage and retrieval (VSR)." Voice mail resembles the service offered by a telephone answering machine. When an incoming call is unanswered, it is forwarded to the voice mail system. There, the caller hears a recorded message and can leave a recorded message. Because the message that is left is stored digitally, it can be routed and transformed, sent to several recipients or sent at future times. Voice mail would have the same effect on telephone surveys as would answering machines. Some of the LECs are now offering voice mail type services to residential users.

D. Enhanced Voice Services

Enhanced services involve computer processing of transmitted information and are provided on a competitive basis by a number of vendors. Of particular interest to the telephone survey industry are the enhanced services involving caller identification or automatic number identification.

Caller ID is part of a package of enhanced services called CLASS--Custom Local Area

Signalling Services.⁵ This new technology is being rapidly deployed in the public telephone network. Caller ID, which is at the heart of CLASS, involves the use of a special display attachment that allows the user to see the number of an incoming telephone call before deciding whether to pick up the telephone. Where it is available, the service is offered through the LEC for a monthly subscription charge of \$5-10 plus the one-time purchase cost of the display device or a telephone with a built-in display. Caller ID currently functions in the **local area only** (Note: Birch Scarborough interviewers do not conduct interviews in their local area [e.g., San Antonio interviews are conducted from another center rather than one of the two San Antonio centers]).

A similar service to caller ID is automatic number identification (ANI), which is a service available to customers with 800 or 900 service. In general, ANI is the long distance equivalent of caller ID, although ANI technology has some other local applications within the industry. ANI has been used for years by telephone companies to keep track of users of chargeable services so bills can be issued. Certain businesses with 800 service also use ANI to identify the telephone number of incoming calls in order to call up a customer's records on a computer database. Some 900 services also use ANI as a means to compile lists of the telephone numbers of incoming calls for later uses such as telemarketing.⁶

These number identification technologies, particularly caller ID, have caused some controversy within the industry and consumer groups. Some people consider the technology to

⁵Wallace, "Pacific Bell set to release Commstar CLASS offerings," Network World, November 26, 1990, p 12.

⁶Smith, "ANI users face software challenge," Network World, February 9, 1990, p1.

offer an "electronic peephole" similar to what is found in a residential door, allowing a person to identify a caller before choosing to establish communication. Despite the debates as to whether this technology violates privacy rights⁷, anecdotal evidence of benefits of the technology have been reported. Because the number of the calling party can be identified, instances of harassing and obscene calls have stopped in some cases.

Related to caller identification services are call blocking services. As part of CLASS, the service provider can offer "call block." For a small monthly charge this service rejects incoming calls from telephone numbers that are specified by the user. Rather than being connected, the calling party hears a recording stating that the party being called is not accepting the call. The other side of the blocking coin is a service that allows the caller to prevent his or her telephone number from being displayed to the called party on a call-by-call basis.

Despite some setbacks, all of the RBOCs have plans to offer caller ID.⁸ However, because deployment of the service is regulated on a state-by-state basis by public utility commissions, there have been different approaches to the service throughout the country. For example, Bell Atlantic Corporation, the RBOC servicing the mid-Atlantic states, provides caller ID without blocking in New Jersey, Maryland, Virginia and West Virginia. However, in Pennsylvania, a state also in Bell Atlantic's service area, caller ID has been barred by the Commonwealth Court as a violation of the Pennsylvania's wiretap law and privacy law.⁹

⁷See Smith, "Who's got your number! Is it constitutional to give it out?: Caller identification technology and the right to informational privacy," 37 UCLA Law Review 145 (1989).

⁸ See Taff, "FCC may be referee in caller ID dispute," Network World, September 9, 1990.

⁹Taff, "Court bars Pennsylvania Bell from offering caller ID," Network World, June 4, 1990.

The effect of caller identification technology on Birch Scarborough will most likely be minimal. Until legal and regulatory issues surrounding the technology are resolved, its implementation will be slow.

IV. Conclusion

Several of the new telephone service technologies such as call waiting, call forwarding, voice mail and caller identification affect Birch Scarborough's interviewing procedures. However, their effect is small and is positive in some cases. Many of the new services have low penetration rates, are primarily used by business users, or have little affect at all.

Birch Scarborough constantly monitors changes in the telephone industry with respect to the possible effects on our ability to reach respondents. While we view the changes to date as having only a marginal effect on our response rates, our consistent efforts to increase response through other means have offset any negative effects.