

# Computer-Assisted Dialing: What will it do for you?

*Dan J. Bernard, Marketing Systems Group (MSG)*

## 1. Background

Computer-Assisted dialing has been an increasingly integral part of many market research organizations telephone data collection operations over the last 10 years. While being adopted as a means of improving interviewer productivity, an unexpected by-product has been quality improvement. This paper will address the economic and quality issues surrounding the use of computer-assisted dialing – showing the benefits to social research.

With the adoption of computer-assisted dialing by organizations such as NORC and other large social research agencies, it is rapidly becoming accepted in social science research circles.

## 2. Overview

While the goal of this paper is to review productivity and quality improvements that can be realized by computer-assisted dialing, it will likely be useful to review how a computer-assisted dialer works. Not so much that there are operational misconceptions – it is common that seasoned researchers are quite unfamiliar with how a dialer really works. What it sounds like. How it interfaces with a CATI system. What controls there are to eliminate respondent abuse.

## 3. Sample Management

Most organizations have determined that it is best to leave the sample management to the CATI system or special front end software developed to do so. Many telemarketing dialers have built-in scripting and number management capabilities, but generally these capabilities are woefully inadequate for the survey researcher's requirements.

Generally, a telephone number or group of telephone numbers is sent to the dialer for dialing. Once dialed, a message is sent back to the CATI or sample management system from the dialer reporting the results of the dialing. In the case of a non-connect such as a non-working number or busy signal, the CATI system will disposition the sample record as such and send a new number to be dialed. All of this is transparent to the interviewer – therefore the dialing of a second number occurs very rapidly – minimizing unproductive time between dialings. When the dialer detects a person answering the phone, the voice is connected to the interviewer and a message is sent to the CATI system to display the introductory paragraph.

The measured accuracy of the automated disposition of the sample is considered a significant feature by one large agency.

## 4. Methods of Dialing

The different terms used for computer-assisted dialing can be very confusing. Terms frequently employed are: auto, power, predictive, adaptive, super, progressive, preview, etc. There are three fundamental methods of automated or machine-based dialing:

- **Auto** – telephone number is dialed by a dumb modem
- **Power** – dialer can detect and disposition certain dialing results such as non-working numbers
- **Predictive** – dials more than one number per interviewer using sophisticated statistical algorithms and number knowledge base to deliver a live respondent more quickly
- **Preview** – is an option utilized in auto and power dialing which allows the interviewer to review data from the sample record before talking with the respondent.
- **Hybrid** – is an option combining preview and predictive refined by NORC, Pulse Train Ltd. and MSG and named HATI<sup>sm</sup>. Hybrid-Assisted Telephone Interviewing. It combines the best of both worlds – delivering the high response rates of preview dialing with the efficiency of predictive dialing.

### 4.1 Auto Dialer

- Dials one telephone number under interviewer control via modem or black box
- Accurate dialing of telephone number
- Dials number much more quickly than manual dialing
- Approximate productivity gains of 3 to 5%
- No abandonment of calls
- No intelligent sensing of dialing result
- No ability to dial “ahead” of the interviewer

## **4.2 Power Dialer**

- Dials one telephone number per interviewer - can be under interviewer control or paced by the programmer
- Builds on all auto-dialer features
- Can automatically detect fax/modem, ring no-answer, non-working, busy signal. Programmatically exchanges messages with CATI system to disposition old number and retrieve new number for dialing
- Conservative productivity gains of 24-50%
- Less tangible benefits of improved working environment
- No abandonment of calls
- No ability to dial “ahead” of the interviewer

### **4.3.1 Performance Gains - Power**

- 1000 23-minute; 94% incidence; Completes per Hour 19% higher
- 950 23-minute; 6.5% incidence; CPH 53% higher
- 2000 10-minute; 95% incidence; CPH 68% higher
- Qualify and transfer to IVR; CPH 100% higher
- Analysis of 1,700,000 dialings: 31 seconds to connect Vs. 56 seconds manually; 43% Reduction
- Large company yields overall 24% increase
- 22 minute; 8% incidence; CPH 96% higher

## **4.4 Predictive Dialer**

- Dials telephone numbers in a ratio greater than 1:1
- Builds on all power dialer features
- Uses sophisticated statistical algorithms to calculate quantity of telephone numbers to dial
- Allows adjustment of call abandonment percentage
- Conservative productivity gains of 25% over power dialing

- Can contribute to respondent abuse via call abandonment if not properly managed. A research sensitive dialer will allow control of abandonment to be held to one in 10,000 dialings.

#### **4.4.1 Performance Gains - Predictive**

- Side-by-side comparisons show 25-50% improvement over power dialing with less than 5% abandonment
- With higher abandonment rates- claims run to 300%

#### **4.5 Hybrid Dialing**

- Combines predictive dialing with preview dialing
- If a number has never been connected to a potential respondent, it will be dialed predictively.
- If the number has been previously connected, it will be dialed in preview mode.
- This blended solution maintains the high response rates of preview dialing, but introduces the efficiencies of predictive dialing.

#### **4.5.1 Performance Gains – Hybrid Dialing**

- Productivity improvements up to 25%

### **5. What else can computer assisted dialing do for you?**

#### **5.1 Can replace need for PBX:**

All call centers need to connect to the public switched telephone network. Calls must be silently monitored for quality assurance purposes. Supervisors must have the ability join a call as required. Some operations require the ability to accept inbound calls.

All these features generally associated with a PBX can be performed by many automated dialers, therefore eliminating the need for a PBX and thus saving capital investment on six-figure PBX's.

## **5.2 The perfect vehicle for call center decentralization:**

- Simple integration with VoIP PBX allowing remote interviewers to connect via VoIP back to a central office and then out to the PSTN (public switched telephone network).
- Improved Quality Control
  - Audio recording introduces robust QC toolset.
  - Live monitoring can originate in any location
  - Exhaustive call data is available

## **5.3 Optional modules provide additional capabilities:**

- Remote Audio Monitoring – Clients, project staff or quality control staff can dial in from remote locations to monitor interviewers.
- Digital voice capture of open ends – allows for more exhaustive probing by interviewer. When the respondent realizes interviewers are writing verbatim responses, they tend to self-edit or abbreviate responses. When the computer is recording the response for later coding - a richer, more complete open-end response is obtained.
- Whole interview recording – The ability to audio record an interview can serve many purposes. On large agency sees it as significant tool in its quality control and training efforts.
  - Coaching of the interviewer
  - Dispute resolution
  - Questionnaire development.
  - Integrate with IVR (Interactive Voice Response)
  - Automated inbound/outbound switching, Call blending, Automated Call Distribution to Spanish speaking interviewers, for example.

## **5.4 Interviewer & Productivity Management**

- Enforces standardized call rules
- Eliminates dialing errors
- Faster dialing means greater throughput
- Dialing modes can be assigned on a study by study and/or station basis
- Real-time graphic and tabular reporting of interviewer productivity

- Full silent monitoring capabilities – both local and remote.

## **5.5 Facilities Management**

- Real-time and historical production reporting, by interviewer, study, shift, site, client, and date
- Scheduling module provides information on number of interviewers and supervisors, and those briefed
- Local and remote monitoring capabilities
- Real-time analyses and reporting of trouble on telephone lines

## **6. How Dialers Interface with CATI**

- For example, the MSG system is a 20 slot, industrial strength Intel-PC with special telephony hardware by Dialogic
- E1, T1, ISDN, or CO lines plug into boards inserted into backplane
- Lines from interviewing stations are punched onto demarc block and cross connected to lines going to station boards
- Dialer is connected to CATI server via serial connection or Ethernet using TCP/IP
- CATI system manages sample file

## **7. What is Heard by the Interviewer?**

- Power Mode:
  - Some systems can be set to pass call progress tones to the interviewer or just the respondent voice on connects.
  - The interviewer will usually hear 'ello'
  - The call will sound like a normal call to the respondent
- Predictive Mode:
  - No call progress tones can be heard
  - The interviewer will usually hear some part of the 'hello'
  - The call should sound like a normal call to the respondent unless the call is abandoned

## 8. Research Vs. Telemarketing

- Research has a limited sample frame. The telemarketing supply is comparatively unlimited.
- A primary goal of research is a high response rate
- Researchers cannot afford respondent abuse - on a project OR industry basis
- Predictive dialing works best with more people, researchers often have 5 to 10 people working on a given project

## 9. What is Research doing Different

- We know more about a given telephone number than anyone in the country
- We pay attention to call history
- We will predict the probability of connection rather than predict when an “agent” will be finished
- We are offering predictive dialing with “near zero” abandonment
- Predicting probability of connection works with just a few interviewers
- We can dial numbers in fractional ratios, e.g. 1:1.7 rather than 1:2 or 1:3 like some telemarketing systems which forces high abandonment rates
- Traditional predictive is an optional setting – as is *research*Predictive<sup>SM</sup>
- We have the flexibility to do it many ways: power, probability of connection, traditional predictive
- Use of automated answering machine detection is discouraged. Studies have shown that some 20% of true respondent contacts are misclassified as answering machines.

## 10. Beyond Productivity – The Improved Environment

Empirically, it is found that new interviewers are successful more quickly when using computer-assisted dialing. Less productive interviewers find it easier to keep up with more productive interviewers. As such, some organizations have concluded that computer-assisted dialing:

- Improves interviewer retention by helping them be successful more quickly
- Makes their job easier, therefore more desirable
- Provides a discipline that isn't innate

- Facilitates improved job satisfaction
- VP large agency:
  - “I much more enjoy running the phone shop.”
  - “The tedious part of the job is gone.”

Other tangential benefits of autodialing:

- Consistent application of dialing technique.
- Automatic and accurate call result disposition.
- Gives the supervisor time to do things other than push for productivity

Overall, these factors help improve project quality.

## **11. Social Research is Different**

- It’s often heard that social research is different – especially when it comes to length of interview – therefore negating the impact of autodialing. Analysis of 1.7 million dialings shows that 70% of interviews are completed on the first connect. This allows social research to benefit from the gains of computer-assisted dialing.
- Social research call rules often call for double and triple the number of dialings done by market research. This actually gives the advantage to social research of being able to make use of computer-assisted dialing. The more dialing of telephone numbers you do, the more productive it can be.
- The adoption of predictive dialing by NORC in their 500 seat call center has, in one fell swoop, legitimized the use of computer-assisted dialers in social research. Two other major social science research organizations in the States are testing and considering computer-assisted dialing.

## **12. Are Dialers Expensive?**

- They are one of the few things in this industry that can demonstrate a return on investment in under a year.
- Are you having trouble finding interviewers?
- Would you like to improve project quality?

**Contact Information:**

Dan J. Bernard  
Vice President  
Marketing Systems Group  
5000 Central Park Drive, Suite 204  
Lincoln, NE 68504 USA  
+1-402-489-0000

[dbernard@m-s-g.com](mailto:dbernard@m-s-g.com)

[www.pro-t-s.com](http://www.pro-t-s.com)