



Tackling abandoned and silent calls

***Response by Callmedia to Ofcom Consultation
on the Revised Statement of Policy on the
Persistent Misuse of an Electronic
Communications Network or Service***

July 2010

INTRODUCTION

Callmedia provides software and services to the contact centre industry for inbound, outbound, blended and multimedia operations. *Callmedia* has always provided outbound contact centre solutions which are designed not to breach the best available code of practice in the region in which the contact centre is being deployed.

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1 QUESTION 1

Do you agree that Ofcom should limit the number of times a company can call an answer machine without guaranteeing the presence of a live operator to once every 24 hours?

Callmedia holds the view that silent calls are unacceptable and that any technology that systematically generates silent calls, such as AMD, should not be used because of the nuisance and anxiety features that it creates. Limiting each individual company to one silent call every 24 hours still embraces the situation where individuals can receive multiple silent calls during a weekend, entirely legitimately.

However, if limited use of AMD is to be permitted then provided that the working is as appears in section 3.110 rather than in this question (which does not mention AMD, simply mentions calling an answering machine) then *Callmedia* would support this option as a better situation than currently exists.

2 QUESTION 2

Do you agree with Ofcom that a two month implementation period (from publication of Ofcom's revised statement) would be an appropriate length of time for industry stakeholders to adopt any changes to comply with the proposed 24 hour policy?

Callmedia believes that 2 months should be sufficient to enable organisations to make this change if they are using AMD.

3 QUESTION 3

Has Ofcom provided sufficient clarity on how the abandoned call rate is to be calculated?

Given the definitions provided in sections 4.5 to 4.8 and the important recognition of section 4.17, *Callmedia* believes that Ofcom **has** given sufficient clarity on how the abandoned call rate is to be calculated.

However, *Callmedia* believes that there are errors in the examples given in the case of both AMD and no AMD and these will be described in the responses to questions 4 and 6.

In addition, *Callmedia* does not agree with section 4.10 which states

4.10 "A <i>reasoned estimate of AMD false positives</i> is an estimate of the number of AMD false positives as a proportion of total answer machine calls"
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The AMD false positives should be calculated as a proportion of the total number of live calls, not answering machines. A false positive is a function of a live call (by definition, if the call is answered by an answering machine, it cannot be a false positive). A simple example illustrates this:

Let us say that for every 100 live calls, 5% are mis-classified as answering machines by the AMD technology. Thus, in a list of 1,000 calls, if 20% are live, 40% answering machine and 40% no-answer, the number of false-positives will be 5% of the total number of live calls which is 5% of 200, being 10.

If the balance of answer machines to no-answer calls changes to 50% answering machines and only 30% no-answers with the live-call rate remaining static, the number of false positives does not change.

Please see appendix 2 for a demonstration of how this can be done.

4 QUESTION 4

Do you agree with the factors set out by Ofcom for determining a reasoned estimate of AMD false positives in an ACS user's abandoned call rate?

Callmedia supports Ofcom's view that live sampling is the only way that the rate of false positives can be accurately determined in real-world situations. However, for reasons already expressed, this needs to be measured as a percentage of live calls, not of answering machines.

In section 4.48 the document states:

"Sampling should be robust enough to give high confidence levels across the population being tested."

We feel “high confidence level” is too vague a term and that Ofcom should clarify in percentage terms the tolerance they expect users to establish. For example, a tolerance level generally accepted as reasonable is 95%, or two standard deviations from the mean.

5 QUESTION 5

Has Ofcom provided sufficient clarity on how AMD users should calculate an abandoned call rate that includes a reasoned estimate of AMD false positives?

The example calculation set out in section 4.54 takes as a basis for its reasoned estimate of false positives that the false positive rate is proportional to the number of answering machines detected where it should be measured as a proportion of live calls.

It also fails to take into consideration that the abandoned calls may also include some false negatives (i.e. an answering machine classified erroneously as a live caller).

Callmedia believes that the text of the statement provides enough clarity to enable users of predictive dialling equipment to work out the principals of how their abandoned call rate should be calculated, including a reasoned estimate of AMD false positives, the example provided does not give enough detail.

In this response, we would like to recommend the approach endorsed by the Direct Marketing Association (DMA) which sets out the steps to calculate the abandoned call rate correctly. It is included as Appendix 2 in our submission, and is available from the UK DMA Website at <http://www.dma.org.uk/sectors/cct-faq.asp>

6 QUESTION 6

Has Ofcom provided sufficient clarity on how non-AMD users should calculate an abandoned call rate that includes an estimate of abandoned calls picked up by answer machines?

Ofcom has got the broad principle correct, but there are errors in the way that the principle is applied.

Firstly, the assumption that the proportion of answering machines within the abandoned call sample is the same as the proportion of answering machines connected to live agents is correct

However, in the example given in 4.66, there is an error in how the reasoned estimates are calculated. The error is in arriving at the reasoned estimate of calls abandoned to answering machines. The example in the document takes as its estimate of the proportion of abandoned calls that would be answered by answering machines the proportion of **all** calls made that are answered by an answering machine. However, calls that are not connected are **never** abandoned. Thus, the correct proportion of answering machines to be used would be the proportion of answering machines in all **connected** calls.

The example below takes as its basis the same scenario as outlined in the consultation document.

In the example given:

- 392 calls are live calls connected to a live operator
- 8 calls are abandoned (dropped by the dialler – including calls answered by answering machines)
- 400 are connected to a live operator and classified as answering machines
- 200 calls are unconnected.

The number of answering machines as a percentage of all connected calls is $400 / (392 + 400) = 50.50\%$.

Thus, of the 8 calls that are *dropped* by the dialler, 50.50% of them will have been answering machines. Thus the reasoned estimate of calls abandoned to answering machines is 4.040404, meaning that the number of *abandoned calls answered by live individuals* is 3.9595.

Thus the abandoned call rate in this scenario is:

$$\frac{(8 - 4.0404)(x)}{(8 - 4.0404)(x) + 392(y)} * \frac{100}{1} = 1.00\%$$

A full algebraic treatment of this approach can be found in both appendixes 1 and 2.

7 QUESTION 7

Do you agree that Ofcom should not amend the existing two second policy as set out in the 2009 Amendment from “start of salutation” to “end of salutation”?

Callmedia agrees that the current measurement should remain.

8 QUESTION 8

Do you agree with Ofcom’s policy proposal that companies provide a geographic contact number (01,02 or 03) in addition to a freephone (080) number in the information message provided in the event of an abandoned call?

Callmedia agrees that this approach is the best compromise to ensure that recipients of unwelcome calls on mobile phones have a lower cost route to contact the company responsible.

9 QUESTION 9

Has Ofcom provided sufficient clarity on what constitutes a “Campaign”?

Yes

**10 APPENDIX 1 – CALLMEDIA’S RECOMMENDATION TO ITS
CUSTOMERS ON CALCULATING THE ABANDONED CALL RATE
WHILE NOT USING AMD**



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Calculating Abandoned Calls in the light of the Ofcom 2008 Statement

Status	Discussion Paper
Project	Abandoned Call Calculations where AMD is not in use
Date	15 th April 2009 – Updated 18 th August 2009
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INTRODUCTION

This document has been produced for operators of Predictive Dialling equipment to clarify the calculations required when determining the abandoned call rate as required by Ofcom's *Statement of Policy for Persistent Misuse*, published in September 2008.

It is necessary because the presence of answering machines has an impact on the genuine abandoned call rate: some calls dropped by a predictive dialler will have actually been answered by an answering machine, and some calls classified as answering machines by equipment will actually have been live calls. The reports and statistical output of most predictive diallers do not factor this in, and it is therefore necessary to be able to demonstrate the true abandoned call rate from those figures that are available from the dialler.

BACKGROUND

Predictive dialling equipment can work in a number of different ways to deliver increased productivity to an outbound contact centre:

Overdialling

The basic premise of the predictive dialler is that more calls are made than there are currently agents able to receive calls, since not all calls that are made are answered by live individuals. The predictive dialler's pacing algorithm (sometimes called a pacing engine) monitors the calling statistics in real time and combining the live calling information with parameters configured by the call centre campaign managers, manages the number of calls made at any given time.

While delivering a significant performance boost to contact centres, this has the side effect of generating calls to live individuals for which there is no agent available to take the call. When this happens, the dialler has to **abandon** or **drop** the call, playing the live call recipient an **information message** providing certain information, such as on whose behalf the call had been made, and what they can do in order to prevent any further calls being made to their number.

In March 2006, Ofcom introduced a set of procedures that outbound contact centres operating predictive dialling equipment should follow in order to avoid being found guilty of *Persistent Misuse of a Telecommunications Network* which included the requirement to play the information message in the event that a call is abandoned, and imposed a limit on the number of abandoned calls that can be made.

Answer Machine Detection

In addition to overdialling another technology is used by some predictive dialler manufacturers and operators known as Answer Machine Detection (AMD). This technology analyses the call to determine if it has been answered by a live individual or by an answering machine. If it believes that it has been answered by an answering machine, the predictive dialler will typically cut the call off. If it believes that it has been answered by a live individual, then provided there is an agent free to handle the call, it is connected to an agent. If not, the call is abandoned and an information message played.

AMD is not 100% accurate. In some circumstances it will falsely classify an answering machine as a live individual (a *false negative*) and in other circumstances it will classify a live individual as an answering machine (a *false positive*). *False positives* have a detrimental effect on the public because they have the effect of generating a *silent call*.

In the case of the *false negative*, the same issue applies as with over dialling – that some of the calls that are abandoned will actually have been answered by answering machines. However, in this case it is a statistically much less significant number.

For these reasons, Callmedia does not recommend or support the use of AMD and this document only focuses on the calculations to be used when AMD is **not** in use.

Regulation

In September 2008, Ofcom introduced a revised version of the *Statement of Policy on Persistent Misuse* which covered a number of issues:

- It required contact centres using AMD to determine a *reasoned estimate* of false positives and to include them in their calculations of abandoned calls
- It provided a precise definition of an abandoned call
- It provided a formula to be used by contact centres to calculate their abandoned call rate.

Initially there was some confusion over the formula and its definitions, but Ofcom clarified their position during an open meeting organised by the Telephone Preference Service (TPS) on March 31st 2009.

This document seeks to provide clear guidance for contact centre operators not using AMD on how to apply the procedures documented in the September 2008 statement and clarified during the March presentation.

DEFINITIONS

The September 2008 Statement defines an abandoned call in section 4.8 as follows:

An abandoned call is where a connection is established but terminated by its originator in circumstances where the call is answered by a live individual. A call may also be regarded as abandoned even if an information message is played (although in those circumstances, it will not be a silent call - see below). A call may also be terminated after a predetermined period, say 15 seconds, because it has not been answered, perhaps because no one is there to take it. Within industry terminology and for the purposes of this statement such calls are not classified as 'abandoned calls'. Abandoned calls are likely to cause unnecessary annoyance, inconvenience or anxiety to consumers.

Thus it is clear that an abandoned call is one which is answered by a **live individual**, irrespective of how it came about from the dialler. Thus for the purposes of complying with the Ofcom statement, a call is considered to be abandoned whether it was actively disconnected by the dialler because there were no agents free to handle the call, or if it was inadvertently disconnected by the AMD technology as a result of a *false positive*.

As to the formula that should be applied to calculate the abandoned call rate, Ofcom provided the following in section 4.16.1:

the 'abandoned call' rate shall be no more than three per cent of 'live calls', calculated per campaign¹⁴ (i.e. across call centres) or per call centre (i.e. across campaigns) over any 24 hour period¹⁵, and shall include a reasoned estimate¹⁶ of Answer Machine Detection (AMD) false positives;

and footnote 15 states the formula mathematically as:

The 'abandoned call' rate shall be calculated according to the following formula: $\frac{\text{abandoned calls (x)}}{\text{abandoned calls (x) + calls passed to live operator (y)}} \times 100/1$

There was some confusion in the contact centre community in that the formula given in the footnote and the text given in the paragraph appear to contradict each other. At the March 2009 meeting, Ofcom clarified that the phrase "calls passed to live operator(y)" referred to in the denominator only refers to *calls answered by a live individual*.

THE IMPLICATIONS FOR OUTBOUND CONTACT CENTRE OPERATORS

This presents a statistical problem for operators of predictive dialling equipment not using AMD cannot be strictly accurate about the number of abandoned calls to **live** individuals – they have to calculate this based on statistical probabilities.

The Ofcom statement specifically states that operators using AMD should factor in a reasoned estimate of false positives. However, for contact centre operators **not** using AMD, the arrival of an estimate of the number of abandoned calls as defined in section 4.8 is not discussed. This document attempts to provide an explanation of the issues and a formula that can be used by contact centres to determine their live abandoned call rate as required in section 4.16.1 of the statement.

ABANDONED CALLS WHEN AMD IS NOT IN USE

When AMD is not in use, there is no danger of abandoned calls being generated by false positives. Although silent calls can be generated accidentally if an agent manually disconnects a phone, or there is some equipment failure, this is rare and can be handled by good management and working practices. Thus, the only significant cause of abandoned calls is calls disconnected by the predictive dialler due to there not being an agent available to handle the call.

A predictive dialler that is not using AMD has to make its *decision* as to whether to abandon a call or connect it to an agent for all calls that are connected (i.e. those that are answered by an individual and for those that are answered by an answering machine). In other words, the calls that the dialler's pacing engine **has to abandon** will be made up of calls to live individuals (where a nuisance will be caused) **and** calls answered by machines (where no nuisance is caused).

In order to arrive at an estimate of those calls disconnected by the dialler that count as an abandoned call for the purposes of complying with the Ofcom statement, it is necessary to estimate the proportion of calls the dialler disconnected that were actually live. We will make the assumption that it will be the same as the proportion of live calls that are connected to agents, but will first cover how safe that assumption is.

CONFIDENCE IN THE ANSWERING MACHINE PROPORTION

The number of calls "dropped" by the dialler that were actually connected to answering machines is being estimated by assuming the same proportion of answering machines exist in that sample of calls that is dropped by the dialler as in the sample that are connected to live agents. Clearly this is an important part of this formula and it is therefore important to establish that this assumption is valid. Of course, it is theoretically possible to have a varying proportion of answering machines within the two different "samples", but this is statistically unlikely and the likelihood of the proportion being the same in both samples increases with the sample size.

Let us take as an example, the case where 40% of connected calls are answered by answering machines, as measured by those calls transferred to agents. Figure 1 shows a representation of the probability that the proportion of answering machines within those calls dropped by the dialler.

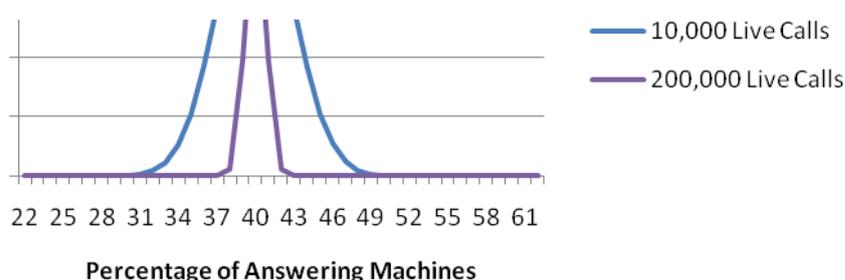


Figure 1 – The Probability Distribution showing range of probabilities of answering machines to be detected within the dropped call sample for both 10,000 live calls and 200,000 live calls

As can be seen from the graph, the larger the sample, the greater the confidence that the proportion of answering machines within the dropped call sample will be the same as the proportion in the sample of calls transferred to agents. (The spread of probabilities is wider around the 40% mark with the smaller sample).

Figure 2 shows more clearly how this confidence varies with sample size. It measures the probability that if 40% of the calls transferred to agents were answering machines, then no more than 43% of the calls dropped were answering machines.

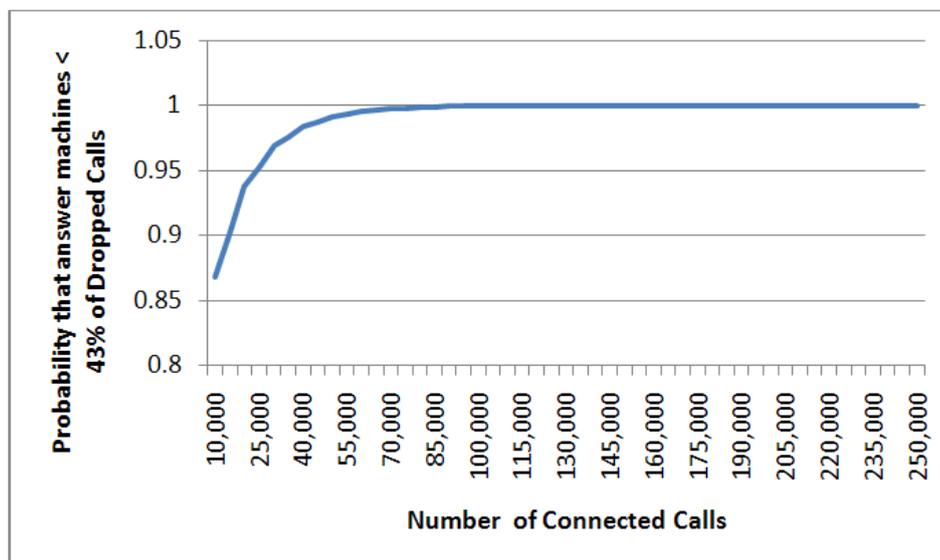


Figure 2 – Probability that answering machine proportion within dropped calls does not exceed 43%

It is clear from this data that it will be extremely rare that the proportion differs significantly from the connected call sample within the dropped call sample. What's more any extreme rare events will be cancelled out by similar rare events where the proportion will be lower. Thus for the numbers of calls made by a typical predictive dialler, the assumption that the proportions of calls are equivalent within the connected and dropped calls, is safe.

CALCULATING THE NUMBER OF ABANDONED CALLS

We now need to show the formula we need to calculate in order to determine how we can determine the Live abandoned call rate required by Ofcom, from the figures that we can simply obtain from the predictive dialler statistics.

In order to state a formula, we must first make some definitions:

Symbol	Definition	Obtainable directly from dialler
D_L	Calls dropped by the predictive dialler that were answered by live individuals	No
D_M	Calls dropped by the predictive dialler that were answered by answering machines	No
D	Calls dropped by the predictive dialler – note that $D = D_L + D_M$	Yes
A_L	Call answered by a live individual and passed to an agent	Yes
A_M	Call answered by an answering machine and passed to an agent	Yes
A	All calls connected to an agent – note that $A = A_L + A_M$	Yes
L	All calls that were answered by live individuals – note that $L = D_L + A_L$	No
R	The abandoned call rate – the proportion of calls answered by live individuals which are disconnected by the dialler	No

It is important to note that the key factor for us to calculate is R - the abandoned call rate. This is the figure which must not exceed 0.03, or 3% in order to comply with the Ofcom *Statement*.

The third column in the table gives an indication as to whether this is a figure that can be counted directly from the predictive dialler's statistics (**counted** rather than statistically **calculated**). Clearly, the key information that we need in

able to determine the abandoned call rate is **not** available directly from any predictive dialler generated counts – it is going to have to be calculated.

We need to be able to measure R, the abandoned call rate.

This, from paragraph 4.16.1, is calculated as:

$$R = \frac{D_L}{L} \quad (1)$$

We have seen that neither D_L nor L can be measured by the dialler directly, but they can be estimated accurately.

Firstly, we need to determine D_L , the number of dropped calls that were answered by live individuals – what Ofcom calls *abandoned calls*.

We have determined that it is safe to assume that the proportion of dropped calls that are live will be the same as the proportion of calls transferred to agents that are live. This proportion, P_L , can be calculated as:

$$P_L = \frac{A_L}{A_L + A_M} \quad (2)$$

So D_L , the live abandoned calls, can be calculated as:

$$D_L = P_L \times D \quad (3)$$

Substituting P_L in the above equation from line (2), we can write that as:

$$D_L = \frac{A_L}{A_L + A_M} \times D \quad (4)$$

We also know, from our definition of L in the table, that the live calls total is made up of live calls connected to agents and live calls abandoned by the dialler – or $L = D_L + A_L$.

So, substituting this statement of L and our statement of D_L from equation (4), we can re-write our function (1) as:

$$R = \frac{D_L}{A_L + D_L} = \frac{\frac{A_L}{A_L + A_M} \times D}{A_L + \frac{A_L}{A_L + A_M} \times D} \quad (5)$$

Although technically correct, this formula is complex and difficult to work with. Fortunately, it can be algebraically simplified into something much more workable.

We will simplify equation (5) by multiplying the top and the bottom of the fraction by $\frac{A_L + A_M}{A_L}$. We then get:

$$R = \frac{\left(\frac{A_L + A_M}{A_L}\right) \times \left(\frac{A_L}{A_L + A_M}\right) \times D}{\left(\frac{A_L + A_M}{A_L}\right) \times A_L + \left(\frac{A_L + A_M}{A_L}\right) \times \left(\frac{A_L}{A_L + A_M}\right) \times D} \quad (6)$$

Which simplifies to:

$$R = \frac{D}{A_L + A_M + D} \quad (7)$$

All the required numbers for this formula are directly available from the dialler's statistics.

11 APPENDIX 2 – THE UK DMA’S GUIDANCE ON CALCULATING ABANDONED CALL RATES
