Effectiveness of actions to reduce harm from nuisance calls in Scotland

As part of A Response to Scotland's Nuisance Calls Commission – An Action Plan, the Scottish Government commissioned this research to analyse the impact of actions set out there and to examine the outcomes of past interventions. This was carried out by Antelope Consulting.

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January 2018

Dedication

This report is dedicated to the memory of our good colleague and friend Brian Smith of Angus Trading Standards. He fought valiantly against nuisance calls in Angus, and supported the commissioning and carrying out of this study, but left us far too soon.

Acknowledgements

Too many people have helped with producing this report to thank everyone individually. Members of staff at both ICO and Ofcom were generous with their time, and some network operators in the Nuisance Calls Memorandum of Understanding group also made significant inputs. In Scotland, Trading Standards and Police staff were particularly supportive. Independent experts also made valuable comments on the Working Paper that underlies part of this report.

We thank all these and many others, not forgetting the Scottish Government who commissioned the work. Responsibility for views expressed, errors and omissions remains with us. We will be pleased to hear from any interested reader.

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Contents

Abbreviations

ASA	Advertising Standards Authority
BT	British Telecommunications
CAS	Citizens Advice Scotland
CLI	Calling Line Identity (also Caller ID, caller identity)
CMC	Claims Management Company
CMRU	Claims Management Regulation Unit
CRTC	Canadian Radio-television and Telecommunications Commission
CSEW	Crime Survey of England and Wales
DMA	Direct Marketing Association
FCA	Financial Conduct Authority
FCC	Federal Communications Commission
FTC	Federal Trade Commission *or* Fair Telecoms Campaign
GDPR	General Data Protection Regulation
ICO	Information Commissioner's Office
MOU	Memorandum of Understanding
MVNO	Mobile Virtual Network Operator
NICC	NICC Standards Ltd, the UK network interoperability standards forum
Ofcom	Office of Communications
Ofgem	Office of Gas and Electricity Markets
OFT	Office of Fair Trading
ONS	Office for National Statistics
PABX	Private Automatic Branch eXchange
PECR	Privacy and Electronic Communications Regulations
PPI	Payment Protection Insurance
PSA	Phone-paid Services Authority
SCDI	Scottish Council for Development and Industry
SG	Scottish Government
TPS	Telephone Preference Service
TSS	Trading Standards Scotland
UK	United Kingdom
US	United States

Note: trueCall has kindly made available online most of the references in this report, at http://www.truecall.co.uk/Articles.asp?ID=334.

Executive summary

On 11 September 2017, the Scottish Nuisance Calls Commission published its Action Plan. One planned action was:

> **Measuring impact to make a difference**
> Volumes of nuisance calls have remained persistently high over the past few years. The Commission identified a need to conduct an in-depth review of previous actions to ensure that future initiatives, at both a Scottish and UK level, are evidence-based and have real potential to make a difference.
> We have commissioned research to analyse the impact of the actions set out here and to examine the outcomes of past interventions. This will be shared with the UK Government, regulators, enforcement agencies and consumer groups so that future work is better targeted and more effective.

This report is the main deliverable from that action. It has four main chapters:

2. **The situation in the UK**, which looks at actions taken in the last few years in the UK to combat nuisance calls, and, drawing on available data, broadly assesses their effectiveness. Actions are grouped by their primary aim:
    a. To reduce the level of nuisance calling targeting UK consumers.
    b. To prevent nuisance calls targeting UK consumers from reaching them.
    c. To minimise harm caused by nuisance calls which do reach UK consumers.

3. **The situation in Scotland**, which looks at how the situation in Scotland differs from that in the rest of the UK, and broadly assesses the likely effectiveness of actions in the Nuisance Call Action Plan. We carry out detailed analyses of data from Ofcom surveys and trueCall call blockers to compare the levels and kinds of nuisance calls reaching Scottish consumers with those reaching consumers in the rest of the UK, and try to explain the differences that we find. We also identify Scottish organisational arrangements which make it easier (or harder) to combat nuisance calls.

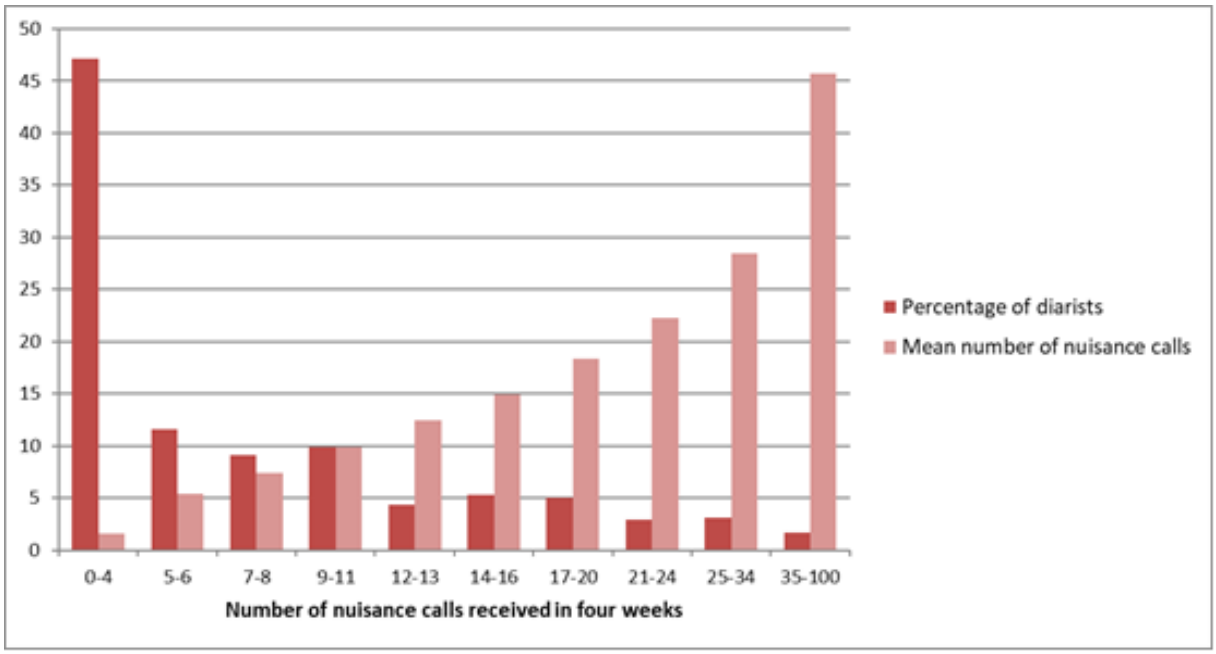
4. **Future monitoring of effectiveness of actions,** which brings together the data sources already identified and suggests others, to guide the Scottish Government in monitoring the outcomes of its Action Plan.

5. **Conclusions and recommendations**, which highlights our main findings and recommends additional actions to reduce harm from nuisance calls in Scotland, as well as measurements to enable informed management of all these actions.

The level of nuisance calling into the UK shows no sign of abating in the near future. However, there are now promising new initiatives by some major network operators to suppress nuisance calls within their networks, and also new mobile call management apps, as well as wider availability of call blocking devices. Technical advances of this kind, taken together, could bring a step change in harm reduction from nuisance calls.

Consumer awareness of, and willingness to take up, available protections is crucial to their effectiveness, but both these are relatively low, so actions to support

consumer awareness should have high priority. Another approach worth considering is switching network call suppression *on* by default, at least for certain groups of customers. Nuisance call incidence is very uneven – our analysis of Ofcom research shows that almost half of landline users are barely troubled by nuisance calls but around 8% of landline users receive 30% of all nuisance calls.



The nuisance calls which cause most harm are scam calls. Reliable data on these are lacking, but drawing on various studies of scams we estimate that two-thirds of the £3bn annual harm from scam calls falls on a mere 2% of worst-affected consumers. These are the sort of people whom Trading Standards (especially in Scotland) have been at most pains to provide with call blockers, which are a very effective solution for the limited number of victims who can be reached.

Telephone scams are only one type of fraud, a growing area of criminal activity, to which almost everyone is exposed but some people are especially vulnerable. The Scottish Action Plan includes working on a new Scams Prevention Strategy, which we agree is the right route for protecting people from scams via the phone or any other channel. Often, people who are vulnerable to scams are also vulnerable in other respects, and Scottish systems of care and support for those most at risk, with inter-agency co-operation, could achieve much, if adequately funded.

Relevant regulation has advanced somewhat in recent years, but the two regulators mainly concerned with enforcement against nuisance calls, ICO and Ofcom, are resourced to act against the perpetrators of only a small proportion of offending calls. Regulatory effectiveness could be improved by:

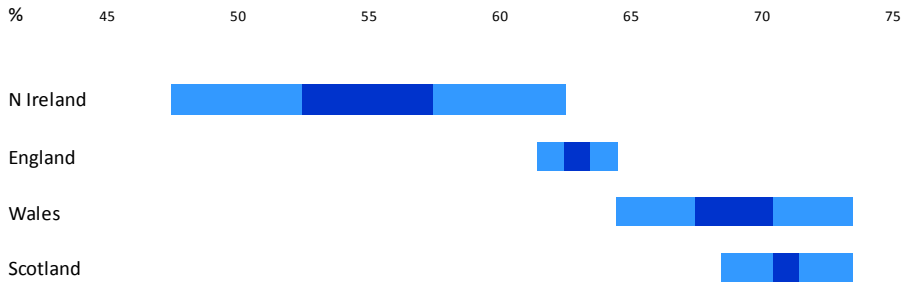
- Streamlining and improving procedures in various respects, aiming to raise the speed and likelihood of potential offenders being pilloried or fined.
- UK implementation in 2018 of the EU General Data Protection Regulation, which may put live voice calls on the same basis as recorded voice calls.
- Greater traceability of nuisance calling through reliable CLI (which should be implemented in the UK in a few years' time); this will make it harder for miscreants to hide.

However, obscure chains of business relationships, whereby for example a company gathers sales leads on behalf of another company with which it has no direct dealings, cannot be eliminated and will continue to make enforcement in this area very challenging.

When nuisance calls relate to calls in a particular regulated sector, such as PPI or energy provision, sectoral regulators may be better placed than ICO or Ofcom to rule and enforce against inappropriate sales practices.

Our analyses of records of nuisance calling since 2013 show that Scottish consumers have been receiving more nuisance calls than consumers in England, Northern Ireland and Wales, though not consistently more than all other statistical regions of the UK.

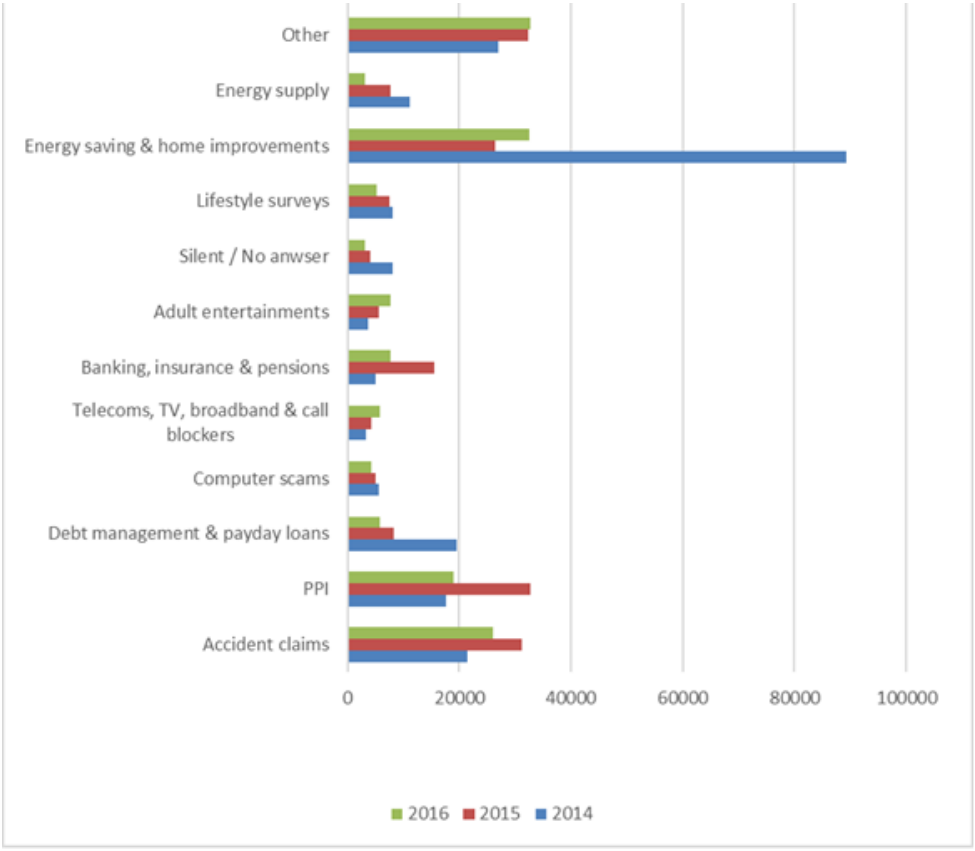
Respondents with landline nuisance calls in the previous four weeks, 2014-2017



Source is 21 Ofcom omnibus consumer issues surveys combined. Bars show 99% confidence intervals, with darker shading on more likely parts of bar.

In Scotland, nuisance calls about energy efficiency have continued at a high level (while they fell off elsewhere, as shown below, with the end of Green Deal funding), and greater discipline in this sector could make a real difference. A significant proportion of nuisance calls to Scottish consumers appears to come from Scottish call centres, which offers an opportunity for local action to raise standards.

ICO concerns by sector, 2014-2016



We see the Scottish Action Plan as an excellent initiative which could benefit all parts of the UK, especially if effectiveness findings are shared, and telcos take the opportunity to trial new approaches to nuisance call suppression in Scotland.

Our recommendations on measurements include:

- Integrated and more user-friendly systems for complaints about nuisance calls, so that complaints will better reflect consumer experience.
- Co-ordinated publication of official complaints statistics.
- Ofcom's Nuisance Calls MoU group of operators to co-operate on producing the best possible indicators of levels of nuisance calls targeting UK consumers.
- Independent verification of industry claims on the effectiveness of their call suppression techniques.
- Future research on consumers' experience of nuisance calls to cover calls to mobiles in as much detail as calls to landlines.

Additional suggested actions include:

- Routinely including home telephone service and nuisance call protection in needs reviews for people in vulnerable circumstances (for example, when leaving hospital, receiving a dementia diagnosis, or after a fall).
- Setting up a pilot whistleblowing line for Scottish call centre staff, maybe advertising it in Glasgow universities.
- Involving Scottish businesses, especially call centres, and consumers in reviewing and implementing best practices for warm calling, debt collection calls, and calls to consumers in vulnerable circumstances.

1 Introduction

This report is the main deliverable from a project commissioned by the Scottish Government[1], with the aims of:

- estimating the effectiveness of different actions to reduce the impact of nuisance calls in Scotland;
- investigating how the Scottish Government can measure and monitor the outcomes of its Scottish Nuisance Calls Action Plan published on 11 September 2017[2].

Available evidence relates mainly to the UK, so we start by looking at the effectiveness of such actions for the UK[3]. We then look at how the situation in Scotland differs from the rest of the UK, and estimate the likely effectiveness of actions in the Action Plan. We continue with a section on how the Scottish Government can measure and monitor the outcomes of the Action Plan, and close with conclusions and recommendations.

The Scottish Government Nuisance Call Commission defined its scope in relation to:

"Unwanted phone calls that attempt to promote a product, service, aim or ideal that can cause the recipient a range of harm, from annoyance to lasting detriment, including emotional or financial damage."

In this paper, we use the term "nuisance calls" to include all such unwanted calls. By "scam calls" we mean the subset of these which are made with criminal intentions. Many nuisance calls are illegal, being in breach of regulations (or in the case of scam calls, of criminal law). However, some calls comply with all the rules but may still be unwanted, and which calls are unwanted will vary for different people. A more detailed classification of these and other types of call, along with indications of their likely incidence, is provided in Annex A.

The available evidence relates mainly to nuisance calls to landlines. The report focuses on these, for this reason and also because of particular concern about nuisance calls to people living with dementia, who tend to be elderly and to have landlines rather than mobiles. But nuisance calls and texts to mobiles are a growing problem, also worthy of attention.

There have been many activities in recent years aiming at reducing the impact of nuisance calls in the UK. We discuss these activities (and potential extensions to them) under three main headings:

- Reducing the number of nuisance calls made to UK recipients.
- Preventing recipients from receiving nuisance calls made to them.
- Minimising harm caused by nuisance calls received.

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[1] The work has been commissioned by the Consumer, Competition and Regulatory Policy Unit of the Directorate for Economic Development of the Scottish Government from Antelope Consulting, with trueCall providing access to their nuisance call database and technical support on its use.

[2] This Action Plan was the outcome of the Scottish Nuisance Calls Commission, which is explained and whose papers are available at https://beta.gov.scot/groups/nuisance-calls-commission/.

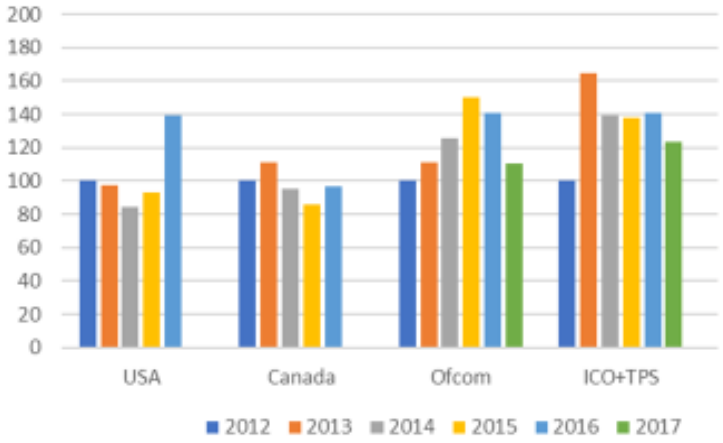
[3] This part of the report builds on an earlier working paper that was circulated among interested parties for comment.

A full study of how best to achieve any of these objectives would naturally consider the cost and difficulty of the actions concerned, as well as their effectiveness. These aspects are outside the project Terms of Reference, but occasionally creep in.

At the time of this study, in the second half of 2017, enforcers pointed to a clear fall from 2016 to 2017 in UK nuisance calls complaints, which is not reflected in North America, as illustrated in Figure 1. In its monthly enforcement update for September 2017, ICO offered these reasons for the fall:

- Successful investigations and enforcement action by the ICO preventing further breaches.
- Call blocking and SMS spam technology are playing a part in reducing the impact of unsolicited marketing. Analysis of our data shows an increase in complaints about calls that have been intercepted by call blockers.
- OFCOM revised its Persistent Misuse Policy 2016 and, since January 2017, has adopted a more strategic approach to tackle and reduce automated nuisance calls by working with telecoms providers.

Figure 1 Nuisance calls complaints trends



Note: All figures are indices based on 2012=100. Sources are published statistics from the regulators, plus informal information for 2017 from Ofcom.
Calendar years are used for UK bodies and reporting years for USA (FTC) and Canada (CRTC).
2017 figures for ICO+TPS and Ofcom are extrapolated to a full year from the first half of 2017.

If maintained, and supported by other indicators, this fall is indeed an encouraging development, which suggests that the Scottish Action Plan has good chances of success.

The project has a strong focus on evidence of effectiveness. To get the best possible picture, we have drawn on all the data sources we could find.

Figure **2** summarises key features of our most important data sources; section 4.3.1 and Annex H provide fuller accounts.

Figure 2 Key features of selected data sources

Data source	Positive features	Reasons for caution
Complaints statistics	Should directly reflect consumer perception of harm.	Figures are highly variable; complaint rate (per problem) is low, and affected by publicity, complainant fatigue and difficulty in complaining.
Ofcom landline nuisance call diary surveys	Systematic counts by representative user samples, done consistently for 4 weeks in each of 5 years.	Counts depend on diarists' recall and commitment; sample sizes limit disaggregation of findings.
Ofcom consumer issues omnibus surveys	Done 3 or 4 times per year. Covering mobiles as well as landlines.	Respondents are asked whether they received nuisance calls in the past four weeks, requiring them to recall and estimate.
trueCall unit records	Large samples, and complete automatic record for each unit providing data.	Results represent the experience of trueCall customers, rather than all landline customers.
Other surveys from e.g. Which?, BT	Supplementary evidence throwing light on special aspects.	Survey design and reporting reflect the commissioning organisation's own objectives.

2 The situation in the UK

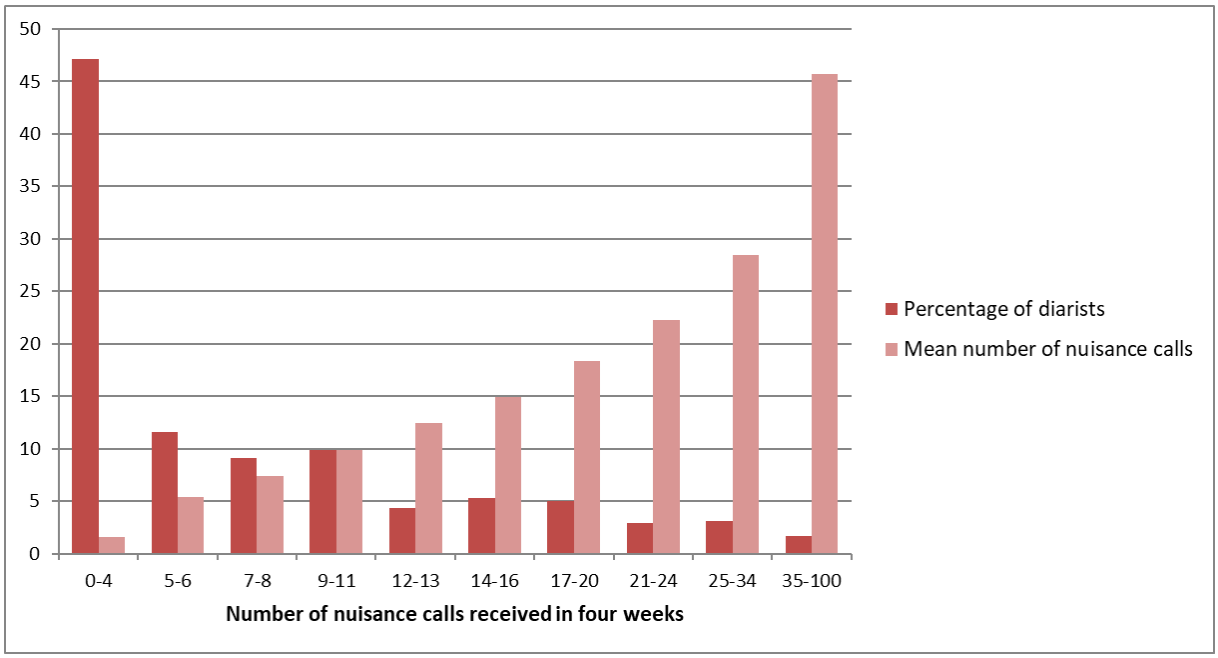
2.1 Reducing the number of nuisance calls made to UK recipients

2.1.1 The current position

As a starting point, we need baseline estimates of the level of nuisance call attempts that are made. Because of much cheaper calls and call centre technology, this level is much higher than five or more years ago. Unfortunately, an actual number is hard to pin down, though we are sure that it exceeds 5 billion. In Annex C we collect such relevant information as we have found. We use 2016 as our base year, because it is the most recent complete calendar year; it happens to predate most of the network suppression activity which we are now starting to see.

An important fact is that the distribution of nuisance calls received is very uneven across the public. We summarise in Annex C the Ofcom surveys that help to demonstrate this. Most relevant among them are the landline nuisance call surveys: starting in 2013, Ofcom has commissioned annual surveys in which around 800 diarists (a representative sample) record details of all the nuisance calls they receive on their landline over four weeks. While the composition of the nuisance calls has varied somewhat from year to year, their numbers and concentration have remained remarkably constant (with very few significant differences at the 99% level being noted from year to year). We have therefore combined these survey findings over the five years 2013-2017 to arrive at the distribution illustrated in Figure 3[4].

Figure 3 Numbers of nuisance calls received in four weeks, 2013-2017



Source: Ofcom landline nuisance call surveys

[4]According to the survey findings, on average fewer than 1% of diarists received more than 40 calls in four weeks and no diarist received more than 84 calls in four weeks. We note here, and illustrate in Annex H, that these surveys may lead to underestimates because of incomplete recording.

To understand Figure 3, imagine all Ofcom's diarists lined up from left to right in order of how many nuisance calls they receive in four weeks, each holding a placard showing how many they receive (so there are many people at the left with placards saying '0', and a few at the far right with placards saying '84' or '100'). The numbers on their placards are added up, and the total divided by 10 to show how many nuisance calls constitute a decile. Suppose the total is 5,000, so the resulting decile size is 500. Then, starting at the left, the numbers on the placards are added up until they make 500; all the users so far are members of the first nuisance call decile. Then we continue with the next set of placards until we reach 500 again; the people concerned are members of the second nuisance call decile; and so on[5].

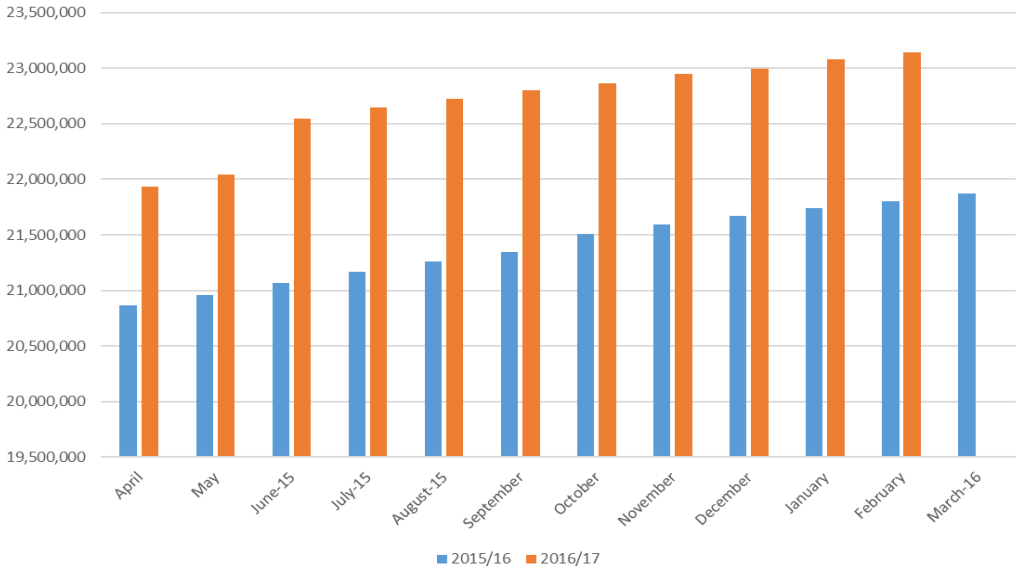
Figure 3 shows that almost half the landline users receive 4 or fewer nuisance calls in four weeks, with an average of 1.5 calls - a level which may be considered tolerable and be overlooked; while at least a fifth receive 12 or more nuisance calls in four weeks – a level which may well be felt as a problem. A twelfth may be thought of as having a serious problem, with more than 20 nuisance calls in four weeks, receiving between them 30% of all nuisance calls to landline networks. Later we shall look at what we call the "worst affected" group, defined as the people contributing to the highest decile. These people get 35 or more nuisance calls in four weeks, with an average of 46 calls each, or 6 times the average for all diarists of 7.6. This group accounts for under 2% of adults who receive calls on landlines.

A further step is to consider how this level would change over the next few years, independently of actions taken with the aim of reducing harm. This is discussed in Annex D. We are aware of influences in both directions, but cannot yet assess their relative strength. We therefore assume that, independent of harm-reducing actions, the level of calling will remain roughly constant.

A major plank of the regulatory framework to counter nuisance calls in the UK is the Telephone Preference Service (TPS). The Privacy and Electronic Communications Regulations (PECR), enforced by ICO, prohibit unsolicited live telemarketing calls to phone numbers registered with the TPS (and prohibit recorded telemarketing calls and text messages without specific consent).

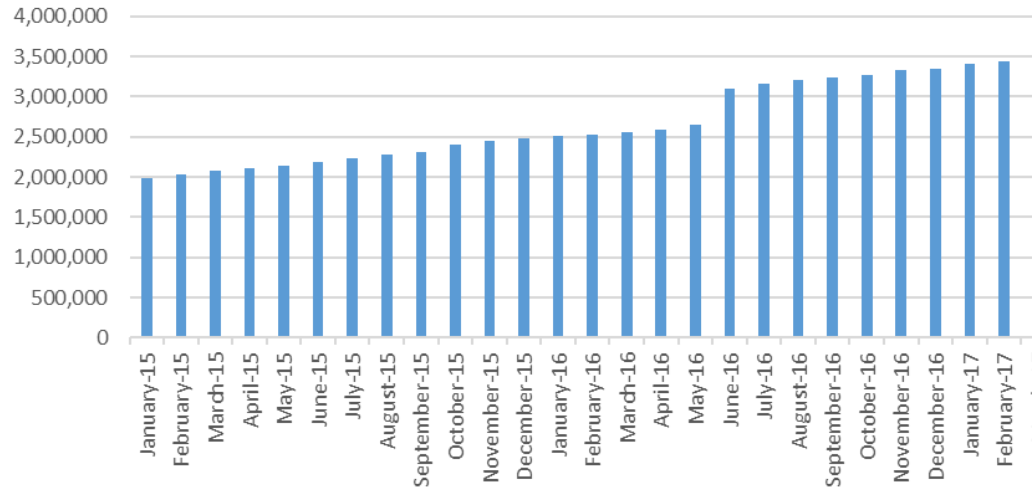
[5] In fact we have approximated this procedure by saying that everyone receiving the same number of nuisance calls will be in the same decile, so that the limits of the deciles are whole numbers.

Figure 4 TPS registrations, 2016-2017



Source: Telephone Preference Service

Figure 5 TPS registrations of mobile numbers, 2016-2017



Source: Telephone Preference Service

Figure 4 and Figure 5 show how TPS registrations continue to grow, though with mobile numbers still far behind landlines[6]. Annex B provides more detail on the current regulatory and enforcement regime; this is mainly shared between ICO and Ofcom, with the CMRU playing a role for claims management companies.

[6] The jump in mobile registrations in June 2016 followed the well-publicised new facility of registering a mobile number by text message. Registration, once carried out, does not need to be renewed, and TPS is not routinely informed about ceased numbers. The total of over 20m landline and 3.5m mobile registrations therefore includes an unknown number of phone numbers that are no longer in use. Registered numbers in use must, however, cover a far greater proportion of the ~20m UK households than the 21% saying they had registered when asked by an Ofcom survey (Annex E). We can only think that many people have forgotten their registration, never knew about it (as it was done by another household member), or assume it has expired as they are once again getting lots of nuisance calls.

2.1.2 Actions intended to reduce the number of nuisance calls being made

1. **Network or individual call suppression**[7]. If sufficiently widespread, in principle call suppression could reduce the likelihood of call attempts being answered, thereby raising the unit cost of answered calls and ultimately the cost of commercially successful calls. However, unit costs of calls are currently so low that take-up of call suppression would have to be very high to have much effect. As long as network suppression is offered on an opt-in basis, the large proportion[8] of people who have few nuisance calls, or are not troubled by them enough to think about avoiding them, are unlikely to opt in. So for the time being, we do not expect suppression to have a material effect on calls made (though it can have a material effect on calls received, which we discuss below).
2. **Consumer behaviour in aggregate**. Calling levels will be affected by the perceived likelihood of answered call attempts resulting in success (maybe a "sale", or a step towards a "sale" such as the called party agreeing to a follow-up call). This in turn depends on the receptiveness of the called party. Public education on how to handle these calls may have some effect here, particularly on specific mass scam calls (e.g. the "Microsoft support" scam) – though others seem to spring up to take their place. We suspect that this effect is no more than a few percent overall, as repeated publicity campaigns to date have not made noticeable inroads on the problem.
3. **Consumer behaviour at the individual level**. Consumers can try to avoid being targeted by nuisance calls by:
    a. **Registering with the TPS.** In 2014 a randomised control trial commissioned by Ofcom showed that registering with TPS cut nuisance calling to the registered individuals by around a third. This finding pointed towards around a third of nuisance calling being by companies who comply with the rules, a figure which is confirmed by the data assembled by trueCall in Annex A. Greater compliance could lead to this figure rising, but we suggest it is more likely to fall as TPS registration rises further (from its now high level, which we estimate at over 75% of households) and the number of unregistered prospects becomes so low as to make compliant telemarketing to the residue barely worthwhile[9].

[7] We use the term "suppression" to include both blocking and diversion. The term "blocking" is also commonly used with this wider meaning, but the distinction can be useful.

[8] As shown above, combining Ofcom's five landline nuisance call surveys of 2013-2017 shows 47% of diarists receiving at most 4 nuisance calls in four weeks and 68% of diarists receiving at most 8 nuisance calls in four weeks. And Ofcom's omnibus survey published in March 2015 (waves 11-12) found that of the 70% who did receive nuisance calls (on their landlines or mobiles), 71% were not prepared to pay 50p a month to be free of nuisance calls – though a small proportion would pay varying amounts, up to £10 a month. The same survey found that 51% of landline users and 56% of mobile phones users did nothing to avoid getting nuisance calls because they got few or none, didn't mind them or hadn't thought about doing anything. More details are given in Annex E.

[9] A consumer survey in 2008 (carried out by Which?) suggested that TPS registration cut nuisance calls by 54%, much more than the 35% found in 2014. See p 9 of TPS report on unwelcome calls 2008, Brookmead Consulting.

b. **Taking care with their personal data**: for example, going ex-directory, or avoiding sharing their phone number when entering competitions or making online purchases. This is standard advice, which sounds good, and is in line with people's expressed concerns[10], but evidence on its effectiveness is lacking[11].

4. **The regulatory regime and its enforcement**. In principle this affects both making calls and sourcing lists for targeting calls. In Annex B we present data on the enforcement actions taken by the main relevant regulators, which range from offering advice to imposing fines. Compliance cost and reduction in opportunities (for scrupulous companies) or the deterrent prospect of "naming and shaming" (for companies with a reputation to protect) and fines (for less scrupulous companies) may encourage moves away from telephone marketing towards alternative marketing channels. Those who do get caught stop making illegal calls (at least until they set up "phoenix" operations), but the numbers of calls that are thereby prevented, though large, can be only a tiny proportion of the total. For instance, Figure 28 shows 8 million nuisance calls having been "caught" by ICO during the period 2015-2017; on our estimates this is under 1 in 2,000 of those being made. Multiplier effects through deterrence (which are claimed but unquantified) would have to be implausibly large for this to make a detectable difference.

   Looking from another angle, regulators can be resourced to pursue only a limited number of cases. Figure 20 (based on trueCall data) shows that even the 1,000 most used calling numbers generate under a third of all nuisance calls.

   The Fair Telecoms Campaign has long advocated more activity from sectoral regulators (such as those for claims management companies, financial services or energy providers) to help prevent nuisance calling. The case made has many merits. However, this approach requires specific legislative or regulatory change in each sector and to date, despite promises, little progress has been made[12]. We return to it in the Scottish context.

   Unfortunately, the low probability of getting caught (especially if operating from outside the UK), and the delay between the offence and any consequences, greatly dilute the positive effects of regulation. Stronger regulation and enforcement may also have a counter-productive effect, of encouraging

[10] For example, in the 2016 ICO Track consumer research, 72% of respondents feared their data being used for nuisance and cold calling – second only to the 75% who feared it being stolen by criminals.

[11] In 2013, already two-thirds of residential landline numbers were said to be ex-directory, but ex-directory numbers were still called, whether via other sources for the numbers, or via random or sequential dialling. The proportion has gone on growing: in November 2017 BT said that 75.7% were ex-directory. Ofcom's 2014 diarist panel survey report (on p 14) states that there was little difference in the overall incidence of nuisance calls between those who did and did not take care about releasing their phone number, or opting out of marketing information, though those who did take care had fewer recorded sales calls and were less likely to receive over 20 nuisance calls during the four weeks of the study. The same survey also showed that online behaviour (shopping, entering competitions or using price comparison websites) made no significant difference to the number of nuisance calls received.

[12] Claims Management regulation is the most successful example to date. In August 2017 the UK Government undertook to ban cold calling about pensions, but concrete steps are yet to come.

unscrupulous and criminal elements to move abroad or otherwise evade the regime. Similarly, a lower availability of qualified lists (which may be of dubious legality) for targeted calling can encourage poorly targeted or completely untargeted calling, which is arguably worse.

By saying that the identifiable effects of enforcement efforts on nuisance calling are low, we do not mean to suggest that these efforts are wasted. They have a clear value in helping to uphold the rule of law and maintain societal standards. ICO are optimistic that the promised personal responsibility of directors for the payment of fines will have significant impact, and (depending on the interpretation of "consent") the UK implementation in 2018 of the General Data Protection Regulation may put live voice calls on the same footing as recorded calls. Regulatory influence and encouragement may also lead to constructive actions by others – this appears to be the case with Ofcom's voluntary "nuisance calls MoU group" of network operators.

5. **Provision by network operators of assured Calling Line Identity (CLI)**. There have already been some improvements in this area, with BT providing full CLI on international calls from December 2014, and a manual call tracing system (via Ofcom) in place since 2014. But widespread use of Voice over IP technology has made number spoofing very easy, and nuisance calls are now more likely than not to arrive with spoofed and therefore untraceable numbers. Assured CLI provision, if and when successful, could eliminate number spoofing, thereby improving traceability, which could deter non-compliant nuisance calling. However, this development is not in prospect for the UK for several years[13], so we do not aim to estimate its effect. Shorter term, new General Conditions on CLI will take effect in October 2018, with new Guidelines, and other suggestions have been made for using CLI differently. All this, if properly implemented and enforced, should both make call tracing easier, and help consumers to see who is calling.
6. **Interconnect agreements**. Ofcom and some network operators are working to stop the origination of mass nuisance calls at source, via clauses in interconnect agreements that would require each link in an interconnection chain to prevent such calls from entering their network. This appears to be another major challenge which cannot be expected to deliver results short-term, though long term it has the potential to be very effective, especially combined with CLI assurance[14]. Different operators however have different commercial incentives related to nuisance calls, with some benefiting from revenues for call origination, call conveyance or call termination[15], possibly without the costs associated with unhappy customers.
7. **Care with announcements**. Observers have pointed out that government or major business scheme announcements (for example, to encourage energy

[13] Ofcom's November 2016 NICC presentation slides 9 to 11.

[14] Ofcom's November 2016 NICC presentation slides 6 and 11.

[15] Landline call termination charges are now very low (at around 0.03 pence per minute) and nuisance calls have a short average duration so the related revenues are not large. Mobile call termination charges are reducing, but still more than 10 times higher than the landline equivalent, making them more worthwhile for networks to terminate. Higher origination costs for calls from mobiles have historically helped to limit nuisance calls to mobiles, but will do so less in future.

efficiency, or pension freedoms) often stimulate streams of nuisance calls. Efforts could certainly be made to minimise disreputable exploitation of these schemes. However, traders are naturally alive to opportunities and it is hard to see such efforts having much effect if the public are to be properly informed about the schemes.

In summary, there appears to be little that can be done short-term that will clearly have the effect of preventing nuisance calls from being made, without risk of counter-productive side-effects. For actors with variable or dubious compliance, prompter enforcement could have a stronger deterrent effect than current long-drawn-out procedures; more transparency during investigations ("naming and shaming") may also be effective. Longer term, sectoral regulation may help, and widespread network suppression, with reliable CLI and inter-operator contractual provisions, could lead to significant reductions. However, it may well be that commercial forces reduce nuisance calling sooner than that, as alternative marketing channels prove more cost-effective.

Similar remarks apply to scam calls as well as to other nuisance calls, though here the relevant authorities are the police rather than civil regulators. Penalties are more severe, including imprisonment, but the probability of being caught is even more remote. We suspect that to bring about big reductions in scam phone call origination, speaking to strangers who phone would need to become socially unacceptable, and viewed as unwise, in the same way as admitting unknown doorstep callers into the house. This would be an extreme position with undesirable side-effects, but if it came about, scam merchants might well move to another channel.

2.2 Preventing recipients from receiving nuisance calls made to them

Once nuisance calls have been made, it may be technically possible to identify and suppress them before they bother customers[16]. Figure 6 outlines the main features of currently available relevant technologies.

The overall effectiveness of any call suppression technology in reducing harm from nuisance calls depends on its availability and take-up as well as on its technical features. These are affected by wishing to minimise drawbacks to consumers[17] of using these technologies:

- Setting them up in the first place can be difficult for end users, especially if elderly or vulnerable. Maintaining up-to-date black and white lists is also a continuing chore.
- These difficulties are aggravated by concerns to avoid interfering with wanted calls ("over-blocking"). Many genuine callers (including for example government agencies, health services or banks) withhold their CLIs, and so would be rejected by some Anonymous Call Rejection settings. And requested

[16] This may mean diverting them to a voicemail box (as BT is doing), screening them (giving the called customer the choice of whether or not to accept them) or making them completely unavailable to the customer. Depending on the hardware and suppression technique used, the phone may ring briefly or not at all.

[17] There can also be serious drawbacks to businesses, if their legitimate outbound calls get blocked. There is ongoing debate in the industry about how best to avoid this happening, and what action should take place if it does.

robocalls (for example, providing online security codes) would be foiled by most call screening techniques, as indeed are some telcos' own services like Reminder Calls.

However, for users who suffer most from nuisance calls, and especially those who are vulnerable to scam calls, on balance these technologies are clearly positive. Pilots of add-on boxes for vulnerable users in some local authority areas have been very successful; the National Trading Standards Scams Team installed more than 100 of these in 2015 and is now launching a new project using the DCMS funding shown in Figure 7. Call blockers provided for vulnerable users in several local authority areas in Scotland have also worked very well; these activities are discussed in the next chapter.

An amendment in 2016 to the Privacy in Electronic Communications Regulations requires all telemarketing calls to include a returnable CLI (which may identify them straight away, or to which a return call can be made which will identify them), and a recent ICO case has enforced this new rule. It sets a precedent for all genuine callers to provide returnable CLIs. For example, the Scottish Government promises in its Action Plan that all its outbound calls will provide a CLI. Widespread adoption of this practice will make CLI-based tools more useful to consumers.

Network call suppression has been slow to arrive, and to some extent this may reflect network operators' mixed incentives: they want to avoid customer problems, but at the same time may derive some revenue from carrying the nuisance calls.

Figure 6 Classes of relevant call suppression technology

Class[1] **1** call management technology, introduced in the early 1990s, relies on the caller's number (known as Caller-ID or Calling Line Identity (CLI)) or an alternative "presentation CLI" being made available when the phone rings. Users can choose to screen their calls based on this information, and can also use Anonymous Call Rejection network services to reject calls with unavailable or withheld CLI, to Choose to Refuse calls from certain CLIs (typically 10) or groups of CLI (such as international)[2], or further calls from the same caller (Last Caller Barring). The rise in "number spoofing"[3] has greatly undermined reliance on actual or presented CLI.

Class 2 technology blocks all calls from a much longer "block list" of originating numbers. It too depends on the availability of CLI. Its effectiveness depends on how many numbers are on the block list[4], how the list is compiled and how often it is updated. On current calling patterns, it can prevent maybe 40% of unwanted calls. Early call blocking devices including the BT6500 phone and some Panasonic phones work on this principle. Some UK network operators are also now employing this technique on behalf of all their customers, blocking numbers identified through the Ofcom Nuisance Calls MoU Group[5] or by other means, such as crowd sourcing about unwelcome calls, or observation of unwarranted call origination by its own customers.

Class 3 technology applies modern data analysis techniques at network level to a wider range of real-time data about calls, to identify traffic streams that have certain characteristics. This can lead to allocation of a *trust score*, such as *scam* or *suspicious*, providing customer choice on call acceptance. CLI remains an important element but the technique is not solely dependent on CLI. Some recently introduced network suppression in the UK is of this kind, and it is also used in some mobile apps.

Class 4 technology also uses CLI, but can function without it. It requires selected callers[6] to take some action (for example, saying their name or keying certain digits) to be connected, which dissuades unsolicited callers from continuing, and, if they do continue, helps the called person to decide whether or not to accept the call. Examples are network services in France and the USA, now followed by Sky in the UK, and some more recent call blocking devices. This approach can block many more unwanted calls, in some cases over 90%[7], but it requires customer agreement as it may affect the reception given to wanted calls.

Applicability of different techniques: Mobile phones can use apps but not add-on boxes. Networks can access the underlying "network CLI" as well as the "presentation CLI" which reaches end users and their equipment. Fuss Free Phones handles nuisance calls through a personal answering service which takes advantage of their special mobile network status.

Notes to Figure 6

1. This classification draws both on Allowing Consumers to Block Nuisance Calls in the Network, trueCall, July 2013 (which speaks of technology "generations") and on BT's three different "types" of call blocking telephone (described on their shop website). We have used the word "class" to show that our classification is not quite the same as either of these.
2. These service names are BT's; near identical services are available from many UK landline providers through Wholesale Line Rental of BT landlines.
3. A technique for sending any caller ID of the caller's choice, which is easy when using Voice over Internet Protocol (VoIP) technology or when using a PABX that has been subverted for this or other purposes (such as making "free" international calls).
4. In recent years, storage limits have increased dramatically, allowing hundreds or thousands of numbers on a block list. The effectiveness of block lists depends both on their permitted length (blocking 1000 numbers should be more effective than blocking 10) and on how often callers change the CLI they are presenting. It is now easy for a caller to present a different CLI for every call. Figure 20 shows that even the top 1000 calling numbers may account for under a third of nuisance calls.
5. More information about this group is provided in Annex C, section C.2.3, on network measurements. Before blocking calls from a CLI, each operator should perform its own "due diligence" to satisfy itself that these are indeed nuisance calls. However, practices differ among operators on how this checking is done, how callers become aware that their calls are being blocked, and how callers can get mistaken blocking reversed.
6. They may be selected in different ways, for example by not being on a "white list" of pre-approved callers (with recognised CLIs or equipped with a pass code), or by having CLIs in certain categories (such as international or withheld).
7. This is also a rough estimate, depending on the specific actions requested of the caller and on callers' behaviour. But it seems that Class 4 technology is generally more likely to block wanted calls than to fail to block unwanted calls. Messages that are left can also lead to call back scams, which may (for example) encourage recipients to make expensive international calls.

Class 1 call blocking technologies have been available for a long time, sometimes included in package pricing but sometimes charged extra, at up to £5.80 a month[18]. Call blocking add-on boxes and phones have to be bought, for prices ranging between £20 and £120. The network suppression services that are now arriving are all, so far, being offered to customers at no additional charge.

Mobile apps for call management and suppression have taken off in the USA[19] and are arriving on this side of the Atlantic. In general, they use crowd-sourced information on calls that are unwanted by their user base; some also scrape their users' contact lists. First Orion has developed call analytics (Class 3) technology for T-Mobile in the USA, and claims a very high level of effectiveness for this approach.

Which? has published useful articles on call blocking options, covering call-blocking phones as well as three stand-alone landline call blocking devices. Another (March 2016) article compares five mobile call-blocking apps (not including TPS Protect). In general, accessing full Which? reviews requires payment.

The case for providing call blockers to vulnerable consumers is so strong that in 2015 the government promised £3.5m of central funding with this primary purpose. Figure 7 summarises published information on the expected and actual uses of this funding to date. Outcomes of component 1a are still awaited; National Trading Standards are using component 1b to deploy call blockers to vulnerable users (but will only be able to reach a small number compared with the 560,000 names thought to be on "suckers lists" now circulating)[20].

[18] Sample prices are shown at the foot of this Ofcom guide: https://www.ofcom.org.uk/phones-telecoms-and-internet/advice-for-consumers/problems/tackling-nuisance-calls-and-messages/phone-company-services-that-can-help-tackle-nuisance-calls.

[19] In August 2016 the US regulator, the FCC, ordered network operators to take action against nuisance calls. Mobile users in the USA typically pay to receive calls, adding injury to insult when the calls are unwanted.

[20] Chartered Trading Standards Institute, Stand Against Scams. (The figure of 300,000 mentioned in the 2017 Citizens Advice Scams Awareness Month Briefing is drawn from an earlier CTSI statement).

Figure 7 Uses of government funding

Item	Use	Proposed, 03/2015[21]	Actual, 08/2017	Remarks
1	Trialling the development and provision of call blocking technology through challenge funding.	£2,000,000	£1,100,000	
1a	Organisations to bid for funding to innovate, design and operate safe, practical and more cost-effective call blocking technology.	£1,500,000	£600,000	Half awarded to 6 companies and half to 3 of them (in phase 2)
1b	For agencies, local authorities and charities to trial providing call blocking devices to vulnerable people.	£500,000	£500,000	Awarded to National Scams Team
2	Awareness raising campaign about existing mechanisms to reduce and report nuisance calls.	£1,000,000	-	
3	Research to determine where Government interventions could be most effectively targeted, seeking to understand the prevalence of different types of nuisance calls, actions consumers take to minimise those calls, and why others do not take similar action.	£500,000	-	
Total		**£3,500,000**	**£1,100,000**	

Figure 8 summarises estimates (based on limited information from various sources, plus guesswork) of the availability, take-up and effectiveness of call suppression technologies. We rely heavily on service providers' published claims, which have not been independently verified. The 2020 figures are all guesses on the high side.

[21] Budget 2015, amplified by DCMS handout at Round Table 23/03/2015 on call blockers for vulnerable consumers, reproduced in a DMA news release.

Figure 8 Possible effectiveness of call suppression technologies

	Class of call suppression technology	Start date[1]	Suppression effectiveness (% of nuisance calls per user)	Estimated take-up now (% of potential users)[2]	Possible take-up in 2020 (% of potential users)	Number of potential users in 2016 (millions)[3]
Network suppression – landline						
BT[4]	1, 3	01/2017	65%	22%	40%	9.4
Sky	1, 4	06/2017	90%	1%	50%	6.1
TalkTalk[5]	1, 2	2014	50%	100%	100%	3.0
	4[6]	H2 2017	90%	-	50%	3.0
Virgin Media	1, 2[7]	2016	Not stated	100%	100%	4.4
Network suppression – mobile[8]						
EE	3	01/2017	65%	Not stated	20%	26.7
O2[9]						24.8
Three	2	2016	Not stated	100%	100%	10.1
Vodafone	2	2016	Not stated	100%	100%	17.5
User device blocking – landline[10]						
Add-on boxes	2, 4	2007	67%	5%	10%	26.4
Blocking phones	2, 4	2013	60%	10%	20%	26.4
User device blocking – mobile[11]						
Phone settings	2	2008	40%	5%	5%	92.0
Smartphone apps	2,3,4	2010	80%	10%[12]	25%	41.0[13]

Notes to Figure 8

1. For device technologies, estimated date of when first widely available in the UK.
2. Technologies that are applied to all connections, without individual customers choosing them, are regarded as having 100% take-up.
3. Latest available figures from Ofcom and in some cases the operators. A proportion of the landline connections is used for broadband only (not for receiving voice calls) and a proportion of the mobile connections is used for machine-to-machine communication. We have no operator-by-operator breakdowns of these proportions, so have quoted the total numbers of residential landline and mobile connections.
4. http://www.btplc.com/news/#/pressreleases/more-than-two-million-now-on-bts-free-service-to-crack-down-on-nuisance-calls-1911024.
5. https://help2.talktalk.co.uk/what-talktalk-doing-stop-scam-calls (with clarification directly from TalkTalk, that the blocking mentioned here refers to all nuisance calls, not just scam calls). TalkTalk is also now blocking calls from numbers that have no CLI.

6. Estimate for the CallSafe service, launched 17 January 2018.
7. Virgin Media plans to provide a Class 4 nuisance call handling service to customers using the IMS platform that it is currently rolling out, and to which it plans ultimately to migrate its TDM customer base. Current IMS customer numbers are low.
8. Mobile network suppression would affect customers of MVNOs on a network in the same way as the network's own customers.
9. O2 has provided no input to the study, but as it is a member of the MoU group we suppose that its practices are probably similar to those of Three.
10. Estimates based on information provided in confidence by sector participants, together with the sources quoted in the next footnote.
11. Estimates based on inference and information extracted from Ofcom surveys (see Annex E).
12. Truecaller claims to have the largest app user base in the UK, with 2 million downloads.
13. Estimate of the number of smartphone owners (not of the number of smartphone subscriptions).

What stands out here is the importance of user take-up, where suppression is provided on an opt-in basis. We believe that opt-in applies to all entries in the table except for network blocking provided by TalkTalk, Vodafone, and Three, which applies automatically to all subscribers. Consumer take-up of opt-in services is unlikely to be high: Ofcom survey findings, summarised in Annex E, include that although 65% of landline users were aware of blocking technology, only 9% of landline users had chosen to use it. 10% of mobile users had used their mobile settings or downloaded an app to block unwanted calls. Scams research by Citizens Advice in 2017 suggests that 11% of respondents had signed up for call blocking services, rising to 15% for people who had been targeted by a scam within the past two years.

An alternative approach worth considering is to reverse the default, switching on the suppression service automatically while giving customers the option of switching it off. This could have benefits both in reducing nuisance calling overall, and in boosting coverage of vulnerable customers; however it could lead to some wanted calls being suppressed, and would require telco systems to be dimensioned for high take-up of the suppression service. Getting customer communications right would be critical to the success of this approach[22].

It is worth noting that BT's Call Protect service is available on a wholesale basis, at a charge of £1.68 a year[23], to companies who repackage and resell BT landlines

[22] It has also been suggested that the default might be reversed just for customers whom the telco has reason to believe are especially likely to be vulnerable to nuisance calls. Such an approach would clearly have to be subject to appropriate data protection safeguards. If pursued, it might build on recent work by the UK Regulators' Network on identifying customers in vulnerable situations as regards energy and water supply.

23 See *Choose to Divert* in the Wholesale Calling Features (analogue) section of BT's price list

(through Wholesale Line Rental). BT say that calls to their Nuisance Call Advice Line have been much lower since the launch of BT Call Protect.

Annex E also summarises consumers' reasons for doing nothing to prevent nuisance calls, as explored in Ofcom surveys. It seems the main barriers to action are managing to think about it, together with avoiding hassle (accounting for around a third of responses); not knowing what to do accounts for another 10%. Price and over-blocking are relatively minor concerns, together mentioned by under 10%. Close to 30% do not regard nuisance calls as a problem worth bothering about.

It seems reasonable to suppose that early adopters of blocking technology are people who know about it and are most troubled by nuisance calls[24]. If this is so, we may expect that over the next few years, as network suppression technology at no extra charge becomes more widely available and known, then take-up will increase and harm from non-scam nuisance calls will decrease, roughly in proportion to the effectiveness of the suppression method(s) used. However, this expectation comes with some big provisos:

- The easiest way to sign up for most services is online, but many people who are troubled by nuisance calls are not internet users. Telcos need to provide easy alternative ways of signing up and make sure that all their customers know about these.
- As long as take-up is on an opt-in rather than opt-out basis, it is unlikely that suppression overall will get high enough to deter mass automated telemarketing.
- Serious scamming often uses a variety of CLIs, and (especially when high-value) may not display the distinctive traffic patterns that network suppression algorithms recognise and exploit. Suppression with very high effectiveness (say, over 95%, or at least Class 4 standard), probably applied at the individual level, will therefore be needed to protect vulnerable users from receiving scam calls.
- Once Class 2 systems are more widely deployed, call centres will start taking action to defeat them. Call centres can easily keep changing their calling number. Class 4 systems focus on an 'allow' list rather than a 'block' list, so changed phone numbers will be treated as 'untrusted' and therefore intercepted.

Responding to the 2013 All Party Parliamentary Group enquiry, in 2014 Ofcom found out that most customers wanting advice on how to handle nuisance calls would ask their operator. Ofcom therefore looked at operators' websites and practices in this area, and found some good practice but also considerable variation and shortcomings. We have looked again at this, and found that most significant operators with personal customers do provide some advice on their websites on nuisance calls, but as Figure 9 shows[25], this advice varies quite widely without clear

[24] The survey sample sizes are too small to say whether those who had chosen to use blocking were those who received the most nuisance calls.

[25] All the results are obtained by searching on "nuisance" on each operator's website. The hyperlinks embedded in the operators' names give some indications of how easy or difficult it may be to find this information by other means.

reason. Bringing all these websites up to best practice looks like a quick win, both for operators and for their customers.

Figure 9 Operator website advice on nuisance calls

	Mobile operators					Landline operators				
	EE	O2	Tesco Mobile	Three	Vodafone	BT	Plusnet	Sky	TalkTalk	Virgin Media
Advice on reporting nuisance calls										
Report to TPS							Y		Y	
Report to ICO	Y		Y [1]	Y [1]		Y [1]	Y	Y	Y [1]	Y [1]
Report to Ofcom (silent and abandoned calls)	Y			Y						Y
Report to police (malicious calls and texts)		Y	Y	Y		Y		Y	Y	
Report to Action Fraud (scams)		Y	Y					Y		
Report to operator	Y	Y	Y	Y [2]	Y				Y	Y [2]
Report to PSA			Y							
Report to Which?						Y		Y		Y
Options for protection against nuisance calls										
Register with TPS	Y	Y			Y	Y	Y		Y	Y
Block calls, with white and black lists						Y	Y	Y		
Bar a number in network					Y[3]	Y[4][3]	Y[4][3]		Y[4][5]	Y[4][3]
Bar a number on a phone	Y	Y		Y		Y	Y			Y
Change your number	Y	Y	Y				Y			
Go ex-directory							Y	Y	Y	
Additional information										
Instructions on barring a number on phone	Y			Y						
Extra references		Y				Y				Y
Further advice	Y	Y						Y	Y	

Notes to Figure 9

1. For spam texts
2. For malicious calls and texts
3. Charged service, not free
4. For all anonymous callers (Anonymous Caller Barring, ACB)
5. For the last caller (Last Caller Barring, LCB)

2.3 Minimising harm caused by nuisance calls received

Lastly, we consider the harm caused by nuisance calls which, despite preventative actions such as those discussed earlier, have been received[26].

2.3.1 Types of nuisance call

Annex A offers a set of estimates of proportions of call types, based on data from Ofcom and trueCall. As Annex A highlights, nuisance calls can be classified in several different ways – for example by severity of nuisance, by originating sector and location, or by whether live agents or recorded or interactive voice technology are used. According to ContactBabel information provided to Ofcom[27], in 2015 the outbound activity of UK call centres was divided roughly as shown below, according to the motive for the activity[28].

Figure 10 Breakdown of UK outbound calling

Outbound calling activity to UK consumers	Proportion of total
Debt collection	40%
Warm sales	18%
Customer service	12%
Cold sales	11%
Consumer surveys	9%
Lead prospecting	3%
Charity collecting	2%
Bill reminders	2%
Fraud prevention	1%
Other	2%
Total	100%

Source: 2015 ContactBabel survey of UK call centres

The fact of taking part in the UK call centre survey behind Figure 10 points to respondents probably being aware of UK regulations and at least aiming to comply with them. Not covered by this survey is a large number of other UK call centres, and many more whose calls appear to originate outside the UK (for example because they present international CLIs, or the agents have foreign accents). Calls in these latter two categories are less likely to comply with UK regulations, and may well be scams. Because of widespread number spoofing, no reliable estimates are available of the proportion of calls in each category. However, an industry source has

[26] We exclude from "calls received" those which have been blocked by home call blockers, or mobile settings or apps. We include those which go to a home answering machine or voicemail, or which ring unanswered, as well as all those which are answered. This distinction is intended to reflect the fact that a ringing phone, along with the decision whether or not to answer it, is a distraction and takes time.

[27] And reproduced here with the kind permission of Steve Morrell of ContactBabel.

[28] The mean proportion of calls to mobile phones (rather than landlines) among survey respondents was 58%.

suggested that the three (i.e. compliant UK call centres, non-compliant UK call centres, and non-UK call centres) produce roughly equal volumes of unwanted calls. This is in line with two-thirds of complaints to Ofcom about silent and abandoned calls having missing CLIs[29], and with the one-third reduction in nuisance calls resulting from TPS registration (presumed to reflect calling from compliant organisations), so we work on this basis for the time being.

A major telco reports that callers purporting to offer debt management, PPI reclaim and car accident claim management services make up the great majority of unsolicited marketing calls on their network. Other published data on types of call (mainly by originating sector) are shown in Figure 11 and Figure 12, with our own analyses of call types from ICO complaints data in section 3.2 (see Figure 21), and from trueCall data in Annex J. Overall we conclude:

- Without consistent terminology when classifying nuisance calls, these data have little objective measurement value. For example, what is meant by the term “scam” clearly varies by data source (and Annex I shows that it varies also by complaints system).
- There are also real variations from time to time in the intensity of different types of nuisance call; this may best be illustrated by the combined Ofcom diary surveys shown in Figure 12.
- Claims management (including PPI) has consistently been a major source of nuisance calls.
- Call blocking services have been a source of nuisance calls, with companies making fraudulent offers to put consumers on supposedly superior Do Not Call registers or provide poorly performing, high priced call blockers[30]. Such calls can further confuse consumers.

[29] Quoted in Ofcom’s Call for Inputs preceding its Persistent Misuse review.

[30] See, for example, the item *Commercial alternatives to TPS, Bogus TPS & scams* at http://www.tpsonline.org.uk/tps/news1.html.

Figure 11 Data on types of nuisance calls

Data from Truecaller Insights Special Report, based on 2 million British users of their mobile app, 01/01/2017-31/05/2017

31% telemarketing
23% insurance
14% nuisance (prank calls through to harassment)
12% telecoms operators
10% financial services
8% scam calls
2% market research

Five biggest categories of nuisance calls on BT's network, 04-11/03/2017

Accident claims	41%	
Personal details (scam)		18.5%
PPI	6.4%	
Computer scam	12.6%	
Debt collection	7.5%	
Other	14%	
Total (29.5 m)	100%	

Which? surveys 01-08/09/2017 and 11-19/11/2015

The most common calls to landlines reported in 2017 relate to: silent calls (mentioned by 48% of respondents), PPI insurance claims (42%) and accident claims (44%). In 2015, the three most common types of calls were PPI (66%), silent calls (55%) and the Green Deal or energy efficiency measures, including boilers and double glazing (52%).

Figure 12 Call sectors from Ofcom landline nuisance call surveys, 2013-2017

	All calls where product identified				
	2013	2014	2015	2016	2017
Home improvement e.g. boilers/ windows*	3%	7%	8%	11%	21% ↑
PPI	22%	13%	23%	21%	15% ↓
Insurance (car/ health/ life etc.)	8%	9%	6%	7%	8%
Phone/ Broadband	3%	5%	4%	5%	8% ↑
Computer/ maintenance/ support	3%	4%	4%	4%	6% ↑
Energy company	10%	7%	5%	4%	6% ↑
Market research/ Survey	10%	8%	9%	10%	5% ↓
Accident claims/ compensation	2%	4%	7%	6%	5%
Scam calls e.g. banking/computer/passwords etc.	-	1%	1%	2%	4% ↑
Government schemes/grants/initiatives	-	-	2%	4%	3%
Financial Services/ products	1%	5%	2%	2%	3%
Solar panels	2%	6%	8%	5%	1% ↓
Banking/ Credit card	2%	1%	4%	2%	1%
Charity	3%	3%	2%	2%	1%
Debt repayment/advice/consolidation	2%	4%	2%	2%	1%

Source: Landline Nuisance Calls W5 presentation, GfK UK for Ofcom, p 21

As well as looking at the originating industry sector, both Ofcom and ICO aim to classify nuisance calls by whether they are live or recorded, silent or abandoned. These distinctions are important to the regulators because of their split responsibilities, with ICO responsible for regulating live and recorded calls and Ofcom for silent and abandoned calls. Differences in how consumers feel about the

calls in these dimensions (e.g. silent vs live voice) do not however appear to be great – all these are found annoying by around 80% and distressing by 5%-10%[31].

2.3.2 Types of nuisance call recipient

Both telemarketing and scams will, where possible, naturally target those whom the callers have reason to believe are likely to be receptive to their messages. In both cases, having been receptive before is a prime indicator of likelihood of being receptive again.

The 2009 University of Exeter report *The psychology of scams*[32] says:

> "Our research suggests that there is a minority of people who are particularly vulnerable to scams. In particular, people who reported having previously responded to a scam were consistently more likely to show interest in responding again. Though a minority, it is not a small minority; depending on how it is assessed, it could be between 10 per cent and 20 per cent of the population."

Earlier OFT research[33] found that 52 per cent of victims had been targeted again by a scam and that, on average, a victim had a 30 per cent chance of falling for another scam within the following 12 months. 2017 research by Citizens Advice shows that 72% of respondents had been targeted by a scam in the past two years, and being targeted once raised the probability of being targeted again to 83% or more. Scam phone calls seemed to have a higher probability of repeat targeting than online, text, paper mail or doorstep channels, though lower than email.

The Exeter report discusses how, as a psychological type, vulnerability to scams is not age-specific. But circumstances which are more likely among older people (such as isolation, loneliness, and diminishing mental capacity) boost the probability of vulnerability being translated into being targeted and finally into becoming a victim. More recent UK research is working towards a psychological vulnerability profile[34], and US research[35] provides further insights in this area.

Ofcom surveys make it clear that older age groups do receive more landline nuisance calls than average; Figure 13, from the 2017 landline nuisance call survey, illustrates this[36]. Numerous other sources (some quoted in Annex F) confirm that this is true of telemarketing and scam calls. Recent research in both the US and the UK[37] shows that younger age groups are also at risk, particularly via mobile phones.

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[31] Pages 34 and 36 of Landline Nuisance Calls W5 presentation, GfK UK for Ofcom. These and similar distinctions can also be valuable for enforcement purposes.

[32] The psychology of scams, University of Exeter for the Office of Fair Trading, 2009, OFT1070

[33] Research on impact of mass marketed scams, Office of Fair Trading, December 2006, OFT883

[34] See *Silence of the Scams* slide pack (from an autumn 2016 conference at Brunel University) and related publications listed at http://www.port.ac.uk/department-of-psychology/staff/ms-martina-dove.html.

[35] Such as the TrueLink Report on Elder Financial Abuse 2015 and the FTC survey mentioned below. See also Annex F.8.

[36] One reason for the rise in landline nuisance call incidence with age is that people in older age groups are more likely to be at home.

[37] For the US, see for example http://firstorion.com/new-irs-scams-survey-shows-millennials-most-likely-to-fall-victim/ and the FTC survey of consumer fraud 2011 (a repeat survey is now in progress). For the UK, see the *Silence of the Scams* slide pack.

Figure 13 Landline nuisance calls by age group

	Age group						All
	16-24	25-34	35-44	45-54	55-64	65+	16+
Mean number of nuisance calls in four weeks per diarist	4.1	4.5	4.5	6.8	9.28	10.28	6.8
Proportion of diarists receiving nuisance calls in four weeks	63%	74%	75%	82%	88%	94%	81%

Source: Ofcom landline nuisance call diary survey 2017

Susceptibility to the less desirable aspects of some telemarketing (such as high-pressure tactics, incomplete information provision, low quality or over-priced goods and services) has not received the same attention as susceptibility to scams. However, it seems reasonable to suppose that many of the same factors will apply, so we can regard the same population as being at particular risk.

2.3.3 Estimating consumer harm caused by the calls

The only available estimates of consumer harm caused by nuisance calls are those offered by Ofcom as background to the 2015 Persistent Misuse Consultation. At around £0.1 per call, these estimates are based on cost of time wasted and take account of consumers' willingness to pay to avoid the calls, but exclude both mitigation costs (e.g. the cost of call blocking) and, importantly for this study, the consequent harm caused by answered calls. We know that the last can be high, especially when vulnerable consumers answer scam calls.

Scam approaches and successful scams are believed to be grossly under-reported[38], though by what factor is unknown[39]. This, coupled with a lack of statistics on the role of phone calls in successful scamming, makes it impossible currently to pin down the number of scam calls or the damage that they cause.

The numbers in Figure 14 are therefore notional, but they are influenced by the scattered and varied information that we have been able to gather (summarised in Annex F). We think it likely that worst-affected call recipients are more likely to engage in conversation with dangerous callers, as well as receiving far more than their share of approaches from these callers, resulting in a more than ten-fold greater exposure to the risks.

[38] Victims often feel embarrassed that they fell for a deception that becomes clear with hindsight; or in some cases they lack the mental capacity to recognise what is going on.

[39] Annex F provides an old OFT estimate of 5% for scams and a recent Crime Survey estimate for fraud of 17%. Neither applies specifically to phone scams.

Figure 14 Notional distribution of harm from nuisance calls to landlines

		2% worst affected	Remaining 98%	All	Source
A	Number of adults using landline (million)	0.80	39.2	40	Rounded figure based on ONS and Ofcom data (see Figure 40)
B	Average number of nuisance calls per month per adult	35.6	7.2	8.2	Based on Ofcom diary surveys 2013-2017[1]
C	Proportion of nuisance calls that are scam calls	30%	15%	15.3%	Conservative assumptions drawing on BT and trueCall data
D	Proportion of scam calls leading to dangerous conversations[2]	30%	10%	10.4%	Conservative assumptions drawing on data from Money Advice Service, AgeUK, and Citizens Advice
E	Proportion of dangerous conversations leading to loss	15%	4%	4.2%	
F	Proportion of scam calls leading to loss	4.5%	0.4%	0.5%	= D x E
G	Average scam loss (£)	350	350	350	Assumed[3]
H	Average cost of scam calls per year per adult (£)	2,019	18	58	= (12 x B) x (C x F) x G
J	Total cost of scam calls per year to this group (£ million)	1,615	711	2,326	= A x H
K	Basic cost per nuisance call (£)	0.1	0.1	0.1	Ofcom
L	Total basic cost of nuisance calls per year to this group (£ million)	34	339	373	= A x (12 x B) x K
	Total (basic and scam) cost per year to this group (£ million)	**2,053**	**1,050**	**3,103**	**= J+L**

Notes to Figure 14

1. Figure 3 relates to a week and this table relates to a month, so the average here is 52/12 of the Figure 3 averages.
2. A “dangerous conversation” is one where the caller has criminal intent and the called party engages in conversation (rather than cutting the call short early on).
3. This round figure is based on an estimate (based on research) from the 2017 Citizens Advice report Changing the story on scams that the median phone scam loss is £693, and allowing for around half of losses to have been recovered. The total of £3.1bn attributable to phone scams is under 30% of an earlier Citizens Advice estimate of £10.9bn total personal losses due to scams.

Although many of the numbers have little empirical basis, we believe that this exercise correctly illustrates how harm is magnified by vulnerability to scam attempts, and how it is concentrated on a small minority of worst-affected recipients – with 2% of people bearing two-thirds of the cost. This picture should be taken into account when prioritising actions.

Here we are defining "worst affected group" as those people who receive the most nuisance calls each and together receive one tenth of all nuisance calls. As explained in section 2.1.1, according to the Ofcom data used in Figure 3, people in this group receive 35 or more nuisance calls in four weeks (with an average of 6 times the overall average) and amount to under 2% of all landline users.

Who are these "worst affected" people? As discussed in the previous section, we know that successful nuisance and scam calling attracts more calling, so it is reasonable to assume that many of them share the University of Exeter's "vulnerable to scam" psychological type, which they thought might affect 10% to 20% of the population. We have already mentioned the 560,000-long "suckers list" of scam victims. We also know (from Trading Standards[40] and other sources identified in Annex F) that high levels of nuisance calling may afflict people living with dementia[41], people with physical and sensory disabilities, older people, and those living alone. We suspect that people in our worst affected group will have two or three of these attributes. They are not easy to identify or help. Clearly they are vulnerable in more than one sense - simply getting that barrage of nuisance calls is quite bad enough, on top of which they may feel it is wrong to put the phone down on someone, be prone to fall for scams or to make unintended purchases, or risk a fall on the way to a ringing phone.

All this applies only to nuisance calls to landlines. A similar exercise should be carried out for nuisance calls and texts to mobiles, on which there is currently less information available. Given high and growing use of mobiles, we would expect the harm associated with nuisance calls to them to be of a similar order to the harm associated with nuisance calls to landlines. However, the groups who are worst affected will differ, in particular by age.

Harm caused by answered calls without criminal intent is very hard to assess. As well as the time wasted by the interruption (with associated annoyance), there may also be detriment associated with mis-selling, for example successful high-pressure sales that are not what the consumer really wanted. However, the risks in question should on average be lower – if an actual purchase is made, presumably on average some value will be derived from it. We have almost[42] no evidence of the incidence or size

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[40] See for example Protecting older and vulnerable consumers in Scotland from nuisance and scam phone calls, Final Report, COSLA, August 2015

[41] Presumably, in the main, those who are still living independently, including many whose dementia has not yet been diagnosed.

[42] Based on a report provided to this study by CPR Call Blocker, who provided equipment to a trial of call blockers in the Wirral in 2015, 6% of triallists made a purchase from an unsolicited call and 67% of those making a purchase were dissatisfied. Average spend was ~ £1200/18=£70 before, and £25 (in a tiny sample of 3 people) after the device was installed.

of such detriment, so unlike the cost of scams it is not added to Ofcom's basic cost per nuisance call to landlines. For a complete harm assessment, further estimates would be needed.

Costs of the order shown in Figure 14 make a very clear case for efforts to prevent nuisance calls from reaching customers, and especially those who are worst affected. Accounts of the experience of sufferers (like Jessica of the Think Jessica campaign) show that this is a public health problem, in the same way as gambling; and like other public health problems, it imposes huge costs on public services as well as on individual victims. However, preventing scam calls without an overall scam prevention strategy may lead to some criminal activity simply being displaced; harm removed from scam calls may well pop up again elsewhere, with online scams being an obvious area to watch.

2.3.4 Actions intended to reduce harm from nuisance calls received

1. **Improve warm sales calls**. Anecdotally, warm sales calls (within an existing business relationship) may be as persistent and unwelcome as cold sales calls. The customer may not be aware of having agreed to receive calls from the company. It seems like basic business sense for companies to record and respect customers' contact preferences, but clearly this is not standard practice[43]. At a minimum, agents could be instructed to ask whether this is a convenient time to speak – a common feeling being that calls "always arrive during dinner"[44]. We suggest that compliance with best practice[45] might reduce both the number of unwanted calls made and the annoyance that they cause, thereby reducing the harm caused by the one third of 18% of calls in this category[46].
2. **Support vulnerable consumers**. As discussed above, even legitimate calls can be particularly risky for vulnerable consumers. If all call centres followed the DMA Guidelines on calling vulnerable consumers (mainly those with physical or mental disabilities), risks of harm to this group should be much reduced. Companies involved in fulfilling telesales can also help here, for example by querying duplicate or multiple insurance policies or magazine subscriptions, or (in the case of banks) unusual account activity.

[43] The widespread practice of outsourcing telemarketing is an important factor here. See the discussion in 3.

[44] Although the actual profile of calling during the day is fairly flat. For example, the 2013 landline nuisance call diary survey recorded that between 8% and 11% of nuisance calls were received during each hour between 9:00 and 19:00.

[45] This action is in accordance with the theory of Ethical Business Regulation (EBR), as advanced by Professor Chris Hodges. Our earlier discussions on the difficulties of regulating nuisance calls point to limitations of EBR here. The practical approach to EBR in these circumstances will be collaboration among all well-meaning market participants to achieve best possible outcomes for consumers, as outlined in a case study of ethical regulation in the book Ethical Business Practice and Regulation by Chris Hodges and Ruth Steinholtz, Hart Publishing, December 2017.

[46] It should also improve the job satisfaction of the call centre agents.

3. **Minimise debt collection trauma**. Debt collection is a large category of call which risks being unwelcome, no matter how carefully it is carried out[47]. However, harm to recipients of these calls could probably be reduced somewhat by attention to guidelines[48], and in particular by checking with recipients whether they would prefer an alternative contact method.

4. **Educate identified vulnerable consumers**. Answered scam calls cause the most harm, especially to vulnerable consumers. The only real protection here is through consumer education, with support for the most vulnerable from others who come into contact with them (as fostered by the Trading Standards Friends Against Scams initiative). People who have been scammed once are known to be at particular risk in future. The 2009 Exeter report offers a grain of hope:

   > "The likely existence of a subset of the population with enhanced vulnerability to scams is both a problem and an opportunity from a consumer education point of view. It is a problem in that it suggests that a high proportion of any general awareness campaign will be wasted on people who are relatively unlikely ever to fall for a scam. It is an opportunity in that if the more vulnerable group can be identified – or can be encouraged to self-identify – educational material can be targeted at them."

5. **Spread CLI display and educate consumers**. Consumers can, of course, reduce harm by refusing to speak with unwanted callers. Their time has still been wasted, but at least they will not be making unwise purchases, far less being caught by scams. Much consumer education consists in getting across the message that it is better not to speak to unsolicited callers, even if this feels impolite. The 2015 consumer issues survey findings in Annex E show that 53% of home phone call recipients and 63% of mobile call recipients did consider the possibility of calls being unwanted and varied their answering behaviour accordingly. However, under half of home phone call recipients said they had a CLI display, which supported the decisions of over 60% of those who had it. Actions to increase take-up of home phone CLI display, together with education to avoid answering the phone to unknown callers and to cut short unwanted conversations, could significantly reduce harm.

6. **Provide CLIs to which return calls can be made**. Routine provision of CLIs that are recognisable, authenticated and allow return calls to be made to them, in particular by government agencies, health bodies and businesses making genuine calls, would foster confidence in the use of CLI and should encourage consumers to use nuisance call suppression systems.

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[47] Figure 50 of the same ContactBabel report says that 22% of answered debt collection calls are hung up by the consumer, while only 10% of cold calls end in this way, and only 0-3% of other types of calls. This may be a fair indication of how unwelcome the calls are.

[48] See Annex G. Echo Managed Services provide a useful research-based presentation / good practice guide which highlights that treating debtors as valued customers, and in particular offering them a choice of communication channel, is more likely to lead to debt recovery and long-term profitable customer relationships. Echo found that 40% of customers with experience of debt recovery said they would react best to a reminder phonecall, with 30% preferring a letter, and smaller proportions citing other channels. Thanks to StepChange Debt Charity for identifying this resource.

7. **Improve complaint systems**. For a small minority of consumers[49], complaining about nuisance calls may help them to feel a bit better, presumably slightly reducing harm to them, even if complaining takes up extra time. Despite some improvements in the last few years, nuisance call complaints procedures remain hard to find and navigate, and can easily take up many times longer than the call itself did[50]. More complaints may be of some value to enforcers, as they provide intelligence and strengthen the case against offenders. Complaints procedures could certainly be made much easier to use[51], but it is hard to suggest that this would bring about any material reduction in harm to consumers.
8. **Transform early warning of scams**. On the other hand, sharing information about scam calls received could avert a lot of harm, especially if done (and reacted to) early. Prompt intelligence about new scams could alert other consumers, network operators and the authorities to the dangers, enabling protections to come into play. To get this to happen requires new levels of willingness to report among affected consumers, together with much improved systems for consumer reporting, and sharing information among the operators and authorities. It is probably too much to hope that victims of multiple scams can be changed in this way, but "once bitten, twice shy" consumers might be recruited to an early warning network, with new phone numbers.

This project looks at scam calls as the most harmful type of nuisance call. Scam calls are more often, and perhaps more helpfully, viewed as just one channel among others (such as email, websites, and paper mail) used by mass market fraud. Scam calls will therefore be addressed by new national counter-fraud initiatives like the Joint Fraud Taskforce and the Banking Protocol, both mentioned in the *Annual Review 2016-2017 on Economic Crime*[52]. These should impact fraud by any channel, but we cannot estimate their effectiveness specifically for fraudulent phone calls.

Fraud directly against individuals is especially distressing, and likely to lead to lasting personal financial loss. However we should bear in mind much larger scale fraud[53] that targets institutions like banks, often via identity theft[54]. The losses concerned tend to be borne by the institution, and accordingly, spread among all its customers. The telephone can play a significant part in institutional fraud, since fraudsters often

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[49] According to Ofcom research summarised in Annex E, about 1% of consumers usually complain when they get unwanted calls, with a further 10% or so doing so occasionally.

[50] Please see Annex H for more detail.

[51] For example, by automating them. The new individual suppression services now being provided by network operators appear to offer an obvious opportunity for blocked numbers to be passed straight on to regulators and counted as complaints. The new TPS Protect mobile app includes a capability for the act of blocking a number to be turned into a complaint, to be passed directly to the relevant official complaint point, although full implementation awaits agreement by all the official complaint points.

[52] By City of London Police, who are the national policing lead in this area, and responsible for Action Fraud. The report is at https://www.cityoflondon.police.uk/advice-and-support/fraud-and-economic-crime/Documents/ecd-annual-review-201617.pdf. See also this news item on how the Banking Protocol (while still in pilot) can stop fraud attempts in their tracks.

[53] The Annual Fraud Indicator report 2016 of the Centre for Counter Fraud Studies at the University of Portsmouth estimates total annual UK losses to fraud at £193 billion, of which "only" £10 billion is fraud against individuals.

[54] Documented by the industry anti-fraud organisations CIFAS and Financial Fraud Action UK.

impersonate bank customers phoning the bank's call centre. The fraudsters gather information needed for impersonation by various means, which may include nuisance phone calls. Techniques used for countering telephone fraud against call centres, such as voice and data analytics[55], may also help in countering calls like these, as well as direct telephone fraud against individuals.

2.4 Summary of possible effectiveness of actions

Figure 15 summarises the main actions that have been discussed in the three sections of this chapter, and tentatively assigns to each a rough level of potential reduction of harm by 2020. Some actions should have greater effects longer term, in particular those relating to CLI[56]. The effects only apply to the beneficiaries shown in the "beneficiaries" column – so, for example, call blocking apps can bring about major reductions in nuisance calls to smart phones, but this is confined to those people who download and use them. The indicative effect bands are colour coded as shown below.

Indicative effect bands	Low (white): <1%	Minor (orange): 1%-5%	Modest (yellow): 5%-10%	Moderate (green): 10%-20%	Major (blue): 20% +

[55] As offered by (for example) Pindrop in the USA and UK.

[56] Ofcom says that more than half of the complaints it gets about silent and abandoned calls have spoofed CLIs. (Information about CLIs in Ofcom casework is currently held internally; Ofcom plan to increase transparency in this area).

Figure 15 Summary of possible effects of existing UK actions

Ref	Action	Actors	Beneficiaries	Possible effect for beneficiaries
2.2	**Reducing number of nuisance calls made to UK recipients**			
	Move to alternative marketing methods	Call originators	All nuisance call recipients	Modest
¶3a	Register with TPS	Consumers	Consumers who do these things	Moderate
¶3b	Guard personal information			Modest
¶4	Stop activities of a minority of bad actors and improve practice of some others	Regulators, enforcers	All consumers and citizens	Low
¶4	Impose penalties on bad actors to deter others			Low
¶4	Influence UK business climate			Low
¶5, ¶6	Improve CLI assurance systems via new technology and interconnection agreements	Network operators, regulators		Moderate
¶7	Avoid new initiatives creating opportunities for nuisance calls	Government agencies, businesses		Modest
3	**Preventing recipients from receiving nuisance calls made to them**			
	Network identification and suppression of mass nuisance calling	Network operators	All nuisance call recipients	Major
	Individual level suppression in networks of unwanted calls	Network operators, consumers	Consumers who take up these options	Major
	Use of mobile apps and home devices to control calls received	App and device providers, consumers		Major
4.4	**Minimising harm caused by nuisance calls received**			
¶1, ¶2, ¶3	Comply with good practice guidelines (including guidelines for warm calls, debt collection and vulnerable consumers)	Call originators	All consumers	Modest
¶2	Note and query repeat subscriptions etc that may be errors	Businesses	Vulnerable consumers	Moderate
¶2	Note and query unusual transaction patterns	Banks		Moderate
¶6	Improve CLI availability for genuine calls	Government agencies, businesses	All consumers	Modest
¶5	Screen calls through CLI inspection or answering machines	Consumer advisers, consumers	Consumers who do these things	Moderate
¶4, ¶5	Do not engage with unknown callers			Major
¶4, ¶5	Recognise and do not respond to scams			Major
¶7	Report nuisance calls in general (with improved systems)	Consumer advisers, consumers, enforcers, network operators	Recipients of nuisance calls who complain	Minor
¶8	Report scam calls in particular (with improved systems)			Moderate

3 The situation in Scotland

3.1 Introduction

The first part of this report looked at the UK as a whole, which of course includes Scotland. This part now looks harder at Scotland itself. The situation there appears to differ from the rest of the UK in the following important respects:

- Ofcom omnibus consumer issues surveys suggest that rather more people in Scotland remember receiving nuisance calls than in other countries of the UK, and Ofcom landline nuisance calls diary surveys suggest that people in Scotland who receive nuisance calls receive more of them than in other countries of the UK[57].
- Statistics for trueCall users show Scottish users receiving far more nuisance calls than similar types of user elsewhere in the UK - in the first half of 2017, standard trueCall users in Scotland were receiving 26 nuisance calls a month compared with 17 a month in the rest of the UK. Disproportionately high levels of calls about home improvements, and to a lesser extent survey calls, account for a large part of this difference.
- Scotland has one of the highest rates of call centre employment in the UK, with a particular concentration of call centres in the Glasgow area. A high proportion of Scottish agents are engaged in outbound calling, accounting for some 40,000 jobs. And some Scottish call centre outbound campaigns focus on Scotland.
- Public funding for improvements to make homes both warmer and more energy efficient has continued in Scotland, while national Green Deal funding stopped in July 2015. trueCall data show that a high proportion of unwanted calls from major call centres targeting Scottish recipients relate to home improvements, and many of these calls appear to originate from call centres based in Scotland.
- The legal system in Scotland is different in some respects. In particular, legislation for the protection of vulnerable adults in Scotland preceded similar legislation in England and Wales. This has prompted some local authorities to install call blockers in the homes of people suffering particularly from nuisance and scam calls; these are proving popular and effective. Also, enforcement of national regulation by UK-wide regulators fits imperfectly with Scottish systems for pursuing and recording offences.

We provide more information on each of these below, together with such information as we have on Scottish consumer behaviour. In addition Annex J presents detailed analyses of recent data from Scottish trueCall users, including a close look at the top 250 numbers making calls which were blocked by these users, and an examination of the differences between the calls received by standard trueCall users and vulnerable trueCall users in Scotland. Annex K looks at Ofcom consumer research

[57] As discussed below, these observations do not apply if Scotland is compared with other regions of the UK rather than with other countries of the UK.

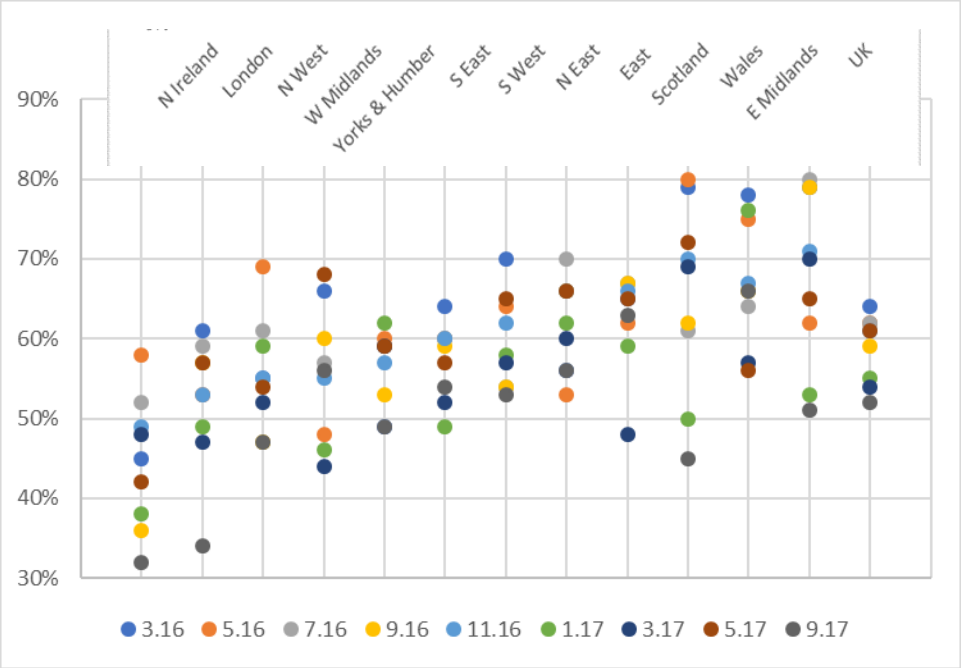
data for Scotland and compares it with the rest of the UK and with the corresponding trueCall data.

3.2 Nuisance calls to Scotland compared with the rest of the UK

Since 2014, Ofcom's periodic consumer issues surveys have been asking respondents about their recollection of receiving nuisance calls in the previous four weeks. We have collected results from 21 such surveys, and in only four of them is the percentage of respondents receiving nuisance calls highest or equal highest in Scotland; usually the percentage for East Midlands, North East or South West is the highest (and the percentage for Northern Ireland or London is the lowest). The percentage is higher than in Scotland in three (out of twelve) nations or regions on average, but it can be higher in as many as nine[58]. BT tells a similar story, saying that on the evidence available through its nuisance calls advice line and network information, Scottish customers receive more nuisance calls on average than those in most, but not all, other parts of the UK; in fact customers in three regions contact BT about nuisance calls more than do Scottish customers.

Figure 16 illustrates the variability[59] of these regional results, using the 9 surveys available for the past two years, with the regions arranged in order of the average results for all 9 combined. Scotland comes third, after East Midlands and Wales.

Figure 16 Landline nuisance calls by region in consumer issues surveys, 2016-17



Source: 9 Ofcom omnibus consumer issues surveys

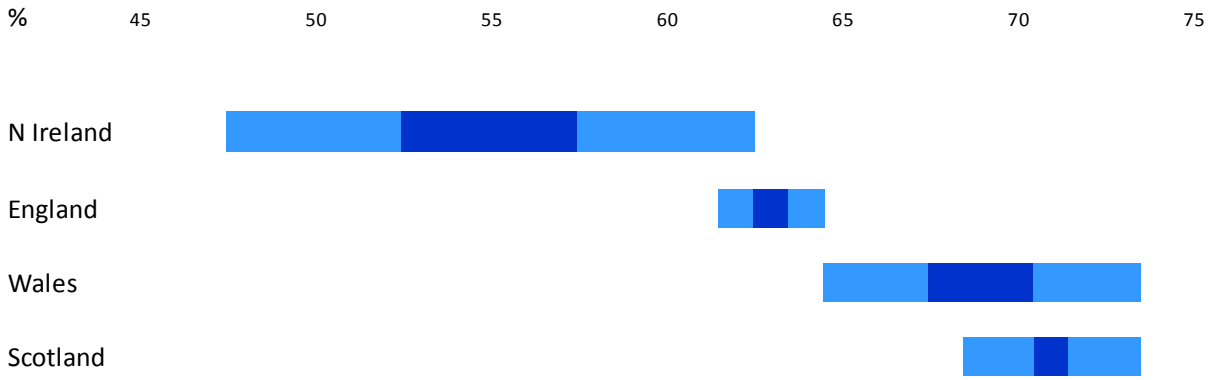
However, if we combine all 21 surveys since 2014, and calculate 99% confidence intervals for the four countries, we get the result shown in Figure 17, with Scotland

[58] These findings need to be treated cautiously, as with sample sizes of around 1,000, and an aim to be representative of the UK as a whole, the consumer issues survey have confidence intervals that overlap around the percentages for individual nations and regions. Relevant details are in Annex H.

[59] Though each survey is shown in a different colour, there is no clear overall trend among the surveys. Variability occurs through time as well as by region.

and Wales clearly having had more nuisance call recipients than England or Northern Ireland.

Figure 17 Respondents with landline nuisance calls in the previous four weeks, 2014-2017



Note: Source is 21 Ofcom omnibus consumer issues surveys combined. Bars show 99% confidence intervals, with darker shading on more likely parts of bar.

Figure 18 and Figure 19 summarise a rather different picture, provided by trueCall data. As they show, the number of nuisance calls received by Scottish trueCall users (which are divided into groups called “standard” and “vulnerable” according to the settings that they use[60]) has been consistently much higher since 2014 than the corresponding figures for the rest of the UK. Standard trueCall users in the rest of the UK have averaged around 20 nuisance calls a month, compared with 30 to 40 nuisance calls a month in Scotland.

It is notable also that the Scottish trueCall user experience has varied more with time[61], being especially and consistently high during 2015 and mid-2016.

[60] A fuller explanation of the vulnerable/standard distinction appears in Annex H.3.

[61] Other parts of the UK display variability with time, but less marked and more random, without clear sustained peaks or troughs.

Figure 18 Nuisance calls per month per trueCall unit in the UK except Scotland, 2014-2017

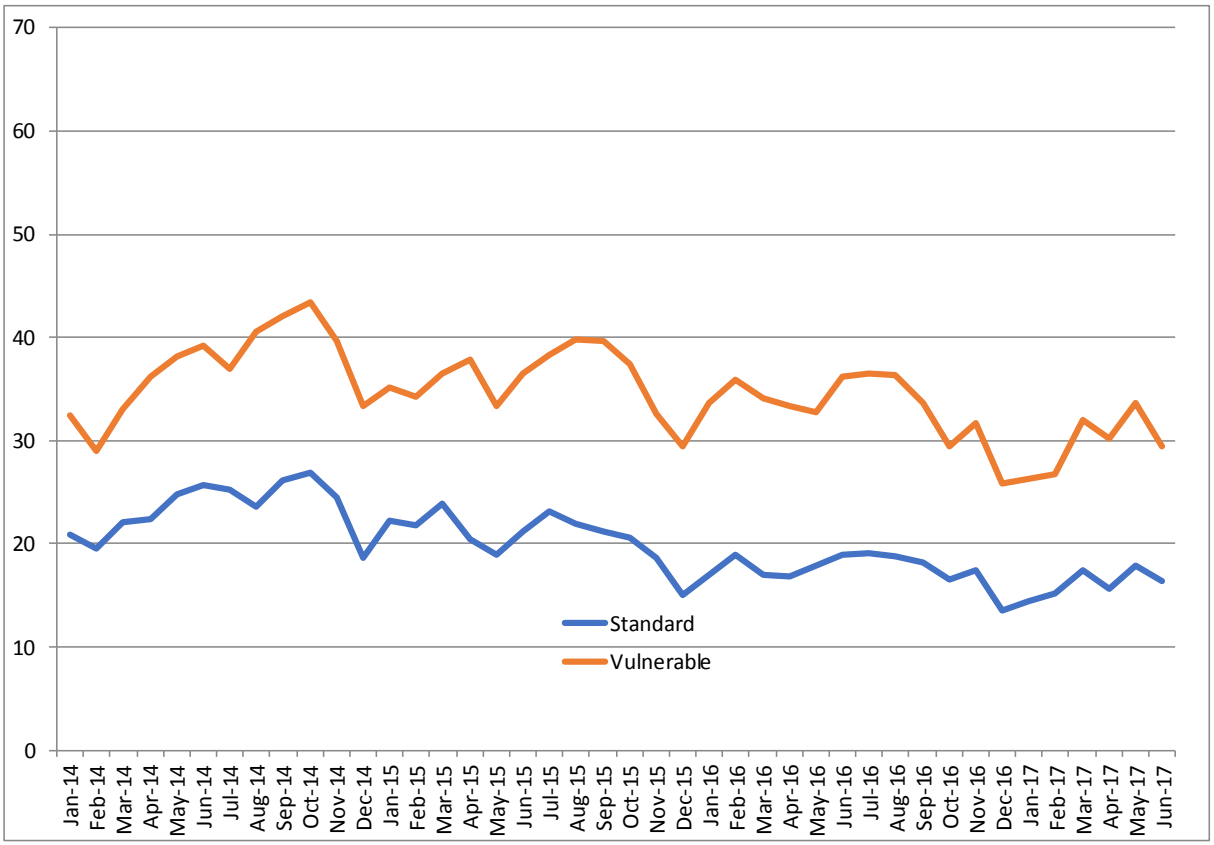
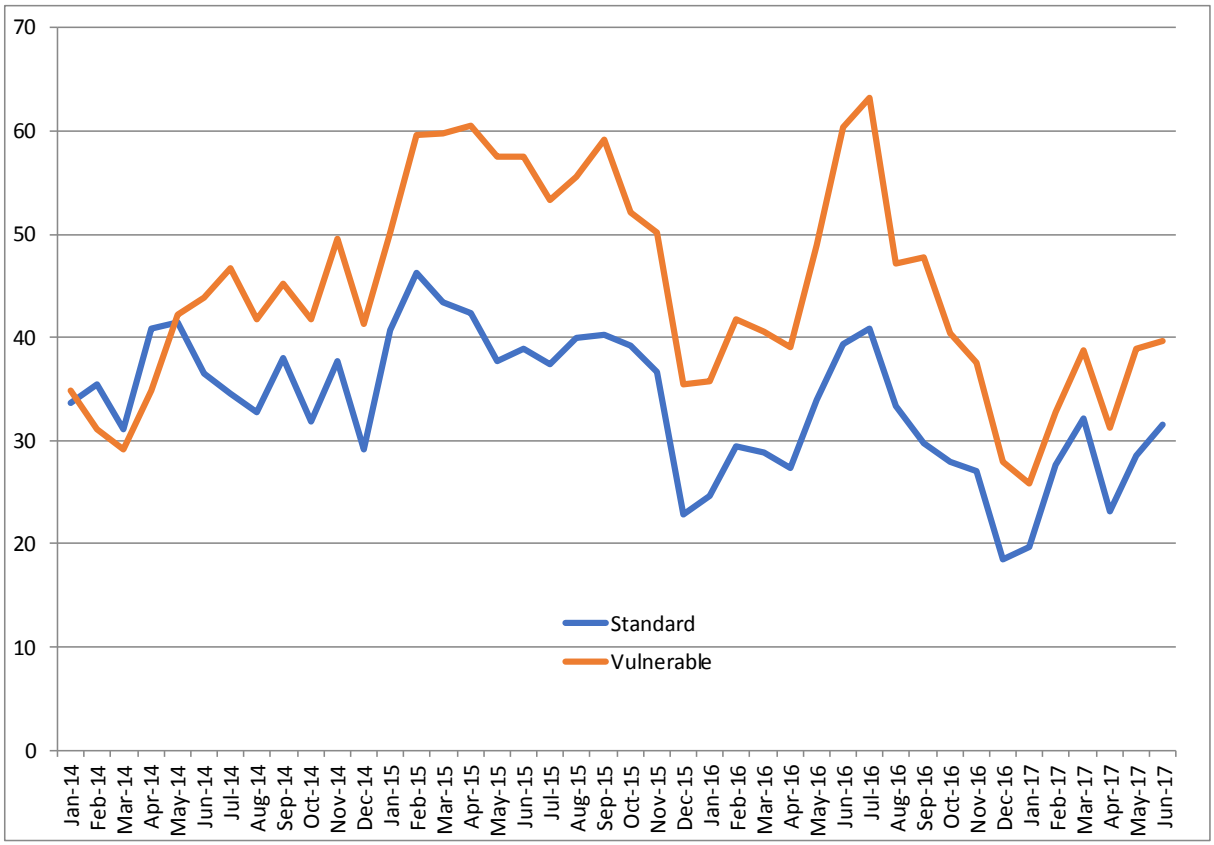


Figure 19 Nuisance calls per month per trueCall unit in Scotland, 2014-2017



Annex J provides far more detail, including comparisons between the types of nuisance calls received in Scotland and the rest of the UK, and between those received by vulnerable and standard trueCall users. Key points include:

- The top 10 and 100 calling numbers account for higher proportions of total nuisance calls in Scotland than in England (as indicated in Figure 20), probably indicating a higher proportion of activity by major call centres.
- Analysing the top 250 numbers making nuisance calls, which have been categorised by sector, Scots receive more calls in most categories, but vastly more calls relating to home improvements - nearly five times as many[62].
- Analysing the top 250 numbers making nuisance calls, 27% of nuisance calls into Scotland come from Scottish numbers (or call centres spoofing Scottish numbers), whereas in the rest of the UK only 3% of nuisance calls come from Scottish numbers. This additional 24% could account for a big proportion of the additional calls that Scots receive. Scots receive the same or more calls as the rest of the UK from all other UK regions.

It is important to note that the "top 250 numbers" analyses naturally focus on the activities of major call centres, which are equipped for mass campaigns. They are

[62] This finding is consistent with detailed analyses of nuisance calls for East Renfrewshire Council: 9 out of the 10 top calling numbers were making calls related to energy efficiency. See http://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=19965&p=0. Also, 46% of the nuisance call cases recorded by Trading Standards Scotland in the year to March 2017 related to energy efficiency.

only a small sample of nuisance calls as a whole; and as frequent changes of calling number become more widespread, the call centres and campaigns using the "top 250 numbers" will change.

Figure 20 Proportion of nuisance calls made by top calling numbers, January-June 2017

User type and area	Quantity of calling numbers			
	Top 10	Top 100	Top 250	Top 1,000
All UK – All users	2.0%	7.9%	12.2%	20.1%
English Standard	2.4%	10.9%	17.3%	28.5%
English Vulnerable	3.5%	13.5%	20.5%	33.2%
Scottish Standard	4.7%	13.2%	20.4%	29.9%
Scottish Vulnerable	6.5%	16.2%	23.4%	33.2%

Source: trueCall data

3.3 Call centres in Scotland

The analysis of trueCall data on the top 250 calling numbers into Scotland has highlighted intensive calling with a focus on Scotland from certain Scottish companies and call centres. In particular, 57 calling numbers that had Scottish area codes were identified as probable sources of telemarketing campaigns, 13 of them located in call centres in Glasgow and 11 located in call centres in Kirkcaldy. More details are given in Annex J.

In the UK as a whole, about 4% of the working population is estimated to work in call centres, but in Scotland this rises to over 5%, with a higher than average proportion of outbound calling (attributed to the appeal of Scottish accents), leading to around 40,000 outbound calling jobs [63]. Call centres and the companies that use them will point to likely job losses if outbound calling is reduced, and the Scottish Government will need to take account of this, bearing in mind that to some extent, more inbound calling may substitute for less outbound.

As noted in the chapter on the UK, there is reason to believe that better treatment of customers would lead to higher job satisfaction for call centre agents. Working conditions in some call centres, especially non-unionised ones, have generated a

[63] The latest publicly available study of the UK call centre industry, commissioned by the DTI, dates from 2004.The industry specialist, ContactBabel, has been unable to make specific contributions to this study. Ofcom commissioned a study of UK outbound calling from ContactBabel in 2015, published as Annex 6 to its Persistent Misuse consultation. A published summary of ContactBabel's 2017 UK industry overview shows that in Scotland and the north of England, over 5% of the employed population is estimated to work in call centres, while in other parts of the UK, the corresponding figure is 2% to 4%, and in London it is under 2%. They say that large call centres (with over 250 agent positions) employ around half of all call centre staff, despite only accounting for less than 9% of physical call centre sites. Further information has been provided by Nerys Corfield, Chair of the DMA Contact Centre Council.

considerable literature[64]. There must be scope for call centre agents to highlight where improvement is needed, for example through a whistle-blowing line.

3.4 Energy efficiency schemes in Scotland

ICO publishes statistics of concerns[65] , showing the call category chosen by the consumer reporting each concern. Figure 21 summarises these for the main categories that were relevant in 2014 to 2016. The most striking feature of this figure is the big drop in concerns in the category "energy saving and home improvements" between 2014 and 2015.

The drop in concerns about energy saving and home improvements was highlighted already in 2015 by David Hickson of the Fair Telecoms Campaign[66], and linked to the end in July 2015 of UK public Green Deal funding for energy efficiency improvements[67]. In Scotland, however, as the Fair Telecoms Campaign has also pointed out, various publicly funded schemes for improved energy efficiency have continued[68].

The previous Green Deal scheme (covering England, Wales and Scotland) included a Green Deal Oversight and Registration Body, under Government auspices. Certified providers were supposed to comply with a Code of Practice which includes provisions to limit and moderate cold calling[69]. We do not know how far these provisions were effective. No publicity is given to any similar scheme covering the Home Energy Efficiency Programmes for Scotland[70].

Combined with the findings of the previous section, these observations suggest that a substantial part of excess nuisance calls to Scottish consumers is related to energy efficiency, with the calls either directly marketing home improvements, or gathering leads to enable such marketing by others.

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[64] See for example the recent book *Working the Phones: Control and Resistance in Call Centres*, Jamie Woodcock, Pluto Press 2017, which includes a 10-page bibliography.

[65] ICO's term for contacts from the public, also known as complaints. The web page for their monthly newsletter about action to combat nuisance calls and texts links to a downloadable file of statistics for the current year.

[66] See the Fair Telecoms Campaign briefing *Energy Efficiency and Effective Regulation of Marketing Activity* at http://www.fairtelecoms.org.uk/uploads/1/1/4/5/11456053/nuisance_calls___energy_efficiency_and_effective_regulation_of_marketing_activity.pdf.

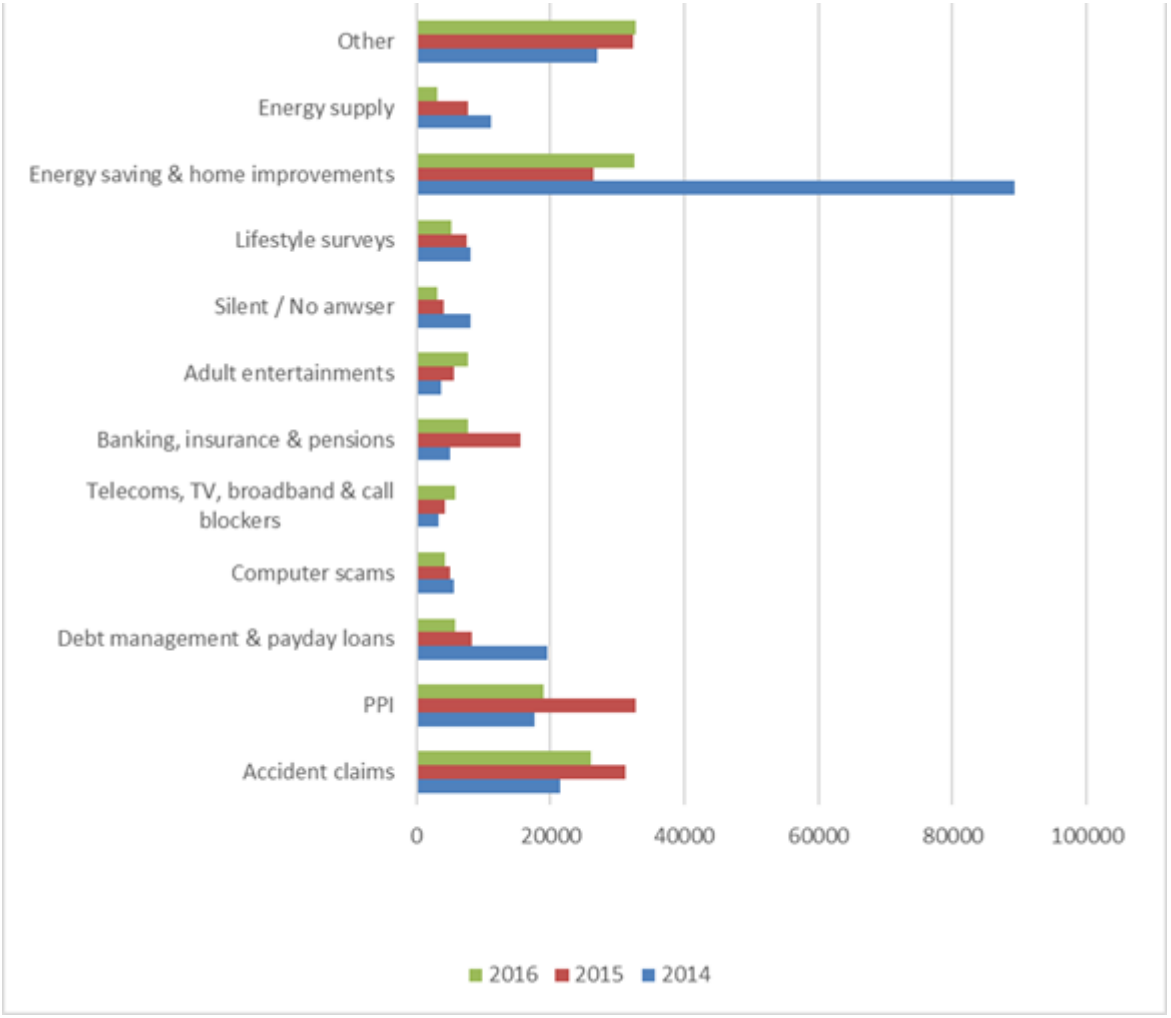
[67] See DECC press release at https://www.gov.uk/government/news/green-deal-finance-company-funding-to-end. Green Deal is now being revived in a different form, under private management – see https://www.gdfc.co.uk/.

[68] Pages 14 to 16 of the March 2017 Citizens Advice report *Frozen Out* usefully describes the Energy Company Obligations and Government funded programmes across the UK, highlighting how Government funding continues in both Scotland and Wales. Up-to-date information on various schemes is held at http://www.energysavingtrust.org.uk/scotland.

[69] Key Code provisions include: 3.10. A Green Deal Participant must not engage in high-pressure sales techniques and must not accept sales leads from persons who are known to use such techniques or are suspected of doing so. A Green Deal Participant must take reasonable steps to satisfy itself about how other parties obtain sales leads before entering into arrangements with them. 3.11. A Green Deal Participant must not offer payments or other remuneration which incentivise staff or other persons to engage in inappropriate sales techniques, or to recommend specific products or services when these may not be appropriate for the customer.

[70] Warmworks Scotland, a key implementation partner, has around 30 approved subcontractors.

Figure 21 ICO concerns by sector, 2014-2016



Source: ICO data compiled by this study

3.5 Legal and organisational features of Scotland

3.5.1 Call blockers for vulnerable adults

The Adult Support and Protection (Scotland) Act 2007 laid duties on local authorities in relation to protection of adults at risk of harm. Similar provisions were introduced in the rest of the UK only through the Care Act in 2014, so Scotland has been a pioneer in this area. Protection from nuisance calls has been recognised as one measure among many that may help some adults at risk, and some local authorities have made major efforts to equip vulnerable residents with call blockers. Figure 22 outlines the success of such activities in the leading area, East Renfrewshire; Angus and South Ayrshire are also working in a similar way[71].

[71] East Dunbartonshire was also involved in earlier similar work.

Continuing work of this kind by these three local authorities is supported by a £405,000 grant won in 2016[72], from the Big Lottery Fund Life Changes Trust, for helping residents living with dementia. Most of the funding covers staff costs, but 18% of it is foreseen for spending on technology, much of which would be aimed at preventing scams[73]. As well as producing direct benefits in the three areas, the three-year programme will lead to a toolkit for applying what is learned from it to other areas[74].

Figure 22 trueCall call blockers in East Renfrewshire

In 2012 East Renfrewshire Council tested a range of call blocking equipment, and decided that the trueCall Secure unit was the most suitable for protecting vulnerable residents from nuisance calls. These people were receiving on average around 40 nuisance calls per month, at least double the national average. The blocking options selected for them varied according to their needs. To date over 550 units have been installed, and 95% of nuisance calls have been blocked. The Council can access online records showing calls received and blocked.

The Council believes that providing call blockers free of charge to this group is a very cost-effective use of funds, as it enables people to stay in their own homes for longer and protects their savings from scammers. The recipients and their carers are delighted with the reduction in nuisance calls. The aims are to provide blockers to all homes including someone with diagnosed dementia, and all those with community alarms; this would amount to around 10% of the homes in the Council area.

Source: Blocking nuisance calls in East Renfrewshire 2016/2017 and interview with Paul Holland of the East Renfrewshire Prevention Team.

Given their high cost-effectiveness, people close to these call-blocking activities strongly advocate extending them to many more potential beneficiaries. The Scottish Government has provided £50,000 additional funding, intended to correspond with the £500,000 made available through DCMS to the National Scams Team for similar purposes. However, it is estimated that there are over 90,000 people in Scotland with dementia, so to reach even (say) 10% of these in this way would require much more generous funding. Further Scottish Government funding of £75,000 was announced on 16 October 2017.

Another benefit of these call blockers is the detailed data derived from them, which can provide many insights into the changing face of nuisance calling (like those in Annex J) and help to track the effectiveness of harm reduction measures.

[72] See the press notice: http://www.lifechangestrust.org.uk/sites/default/files/Media%20release%20-%20Financial%20Scams.pdf.

[73] At an estimated direct technology cost of £100 per unit (as used in the East Renfrewshire cost-benefit calculations), this would enable about 700 people to be provided with call blockers across the three local authority areas.

[74] Much of this information was supplied to the study by the late Brian Smith, Senior Trading Standards Officer at Angus Council.

3.5.2 Other arrangements special to Scotland

Various other features of the Scottish scene deserve mention here. They are mostly helpful in the aim of reducing harm from nuisance calls; however, the additional procedure for enforcement in Scotland slows down action by UK authorities, and split systems for reporting fraud complicate statistical analysis.

Protection as a priority: Council Trading Standards departments across Scotland focus on consumer protection, including the prevention of scams by any channel. They co-operate closely with Police Scotland, who say that in general, protecting potential victims against fraud is far more likely to reduce harm than pursuing the perpetrators[75], given the difficulty in first finding the perpetrators and then securing their conviction[76].

Cross-authority working: At both local and Scottish levels, not just the Police and Trading Standards but also, among others, HMRC, Border Force, Scottish Environmental Protection Agency, and Food Standards Scotland come together to fight serious and organised crime. Most of these agencies have a presence at the Scottish Government Crime Campus at Gartcosh, which has greatly enhanced multi agency working in Scotland. Co-operation of this kind may be easier in Scotland than in the UK as a whole because of its smaller size, and some say more open attitudes.

Working against scams: Scams (mass-market consumer fraud) are seen as becoming an easier and more lucrative form of crime than drug dealing, so consumer protection against scams has a high priority[77]. The 2014 Citizens Advice Scotland (CAS) report *Scammed and Dangerous* provides a useful, if by now slightly dated, picture of different types of scam in Scotland and their likely victims. The Police and Trading Standards lead the work against scams, with other public agencies contributing as appropriate. Private sector entities such as banks, money transfer bureaux or telcos may also need to be involved.

Common Law duty of care: We have been told that it is more clearly the norm in Scotland for people to highlight concerns about others' well-being, fulfilling a common law duty of care, even where there could be countervailing privacy issues or victim denial of their status. For example[78], in 2013 Scottish postal workers helped to identify fraud victims using postal items addressed to them as evidence. Banks are being asked to follow a similar practice.

Case data: It is very helpful that intelligence about reported or detected scams is shared among national and local Trading Standards bodies in Scotland through the "Memex" database system[79]. Co-presence at the Gartcosh Crime Campus also facilitates intelligence sharing between the Police and Trading Standards.

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[75] Interview with Chief Inspector Ronnie Megaughin and Detective Inspector Frank McCann, Police Scotland, 13/07/2017.

[76] Police resources are allocated in the light of a Public Interest Test incorporating such considerations.

[77] Following this study, the Scottish Government has commissioned from EKOS Consultants a study on the economics of preventative actions in relation to scams in general (via any channel, not just the phone).

[78] See https://www.myroyalmail.com/news/2014/09/fighting-fraud.

[79] This is also in use in much of England and Wales, though other parts of England and Wales use a different system, IDB.

Fraud reporting: As elsewhere in the UK, it is believed that fraud, including scams, is greatly under-reported[80]. The impression of under-reporting is accentuated by the fact that Scots have a choice of reporting routes: through the Citizens Advice Consumer Helpline, Police Scotland or Action Fraud (the latter covering the whole UK). Although reports from Scottish consumers to national agencies could and should be fed back to the Scottish agencies, this has not been happening as expected, which may well be why the last year's fraud statistics for Scotland appeared to go down when those for the rest of the UK rose.

Issue of warrants: In order to pursue a case in Scotland, ICO has to go through the Procurator Fiscal's office to obtain a warrant that is valid in Scotland. ICO feels that this additional procedure slows enforcement and is considering alternative legal approaches[81].

Charity fundraising calls: The recently introduced Fundraising Preference Service[82] does not apply to Scotland. Joining in was considered, but decided against on the grounds that charities in Scotland tend to be smaller than in England, there have been few complaints about unwanted fundraising calls, and that the existing Telephone Preference Service should be sufficient[83].

Citizens Advice Scotland: the Scottish sister to the UK national advice charity has 61 bureaux (at least one in each of 31 of the 32 Scottish local authority areas) and over 200 outreach posts, including periodic visits to outlying islands. Each of the 61 bureaux has its own social media account. It is very well placed to reach Scottish consumers, has already taken part in a nuisance call awareness campaign with Which?, and devotes part of its website to useful resources for consumers.

3.6 Behaviour and characteristics of Scottish consumers

We have tried to see if Scottish socio-economic and demographic characteristics help to explain a greater incidence of nuisance calls in Scotland, but have not found any useful evidence to this effect. For example, life expectancy in Scotland is a little lower than in the rest of the UK, and correspondingly the proportion of older people in the population is no greater than elsewhere. The dispersed rural population could mean that telemarketing has historically worked well in some areas, alongside catalogues and distance sales, but for that, too, we lack evidence[84]. However, the state of the housing stock, along with the colder, wetter and darker weather in Scotland, may strengthen the need for improved energy efficiency; such effects are visible in the make-up of nuisance calls.

There are some significant differences in technology take-up between Scotland and the rest of the UK, as illustrated in Figure 23. Looked at over time, these differences are reducing. However, lower levels of internet use in Scotland may have led to

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[80] A 5% reporting rate is sometimes quoted, but no foundation has emerged for this other than educated guesswork.

[81] Interview with David Clancy of ICO, 01/08/2017.

[82] This allows consumers to register their desire not to receive fundraising calls. See https://www.fundraisingregulator.org.uk/the-fundraising-preference-service/.

[83] Interview with Laura McGlynn and Jamie Steed of the Scottish Government, 11/07/2017.

[84] There could be some parallels with the situation in Norway, outlined in an annex to the 2015 StepChange report *Combatting Nuisance Calls and Texts*.

continued marketing by telephone, when internet communications were more used elsewhere. If this is part of the explanation, then the level of telephone marketing would naturally approach that in the rest of the UK, as internet use rises.

Lower internet take-up (which is even lower among older and disabled people and lower income groups)[85] has implications for the design of consumer awareness and educational materials, and for complaints systems. Clearly, it is not enough to rely on websites which may be inaccessible to those who most need them.

A special survey[86] of older people and scams carried out by Age Scotland with AgeUK in the summer of 2017 showed that 41% of Scottish over-65s thought they had been targeted by scammers, with 29% of these mentioning voice communications (presumably, phone calls) as the medium, second to 39% mentioning electronic communications. Across the UK, 27% of single people surveyed responded to a scam attempt, compared with only 9% of those who were married or living as married.

Figure 23 Take-up of communications services, 2017

		UK	Wales	England	Scotland	N Ireland	Scotland urban	Scotland rural
Voice telephony	Landline (H)	82%	80%	82%	81%	84%	78%	88%
	Mobile phone (P)	94%	94%	95%	90% ↓	94%	95%	90%
	Smartphone (P)	76%	74%	77%	70% ↓	76%	76%	69%
Internet	Computer (any type) (H)	84%	81%	85%	75% ↓	80%	82%	81%
	Tablet computer (H)	58%	61%	58%	56%	62%	62%	57%
	Total Internet (H)	88%	84%	89%	77% ↓	83%	85%	83%
	Total Broadband (H)	83%	79%	84%	73% ↓	79%	78%	81%
	Fixed Broadband (H)	82%	78%	83%	72% ↓	79%	77%	81%
	Mobile Broadband (H)	2%	1%	2%	2%	1%	1%	1%
	Use internet on mobile (P)	66%	58%	68%	57% ↓	68%	58%	57%

Source: Ofcom Communications Market 2017 report, chapter on Scotland; data from Ofcom Technology Tracker H1 2017. Note: Arrows indicate significant differences; H and P indicate take-up percentages relating respectively to households and individuals.

3.7 Expected effectiveness of actions in Scottish Nuisance Call Action Plan

This section applies to the Scottish Nuisance Call Action Plan the findings of our study of the effectiveness of actions to reduce harm from nuisance calls in the UK. It aims to take into account relevant special features of the situation in Scotland, as set out in this chapter.

The same colour-coded indicative effect bands are used as in the earlier effectiveness table. Note that the effect is assessed relative to the people who could

[85] See for example *Offline and Left Behind*, CAS, May 2013; *Bridging the Digital Divide*: *Measuring the progress of digital inclusion amongst Scottish CAB clients*, CAS, May 2016.
[86] See http://www.ageuk.org.uk/scotland/latest-news/over-400000-older-scots-targeted-by-scammers/

be affected by it (shown in the “beneficiaries” column) – for example, the call blockers to be funded by the Scottish Government will have a major effect only for the people who get them.

We offer a few observations:

- Six actions appear to have a potentially major impact on their beneficiaries.
- Even minor effects can add up to become major if enough of them are done, and sustained; and combining actions may be more than additive, as different actions can strengthen each other.
- Scalability (as for action A1 – *provide call blockers to vulnerable consumers*) and sustainability (as for action D5 – *develop a scams prevention strategy*, which has to be implemented to be of value) are crucial considerations, in varying degrees, for all action types. For example, probably A1 cannot be applied to everyone who would benefit from it, but with the arrival of new call blocking options, it could have a catalytic role by spreading awareness of how well these can work.
- Examples set by the Scottish Government, such as *displaying CLI with outbound calls* (action D3), can have an indirect influence well beyond their direct effect. We do not feel able to estimate this, but expect that it would be beneficial for the whole UK as well as for Scotland.
- In other actions too, Scotland could pioneer approaches that would be beneficial for the whole UK. Action D4c), *make complaining easier*, is an example.
- Action D4b), *get telcos to block more where technically feasible*, is mainly a whole-of-UK activity led by Ofcom, but SG may be able to interest some operators in piloting new approaches in parts of Scotland.
- Similarly, new approaches to reaching hard-to-reach consumers with awareness messages (action A2) or to engaging financial partners in protecting vulnerable consumers (action C2) might well be piloted in Scotland.
- The concentration of call centres in Scotland provides an excellent opportunity for the Scottish Government and business community to raise standards of practice directly, with immediate benefits both to Scottish consumers and to call centre agents.
- The Action Plan correctly recognises that use of the telephone for scams can be addressed only in part through actions that aim to prevent nuisance calls; other actions will also be needed as part of an overall anti-scam strategy. For example, mail or email can dupe a victim into calling a fraudster, whose calls may then be welcomed.

Indicative effect bands	Low (white): <1%	Minor (orange): 1%-5%	Modest (yellow): 5%-10%	Moderate (green): 10%-20%	Major (blue): 20% +

Figure 24 Assessment of effectiveness of actions in the Scottish Action Plan

Action in the Scottish Action Plan	Lead actors	Beneficiaries	Possible effect for beneficiaries	Remarks
A Consumer protection and empowerment				
A1 Provide call blockers to vulnerable consumers	SG, TSS	500 vulnerable consumers	Major	Scaling depends on funding of £100 per consumer
A2 Raise awareness of protection options	SG, Which?, CAS	Consumers reached by campaigns	Major	Effects depend on consumers' own initiatives (see B)
A3 Measure impact of this Action Plan	SG, consultants	Nuisance call recipients	None directly	Any effects depend on actions taken in light of findings
B Consumers' own initiatives				
B1 Sign up to TPS	Consumers	Consumers who do these things	Moderate	As in Figure 15 for UK
B2 Block unwanted calls			Major	
B3 Check before you tick			Modest	
B4 Complain		Regulators, consumers	Minor	Could have moderate effect on scams
C Business behaviour				
C1 Raise awareness of the rules	SG, SCDI	SMEs and consumers they call	Moderate	Optimistic assessment assumes will to comply
C2 Build partnerships with financial providers to protect vulnerable consumers	SG, banks and other partners	Vulnerable consumers	Major	Banks could reduce losses due to consumer fraud
C3 Encourage best telemarketing practice	SG, DMA	Consumers called by compliant companies	Minor	Confirmed offenders unlikely to change their behaviour
C4 Include vulnerability in the Business Pledge	Businesses	Vulnerable consumers	Minor	Voluntary pledge, likely to reflect existing practice
D Government response				
D1 Update SG impact assessments to include consumer impact	SG	All consumers	Minor	Good general practice but specific impact not identifiable
D2 Ensure SG schemes meet best practice in not stimulating nuisance calls	SG	Nuisance call recipients	Minor	Bad actors will call anyway
D3 Display a number for SG outbound calls	SG and agencies	All consumers	Minor	Could be modest if others follow SG lead
D4 Work to improve regulatory solutions:	SG, UK Government			
a) Consider making live voice calls illegal unless opted-in	UK Government	Nuisance call recipients	Modest	Reserved to UK Government
b) Get telcos to block more where technically feasible	Ofcom, telcos		Major	Mainly whole-of-UK activity
c) Make complaining easier	SG with regulators	Complainants, regulators	Minor	Could have moderate effect on scams
D5 Develop a scams prevention strategy	SG with partners	All consumers	Major	Effect will depend on sustained resources

4 Future monitoring of effectiveness of actions

The previous chapter looked at the likely effectiveness of actions in the Scottish Nuisance Calls Action Plan. The Scottish Government has also requested a review of relevant measurements that could help it[87] to monitor the actual effectiveness of the Action Plan over the next few years.

Earlier chapters and associated annexes have already discussed existing measurements that we are aware of (see, in particular, Figure 2 and Annex H). This chapter aims to bring together this material, with some additions, so as to highlight gaps which could usefully be filled.

Figure 25 summarises the main measurements that SG could make or request, which seem likely to help with assessing the effectiveness of different elements of the Scottish Action Plan. Several will need to be complemented by external data or estimates. For example, it is relatively easy to measure whether Scottish Government schemes are complying with best practice for not stimulating nuisance calls (once best practice has been codified); but what effect this has on the level of nuisance calls in Scotland will be a matter for informed judgement. Progress should ultimately be reflected in lower levels of nuisance calls and of harm.

Relevant conclusions and recommendations are included in the final chapter.

[87] The study was commissioned by the Consumer, Competition and Regulatory Policy Unit of the Directorate for Economic Development of the Scottish Government, which has also produced the Nuisance Calls Action Plan. For brevity, we assume that this Unit will continue to lead on the implementation and monitoring of this Action Plan, and that future progress and measurement reports will be made to it.

Figure 25 Approaches to monitoring effectiveness of Scottish Action Plan

Action in the Scottish Action Plan	Approaches to measuring and monitoring effectiveness
A Consumer protection and empowerment	
A1 Provide call blockers to vulnerable consumers	Reports from involved Local Authorities, drawing on end user feedback and independent project evaluation.
A2 Raise awareness of protection options	TPS registration data (by Local Authority), CAS feedback, consumer surveys.
A3 Measure impact of this action plan	Everything in this column contributes.
B Consumers' own initiatives	
B1 Sign up to TPS	TPS registration data, preferably with refreshed estimates of TPS effectiveness.
B2 Block unwanted calls	Take-up reports from blocking providers (networks, devices and apps); consumer surveys.
B3 Check before you tick	Consumer surveys.
B4 Complain	Complaints statistics, consumer surveys, enforcement feedback.
C Business behaviour	
C1 Raise awareness of the rules	Annual report to SG from lead business body on relevant activities and outcomes, including display of number for outbound calls (see D3).
C2 Build partnerships with financial providers to protect vulnerable consumers	
C3 Encourage best telemarketing practice	
C4 Include vulnerability in the Business Pledge	
D Government response	
D1 Update SG impact assessments to include consumer impact	Effects too remote to be measurable.
D2 Ensure SG schemes meet best practice in not stimulating nuisance calls	SG publicity department to check and report schemes' compliance with best practice guidelines.
D3 Display a number for SG outbound calls	SG telecoms department to implement and report.
D4 Work to improve regulatory solutions:	
• Consider making live voice calls illegal unless opted-in	ICO to report on the situation under GDPR.
• Get telcos to block more where technically feasible	See B2.
• Make complaining easier	See B4.
D5 Develop a scams prevention strategy	Include and identify phone scams, so that evaluation of the strategy will show developments on phone scams.

4.1 Measuring the underlying level of nuisance calls

As was stressed early in this report, it is vital to measure the underlying level of nuisance calls if we are to get any idea of the effectiveness of counter measures. Variability in this underlying level is probably large enough to mask the effects of actions to reduce the level. Annex C attempted to estimate the level from published information, and got no consistent results.

Until recently, survey data on nuisance calls received have been used as a proxy for the underlying level of nuisance calls. With increasingly effective call suppression, this approach is no longer valid; and fortunately Ofcom, with the Nuisance Calls MoU Group of network operators, are well placed to produce and share estimates of this underlying level, using their monthly measurements and other observations available to network operators.

Information exchanged within the MoU Group has been regarded as commercially confidential, even in aggregate (so that no one operator's information is identifiable). We believe that everyone concerned with reducing harm from nuisance calls, not least the operators themselves, would benefit from having base measurements against which progress could be assessed. We therefore recommend that this group should jointly come up with periodic evidence-based estimates of levels of nuisance calling that could be shared with all concerned.

Considerable value could be added by estimates of various breakdowns of the totals, in particular:

- **Geographic breakdowns:** for example, the Scottish Government wants to focus on nuisance calls targeting people in Scotland. Geographic information is embedded in the call details already being collected, although more processing would be needed to extract it.
- **Call characteristics:** these may not be evident simply from the collected call details, but by sharing the findings of related investigations, operators could doubtless put together reasonable ideas of whether calls are silent or abandoned, and live or recorded. Often, it should also be possible to establish the likely origin and purpose of the calls.

Call centre experts like ContactBabel are also well placed to estimate levels of calling to and from UK-based call centres (and associated overseas operations), based on industry surveys and detailed sectoral knowledge. ContactBabel produce and sell an annual report which includes such information. The Scottish Government may want to explore options for accessing such information regularly.

4.2 Measuring nuisance calls received

We have discussed at length two main existing sources of information on nuisance calls received:

- Consumer surveys (to date mainly carried out by Ofcom), in which sampled consumers either recall or record their experience of nuisance calls. Which?, Uswitch and BT from time to time have also carried out and published the findings of similar surveys.
- User equipment or apps designed to help users control the calls they receive. These may assemble aggregate data on nuisance calls reaching consumer connections and their fate when they arrive, for example whether they are

suppressed or answered. The main source of UK data for this study has been the call blocker company trueCall; some (international) data have also been available from app companies Truecaller, hiya and First Orion.

The effectiveness of mechanisms for suppressing nuisance calls, whether in networks or in user equipment or apps, can be assessed in two ways:

- By comparing estimated base levels of nuisance calling with consumers' reported experience of receiving nuisance calls. The difference should represent calls which are suppressed before they reach consumers.
- From companies' own reports of their achievements in this area. To date these reports have been highly selective and occasional, reflecting companies' commercial motivations.

These two approaches combined should give better results than either approach alone. Synchronising surveys and company reports (so that they both refer to the same week or month) would be helpful.

A company's success in nuisance call suppression may well become a factor for some consumers in choosing between companies. However, consumers cannot be expected to assess all the features of these technologies, so it is highly desirable that the companies' reports on their achievements should be in comparable form, and also that they should be independently verifiable.

Once network-based estimates of the underlying level of nuisance calls become available, the surveys can be freed to look at user experience, in particular what incidence and content of nuisance calls annoys or worries people. Distinctions by age, gender, working status and socio-economic group are helpful. The landline nuisance calls diary survey could usefully be complemented with an analogous survey on mobile nuisance calls and texts. The questions in the consumer issues survey that ask people to look back over the previous four weeks seem of relatively little value, as they may well be answered wrongly.

The user device and app measurements have continuing value for both landline and mobile services, because by crowd sourcing they could help to identify new forms of suspicious or fraudulent call.

4.2.1 Consumer awareness and take-up of protection options

As has already been stressed, the effectiveness of opt-in call suppression depends crucially on consumers' own decisions to opt in to them, which in turn depends on their being aware of these options. Service, app and device providers may themselves measure consumer awareness as well as take-up, and SG may gain their co-operation in sharing such measurements.

Citizens Advice Scotland and Which? should be able to report on the reach of their September 2017 awareness campaign. In future they might increase the interactivity of their online advice pages so as to be able also to report on which pieces of advice consumers view the most, and find the most useful.

Ofcom's March 2015 consumer research into awareness and take-up of protection options (see Annex E) has been valuable for this study. Ofcom is currently reviewing

its market research on nuisance calls[88], and one outcome of the review might be repeating this set of awareness questions at intervals. As well or instead, SG could itself commission consumer research in this area.

4.2.1.1 TPS registration data

In August 2017, TPS provided to this study their data on how many telephone numbers in each geographic area code in Scotland are on the register. These data could be provided at regular intervals, and translated into "TPS take-up" figures for each local authority area in Scotland. Figure 26 shows our initial translation of this kind; Annex L explains how it was done. The average take-up for Scotland as a whole is 73 per 100 households, and the figure shows that TPS registrations per 100 households are mostly between 65 and 85, but there are deviations in each direction, which may help in focusing local awareness campaigns, either for individual council areas or for particular intermediate zones[89].

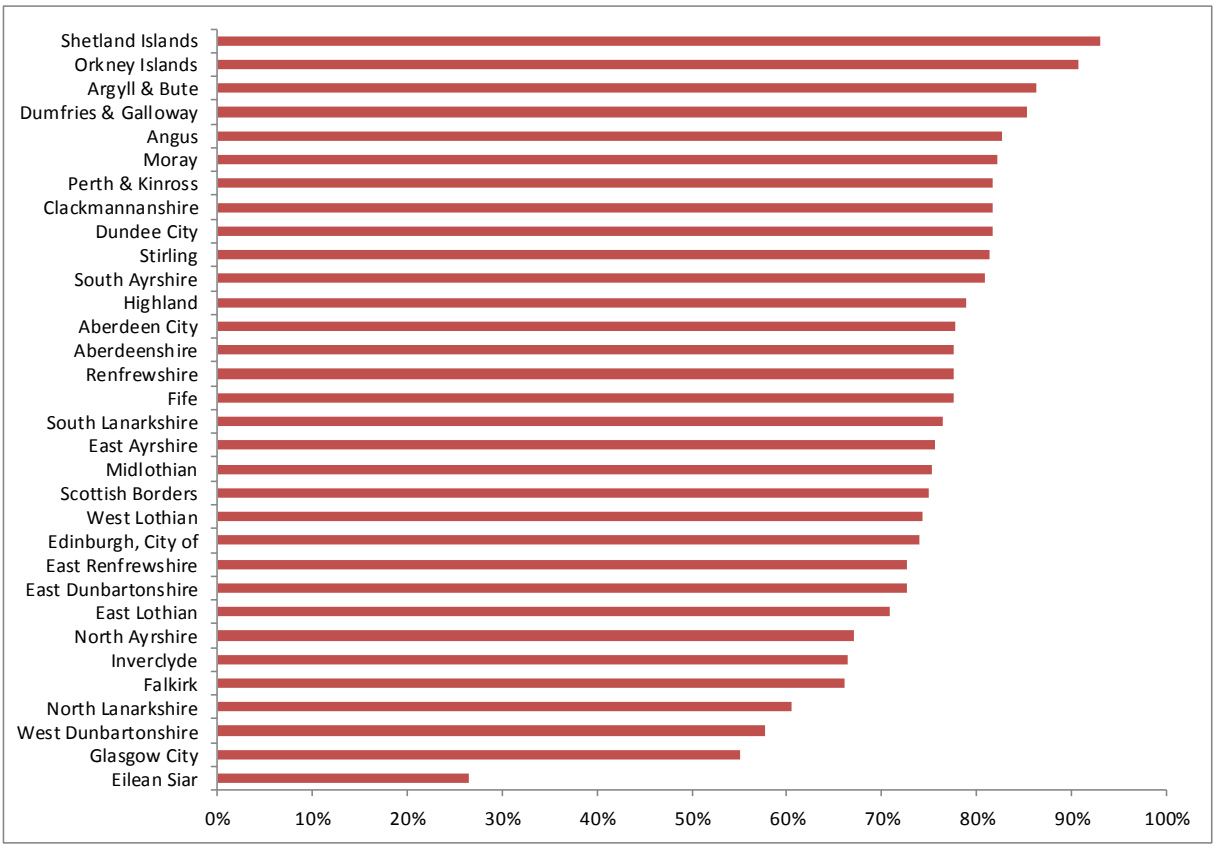
Regular repetition of this exercise could shed light on the effectiveness of consumer awareness campaigns in different local authority areas, even if difficulties in attributing the TPS figures to local authority areas cast doubt on some individual area results[90].

[88] Ofcom's Statistical Release Calendar for 2017 includes the following note: "We are proposing to change the frequency of this study from annually to every two years. The next nuisance calls landline panel research will report in March 2019. Please contact market.research@ofcom.org.uk by Friday 20 October 2017 if you have any feedback regarding this change."

[89] The mapping exercise has used the same intermediate zones as the Scottish Index of Multiple Deprivation (SIMD).

[90] In particular, some of the registrations attributed to the council areas closest to Glasgow City may properly belong to Glasgow City. By contrast, the figures for Shetland Islands and Orkney Islands at one extreme, and Eilean Siar at the other, should be free from confusion with any other areas,

Figure 26 TPS registrations per household by council area in Scotland



4.3 Measuring consumer harm resulting from nuisance calls

4.3.1 Complaints and case data

A traditional indicator of consumer harm (for nuisance calls and in many sectors) is complaints. Because they reflect harm experienced, complaints about nuisance calls have the potential to be an especially valuable measure for the Scottish Government. The extra data that complainants are asked for can also be a useful source of intelligence for enforcement purposes.

Figure 27 shows how complaints to ICO[91], Ofcom and TPS have varied since 2010. Following a large peak in 2013 (when the issue received much publicity and ICO made it easier to complain), there have been apparently random variations and little discernible overall trend. Figure 1 however, complied on an annual basis, shows reductions between 2016 and the first half of 2017.

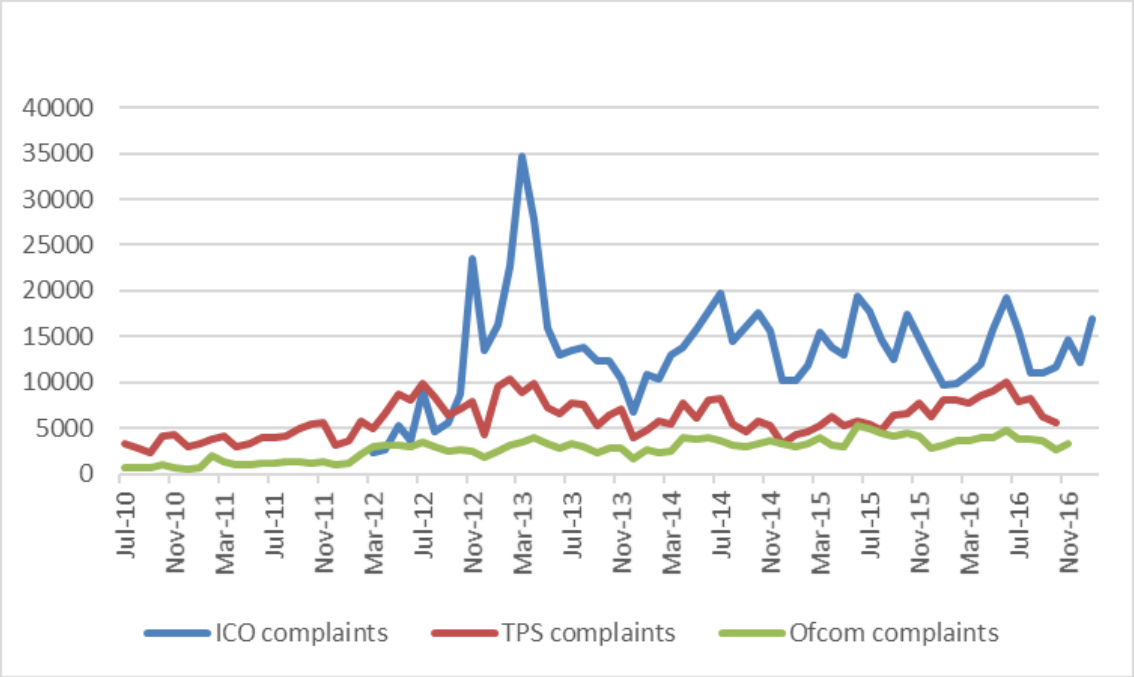
It is well known that complaints represent only the small tip of a large iceberg[92], and that complaint levels are affected not only by harm experienced but also by factors such as publicity around the issue in question, people's awareness of how to complain and the ease or difficulty of making a complaint. Still, as they are collected

[91] These include complaints about nuisance calls to CMRU and to the mobile operators via '7726'.

[92] See for example Understanding Consumer Experiences of Complaint Handling, September 2016, research by djs for Citizens Advice.

across sectors and causes for complaint, they are often used to compare consumer experiences across sectors and types of problem.

Figure 27 Monthly complaints to official bodies, 2010 to 2016



Annex I provides information on the different complaints systems currently in use. As the claims management regulation review noted[93]:

> "The existing environment for reporting complaints about direct marketing is confusing for consumers; different types of complaints currently need to be made to one or more of ICO, Ofcom, TPS, CMRU and/or the Advertising Standards Agency (ASA). The creation of a central reporting point for such complaints could help to reduce such confusion."

Complaints about spam texts can be made relatively easily, by sending a message from the mobile phone affected to '7726'. Figure 28, based on reports of completed cases, shows that this easier reporting makes a big difference - complaints about texts are much more likely to be made by sending a message to '7726' than by contacting ICO, and, overall, taken-up complaints about texts are more than six times as common as taken-up complaints about calls[94]. Yet without the '7726' option, the reverse would hold - at around 4 per 100,000, taken-up complaints per text made directly to ICO are only half as common as taken-up complaints per call.

[93] *Claims management regulation review: final report* (HM Treasury and the Ministry of Justice, 2016), https://www.gov.uk/government/publications/claims-management-regulation-review-final-report.

[94] The figures here are for the few cases where both the numbers of calls or texts and the numbers of complaints are available. The ICO annual reports for 2014-2017 together provide a total of 508,396 complaints (or "concerns") made directly to ICO, with 88% due to calls.

Figure 28 Modes of complaining to ICO from completed case reports, 2014-2017

Medium	Number of complaints cited in completed case reports	Proportion of complaints made directly to ICO	Number of calls or texts causing complaints	Complaints per 100,000 calls or texts causing complaints
Calls	1,294	78.13%	16,707,773	7.7
Texts	10,361	7.71%	20,377,862	50.8

To provide another comparison, BT has said that since the launch of BT Call Protect, there are 80,000 calls per week (or at least 320,000 calls per month) to '1572' to add numbers to personal blacklists, change settings or check the messages left by calls that might be nuisance calls[95]. Despite arising from just 2 million service users, this number dwarfs the average number of complaints made to ICO, Ofcom and TPS together, which was about 6,200 per week in 2016[96].

We recommend that the two organisations mainly receiving complaints about nuisance calls, ICO (now in overall charge of TPS) and Ofcom, jointly review how to maximise public value from their complaints statistics. Changes for consideration include:

- Finding the most meaningful period over which to aggregate complaints, which is long enough to eliminate "noise" but short enough to reflect genuine trends.
- Synchronising complaints publication from the two organisations, using consistent breakdowns, and combining figures when this makes sense so as to provide a single overall indicator.
- Providing their best interpretation of the factors affecting changes in complaints levels, such as changes in nuisance call levels or types, availability and take-up of call suppression services, effective enforcement action, relevant publicity, or changed complaints systems.

Action Fraud and Police Scotland, working with Trading Standards Scotland, also gather complaints and case data on scam calls. These data should also feed in to the Scottish Government assessment of its Action Plan, and as far as possible be integrated with the ICO/Ofcom exercise just outlined.

The Scottish Government may wish to request the UK organisations to pass on data from the subset of complaints that can be identified as from Scottish complainants or about Scottish originators. If complaints from Scottish complainants were to fall faster

[95] *More than two million now on BT's free service to crack down on nuisance calls* (BT, April 2017), https://www.btplc.com/news/index.htm#/pressreleases/more-than-two-million-now-on-bts-free-service-to-crack-down-on-nuisance-calls-1911024.

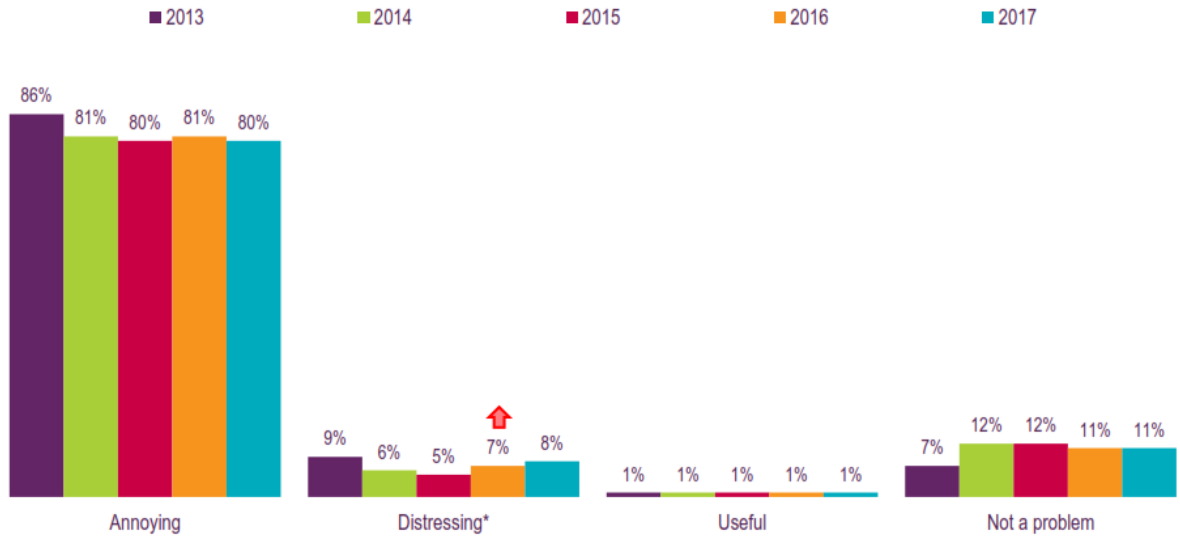
[96] *Tackling nuisance calls and messages: Update on the ICO and Ofcom Joint Action Plan* (Ofcom, December 2016), https://www.ofcom.org.uk/__data/assets/pdf_file/0017/96110/ICO-Ofcom-joint-action-plan-2016.pdf.

than complaints from the rest of the UK, it would be a valuable indicator of success of the Action Plan.

4.3.2 Consumer feelings about nuisance calls

Ofcom's diary survey, and occasionally other surveys, ask people how they find the nuisance calls that they receive (choosing among *distressing, annoying, not a problem* and *useful* – see Figure 29). Since consistently over 80% of respondents find the calls annoying, changed levels of distress may be hard to detect with any confidence. As is shown in Figure 30, distress is largely (though not only) attributable to scam calls, and it may work better to explore this as part of the Scottish Government's broader scams prevention strategy than as a subset of nuisance call research. (Note that the kinds of calls shown in the middle part of Figure 30 were chosen by respondents; many of those shown as financial services, computer maintenance etc may in fact also have been scam calls).

Figure 29 Feelings about nuisance calls overall, 2013 to 2017



Source: Presentation slides of Ofcom landline nuisance calls diary survey 2017

Figure 30 Distress caused by nuisance calls

Percentage of 2017 diarists finding calls of certain kinds distressing

Abandoned calls	13%
Silent calls	9%
Recorded sales calls	8%
Live sales calls	7%
Scam calls	24%
Financial services	16%
Computer maintenance	11%
Accident claims	10%
PPI	8%
Home improvements	7%

Top reasons given by 2017 diarists for finding calls distressing

They keep phoning	20%
Silent calls / caller hangs up	20%
Disturbed / time wasting	12%
Scam call	11%

Source: Ofcom landline nuisance calls diary survey 2017

Other sources for assessing how consumers feel about the calls they receive include MPs' postbags (in recent years nuisance calls have been a major element), and qualitative reports from call suppression providers. For example, BT and TalkTalk, who have been very active in phone scam prevention, may be able to report on the volume and nature of calls they get to their advice lines; while trueCall and others may provide verbatim comments from their customers who have blocked certain callers, as well as reflecting to SG any value obtained from public crowdsourced databases like whocallsme.com.

5 Conclusions and recommendations

5.1 Conclusions

The level of nuisance calling into the UK shows no sign of abating in the near future. However, there are now promising new initiatives by some major network operators to suppress nuisance calls within their networks, and also new mobile call management apps, as well as wider availability of call blocking devices. Technical advances of this kind, taken together, could bring a step change in harm reduction from nuisance calls. Consumer awareness of, and willingness to take up, available protections is crucial to their effectiveness.

Relevant regulation has advanced somewhat in recent years, but the two regulators mainly concerned with enforcement against nuisance calls, ICO and Ofcom, are resourced to act against the perpetrators of only a small proportion of offending calls. Their procedures could be streamlined and improved in various respects. Greater traceability of nuisance calling through reliable CLI (which should be implemented in the UK in a few years' time) will make it harder for miscreants to hide. However, obscure chains of business relationships, whereby for example a company gathers sales leads on behalf of another company with which it has no direct dealings, cannot be eliminated and will continue to make enforcement in this area very challenging.

When nuisance calls relate to calls in a particular regulated sector, such as PPI or energy provision, sectoral regulators may be better placed than ICO or Ofcom to rule and enforce against inappropriate sales practices. In Scotland, nuisance calls about energy efficiency have continued at a high level, and greater discipline in this sector could make a real difference. A significant proportion of nuisance calls to Scottish consumers appears to come from Scottish call centres, which offers an excellent opportunity for local action to raise standards.

Telephone scams are only one type of fraud, a growing area of criminal activity, to which almost everyone is exposed but some people are especially vulnerable. People who are worst affected by nuisance calls bear a hugely disproportionate burden of harm from telephone scams, so giving priority to identifying and protecting them will make the biggest impact on harm reduction. Often, people who are vulnerable to scams are also vulnerable in other respects, and Scottish systems of care and support for those most at risk, with inter-agency co-operation, could achieve much, if adequately funded.

The Scottish Nuisance Call Action Plan includes several potentially highly effective actions, together with others which will make valuable contributions to reducing harm from nuisance calls. If sustained for long enough, and with support from the UK government and national telcos, this could become a model initiative for others to follow.

5.2 Recommendations

These recommendations are for actions to be encouraged and supported by the Scottish Government, but mostly carried out by others. They are grouped by the lead actor. The focus is on recommendations which could be implemented for Scotland in the near future.

Scottish Government

1. Establish a co-ordination point (possibly in the Scottish Council for Development and Industry) to monitor implementation of the Action Plan, bringing together concerned actors for discussions as needed.
2. Building on existing back-end integration[97], provide a nuisance call complaints portal for Scottish consumers, which automatically directs complaints to the right place. This would be primarily web-based, but a freephone telephone number should also be provided. This will enable it to track levels, sources and types of complaint, with desired frequency and timing so as to assess the effects of different actions or events (e.g. widespread publicity, new rules or practices).
3. Consider how best to facilitate rapid exercise of UK enforcement powers in Scotland.
4. Building on relevant UK Government efforts, set up a prize contest for innovative call management technology, including the possibility of voice recording as evidence.
5. Codify and implement best practice in publicising schemes while minimising stimulation of unwanted calls. As an immediate example, consider how best to control the telephone activity of companies selling energy efficiency improvements, possibly through Warmworks Scotland.
6. Invite Members of the Scottish Parliament to report on the profile of nuisance calls within their constituency postbags.
7. Work with UK regulators and concerned sector partners to produce improved regular indicators of progress in reducing harm from nuisance calls. In particular:
    a) Discuss with Ofcom the future of their nuisance call market research and related measurements, including bought-in industry research.
    b) Request separately identified Scottish findings from surveys, if possible with boosted samples to improve comparability. This will help to identify any differential effects of actions, as between Scotland and the rest of the UK. If necessary, commission complementary surveys.
    c) Agree with local authorities using trueCall, and possibly directly with trueCall, access to or reports from the trueCall database. This will enable regular tracking of levels and patterns of nuisance calls to both “standard” and “vulnerable” users, which should provide evidence of effects of actions. Special analyses could include for example measuring the effectiveness of telco blocking options (BT Call Protect, Sky Talk Shield, etc); changes over time in the effect of having a trueCall unit (do call centres eventually stop calling?); and more detailed understanding of the composition of the top X calling numbers.

[97] For example, by First Orion for TPS Protect.

d) Approach network operators about data on subscriptions to and blocking performed by their network blocking services.
e) Get regular reports from TPS of identifiably Scottish registrations (and map them to Local Authority areas); examine these before and after awareness campaigns to see if any change is observable.

Consumer advice providers

1. Review and keep updated advice to consumers on protection from nuisance calls, in the light of new call suppression techniques now available.
2. Make available to consumers, if possible without charge, independent comparable evaluations of the strengths and weaknesses of the various call suppression techniques.
3. Ensure that advice for people who do not use internet is available to them in suitable formats, including formats accessible to differently-abled people.
4. Consider presenting online advice interactively, to help consumers see what is best for them by answering a few questions. This would enable more options to be included, like screening calls, going ex-directory, using a dummy number when completing forms[98], and changing numbers.
5. Report to SG on success of nuisance call awareness campaigns, and on perceived usefulness to consumers of advice on steps they can take to protect themselves from nuisance calls.

Adult care workers

1. When assessing a person's needs for care and equipment at home (for example following a fall or on discharge from hospital), include telephone service and equipment provision, taking account of nuisance call protection facilities as well as price and other features[99]. Where change in these is needed, support the cared-for person in implementing the change.
2. Combatting social isolation must have high priority, as it should reduce people's motivation to engage with fraudsters on the phone, on top of its other benefits.
3. Encourage people who are known to have suffered from a scam (or where they lack capacity, whoever is responsible for their affairs) to get a call blocker or equivalent network service.

Telecoms service providers

1. With Scottish Government facilitation, consider and implement ways of working with financial service providers and adult protection authorities to help to identify and protect customers at risk of telephone fraud, within appropriate privacy guidelines.
2. Publicise to landline customers the benefit of checking the CLI of inbound calls and the way to do so. If necessary, provide a free CLI display unit or equivalent facility.

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[98] See for example http://www.truecall38.co.uk/ which offers the dummy number 0333 88 88 88 88.

[99] Installing a domestic call blocker requires no more special knowledge or skill than installing a phone with an emergency button.

3. Review the nuisance call advice provided to consumers on websites, aiming for best practice as suggested by Ofcom.
4. In consultation with the Scottish Government, consider using Scotland or parts of Scotland to pilot new approaches to getting customers signed up to call suppression services, including having the services switched on by default.
5. Share data derived from call suppression activities with enforcers and others, so as to maximise harm reduction. Report regularly in a comparable form on the effectiveness of call suppression, and on its take-up (where it does not automatically apply to all customers).
6. For all new customers, make nuisance call protection choices (such as TPS registration and call blocking on mobile handsets) a routine part of the signing-up process.
7. When Caller Display service is available free on all landlines (a new General Condition requires this by October 2018), turn it on by default rather than relying on customers asking for it.
8. With Ofcom, the MoU group should devise non-confidential indicator(s) of nuisance call volumes targeting UK users, for regular publication.

Businesses using outbound calling, and relevant business associations

1. Ensure all company directors are aware of telemarketing rules, perhaps alongside implementation of the General Data Protection Regulation (GDPR) in May 2018.
2. With consumer representatives, review and implement good calling practices, including those for warm marketing, vulnerable consumers and debt collection.
3. Pay special attention to outbound calling practices of call centres in the Greater Glasgow area.
4. Encourage whistle-blowing by call centre agents. As a pilot, a Scottish whistle-blowing line could be set up and advertised in universities in Glasgow, to reach students who work short-term in local call centres.
5. Set up a Scottish Trusted Trader scheme, whose members would comply with good practices across the board (in relation to the services they provide as well as their use of the phone), with jointly funded consumer guarantees in case of problems.

UK regulators and enforcers

1. Ensure relevant Scottish authorities are aware of complaints about apparently Scottish companies, and any proceedings against such companies, whether informal or formal, together with any reduction in complaints about relevant companies under monitoring/enforcement.
2. Where possible, inform the Scottish Government about complaints from consumers based in Scotland.
3. Work together to improve the usefulness of complaints statistics as a management tool, for all concerned with reducing harm from nuisance calls, including the Scottish Government. Ofcom, ICO and Action Fraud should jointly offer their own best understanding of how and why the statistics change.

A further recommendation, for the Scottish Government together with the UK Government, is to keep the effectiveness of action programmes under review,

and give due consideration to other ideas that have already emerged or that may emerge in future. Below we list some such ideas that have surfaced during the study. These may require further development, and their implementation (if decided on) would require broader (UK or international) and often longer-term involvement.

Broader or longer-term actions – already under way

1. Telcos introducing improved CLI practices, under the new General Condition coming into effect in October 2018.
2. UK Government (DCMS) pursuing Director Level Accountability for nuisance calls.
3. Cold calling about pensions to be banned.
4. Networks designing and implementing new CLI systems to prevent number spoofing with Voice over IP (widespread benefits are unlikely before 2020).
5. Ofcom to keep CLI practices under review and require further improvements where warranted.

Possible broader or longer-term actions for discussion

1. Wholesale Line Rental landline providers to offer their customers the BT Call Protect product if they have no better alternative.
2. Telcos to make it easy for users of their opt-in call suppression systems to turn suppressing a call into a complaint about that call.
3. Perhaps via Ofcom/Indian regulator links, extend call centre whistle-blowing to India, offering a bounty for useful reports.
4. All sectoral regulators to consider the role of telemarketing in their own sectors and limit it as appropriate.
5. Consider a regime for licensing UK-based call centres. Licences would depend on demonstrated compliance with all relevant rules.
6. Set up and run a publicly available database identifying the companies and purposes behind legitimate outbound presentation CLIs. Network operators would suppress spoofed calls where the presentation CLIs did not match known network CLIs.
7. Reconsider the bases for financial penalties for nuisance calling, not ruling out per-call fines (or putting a company out of business where appropriate).
8. Consider directing the proceeds of financial penalties towards protection of and redress for vulnerable consumers.

Annex A What is a nuisance call?

This Annex was originated in November 2016 by Steve Smith of trueCall. It is reproduced here (amended) with his kind permission.

A.1 Terminology

The term ‘nuisance call’ is a catch-all description for a call that you don’t want to receive, and is therefore unhelpful as a technical term. It is possible for any phone call that you get at home or on your mobile phone to be a ‘nuisance call’. For example, a call from a close member of the family may arrive at a critical time during a tennis match on the TV.

This annex provides a taxonomy of phone calls that allows particular types of unwanted calls to be identified. The table below splits out calls into three main categories – **Domestic calls** (person to person), **Organisational calls** (organisation to person) and **Other**. We suggest that only the calls described as unwanted marketing calls, plus of course scam calls, are of interest to governments and regulators. Note that while they may be unwanted, some of these calls are legal.

The deficiencies of the term ‘nuisance call’ are clear – unwanted **domestic** and **other** calls may all be referred to as ‘nuisance calls’ but they are not within the remit of government and regulators.

The term ‘unwelcome organisational call’ is a more precise term that appears to cover the right ground but it is unwieldy.

‘Unwanted commercial call’ is a little more user friendly. It covers legitimate and illegitimate calls from businesses, calls from charities, and scam calls. It isn’t completely satisfactory because it doesn’t cover calls from political parties canvassing for your vote - these may be unwanted calls from an organisation, but strictly their purpose is not commercial.

Unwanted organisational calls can also be categorised in other ways:

- By purpose – sales, survey, scam, etc
- By industry – telecoms, energy, home improvements, insurance, etc
- By mode of the call – live agent or recorded message (robocall)
- By call presentation – calls may be connected, may be abandoned (with a compliant announcement), or may be silent calls

For example, robocalls (where there is no prior consent) may be illegitimate marketing calls or scams. Silent calls are usually non-compliant marketing calls, where the non-compliance may be deliberate or accidental.

A.2 Estimates of the number of calls of each type

trueCall collects data on inbound calls that around 6,000 trueCall customers with CLI agree to provide to trueCall’s central database. As far as we know, this database is a unique resource in the UK for understanding the composition of nuisance calling to landlines and changes in its level. And although trueCall users are not a representative sample of all UK landline users, the database can also help in understanding the level of nuisance calling to landlines (possible adjustments for non-representativeness are discussed in Annex H.4).

It is impossible to determine with absolute certainty whether a blocked call would have been an unwelcome call had it been connected, but trueCall have developed an algorithm that applies over 30 separate tests to determine whether an incoming call (whether connected or blocked) was likely to have been an unwelcome call. For example, it is likely to be a nuisance call in the following cases:

- Its Caller-ID was on the user's block list.
- The call was intercepted, and when announced to the user was rejected.
- The caller chose not to say their name or press a button when asked.
- The user chose to reject the caller midway through the call.

Figure 31 A taxonomy of phone calls

	Legal?	**Nuisance?**	**Estimated % of all calls**	**Estimated % of nuisance calls**	**Basis for estimate**
Domestic calls (person to person)					
Friends and family calls	Y	N	60%	-	trueCall database analysis[9]
Unwelcome personal calls	Y	Y	<1%	<1%	Conversations with trueCall customers[10]
Malicious calls[1]	N	Y	<1%	<1%	
Organisational (organisation to person)[2]					
Welcome/invited organisational calls (marketing & others)[3]	Y	N	3%	-	trueCall database analysis[11]
Unwanted marketing calls – legitimate and compliant[4]	Y	Y	4%	12%	Analysis of top 250 nuisance calls Jan – June 2017[12]
Unwanted marketing calls - legitimate sales pitch, but non-compliant[5]	N	Y	10%	29%	
Unwanted marketing calls - misleading or aggressive commercial practices[6]	N	Y	14%	38%	trueCall cost benefit analysis using Ofcom diary survey 2017
Scam calls[7]	N	Y	7%	19%	
Unwanted non-marketing calls (e.g. debt collection, market research)	Y	Y	<1%	2%	Analysis of top 250 nuisance calls Jan – June 2017
Other[8]					
Misdials	Y	Y	<1%	<1%	Conversations with trueCall customers[10]
Wrong numbers	Y	Y	<1%	<1%	
Call to recycled numbers	Y	Y	<1%	<1%	

Notes to Figure 31

1 Calls from private individuals that are malicious. It may be a heavy breathing call, or the caller may use abusive or sexually explicit language, or threaten the called party, their family or their property.

2 Organisations may be businesses, public services, charities, political parties, etc.

3 Marketing calls from organisations whose calls have been invited – a double glazing company calling you after you have clicked on ‘Call me’ at their web site; a charity who you have asked to call you about a donation; etc. Also calls from organisations whose calls have been invited that are not associated with marketing – the garage calling to say that your car is ready for collection; the dentist reminding you of your appointment; your bank querying a transaction on your card; etc.

4 This is a call from a company that – while it is legal - is unwanted. This may include your energy or telephone company calling with a cheap deal; a company offering to assist you with a PPI claim; etc. If the purpose of the call is to market a product or service then these calls are legal only if the called party’s number is NOT registered with the Telephone Preference Service, or if consent to call has been given in some other way (possibly without you realising you were giving it, e.g. by failing to uncheck a checked box online).

5 Marketing calls from an organisation that are unwanted where the proposition is pitched fairly, but which are not compliant with the calling regulations for some reason. This may be because they ignore TPS, they don’t respect ‘do not call’ requests from people they call; they call outside allowable hours; they call with a recorded message without explicit prior consent to this form of contact; they refuse to identify themselves when asked; etc.

6 These calls may occur on the initiative of the agent or the management.

a. In the first case, the call centre agent is engaged in misleading and aggressive commercial practices (more often referred to as mis-selling) but this is not sanctioned by management. The remuneration that call centre staff receive is often heavily weighted towards commission earned for the sales they make, so they may go ‘off script’. They may exaggerate about the product or service being sold, promise discounts that don’t materialise, switch people from one service to another without telling them (‘slamming’), use coercive or exploitative sales tactics, etc.

b. In the second case, the call centre is knowingly engaged in misleading and aggressive commercial practices. This may be a matter of turning a blind eye to bad practice by individual sales agents, or the products and proposition may be intrinsically misleading – for example:

    - The call centre claims that your doctor asked them to call you about some high priced vitamin pills that you supposedly need;
    - The call centre tells you that you have won a prize, but can only claim it if you purchase overpriced products from their catalogue.

7 With scam calls there is no legitimate product being sold – the whole purpose of the phone call is to defraud the called party. This may be attempted in a single call, or over a period of time in a series of calls. Where the called party has been ‘groomed’ they may consider that the call is a welcome call.

8 These calls may be made by an individual or an organisation that places a call to the wrong phone number by mistake. There was no intention to call the party who was actually called. They fall into three main groups:

- **Misdial:** The caller has made a mistake when dialling a number – typically they have dialled one or more wrong digits, or have transposed digits when dialling. For most people this is a very small proportion of the calls that they receive, but those who have a phone number that is similar to the local taxi company may get a lot of them. Though low, the incidence of such calls is said to be increasing as a result of phone use by more people who are living with dementia and similar conditions.
- **Wrong number:** In this case, the caller has correctly dialled the number, but the number that they are dialling is incorrect – for example, it was misprinted in a directory.
- **Call to a recycled number:** This is a legitimate phone call to someone who previously had your phone number. This is not normally a problem unless the previous user of the number was a business and, say, your number is still listed in a phone book or directory under their name.

9 60% of calls are welcome and from ‘01’, ‘02’ and ‘07’ numbers, withheld numbers and international callers.

10 trueCall customers hardly ever mention these types of call.

11 3% of calls are welcome and from ‘03’, ‘08’ and ‘09’ numbers and ‘number unavailable’ calls.

12 29% of the top 250 calling nuisance numbers were technically compliant, while 71% were not technically compliant.

Annex B Regulatory actions

B.1 The institutional and legal framework

B.1.1 The roles of the regulators

The functions of the main regulators relevant to nuisance calls and texts are summarised in Figure 32. Other sectoral regulators also have lesser roles; for instance:

- Ofgem has moderated the calling activities of energy companies (such as Scottish Power[100]).
- The Advertising Standards Authority (ASA) has ruled against companies sending unsolicited texts (such as Data Supplier[101]).
- The Financial Conduct Authority (FCA) identifies companies to avoid[102], warns about the use of its CLI[103] and publicises companies making potentially fraudulent cold calls (such as William Howarth[104]).

The Information Commissioner's Office (ICO) and Ofcom are well known in relation to nuisance calls; the Claims Management Regulation Unit (CMRU) is rather less well known. It currently sits in the Ministry of Justice but is due to be transferred to FCA.

The Telephone Preference Service (TPS) is not a regulator. It is responsible for keeping the register of telephone numbers that should not receive unsolicited live direct marketing calls. This year overall responsibility for TPS passed from Ofcom to ICO.

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[100] *Notice of decision to impose a financial penalty pursuant to section 27A(5) of the Electricity Act 1989 and section 30A(5) of the Gas Act 1986* (Ofgem, December 2013), https://www.ofgem.gov.uk/system/files/docs/2017/04/sp_notice_of_decision_to_impose_a_financial_penalty_sp_slc25_4_december_2013.pdf.

[101] *ASA Adjudication on Data Supplier* (ASA, December 2012), https://www.asa.org.uk/rulings/data-supplier-a12-205127.html.

[102] *About the FCA Warning List* (FCA, August 2017) https://www.fca.org.uk/scamsmart/about-fca-warning-list.

[103] *Fake FCA emails, letters and phone calls* (FCA, April 2016), https://www.fca.org.uk/consumers/avoid-scams-unauthorised-firms/fake-fca-emails-letters-phone-calls.

[104] *William Howarth* (FCA, May 2015), https://www.fca.org.uk/news/warnings/william-howarth.

Figure 32 The roles of the main regulators

Regulator	Main legislative basis	Main relevant responsibilities
ICO	Privacy and Electronic Communications Regulations	Preventing the transmission of unsolicited live direct marketing calls, recorded direct marketing calls, direct marketing texts, and direct marketing emails
Ofcom	Communications Act	Preventing misuse of telecommunications, in which it gives priority to preventing silent and abandoned calls, and monitoring use of telecommunications
CMRU	Compensation (Claims Management Services) Regulations	Preventing illegal activities by companies that contact consumers to offer claims services (especially about financial mis-selling and injuries)

As the lead regulators in this area, since 2013 Ofcom and ICO have published an annual Joint Action Plan, setting out the main actions taken in the past year and plans for the next year. This is available at https://www.ofcom.org.uk/consultations-and-statements/category-3/ico-ofcom-joint-action-plan. The Joint Action Plan usefully includes relevant statistics, for example on complaints, but does not discuss the effectiveness of any specific actions. ICO has proposed[105], but not yet carried out, a study of the effectiveness of the lower evidence threshold for enforcement against an alleged offender that came into force in April 2015.

B.1.2 Recent and forthcoming developments in regulation

Ofcom has been concerned about silent and abandoned calls for over ten years. Since then regulatory measures have become progressively stricter, as illustrated by Figure 33. Changes said at the time to be most important are in **bold**. However, new measures take time to have results and old investigations take time to be concluded, so comparisons between years are difficult. Overall, it may be that the regulatory regime has held its own, in the sense that levels of nuisance calling have remained relatively steady.

[105] In section 2.2 of the ICO Plan, 2016-2019, dated February 2016,

Figure 33 Recent and forthcoming developments in regulation

Date	Regulator	Action
Forthcoming	ICO	Cold calling relating to pensions to be outlawed
Forthcoming	ICO	Direct Marketing Code of Practice to be made compulsory (under Digital Economy Act 2017 Section 96)
Forthcoming	ICO	**Company Directors to be personally responsible for payment of fines**
In force Oct 2018	Ofcom	Revised General Conditions will require network blocking of calls with clearly impossible CLI, CLIs to be valid, callable numbers, and provision of CLI display to all customers without extra charge
25/05/2018		GDPR and the new European e-privacy regulation take effect
28/05/2017	Ofcom	Introduced guidelines setting the process under which network access would be blocked to prevent misuse or fraud
01/03/2017	Ofcom	Introduced guidelines describing as “misuse” any silent or abandoned calls
30/12/2016	ICO	Took over the management of TPS from Ofcom
16/05/2016	ICO	Required direct marketing calls to provide CLIs
06/04/2015	ICO	**Freed from the requirement to show that nuisance calls and texts produce “substantial damage or substantial distress” before acting**
29/12/2014	CMRU	**Acquired powers to issue fines of up to 20% of company annual turnover**
01/10/2014	CMRU	**Required companies to be compliant with all DMA guidance notes**
10/07/2014	Ofcom	Allowed to share information about nuisance calls and texts with ICO and the Insolvency Service
24/10/2013	ICO	Introduced guidelines for consent to receiving direct marketing calls and texts normally to be limited in time and (except for live calls) granted specifically to the company in question
13/06/2013	CMRU	Started to name companies under investigation or subject to recent enforcement action
14/11/2012	ICO	Started to name companies under investigation or subject to recent enforcement action
26/05/2011	ICO	**Acquired powers to issue fines of up to £500,000** and to obtain information about calls and texts due to third parties
01/02/2011	Ofcom	Introduced rules against the repetition of silent calls on the same day
15/09/2010	Ofcom	**Acquired powers to issue fines of up to £2,000,000 (formerly £50,000)**

European legislation coming into force next year will still need to be observed in the UK. The content of the General Data Protection Regulation (GDPR) is already final but its implications for nuisance calling will depend on the interpretation of “consent”; the Article 29 Working Party is expected to report on this by the end of 2017. At the time of writing, the new e-privacy regulation was still being discussed in the

European Parliament and subject to amendment. However, its articles relevant to nuisance calls (12 to 16) appeared fairly stable. The biggest change from the current rules is the following text in Article 14, on incoming call blocking:

> Providers of number-based interpersonal communications services shall deploy state of the art measures to limit the reception of malicious or nuisance calls by end-users and shall also provide the called end-user with the following possibilities, free of charge:
> (a) to block incoming calls from specific numbers or from anonymous sources;
> (b) to stop automatic call forwarding by a third party to the end-user's terminal equipment.

Further changes may come about if pressure for them is successful. Over the past five years, many groups and individuals have called for regulatory changes to reduce nuisance calls. Two campaigning organisations deserve particular mention:

- Starting in June 2012[106], Which?[107] led a campaign against nuisance calls and texts which led among other things to a Task Force in 2014 on Consent and Lead Generation (in the context of nuisance calls and texts). A summary by Which? of implementation status shows that most of the recommendations made by the Task Force have been carried out, with the main outstanding priority being Director Level Accountability for nuisance calls. Which? now also supports putting live telemarketing on the same footing as recorded telemarketing, that is, illegal without prior consent.
- The Fair Telecoms Campaign (FTC) has made nuisance calls a key issue, with a focus on getting sectoral regulators (such as those for claims management, financial services, energy or communications) to outlaw telemarketing in their own sectors. Copious relevant briefing materials can be found on its website. It, too, presses for live telemarketing to be illegal without prior consent.

B.2 Regulation in practice

B.2.1 Investigations and enforcement

The numbers and lengths of investigations by the three regulators can be compared, to some extent. In Figure 34 we have aimed to use consistent time periods, between the start of an investigation (determined by the initial contact with the company under investigation or the initial concentrated monitoring of the calls or texts) and the end of the investigation (determined by the serving of a notice about the most rigorous form of enforcement from the investigation, before any appeal or deferral of payment).

[106] A useful timeline is provided at http://www.which.co.uk/campaigns/nuisance-calls-and-texts/track-our-progress/.

[107] Which? worked closely with Mike Crockart, from 2010 to 2015 the MP for Edinburgh West, and founder of the All Party Parliamentary Group on Nuisance Calls, which in 2013 published its own report on this topic.

Figure 34 Numbers and lengths of regulatory investigations

Regulator	Period[108]	Number of investigations	Number of investigations resulting in fine	Mean length of investigation (days)	Mean length of investigation resulting in fine (days)
ICO	2014-2017	356	42	180	292[109]
Ofcom	2011-2017	Not available	8	609	543
CMRU	2015-2017	30	8	339[110]	339

On their own, differences between the average lengths of investigations for the regulators mean little[111]. The point is that these investigations take considerable time, so that any penalty occurs long after the offence. This is well known to reduce deterrent effects, which are strongest when penalties are quick and likely. The regulators are set up to prefer offering advice to fining, which they see as a last resort. For example, Ofcom considers that the advice that it offered to nine companies during six months of 2016 led to the prevention of millions of nuisance calls.

This preference for offering advice can be exploited easily by criminal companies that can initially appear just to be careless. Moreover, careless companies may need repeated advice.

More detailed figures, for each regulator and each financial year, follow in Figure 35, Figure 36 and Figure 37. These show how many investigations result in more rigorous demands than advice.

[108] All periods in this annex are ranges of UK government financial years.

[109] A different determination of the start dates of investigations suggests a mean length of 466 days.

[110] The figures for lengths of investigations are available for only two investigations (both resulting in fines).

[111] However, it is striking that the Ofcom period for monitoring silent and abandoned calls in an investigation is only 48 days out of the average 543 days taken by an investigation resulting in a fine.

Figure 35 Enforcement by CMRU

Period	Number of investigations	Number of investigations resulting in fine	Number of investigations resulting in cancellation of authorisation	Number of audits	Number of audits resulting in warning	Proportion of investigations or audits resulting in less formal requests
2016-2017	26	5	3	111	40	65%
2015-2016	15	3	1	111	48	59%
2014-2015	10	0[112]	0	102	30	73%
2013-2014	5	0	0	45	5	90%

Figure 36 Enforcement by ICO

Period	Number of investigations	Number of investigations resulting in fine	Number of investigations resulting in enforcement notice	Number of investigations resulting in action requirement or notice of intent	Number of investigations resulting in improvement plan or undertaking	Proportion of investigations or audits resulting in less formal requests
2016-2017	138	16	3	1	0	86%
2015-2016	125	20	3	2	4	77%
2014-2015	93	6	8	0	1	84%

[112] CMRU had no powers to fine until the end of 2014.

Figure 37 Enforcement by Ofcom

Period	Number of investigations	Number of investigations resulting in fine	Number of investigations resulting in enforcement notice	Number of investigations resulting in action requirement or notice of intent	Number of investigations resulting in improvement plan or undertaking	Proportion of investigations or audits resulting in less formal requests
2016-2017	Not available	0	Not available	Not available	Not available	Not available
2015-2016	98	1	Not available	Not available	Not available	99%
2014-2015	47	4	Not available	Not available	Not available	91%
2013-2014	20	1	Not available	Not available	Not available	95%
2012-2013	Not available	2	Not available	Not available	Not available	Not available
2011-2012	Not available	0	Not available	Not available	Not available	Not available

The claims management regulation review that was conducted in 2016 suggested[113]:

- The CMRU should seek to make wider use of warrants and seizure powers (as an alternative to giving the notice needed before an on-site audit).
- The CMRU should encourage compliance through greater use of regulatory roadshows, workshops, and training support.
- The CMRU should use a broader range of existing enforcement measures, such as smaller fines or mandatory training.
- The CMRU should consider whether smaller fines or mandatory training may have a complementary effect (presumably to larger fines imposed after prolonged investigations) as a credible deterrent by showing that the regulator will not tolerate persistent or deliberate rule breaches.
- The CMRU should publish all appropriate information on enforcement activity, including against unauthorised firms.

B.2.2 Publicising miscreants

Ofcom publishes very little information about investigations that result in fines, and no information about those that do not (as Figure 37 indicates). Its main justification for this seems to be section 393 of the Communications Act 2003, which prevents Ofcom from releasing information about businesses that it has obtained using its

[113] *Claims management regulation review: final report* (HM Treasury and the Ministry of Justice, 2016), https://www.gov.uk/government/publications/claims-management-regulation-review-final-report.

powers. Requests made under the Freedom of Information Act 2000 might well be refused, as, for example, was a request about the most recent investigation to result in a fine[114]. In its response to that request (mainly for a nonconfidential version of a notification to Verso Group), Ofcom stated:

> "In previous investigations into persistent misuse, Ofcom published a non-confidential version of the notifications made under section 128 of the Communications Act 2003 that are issued to companies subject to an investigation. Ofcom reviewed this practice earlier this year, after we issued the section 128 notification to Verso Group but before publishing a nonconfidential version. Ofcom no longer publishes details until we have concluded our investigation."

However, there is a precedent for Ofcom to name and shame careless and criminal companies: to help in controlling premium rate services it publishes two lists (identifying individuals as well as companies):

- The 'under assessment list' identifies those that Ofcom is assessing to determine whether they have used telephone numbers in a way that has caused serious or repeated harm to consumers. Inclusion on the list might happen after a decision is made by a relevant consumer protection authority.
- The 'number refusal list' identifies those that Ofcom is satisfied have used telephone numbers in a way that has caused serious or repeated harm to consumers and that should not be allocated further telephone numbers. Inclusion on the list would last for a period depending on the seriousness of the past use.

In its statement introducing these lists, Ofcom gave a list of the main types of scam that might undermine consumer confidence in telephone numbers, which included[115]:

- Criminal offences involving number abuse, such as fraud.
- False or misleading advertising of call rates.
- Contraventions of the Numbering Plan, such as revenue sharing on 070 numbers.
- Fax-back and 'missed call' call-back scams.
- Inducements to consumers to make lengthy calls to high tariff numbers in order to qualify for 'prizes' that are never received, are different from advertised or not winnable in practice.
- Artificial delays on high rate numbers to create revenue for the called party.

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[114] *Freedom of Information request about Ofcom's own initiative investigation into Verso Group (UK) Limited* (Ofcom, 6 January 2017), https://www.ofcom.org.uk/__data/assets/pdf_file/0021/96600/369807-Verso-Group-investigation.pdf.

[115] *Consumer protection test for telephone number allocation* (Ofcom, 30 September 2008), https://www.ofcom.org.uk/__data/assets/pdf_file/0026/45854/statement.pdf.

Ofcom also noted[116]:

> "This list is not exhaustive, and we intend to apply the CPT [Consumer Protection Test] to other types of harmful behaviour that we might identify as involving the use of telephone numbers as they arise. In order that the test may better evolve over time, it will normally be triggered by rulings made under particular legislation and consumer protection instruments, rather than being linked to certain specific offences. In line with our general duties, we will approach this task on the basis of the need to be transparent, and this may extend to, for example, publishing findings or summaries via our website."

This suggests that Ofcom could be more open about which companies it is investigating for misuse resulting in nuisance calls. Consumers could be protected better during investigations that take time to be concluded.

B.2.3 Imposing fines

The large fines make headlines, but the other fines have often been quite small, as implied by Figure 38.

Figure 38 Ranges of fines

Regulator	Period	Number of investigations resulting in fine	Mean fine (£)	Median fine (£)	Minimum fine (£)	Maximum fine (£)
CMRU	2015-2017	8	268,481	155,923	3,000	850,000
ICO	2014-2017	42	96,881	77,500	5,000	350,000
Ofcom	2011-2017	8	221,000	40,000	8,000	750,000

As Figure 36 indicates, the number of fines imposed by ICO has risen sharply since the removal of the requirement to show "substantial damage or substantial distress". However, range of fines does not seem to have changed greatly.

The fines are frequently left unpaid. Figure 39 shows fines collection status for ICO, some months after the end of the relevant financial year (2015-2016)[117].

Figure 39 Success in the collection of fines by ICO, 2015-2016

Number of fines	Number of fines remaining unpaid	Number of fines on companies now in liquidation	Number of fines under appeal	Number of fines being paid in instalments	Number of fines paid	Number of fines not yet due for payment
20	8	3	2	3	2	2

[116] *Consumer protection test for telephone number allocation* (Ofcom, 30 September 2008), https://www.ofcom.org.uk/__data/assets/pdf_file/0026/45854/statement.pdf.

[117] *ICO Disclosure Log – Response IRQ0628919* (ICO, 8 June 2016), https://ico.org.uk/media/about-the-ico/disclosure-log/1625749/irq0628919-response.pdf.

In the following financial year (2016-2017) fines amounting to £1,923,000 were levied; £559,300 of them had been paid by the end of that year[118]. Companies under investigation tend to go out of business before they can be fined or before they can be forced to pay their fines; their directors then sometimes appear elsewhere.

Ofcom's collection rate for fines relating to nuisance calls is said to be high, in part because larger fines are generally payable by larger companies who have a reputation worth protecting and therefore pay up. In addition, Ofcom is reluctant to impose fines on companies that have gone into liquidation or that they have other reasons to expect not to pay.

B.2.4 Ensuring the suppression of traffic

Ofcom, through the Phone-paid Services Authority (PSA), has long recognised that one treatment of premium rate services that have harmed consumers is blocking them: the operators that carry the calls, and that would otherwise pass on the revenues from the calls to the premium rate service providers, instead are directed to suspend access to the services. It has now started to apply a similar treatment to nuisance callers: it has requested that operators block traffic from certain numbers. Having tried out the treatment, Ofcom has now formalised the procedure[119]. This approach is apparently very effective, but labour-intensive and seen as heavy-handed. It may be needed for (and effective against) operators who do not take part in the MoU group.

[118] *ICO Disclosure Log – Response IRQ0681123* (ICO, 19 May 2017), https://ico.org.uk/media/about-the-ico/disclosure-log/2014540/irq0681123-response.pdf.

[119] See Section 8 of *Enforcement guidelines for regulatory investigations* (Ofcom, June 2017), https://www.ofcom.org.uk/__data/assets/pdf_file/0015/102516/Enforcement-guidelines-for-regulatory-investigations.pdf. Detailed criteria and procedures are laid down for Directions under General Condition 20.3.

Annex C Estimates of the level of nuisance calling

C.1 Summary

As explained in the main text, to assess the effectiveness of actions to reduce nuisance calling, it is essential to know the level of nuisance calling in the first place, but currently there is no clear information on this. Some bases for estimates of the number of nuisance calls per year are:

- **Complaint figures**. These provide a lower bound, suggesting that the number of nuisance calls per year to landline and mobile networks is at least 3.2 billion.
- **Survey results**. Ofcom used the landline nuisance call surveys to estimate that the number of nuisance calls per year to landlines is 4.8 billion; an adjustment mentioned below would reduce this estimate to 4.4 billion.
- **Network measurements**. Ofcom's statements suggest that the number of nuisance calls per year to landline and mobile networks is up to 9.4 billion. Various figures published by operators point to considerably higher totals, if extrapolated using market shares.
- **User device measurements**. Records from trueCall units located in users' homes can be used to estimate that, after adjustment as below, the number of nuisance calls per year to landline networks is 4.5 billion.

C.2 Estimation techniques

C.2.1 Complaint figures

In 2016 ICO, Ofcom and TPS together collected about 320,000 complaints about nuisance calls, some of which might be made to more than one organisation or in more than one way[120]. This total can be used to give a simple floor estimate: the number of nuisance calls per year to landline and mobile networks is at least 3.2 billion, given that, as shown in Figure 28, for the investigations that ICO has completed, the ratio of complaints to nuisance calls is less than 0.01% (and this is probably an over-estimate, as ICO are more likely to investigate cases that attract higher levels of complaint).

C.2.2 Survey results

Ofcom estimated the number of nuisance calls per year to landline networks to be 4.8 billion in 2015[121]. Underlying the calculation were assumptions that each diarist in the 2015 landline nuisance call survey received 8.4 nuisance calls in four weeks, that 84% of the 52.02 million adults in the UK in 2015 had access to a landline (in accordance with the 2015 technology tracker survey), and that a diarist received on

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[120] *Tackling nuisance calls and messages: Update on the ICO and Ofcom Joint Action Plan* (Ofcom, December 2016), https://www.ofcom.org.uk/__data/assets/pdf_file/0017/96110/ICO-Ofcom-joint-action-plan-2016.pdf.

[121] *Review of how we use our persistent misuse powers: Focus on silent and abandoned calls* (Ofcom, December 2016) 2016), https://www.ofcom.org.uk/__data/assets/pdf_file/0014/82040/persistent_misuse.pdf.

average the same number of nuisance calls as any other adult; then the number of nuisance calls per year to landline networks was 8.4*52/4*52.02*84% or 4.8 billion.

The assumption that a diarist received on average the same number of nuisance calls as any other adult is questionable. The landline nuisance call surveys do not determine what proportion of calls to the landline in question a diarist receives in comparison with other household members. Of course, people in the vulnerable groups on whom intensive nuisance calling tends to be focused (as discussed in section 2.3.3) are unlikely to be recruited as diarists.

The Ofcom calculation that led to 4.8 billion can be adjusted to limit the lines to those used for receiving calls (which were 92% of the total in the 2015 technology tracker survey); it then leads to 4.4 billion. The assumptions underlying the calculation, adjusted like this and adapted to other years, can support analogous estimates of the numbers of nuisance calls derived from the other landline nuisance call surveys and from the 2013-2014 TPS effectiveness surveys. Figure 40 summarises the estimates. The estimates from the TPS effectiveness surveys are higher than those from the landline nuisance call surveys of the same years; they can be regarded as estimates of the numbers of nuisance calls that there would be if half (in the 2014 TPS effectiveness survey) or all (in the 2013 TPS effectiveness survey) of the landlines were not registered with TPS.

Figure 40 Estimates of nuisance calls per year to landlines

Year	Survey type	Mean number of nuisance calls per adult in four weeks	Numbers of adults (millions)	Proportion of adults with landlines	Proportion of landlines on which calls are received	Estimated number of nuisance calls to landlines per year (billions)
2017	Landline nuisance call diary surveys	6.8	54.09	82%	83%	3.5
2016		7.3	53.26	86%	89%	4.0
2015		8.4	52.02	84%	92%	4.4
2014		7.3	51.59	84%	94%	4.0
2013		6.9	51.26	85%	92%	3.7
2014	TPS effectiveness survey	7.9[122]	51.59	84%	94%	4.2
2013		11.9[123]	51.26	85%	92%	6.2

Sources: Ofcom landline nuisance call and TPS effectiveness surveys, other Ofcom data, ONS, this study

The estimates in Figure 40 might suggest that the numbers of nuisance calls rose over the last few years but are now are falling. However, this conclusion is suspect, because:

- There is a month-by-month variation in the number of nuisance calls (superimposed on a seasonal variation), as shown in Figure 46. The TPS effectiveness surveys themselves demonstrate the seasonal variation rather

[122] This figure is the average of 5.8 and 10.0, which were the figures resulting from the March 2014 survey for respondents whose numbers were or were not registered with TPS (respectively).

[123] This figure is for the November 2013 survey, when no respondents' numbers were registered with TPS.

markedly: the mean number of nuisance calls recorded was 11.9 in November 2013 and 10.0 in March 2014 for the landlines not registered with TPS.

- The diarists for the TPS effectiveness surveys were selected from among people whose landlines were not initially registered with TPS; they may therefore have been atypical of the whole population somehow, and their nuisance call pattern likewise. In any case, though in the second effectiveness survey half of the landlines had been registered, in the first TPS effectiveness survey none had been registered and the mean number of nuisance calls recorded would exceed that appropriate to the whole population, given that TPS registration does indeed have an effect.

C.2.3 Network measurements

Monthly co-ordinated measurements by the signatories have enabled Ofcom to estimate the number of potential nuisance calls on the networks covered by the MOU[124]. That estimate suggests that there are 22 million nuisance calls per day; the MOU networks have at least 85% of all landline subscribers and 85% of all mobile subscribers, so there could be up to 9.4 billion nuisance calls per year to landline or mobile networks. However, the estimate is based on aggregating all the MOU returns; it could be an underestimate, because:

- It largely picks up bulk automated dialling.
- It provides information about only the most frequently presented CLIs in various categories.
- We have heard that some smaller networks that are not MOU signatories have customers who originate disproportionate numbers of nuisance calls; such networks may see low origination charges for large call volumes as part of their competitive appeal.

Though some calls included in the MOU returns might not be nuisance calls, in our judgement there are probably more that are not included that are nuisance calls, since the measurement method excludes many originators of smaller numbers of nuisance calls (see Figure 20).

Ofcom say that the MOU returns indicate that the number of nuisance calls per month has been fairly stable since measurements started in early 2016.

Operators are wary of making data about nuisance calls public. However, some inferences can be made from what they do publish and the numbers of potential users (on specific operator networks and for specific network technologies). For example:

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[124] *Nuisance Calls (Technical Measures) Memorandum of Understanding (MoU)* (December 2015), https://www.ofcom.org.uk/__data/assets/pdf_file/0026/31859/nuisance_calls-tech-mou.pdf

The operators that signed the MOU are BT, Gamma, KCom, Post Office, Sky, TalkTalk, Virgin Media, EE, O2, Three and Vodafone. On a given day each month, each signatory collects Call Detail Records for all calls entering or leaving its network, and counts the most frequently occurring CLIs on these in various categories suggestive of nuisance calling, including malformed CLIs, Premium Rate CLIs, very short calls (<1 second), short calls (1-3 seconds), high ratio of unanswered calls and calls with no CLI digits.

- BT has said that if all its customers requested it to divert nuisance calls it would divert 65% of them, which would mean finding 1.6 billion nuisance calls per year on its network, including calls carried for other operators[125]. We do not know the proportion of traffic on BT's network which is destined for other networks, so we cannot extrapolate from this figure. However, additionally BT has said that adults on its network aged between 16 and 24 receive about 3 nuisance calls per week while those aged between 55 and 64 receive about 5 nuisance calls per week[126]; this points to an average of at least 16.0 nuisance calls in four weeks for each adult. Under the same basic assumptions in the Ofcom calculations there would be at least 9.1 billion nuisance calls per year to all landline networks or, adjusted to limit the lines to those used for receiving calls, 8.4 billion.
- TalkTalk has said that it blocks 100 million nuisance calls per month. If this represented 50% of nuisance calls (as has been suggested), then given its market share there would be 17.6 billion nuisance calls per year to landline networks, unless TalkTalk is disproportionately targeted (which could reflect its customer profile or data leaks). TalkTalk is now also suppressing all calls without CLIs, which it believes amount to another 8 million calls per month (though some of those might not be nuisance calls).
- Vodafone has said that it blocks between 2.0 million and 2.5 million nuisance calls per day. It has not said what proportion of nuisance calls this is; a proportion of 65% would imply that there are between 5.9 billion and 7.4 billion nuisance calls per year to mobile networks. A proportion of 100% would imply that there are between 3.8 billion and 4.8 billion such calls.

C.2.4 User device measurements

User device measurements of the numbers of nuisance calls are like network measurements, except that they are performed by equipment where the users receive calls. The trueCall "standard" and "vulnerable" units have been collecting data on nuisance calls for some years. Figure 41 summarises the results of using the data collected for the standard units to find the number of nuisance calls received. The vulnerable unit users are likely to be vulnerable people and typically receive many more nuisance calls than the standard unit users, so they are not suited to estimating the number of nuisance calls received by the population as a whole.

Figure 41 Nuisance calls per year to landlines based on standard trueCall unit data

Year	Mean number of nuisance calls per unit in four weeks	Number of landlines (millions)	Proportion of landlines on which calls are received	Estimated number of nuisance calls per year to landlines (billions)
2017	16.3	26.4	83%	4.6
2016	17.8	26.1	89%	5.4
2015	21.3	25.5	92%	6.5

[125] *More than two million now on BT's free service to crack down on nuisance calls* (BT, April 2017), http://www.btplc.com/news/#/pressreleases/more-than-two-million-now-on-bts-free-service-to-crack-down-on-nuisance-calls-1911024.

[126] *BT launches free service to crackdown on nuisance calls* (BT, January 2017), http://www.btplc.com/news/#/pressreleases/bt-launches-free-service-to-crack-down-on-nuisance-calls-1745250.

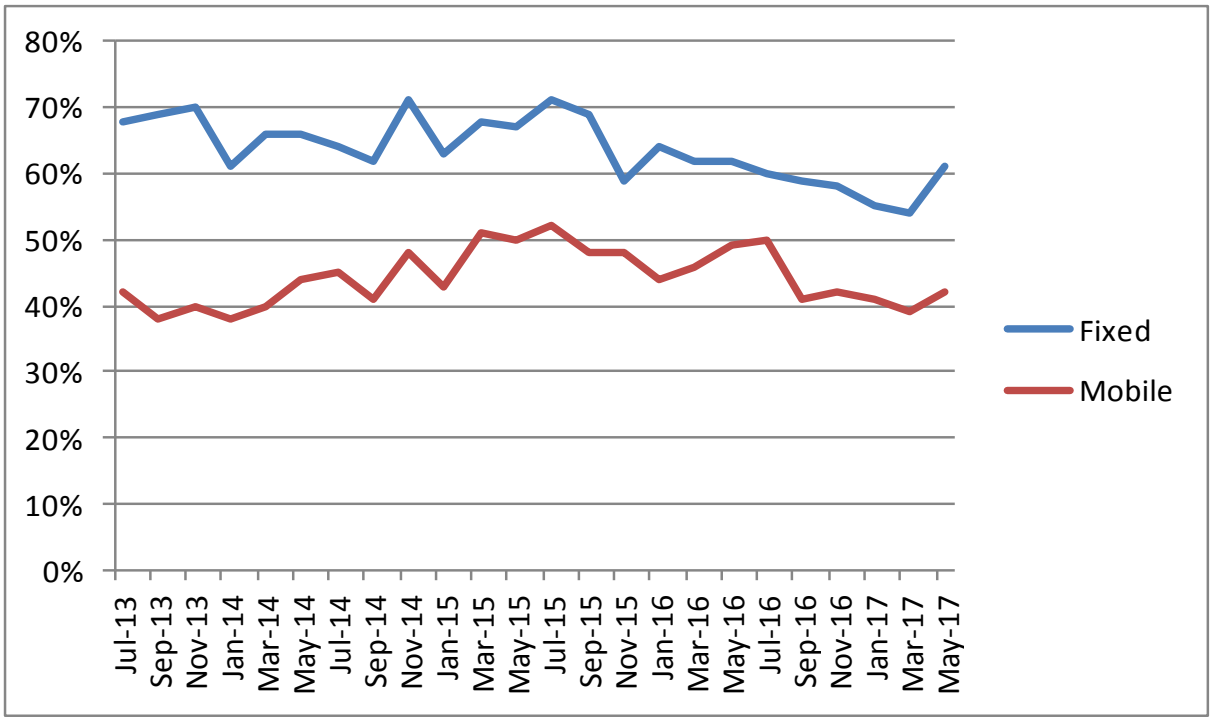
2014	23.1	25.0	94%	7.1

C.3 The relative contributions of landline and mobile calls

In 2016 there were 26.4 million residential landlines, 7.1 million business landlines and 92.0 million mobile subscriptions. If outbound calls from UK call centres had been distributed evenly across all these, 73% of them would have been made to mobiles. In fact only 58% of them were made to mobiles (in 2015), so there is an imbalance of about 43%: for every 100 such calls received by mobiles, about 143 [that is, 100*(73%/58%)((100%-73%)/(100%-58%)] such calls are received by landlines.

The number of nuisance calls per mobile user appears to be lower than the number of nuisance calls per landline user in line with this imbalance, in that according to the only available relevant data, from the Ofcom consumer issues surveys, for every 100 nuisance calls to mobile users there are on average 145 (between 120 and 182) nuisance calls to landline users. This is illustrated in Figure 42, which also suggests that the imbalance has reduced somewhat since 2013.

Figure 42 Landline and mobile users receiving nuisance calls in the previous four weeks



Source: Ofcom consumer issues surveys

Annex D Independent factors influencing future levels of nuisance calls

The attractiveness of telemarketing to UK recipients depends on:

1. Market opportunities for goods or services that call recipients may buy.
2. The cost-effectiveness of telemarketing compared with alternative marketing channels.

The first of these is largely independent of harm-reducing actions; market opportunities arise and may then fall again in largely unpredictable ways, associated for example with broad social trends and the state of the economy. Some opportunities seem to be created by government action, with PPI as a case in point; but it is debatable whether such necessary measures can be brought in without creating commercial opportunities. Again, informed observers may attribute the relative decline in PPI calls to the market having burned itself out, more than to relevant regulatory actions. (It has been suggested that the end of the period during which compensation for PPI can be claimed, in August 2019, may lead to a surge of PPI calling as the deadline gets near.)

Most harm-reducing actions aim to cut down on the level of calling through reducing the relative cost-effectiveness of telemarketing. But cost-effectiveness also depends to a significant extent on independent factors, in particular on continuing reductions in the cost of targeting, making and conducting bulk calls, resulting from technical advances, for example in cloud, artificial intelligence, voice recognition and data analysis technologies.

UK markets often follow North American developments. We note that in the USA, making recorded marketing calls ("robocalling"), although usually illegal, has risen greatly and continues to rise, leading to ever more complaints to the Federal Trade Commission[127]. We also note that a 2016 survey for the Canadian regulator, CRTC, of Canadian telemarketers showed an expected increase in telemarketing; and industry participant First Orion forecasts continuing growth of at least 10% a year in nuisance and scam calls. These indicators suggest that, other things being equal, telemarketing calls to the UK would go on growing.

On the other hand, the continuing voice telephony trend in the UK, away from landlines (other than as an incidental part of broadband packages) and towards mobile phones[128], now usually smartphones[129], may have an opposite effect. The higher cost of calling to mobiles (compared with calling to landlines) is fast reducing. However, smartphones have some built-in call filtering capability and users can access many call handling apps. The much greater ease with which smartphone users can choose which calls to answer, together with a growing proportion of

[127] See National Do Not Call Data Book FY 2016, p 5. The year as a whole showed record complaints, with around two-thirds of complaints being about recorded calls (often referred to as "robocalls").

[128] This trend is also taking place in North America, but relative costs to consumers of landline and mobile services make it less pronounced at this stage.

[129] Ofcom's Technology Tracker in early 2017 showed 81% of adults using smartphones.

landlines that are never answered[130], could reduce the relative attractiveness of voice telephony as a marketing channel.

In 2014, a marketing report[131] showed a declining receptiveness among the respondent population to any kind of telephone marketing approach (with email or direct mail being much preferred, though no marketing approach at all was the most popular option). This contrasted strongly with marketers' reported perceptions of customer preferences. Possibly, in some circles, there will be a growing recognition of this mismatch and adjustments aiming to reduce it. In particular, "warm" calling (to a company's own customers, which many people regard as a nuisance) could well reduce as companies come to realise its potential to alienate customers rather than cement their loyalty.

[130] Ofcom's Technology Tracker in early 2017 showed 18% of those with a landline at home claiming not to use the landline for receiving calls. (They may even not have a phone plugged in to the line). The corresponding figure in 2015 was 8%.

[131] The Fast.Map 10th Annual Marketing GAP tracker, based on an online panel, showed small (typically well under 5%) and declining percentages of consumers who wanted to receive any kind of marketing phone call, for any purpose.

Annex E Evidence on consumer attitudes to nuisance calls

As well as the annual landline nuisance call diary survey (2013-2017), Ofcom has commissioned many omnibus surveys to monitor consumers' recalled experiences of nuisance calls in the four weeks preceding the survey. In the March 2015 and December 2015 Consumer Concerns Surveys, respondents were asked about their behaviour in relation to nuisance calls, the answers to which provide useful evidence for this paper. Some of these are reproduced here for convenient reference.

Q.30A Does your main home landline phone have caller display?
March 2015: 47% yes, 52% no; December 2015: 48% yes, 51% no.

Q.31 If you have it, do you usually look at the caller display before deciding whether to answer your phone?

	March 2015		**December 2015**	
	Home phone	**Mobile**	**Home phone**	**Mobile**
Always	62%	60%	61%	62%
Sometimes	22%	17%	23%	17%
Never	15%	23%	16%	21%

Q.32 How often do you receive calls that you want e.g. from friends, family or companies that you want to speak to?

	March 2015		**December 2015**	
	Home phone	**Mobile**	**Home phone**	**Mobile**
Every day	35%	58%	36%	60%
A few times a week	36%	27%	34%	26%
A few times a month	12%	6%	12%	6%
Less than once a month	6%	3%	7%	3%
Never	9%	6%	9%	5%

Q.34 Are you aware of call blocking technology i.e. a device or service to block\ stop unwanted calls on your landline phone?
March 2015: 65% Yes, 33% No; December 2015: 68% Yes, 30% No

Q.35 As a result of receiving unwanted calls from companies or organisations, have you, or someone else in your household, done [either of] the following?

a) Signed up with\ put your landline number on the Telephone Preference Service (TPS)\ do not call register:
b) Got call blocking technology on your landline - i.e. a device or service to block\stop unwanted calls on your landline phone (e.g. a TrueCall device, a BT call blocker phone, services provided by your landline provider like anonymous call reject, incoming call blocker or last caller barring) / Used settings (if available) on your mobile handset or downloaded an app to block calls)

	March 2015		December 2015	
	Home phone	Mobile	Home phone	Mobile
Signed up with TPS	21%	7%	21%	7%
Used blocking technology	9%	10%	9%	10%
Neither	71%	83%	71%	82%

Q.36 And when you receive an unwanted call from an organisation or company on your home landline phone do you ever report it to an official organisation (e.g. Ofcom or the Information Commissioner's Office) or your landline provider?

	March 2015		December 2015	
	Home phone	Mobile	Home phone	Mobile
Always	2%	1%	1%	1%
Nearly always	-	-	-	-
Sometimes	4%	2%	4%	2%
Rarely	6%	3%	5%	3%
Never	78%	78%	80%	79%
No unwanted calls	8%	13%	7%	13%

Q.37 When your phone rings, which of these do you REGULARLY DO in order to avoid\not have to answer unwanted calls from companies or organisations?

	March 2015		December 2015	
	Home phone	Mobile	Home phone	Mobile
I rely on my answerphone to take a message	14%	8%	14%	9%
I do not answer the phone to numbers that I do not know	14%	29%	13%	31%
I do not answer the phone if I am not expecting a call	11%	11%	10%	12%
I do not answer the phone at certain times of the day and\ or evening	9%	5%	9%	7%
I do not answer the phone to numbers that I recognise but do not want to answer (e.g. a utility company - we do not mean friends or family)	6%	14%	6%	13%
I switch ringtone down\off so I am not disturbed by unwanted calls when it rings	3%	7%	3%	6%
I unplug my landline phone so you do not receive calls on it/ I only have my mobile phone switched on when I want to make a call or am expecting a call	2%	2%	3%	2%

I let it ring and do not answer	Not asked	Not asked	-	Not asked
Other	1%	1%	1%	1%
None of these (I always answer the phone when it rings)	47%	37%	48%	37%

Q.38 Why have you not done anything to try to avoid unwanted calls from companies or organisations on your phone?

	March 2015		**December 2015**	
	Home phone	**Mobile**	**Home phone**	**Mobile**
Haven't thought of doing anything	22%	21%	20%	19%
I do not get enough of these calls for it to be necessary	17%	18%	18%	18%
Too much hassle	15%	17%	17%	16%
I don't know what to do to stop them	10%	10%	10%	8%
I do not mind receiving these types of calls	6%	5%	7%	5%
I don't think anything would work	6%	8%	7%	8%
I do not get any unwanted calls	6%	12%	8%	15%
I am worried about missing an important call	5%	5%	7%	7%
Technology or services to stop them is too expensive	4%	Not asked	2%	Not asked
Other	7%	2%	5%	2%
Don’t know	10%	10%	9%	9%

Annex F Evidence on vulnerable consumers and telephone scams

F.1 Summary tables

F.1.1 Amounts lost per scam case, report or call

Amount lost	Date	Base	Type	Source
£2,800/case	2015 - 2016	11,000	Phone banking fraud reports	Financial Fraud Action UK
£693/case (median)	2017	3 months' case reports	Phone scams where money was lost	Citizens Advice
£1,461/case	2016	unknown	Scam call cases advised	Citizens Advice
£23,423/case	2012 - 2014	185	"No hang up" scam cases	Financial Ombudsman Service
£233/victim	2015	unknown	Scams among older people	Age Concern survey
£600/call	2016 - 2017	34,504	Computer software phone calls	Action Fraud news release
£176/call	2016	5,695	Courier fraud phone scams	Action Fraud news release
£58/report	2015	12,000	Computer software phone calls	Action Fraud news release
£845/case	2016	unknown	Successful phone scams	trueCall
£745/case	2011	unknown	Microsoft support phone scam	Microsoft via Which?

F.1.2 Use of phones for perpetrating scams

41% of scams reported to Citizens Advice used unsolicited phone contact	2014-2015
67% of pension scams reported to Citizens Advice used unsolicited phone contact	2014-2015
68% of pension scams reported to Citizens Advice used unsolicited phone contact	2016
50% of Citizens Advice survey respondents had been targeted by phone scams in past 2 years; last scam attempt was by phone for 54% of over-65s (lower %s of younger ages)	2017

Note: Both phones and other media may be used in grooming a single scam victim, and more than one phone call may take place.

F.1.3 Hit rates of scam attempts

12.5% of older people receiving a scam communication respond, and 70% of these lose money	2015	Age Concern survey
Less than 1% of those who receive certain types of scam communication say they lose money	2011-2012	Crime Survey of England and Wales
7% of adults receiving scam calls respond, and 6% of these lose money	2015	Money Advice Service survey
Overall success rate of phone scam attempts is 0.56%	2017	trueCall
9% of over 65s respond when targeted by a scam, with higher %s among single and older people	2017	AgeUK
14% of those targeted by scams are drawn in, and 33% of those lose money	2017	Citizens Advice

F.2 Groups targeted by scams

Short changed: Protecting people with dementia from financial abuse (Alzheimers Society 2011), based on surveys of people with dementia and their carers, says:

> The problems of people with dementia receiving unwelcome or nuisance telephone calls was very commonly reported by carers. More than two-thirds (70%) said that cold callers routinely targeted the person that they care for. Common hazards included inappropriate selling, such as an energy company repeatedly calling to ask the person to change supplier. There were instances of high-pressure tactics, where people were repeatedly sold things like memberships and subscriptions. There were also more complex 'boiler room scams'.

The report gives the number of people then living with dementia as 750,000; this figure is now forecast to increase to 1m by 2025.

Scams Awareness Month Briefing, Citizens Advice, July 2017

It has been recently reported that the names and addresses of nearly 300,000 people nationally are on lists which are being sold between criminals to use as targets for scams. Research has found that 9 in 10 people on these target lists are unaware that they are being targeted. Often, people who are socially isolated are not able to connect to the support or help to prevent this.

According to Citizens Advice data, when compared to the general population disabled people and those who have a long term health condition (LTHC) were more likely to be victims of phishing and other banking scams (37% vs 29%) and prizes and lottery scams (41% vs 29%). Though these factors do not necessarily make them socially isolated, they may contribute to it. The Office of National Statistics found that those in poor health are more than 2.5 times more likely to report feeling lonely than those reporting good health.

http://www.ageuk.org.uk/scotland/latest-news/over-400000-older-scots-targeted-by-scammers/

41.3% of over 65s in Scotland believe they have been targeted by scammers, according to new research for Age Scotland and Age UK. Of those targeted, nearly a tenth (9%) have responded to a scam. Across the UK, over a quarter (27%) of single older people responded to an attempted scam compared to just under a tenth (9%) of their married (or living as married) counterparts.

Of those who had previously been targeted by scammers, 16% of single older people paid them money, compared to just 6% of those who were married. And 22% of those who are single provided personal information compared to just 2% of those who are married.

Compared to 7% of the overall 65+ sample who responded, 9% of those aged 75+ paid money compared to 5% of 65-74 year olds. 6% of those aged 75+ gave personal information compared to 4% of 65-74 year olds.

70% of those older people in Scotland targeted by scammers didn't report it to an official channel, with 42% only confiding in friends and family, and 25% admitting they didn't tell anyone at all because they felt too embarrassed. Of those who did officially report the scam however, the vast majority reported having a positive experience.

In addition, the research found that phishing (electronic communication) was the most common scam (experienced by 39% of those targeted), vishing (verbal communication) was close behind (29%), with rogue trader and card fraud following (14%).

Changing the story on scams, Citizens Advice, August 2017

In a nationally representative survey of over 3,000 adults, 72% had been targeted by a scam during the past two years – 55% by email and 50% by phone (the top two channels). All age and income groups were targeted, with lower rates reported by people with incomes below £9,500 or aged over 75 (though this may partly reflect lack of awareness).

F.3 Use of telephone for scamming

Citizens Advice press release 1 July 2015, based on analysis of more than 20,000 scams reported between April 2014 and March 2015

- 41% of scams reported to the Citizens Advice service come from a cold call - making it the most common method of con reported to the national charity - followed by online scams at 18 per cent.
- 46 per cent of scam reports to local Citizens Advice were made by people over 55.
- Over a third (37 per cent) of cold call scams reported to the national charity are for professional and financial services.

Citizens Advice evidence report: consumer experience of pension and pensioner scams before April 2015**:** We have observed five key ways that scammers contact consumers: phone calls, texts, letters, the internet and door-to-door tactics. Data from our Consumer Service shows that more than two thirds of reported scams used unsolicited telephone contact. (Citizens Advice Consumer Service Helpline, October 2014 – March 2015)

Too good to be true?: Understanding consumer experience of pension scams a year on from pension freedoms

Scam contact method identified in last 3 months by Citizens Advice staff (pension column) or in past two years by 2017 survey

Medium	**Proportion of scams using the medium**	
	Pension scams, 2016	All scams, 2017
Phone	68%	50%
Post	28%	44%
Email	21%	55%
In person	15%	16%
Text	2%	31%
Online/other	2%	33%

F.4 National statistics and reporting

The CSEW (Crime Survey for England and Wales) 2017 suggests that only 17% of victims of fraud who are resident in households report to the police or Action Fraud. There were 3.4m incidents of fraud (excluding computer-related items, which were a further 1.9m).

The official ONS quarterly fraud statistics do not break out phone fraud as a separate category. In the first quarter of 2017, 156,800 fraud incidents were recorded in England and Wales, 69,000 of them by Action Fraud (the recommended reporting route for telephone scams).

Research on impact of mass marketed scams OFT883 December 2006: Fewer than five per cent of people report scams to the authorities. The research also found that 52 per cent of victims had been targeted again by a scam and that, on average, a victim had a **30 per cent chance** of falling for another scam within the following 12 months. This supports anecdotal evidence that a proportion of scam victims are particularly vulnerable and likely to fall for scam after scam. We refer to this type of victim as a chronic scam victim.

Annual Fraud Indicator 2016 (University of Portsmouth) estimates total annual losses due to fraud against individuals at £9.7bn.

Citizens Advice Scams Awareness Month Briefing 2017 offers updated estimates of 3.6m cases of scams and fraud, with an estimated total loss of £10.9bn. This would amount to an average loss of £3,000 per case.

National Audit Office 2016 report Protecting Consumers form Scams, Unfair Trading and Unsafe Goods and 2017 report Online Fraud both contain much relevant material, but nothing specific to phone scams.

F.5 Amounts lost to scam calls

Changing the story on scams, Citizens Advice, August 2017
Median loss to scams, by channel (from consumer service helpline, January to March 2017)

Channel	Amount
Mail	£120
Online/email	£556
Telephone	£693
Doorstep	£1,750
Trader's premises	£1,400

Fraud the Facts 2017 (the Annual Report of Financial Fraud Action UK, now part of UK Finance) records losses due to phone banking fraud of around £30m in each of the last two years, with 11,000 reported cases – an average loss of £2,800 per case.

Protecting consumers from scam calls: toolkit for the Citizens Advice Network (Scams Awareness Month 2017) tells us:

- A quarter of the UK population has received a call requesting personal or financial information (Financial Ombudsman Service)
- 4 in 5 telephone scam complaints to the Ombudsman came from consumers over 55
- £1461 is the average lost to scam calls per affected consumer (Citizens Advice figure, quoted in BIS Consumer Protection Partnership Update 2016)

Calling time on telephone fraud: a review of complaints about "vishing" scams, Financial Ombudsman Service Insight Report, July 2015.

> Between mid-2012 and the end of 2014, we resolved 185 complaints involving "no hang-up" scams.
>
> Altogether, the complaints we reviewed represented collective losses of £4.3 million (some of which was later recovered by some consumers). [£4.3m/185 = £23,243 loss per complaint]

Amount of money lost	Proportion of complainants
£1-£999	16%
£1000-£1,999	8%
£2,000-£4,999	7%
£5,000-£9,999	16%
£10,000-£14,999	14%
£15,000-£19,999	8%
£20,000-£49,999	20%
£50,000-£74,999	6%
£75,000-£99,999	3%
£100,000+	1%

Source: Financial Ombudsman Service.
Base: 173 individual consumer complaints (about "no hang-up" scams).

Age group	Proportion of complainants
18-24	2%
25-34	1%
35-44	5%
45-54	12%
55-64	26%
65-74	30%
75+	24%

Source: Financial Ombudsman Service.
Base: 143 vishing complaints (with known complainant age)

Action Fraud press release June 2017

> …The arrests have come about as a result of work by the City of London Police and forensic and investigative services provided by Microsoft analysing tens of thousands of Action Fraud reports and working with other affected organisations, such as BT and TalkTalk, to attempt to trace the source of the problem. This analysis and enquiries undertaken by the City of London Police have shown that many of the calls originate in India and that the worldwide losses from victims are thought to be in the hundreds of millions of pounds….
>
> …For the financial year 2016/17, there were 34,504 computer software service fraud reports made to Action Fraud, the national fraud and cyber reporting centre, with attributed losses of £20,698,859. This accounts for 12% of all reports to Action Fraud, making it the third most reported fraud type. The average loss suffered by victims is £600 and the average age of victims is 62. Despite these losses the number of victims is thought to be much higher as analysis shows many fail to report.

The FOS vishing report also says:

> Action Fraud – the national reporting centre for fraud and internet crime – logged 1,028 instances of consumer phone fraud in 2014.
>
> A growing area of concern has been the increase in fraudsters impersonating banks and police over the telephone – which is commonly referred to as voice phishing, or "vishing". According to Action Fraud, vishing scams accounted for £23.9 million of losses between December 2013 and December 2014 – more than triple the £7 million recorded in the previous year.

[£23.9m/1,028 = £23,249 loss per victim]

http://www.actionfraud.police.uk/news/watch-out-for-microsoft-scam-calls-to-fix-your-computer-jan15

Computer Software Service Fraud involves victims being contacted by telephone and told that there is a problem with their computer and for a fee this can be fixed.

The National Fraud Intelligence Bureau (NFIB) which assesses Action Fraud reports has said that between June 2014 and November 2014 there were over **12,000 reports** that were categorised as a Computer Software Service Fraud. Analysis of those reports suggests that callers purport to be from a variety of organisations such as Microsoft, TalkTalk, BT as well as more generic sounding organisations such as the 'Windows Technical Department'.

They also said there was a total reported loss of **£691,446** with some victims losing up to **£6,000**.

[average loss per report £58]

National Trading Standards Consumer Harm Report 2016 Case study: Call blocker pilot

The Scams Team worked on a pilot programme focused on blocking scam calls. The installation of a unit designed to block scam calls as part of the pilot saw 34,804 scam calls blocked. It is estimated that the total savings achieved through the pilot amount to over £65,000. The pilot also found that the majority of victims prevented were living alone. [average saving £1.9 per blocked scam call]

Update: the true cost of the "Microsoft support" scam call Which? conversation, 30 June 2017

The scale of this scam call, which has been doing the rounds for nearly [seven] years, is staggering. According to figures from Microsoft, one in five people surveyed in the UK had received one of these scam calls since 2010. Of those who have received a call:

- Over a third said the caller tried to sell them something.
- Over a fifth were asked to permit the caller remote access rights to their computer.
- Over a fifth were asked to download some software.
- And 18% were asked outright for credit card information.

According to Microsoft, half of the victims were aged 55 years or over, and the average amount lost has been a painful £745.

F.6 Consumer behaviour on receiving a scam call

Money Advice Service research 2015

- 63 per cent of Britons have received a suspicious call in the past 12 months
- On average, a scam call lasts 46 seconds before the victim realises that it is not genuine
- Among those that received a scam call since 2010, while the vast majority (93 per cent or 47 million) hang up and end the call after 46 seconds on average, close to one in ten (7 per cent) or 3.5 million adults fell victim.
- Of those, more than one in 20 (6 per cent) went on to transfer money, hand over personal information (6 per cent) and pass on bank details (4 per cent).

[hit rate of 6% of 7% of those approached, or 0.42%]

Only the tip of the iceberg, AgeUK, April 2015

Recent research by Age UK found that 53 per cent of people aged 65+ believe they've been targeted by fraudsters. While only one in 12 responded to the scam, 70 per cent of people of all age groups who did respond said they had personally lost money. This could mean that a staggering half a million older people have fallen victim to losing savings. What is more, the research also suggests that a third of older people who responded may have lost £1,000 or more.

[hit rate 0.7*(1/12) = 6%; average loss per victim £233 and per scam attempt £19]

CSEW survey on mass marketing fraud, 2011-12

Less than 1% of adults who received either a lottery communication, guaranteed high investment return communication or romance fraud communication sent or transferred money (data not shown).

Therefore while the 2011/12 survey shows that a relatively large proportion of adults were potentially exposed to becoming a victim of these types of fraud, only a very small percentage actually fell victim. The number of victims is too small to produce any reliable estimates of the scale of victimisation. These may represent underestimates of the true prevalence of victimisation as some victims may have been too embarrassed to disclose this information.

http://www.actionfraud.police.uk/news-eight-men-jailed-for-defrauding-elderly-of-1million-may16

Collaboration between the National Terrorist Financial Intelligence Unit (NTFIU) and the National Fraud Intelligence Bureau (NFIB) leads to eight men being jailed for a total of 34 years for defrauding elderly people out of approximately £1 million. The men were brought to justice after an investigation led by the Metropolitan Police's Counter Terrorism Command and is one of the biggest courier fraud investigations carried out by police in the UK. The gang targeted the elderly and vulnerable in courier fraud-style scams and used 16 telephone lines to make 5,695 calls to 3,774 different numbers across the UK.

[£176 lost per call, 1.5 calls per number]

https://www.financialfraudaction.org.uk/wp-content/uploads/2016/09/phone-scams-press-release-embargoed-until-2-dec-2014-final.pdf

The research, carried out on behalf of FFA UK by ICM, suggests that 58 per cent of people have received suspect calls, a steep rise from 41 per cent of respondents in a similar study carried out last summer. The increase in scam calls is reflected in new figures, also published today, which show a threefold rise in the amount of money lost to phone scammers. Over the last year, at least £23.9m of losses can be attributed to Vishing – up from £7m in the previous year.

Despite the growing threat to the public, results from the ICM research found that a quarter of people (25 per cent) make no effort to challenge the identity of callers asking for financial information. Meanwhile, 36 per cent of people said they found it difficult to tell the difference between genuine requests for information on the phone and fraudulent ones.

Worryingly, a sizeable minority said they would comply with fraudulent directions from the criminal, believing these to be genuine requests from their bank. A total of 10 per cent of respondents said they would either give cash to a 'courier', hand over their card, or move money into another account if requested to do so by a criminal purporting to be from their bank.

F.7 Overall incidence of scam calls

BT April 2017 news release suggests a minimum of 20% of nuisance calls are scams (based on statistics of calls they blocked during a week in March).

2017 Ofcom diarists classify only 4% of nuisance calls as scams – higher than in previous years. In fact a proportion of several other categories were probably scams, but identifying scam calls was not a main aim of this research, and does not appear to have been part of the diarist briefing.

In Cost-Benefit Analysis of Call Blockers, using Ofcom survey data, trueCall's own database and a range of other information, trueCall estimates that 17% of nuisance calls are scam attempts, with a success rate of 0.48%, an average loss of £845 per successful scam call, and an average annual loss to scam calls of £313 per vulnerable recipient.

F.8 Information from North America

The following reports contain interesting insights and data on scams, gathered in the USA or Canada.

Cracking the Invulnerability Illusion: Stereotypes, Optimism Bias, and the Way Forward for Marketplace Scam Education. Better Business Bureau, Institute for Marketplace Trust, 2016.

2016 BBB Scam Tracker Annual Risk Report: A New Paradigm for Understanding Scam Risk. Better Business Bureau, Institute for Marketplace Trust, 2016.

Consumer Fraud in the United States, 2011: the third FTC survey. FTC, 2013.

TrueLink Report on Elder Financial Abuse 2015

Annex G Debt collection guidelines

G.1 Debt Collection Guidance: OFT664rev

3.2 It is unfair to communicate with debtors, or their representatives, in whatever form, in an unclear, inaccurate or misleading manner.

3.3 Examples of unfair or improper practices are as follows: …

j. contacting debtors at unreasonable times

k. ignoring or disregarding debtors' reasonable requests in respect of when, where and how to contact them. For example, shift workers may ask not to be telephoned during certain times of the day. Also, some debtors may request contact by email rather than by telephone.

l. asking or instructing debtors to make contact on premium rate or other special rate telephone numbers.

G.2 Sample letter provided by StepChange Debt Charity

From:
Name:
Address:
Postcode:
Date:

To:
Creditor's Name:
Account/Agreement No:

Dear Sirs

I am writing to complain about the frequency and inappropriate times of your telephone calls as they're causing me considerable stress. Please remove my telephone number from your database and send all future communications in writing to my home address only.

If you continue to call I will contact the Financial Ombudsman Service to make a formal complaint.

Please confirm in writing that you have updated your records.

Yours faithfully

(Print name)

G.3 Guidelines focusing on specific reasons for vulnerability

Vulnerability: a guide for debt collection. 21 questions, 21 steps. Chris Fitch, Jamie Evans and Colin Trend, Personal Finance Research Centre, University of Bristol; Money Advice Trust; Plymouth Focus Advice Centre. March 2017. Available at http://www.bris.ac.uk/media-library/sites/geography/pfrc/pfrc1701-21-steps-vulnerability-and-debt-collection-(web).pdf

Annex H Comparison of UK data from Ofcom and trueCall

H.1 Ofcom surveys

Ofcom conducts surveys designed to have respondents who are representative of the UK in terms of gender, age group, socio-economic group, working status and region of residence. In Figure 43 we identify those of most relevance to this project.

Figure 43 Relevant surveys by Ofcom

Survey	Frequency	Technique
Landline nuisance call (diary survey)	January-February every year since 2013	A sample of about 800 people keep diaries in which they record details about every nuisance call that they receive in four successive weeks
TPS effectiveness (diary survey for a randomised control trial in two waves)	November 2013 and March 2014 only	This resembled the landline nuisance call diary surveys, except that the 800 or so diarists that participated in both 2013 and 2014 were not registered with TPS before the 2013 survey and, unknown to them, half of them were registered before the 2014 survey
Consumer issues (omnibus survey)	January, May and September (and formerly March, July and November too) every year	A sample of about 1,000 people is interviewed as part of an omnibus study (potentially asking about other topics besides telecommunications) to determine their experience of, and attitudes to, telecommunications problems such as nuisance calls
Technology tracker (omnibus survey)	January-February and July-August every year	A sample of about 2,000 people is interviewed to determine whether and how they use telecommunications services and devices

H.2 The proportion of people receiving nuisance calls

The sources of data from Ofcom that are most directly concerned with nuisance calls are the consumer issues surveys and the landline nuisance call surveys (along with the TPS effectiveness surveys of 2013-2014). The consumer issues surveys rely on omnibus interviews in which interviewees recall face-to-face whether they have received nuisance calls in the previous four weeks. The landline nuisance call surveys and the TPS effectiveness surveys rely on diary entries for which respondents keep diaries over four weeks.

The consumer issues surveys persistently find fewer nuisance calls than do the landline nuisance call surveys and the TPS effectiveness surveys[132]: typically the

[132] Until July 2013, the consumer issues survey results were similar to those of the landline nuisance call surveys, but their questions did not restrict attention to the previous four weeks (unlike those of the landline nuisance call surveys). After the questions were amended, fewer respondents to the consumer issues surveys reported that they had received nuisance calls.

proportion of interviewees that recall receiving nuisance calls is roughly 3/4 of the proportion of diarists that report receiving nuisance calls. Possibly this indicates that low numbers of nuisance calls pass unnoticed, or at least unremembered. Figure 44 supports this possibility: in the landline nuisance call surveys the proportion of diarists that report receiving at least three nuisances calls ranges between 63% and 69%, so it is usually close to the proportion of interviewees that recall receiving nuisance calls.

Figure 44 Proportions of users receiving nuisance calls in Ofcom surveys

Year	Proportion of adults with landlines that reported receiving nuisance calls in four weeks…				
	During the landline nuisance call diary survey, with the number of nuisance calls received being at least…			In a consumer issues omnibus survey…	
				Just before the diary survey	Just after the diary survey
	1	2	3		
2017	81%	71%	63%	55%	54%
2016	84%	73%	64%	59%	64%
2015	87%	78%	69%	63%	68%
2014	85%[133]	76%[134]	68%	62%	66%

The landline nuisance call surveys themselves may be affected by human nature. As Figure 45 illustrates, in every year there is a decrease in the number of nuisance calls reported in the surveys after the first week, at a season of the year when evidence (from the consumer issues surveys and standard trueCall units) suggests that there should be an increase. If there was not simply week-by-week variation perhaps the diarists became less conscientious after the first week.

Also, the diary can hold details of only 40 nuisance calls; anyone getting more than that is asked to record them on separate sheets or request another booklet, but this too could lead to under-reporting[135]. A diarist may also just overlook noting call details, especially when busy with something else, in a different room from the diary, or getting a series of calls.

[133] The corresponding figure for the TPS effectiveness survey of March 2014 is 84%; it is the average of 77% and 91%, which were the survey results for respondents whose numbers were or were not registered with TPS (respectively).

[134] There is no corresponding figure for the TPS effectiveness survey of March 2014, but 53% (which is the average of the survey results for respondents whose numbers were or were not registered with TPS) reported receiving at least six nuisance calls.

[135] Fewer than 1% of the diarists reported more than 40 calls in any year except 2016, when fewer than 2% did so.

Figure 45 Weekly variations in Ofcom landline nuisance call surveys

Year	Proportion of users that reported receiving nuisance calls for successive weeks numbered…				Mean number of nuisance calls received in one week for successive weeks numbered…			
	1	2	3	4	1	2	3	4
2017	31%	26%	24%	25%	1.9	1.7	1.6	1.5
2016	30%	26%	27%	24%	2.1	2.0	1.9	1.8
2015	34%	28%	28%	25%	2.5	2.1	2.1	1.9
2014	35%	29%	25%	25%	2.1	2.0	1.8	1.8
2013	30%	24%	24%	22%	2.0	1.7	1.7	1.7

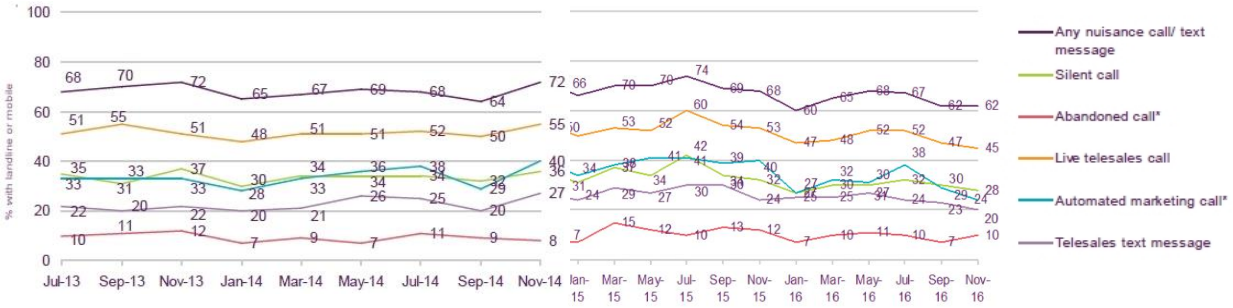
Despite their limitations the consumer issues surveys have been useful, because by occurring frequently and considering mobile phones as well as landlines they can provide an impression of trends, as illustrated by Figure 46. Of course, recent publicity about nuisance calls, as well as their actual level, may affect how many nuisance calls people remember receiving. The network measurements and user device measurements that are now becoming available should provide more objective ways of detecting the trends. They should also avoid some of the problems faced by the landline nuisance call surveys.

Records from standard trueCall units can provide figures analogous to those from the landline nuisance call surveys and consumer issues surveys given in Figure 44. We discuss below how these figures (or indeed other figures derived from network measurements or user device measurements) might be related to those other figures.

H.3 The frequency of nuisance calls

Figure 46 uses the Ofcom consumer issues surveys to show evidence of a seasonal variation in the number of nuisance calls, which rises towards the beginning of the year and falls towards the end, with the highest sometimes being 23% more than the lowest over six months. The variation is more marked for some types of nuisance call (such as automated marketing calls) than for others (such as abandoned calls).

Figure 46 Percentages of adults receiving nuisance calls in four weeks



Source: Ofcom consumer issues survey reports in updates to the joint ICO/Ofcom action plan[136]

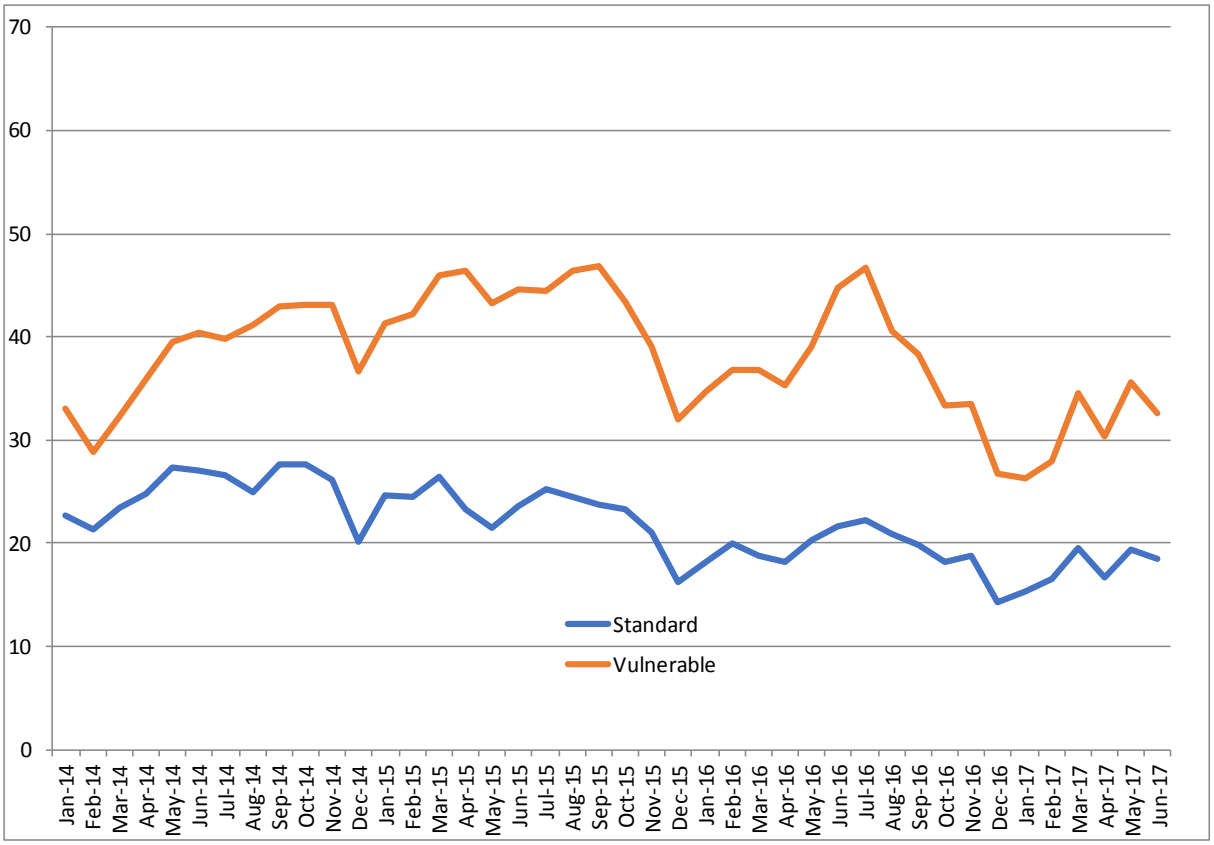
[136] The survey answers reported until November 2014 related to receiving nuisance calls on landlines; after that, they related to receiving nuisance calls on landlines or mobile phones.

The Ofcom landline nuisance call surveys occur only once per year, so they are unable to show a seasonal variation in the number of nuisance calls like that in Figure 46. However, trueCall units can do so, as demonstrated in Figure 47.

There is also a pronounced day-of-week variation, as recorded by the landline nuisance call diary surveys and trueCall data[137]. It is exhibited very clearly for one calling number in Figure 66.

Figure 47 distinguishes between trueCall "standard" units and trueCall "vulnerable" (or "secure") units. Both the standard units and the vulnerable units admit calls from callers on the white list, reject calls from callers on the black list and intercept calls from callers on neither list. The standard units tell callers on neither list to say their names if they want the calls to proceed; the vulnerable units tell them to press a key, provide a code already assigned to them or contact someone else (such as a relative, carer, neighbour or warden). The vulnerable unit users are likely to be vulnerable people and typically had their units supplied free of charge by their local authority or other care agency. The different numbers of nuisance calls received by the standard units and the vulnerable units provide evidence that vulnerable people are especially targeted by nuisance callers.

Figure 47 Nuisance calls per trueCall unit per month, UK, 2014-2017



[137] For instance, the 2013 landline nuisance call diary survey recorded that the proportions of nuisance calls per day were 20% on each of Monday and Tuesday, 18% on each of Wednesday and Thursday, 16% on Friday, 6% on Saturday and 2% on Sunday. Calling rates were fairly constant between 9:00 and 19:00 but fell off rapidly outside those hours.

Even the standard units report higher numbers of nuisance calls than do the landline nuisance call surveys: the proportions of users receiving higher numbers of nuisance calls are higher for standard trueCall units than for Ofcom landline nuisance call surveys, with the effect that the mean number of nuisance calls received is much higher for the standard units report than for the landline nuisance call surveys. Figure 48 consolidates the reports for 2014-2017 to illustrate this.

Figure 48 Proportions of landline users receiving given numbers of nuisance calls, 2014-2017

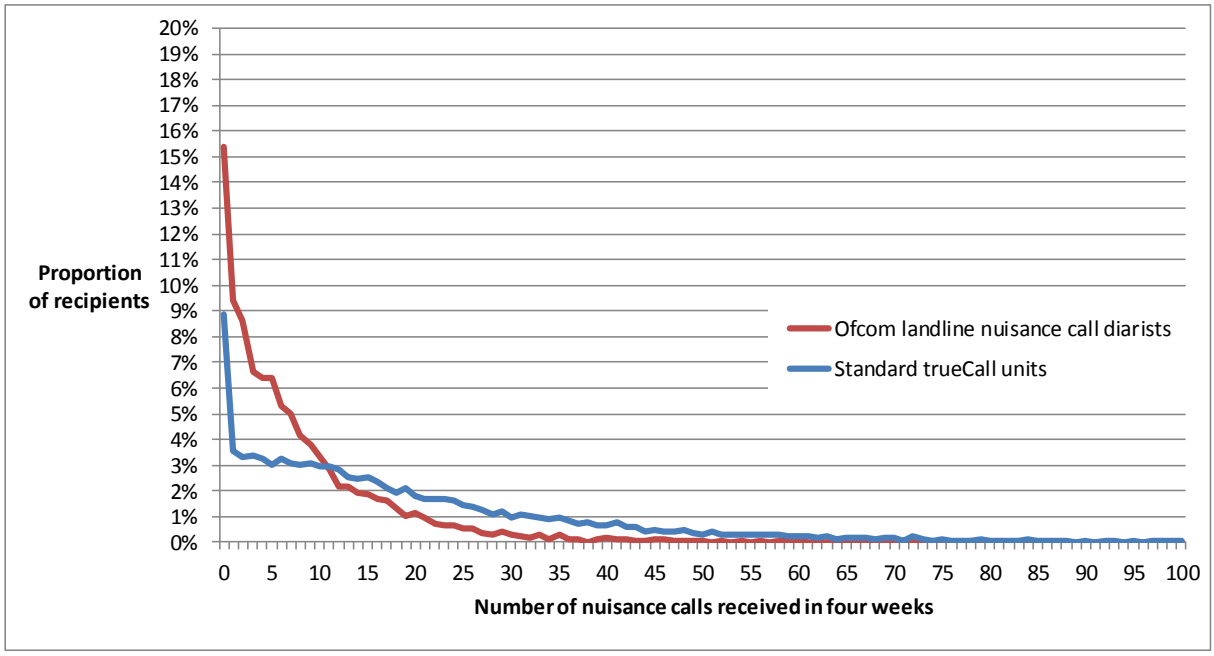


Figure 49 shows this in another way[138].

Figure 49 Summary distribution of landline nuisance calls per user, 2014-2017

Data source	Proportion of recipients receiving in four weeks a number of calls in the range…									Mean number received in four weeks
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	
Ofcom landline nuisance call surveys	15%	37%	22%	11%	7%	3%	2%	1%	0%	7.6
Standard trueCall unit records	9%	16%	15%	13%	10%	8%	5%	5%	4%	18.0

H.4 Comparisons between sources of data

The consumer issues surveys and landline nuisance call surveys are designed so that the respondents are representative of UK adults in terms of gender, age group, socio-economic group, working status and region of residence. By contrast, the owners of standard trueCall units are not representative, as:

- They are motivated to buy the units, perhaps by receiving high numbers of nuisance calls.

[138] The consolidation uses the full range of records available for standard trueCall units until October 2017 and the results of the landline nuisance call surveys covering four weeks in each year.

- They could be disproportionately in older age groups (as suggested by a small trueCall user survey in 2013), so they would encounter disproportionate numbers of nuisance calls.
- They are not spread uniformly throughout the UK, but there are regional variations in nuisance call patterns (as indicated in Annex K).
- They can accidentally or deliberately fail to activate the central collection of records.

However, related comments apply to the landline nuisance call surveys. For instance:

- The respondents might be motivated to participate either by receiving very few nuisance calls (in which case any participation fee would be easily earned) or by receiving very many nuisance calls (in which case anything that might reduce the nuisance could be welcomed).
- The respondents can be mistaken or forgetful, and, as demonstrated by Figure 45, some appear to be less conscientious in reporting nuisance calls after the first week of a survey.
- The surveys use samples that are not large enough to permit detailed inferences about cross-tabulated groups (such as the elderly in Scotland).
- The surveys occur at particular times of year, but there are seasonal variations in nuisance call patterns.

In any event, counting nuisance calls by using standard trueCall units (or indeed by using any equipment that intercepts them before the users receive them) is likely to produce a higher number than counting them by using the diarists of the landline nuisance call surveys, who need to be at home to receive them. In fact the diarists count fewer calls if they go out to work; Figure 50, based on the 2017 landline nuisance call survey, illustrates this. In it, the mean number of nuisance calls in four weeks per diarist who is not working (8.4) or even per diarist who is retired (10.1) is still well below the figure obtained from standard trueCall units in Figure 49. However, many of the diarists share their homes with other adults who are likely to receive some calls, even if not as many as the diarists, so the average number of nuisance calls per household will be higher than the number of nuisance calls per diarist. The assumption made in Annex C is that the diarists receive only the proportions of the nuisance calls due according to the sizes of their households (so in a two-person household the diarist would receive half the nuisance calls), but this is questionable.

Figure 50 Landline nuisance calls received in four weeks, by working status

	Working status						**All**	
	Full time employed	**Part time employed**	**Home-maker**	**Student**	**Tempor-arily out of work**	**Retired**	**Working**	**Not working**
Mean number of nuisance calls in four weeks per diarist	5.3	6.5	6.9	4.4	6.7	10.1	5.6	8.4
Proportion of diarists receiving nuisance calls in four weeks	76%	82%	85%	60%	82%	92%	78%	85%

Source: Ofcom landline nuisance call surveys

Understanding how the results from the landline nuisance call surveys and those from the standard trueCall unit records differ requires us to look at the distributions, not just the means. With suitable c information about these distributions, we could, for example, infer the distribution of nuisance calls to a two-person household, given the distribution of nuisance calls to a diarist. We could take similar account of the age groups of trueCall unit purchasers and of the difference between the first week and the subsequent weeks of the landline nuisance call surveys. Our explorations so far show that several factors need to be taken into account when resolving the differences; for instance, just considering working status or age group on its own is insufficient.

We do not have adequate data to determine these distributions. We note, however, that the distribution of the landline nuisance call surveys appears to align best with that of the standard trueCall unit records if it is offset by one, two or three nuisance calls[139]; this amounts to assuming that people are motivated to buy standard trueCall units only if they receive at least one, two or three nuisance calls in four weeks (on average). However, the alignment between the distributions remains poor even with this offset.

[139] The “best” alignment in this case minimises the sum of the squares of the differences between the (Ofcom survey and trueCall unit) proportions of recipients of given numbers of nuisance calls.

Annex I Nuisance call complaints systems

There are three “official” portals for consumer complaints about nuisance calls, run respectively by ICO, TPS and Ofcom, and one for scams: Action Fraud. In addition, Which? now provides a front end to these; and some network operators provide nuisance call support to customers, including the possibility of making a complaint. For this study we have looked at the ICO, TPS, Ofcom, Action Fraud and Which? systems and summarise our findings below.

Figure 51 Channels available for complaining

Channel	Online	Web chat	Email	Telephone	Post	Remarks
ICO	Yes					Page directs to relevant places (though some links are out of date). Gives expected completion time.
TPS	Yes				Yes	Can phone to request complaints form, but not to complain.
Ofcom	Yes			Yes	Yes	Page directs to relevant places; Ofcom deals only with silent & abandoned calls.
Action Fraud	Yes	Yes	Yes	Yes		Not clearly suited to phone scams, unless fraud is in progress.
Which?	Yes					Claims to forward complaints to the relevant place.

Figure 52 Online complaints procedure

Channel	Pages of form	Pages of instructions	Obligatory fields	Optional fields	Categories in drop-down menus	Remarks
ICO	3	1	10	10	22	Allows up to 5 calls to be complained about at one time, and personal details to be reused if complaining again within a month.
TPS	5	1	24	6	12, 32	Must know company or number to use this.

Channel	Pages of form	Pages of instructions	Obligatory fields	Optional fields	Categories in drop-down menus	Remarks
Ofcom	1	2	16	5	-	Tricky Captcha hurdle.
Which?	3	0	8	2	21	In at least the TPS case, routes to TPS (to start again), despite company and calling number being unknown.

The options in the ICO and TPS drop-down menus are shown below (those in the Which? form are almost the same as ICO's). Ofcom's diary survey categories are also shown for comparison. The highlights show how scams and surveys are described in these different lists. These options may confuse complainants and lead to similar experiences being differently categorised by different people, as well as by different systems.

TPS: first dropdown menu	**Ofcom diary research**
Sales and marketing call Market research Recorded message Silent call (whereupon answering there is silence) Reverse call request Debt collection Overseas call SMS (text) alerts Text message Scam calls Suppression services that charge a fee Other (Nuisance, Abusive, Threatening)	Market research/ Survey Computer/ maintenance/ support Scam calls e.g. banking/computer/passwords etc. PPI Home improvement e.g. boilers/ windows Phone/ Broadband Insurance (car/ health/ life etc.) Government schemes/grants/initiatives Financial Services/ products Accident claims/ compensation Energy company Debt repayment/advice/consolidation Banking/ Credit card Charity
TPS: second dropdown menu	**ICO**
Adult Content Charities Cleaning (including Home, Car, Carpet, Window, Oven) Commercial Suppression Services (including Call Blockers) Competitions Debt Management i.e. Debt consolidation Energy Efficiency Installations (Solar Panels, grants etc.) Energy Supplier (Gas, Electricity etc) Financial Services (e.g. Credit Card, mortgage, Pensions etc) Flight Delays Gambling - i.e. lottery Health and Wellness - Alternative Medicine Holiday (e.g. offers on city breaks, cruises etc) Home Improvement - (Double Glazing, Kitchen, Windows etc.) Home Security - (Alarms etc.) Insurance (Including car, life and home) Investment (including wine, minerals, stocks and shares etc) Lead Generation/ Lifestyle Surveys (Attempting to gain consent for marketings calls) Mobility Equipments (Mobility Scooters, Stair lift aid etc.) Other Home Improvements Payment Protection Insurance Claim (PPI) Personal Injury Compensation - (car accident, trip and fall, work related injury i.e. hearing loss etc.) Prank Calls Price Comparison (Insurance, broadband, etc.) Ruined Holiday (Packaged holiday not as contracted, food poisoning etc) Satellite tv Scams (Including calls offering technical support for a computer) Short term loan i.e. pay day loan Telecoms - (Landline, Mobile, Broadband) Warranty (including Satellite TV and Household items) Will writing	Accident claims Adult content Banking Broadband, phone, TV or other telecoms services Call blockers Charities Competition Computer scams - you should report these to Action Fraud Debt management Energy saving and home improvements, including double glazing, windows and insulation Energy supply Gambling Health Holidays Insurance (including car, life and home) Lifestyle surveys Oven cleaning Payday loans Payment Protection Insurance (PPI) Pensions Silent / no answer - you should report these to Ofcom

Annex J Analysis of trueCall data for Scotland

J.1 Introduction

For this project, Steve Smith of trueCall has carried out several special analyses of the data that many trueCall users in Scotland contribute to the trueCall nuisance call database (and, for comparison, similar data for the rest of the UK). As explained elsewhere in this report, these users are divided into two broad categories depending on their type of unit or settings:

- "vulnerable trueCall users", defined as those who have a trueCall unit marketed as "trueCall Secure", or who have the regular trueCall Call Blocker product but have configured it with settings designed for people with dementia or similar conditions ('Lock Down');
- "standard trueCall users", who are all other users.

The definition of "nuisance call" used in these analyses is discussed in Annex A. Throughout the UK, vulnerable trueCall users receive distinctly more nuisance calls than standard trueCall users.

We could not expect Ofcom's diary surveys to reflect the levels of nuisance calls experienced by vulnerable trueCall users, both because the sample sizes are too small to properly represent this category, and because many people in this category – for example those with dementia – would not have the capacity to reliably and accurately complete a diary. And the levels of nuisance calls recorded by even standard trueCall users are considerably higher than those emerging from Ofcom's landline diary surveys, for reasons which include:

- trueCall users are a self-selected sample of people who are sufficiently bothered by nuisance calls to buy and install a premium call blocker.
- Ofcom's landline diarists record only the nuisance calls that they personally receive, which in households with more than one adult will be less than those received by the household as a whole.
- trueCall units record every nuisance call, whether or not anyone is at home. Ofcom diarists can record only those calls that they receive when they are at home, and may occasionally fail to record some calls that they do receive[140].

We believe however that the *composition* of nuisance calls received by trueCall users should be a good guide to the *composition* of nuisance calls received by active landline users in general, even if not to the level.

Concentrated efforts by some Scottish local authorities and Trading Standards departments to protect vulnerable adults from nuisance calls have led to relatively high numbers and proportions of vulnerable trueCall users in Scotland. This situation reflects these efforts rather than any significant difference between the Scottish and

[140] Nuisance calls reported fall during the four weeks of each Ofcom landline nuisance call survey; this might reflect diarist fatigue or underlying fluctuations. The diary accommodates only 40 nuisance calls; anyone getting more than that is asked to record them on separate sheets or request another booklet, but this too could lead to under-recording. A diarist may also just overlook noting call details, especially when in the middle of doing something else, in a different room from the diary, or getting a series of calls.

UK populations. Our analyses treat vulnerable and standard users in each population separately, so that this concentration of vulnerable trueCall users in Scotland does not affect our findings.

J.2 Nuisance calls into the UK and Scotland

Figure 53 and Figure 54 demonstrate that levels of non-nuisance calls are similar between the UK and Scotland, and also between vulnerable trueCall users and standard trueCall users. However, there are large differences between levels of nuisance calls, both between the UK and Scotland, and between vulnerable trueCall users and standard trueCall users.

A decline in nuisance calling may be detectable in the 2017 figures, but it may be too soon to say.

Figure 53 Calls received per trueCall unit in four weeks in the UK except Scotland, 2014-2017

		2014	2015	2016	2017 (6 months)
Standard trueCall users	Incoming calls	61	60	53	50
	Non-nuisance calls	38	37	35	33
	Nuisance calls	**23**	**23**	**18**	**17**
Vulnerable trueCall users	Incoming calls	64	81	76	71
	Non-nuisance calls	33	40	41	42
	Nuisance calls	**31**	**41**	**34**	**29**
All trueCall users	Incoming calls	61	65	61	59
	Non-nuisance calls	37	38	37	37
	Nuisance calls	**24**	**28**	**24**	**22**

Figure 54 Calls received per trueCall unit in four weeks in Scotland, 2014-2017

		2014	2015	2016	2017 (6 months)
Standard trueCall users	Incoming calls	72	75	63	58
	Non-nuisance calls	40	39	35	33
	Nuisance calls	**32**	**36**	**28**	**26**
Vulnerable trueCall users	Incoming calls	64	94	87	78
	Non-nuisance calls	33	45	46	46
	Nuisance calls	**31**	**49**	**40**	**32**
All trueCall users	Incoming calls	69	84	76	70
	Non-nuisance calls	37	42	41	41
	Nuisance calls	**32**	**42**	**35**	**29**

Figure 18 and Figure 19 show these features graphically. Similar figures and charts have been studied for all other countries and statistical regions of the UK; it is Scotland that stands out as different.

Another difference appearing in the charts is the large peaks and relative troughs in the Scottish profile. This is not just a sample size phenomenon – it does not appear in other regions of similar size. This is examined in more depth below, and found to be related to focused calling campaigns from a few originating numbers.

J.3 Nuisance calls to standard trueCall users in Scotland and rest of UK

J.3.1 Scam and suspicious calls

We distinguish between the three grades of severity of nuisance call described in Figure 55.

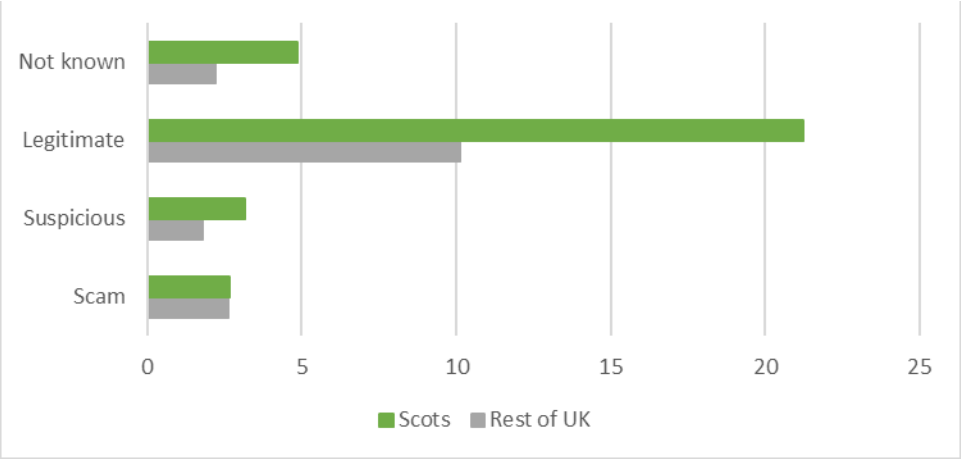
Figure 55 Grades of severity of nuisance calls

Grade	Description	Relation to Annex A taxonomy
Legitimate	Legitimate products are being sold over the phone, either in a legitimate way or with some breach of the PECR or persistent misuse regime.	Estimated at 41% of nuisance calls in Figure 31 – described in its notes 4 and 5.
Suspicious (mis-selling)	There is a legitimate product, but sales techniques used are illegitimate. This may involve the gathering of sales leads under false pretences, misleading or exaggerated claims for the product or service, a 'hard sell' approach, the targeting and exploitation of vulnerable consumers, etc. Some financial risk or unnecessary inconvenience is involved for the consumer.	Estimated at 38% of nuisance calls in Figure 31 – described in its note 6.
Scam	There is no legitimate product or service - the purpose is to deceive in order to get money or personal information from the consumer.	Estimated at 19% of nuisance calls in Figure 31 – described in its note 7.

Figure 56 shows the results of an analysis of the top 250 nuisance calling numbers into Scotland and the top 250 nuisance calling numbers into the rest of the UK. It analyses the calling numbers by source (if this can be identified from the calling number) and groups them by these three grades.

Analysing the top 250 numbers making nuisance calls, Scots receive 1% more scam calls, 77% more suspicious calls and 110% more legitimate calls than users in the rest of the UK.

Figure 56 Nuisance calls per month to standard trueCall units by severity, Scotland and UK



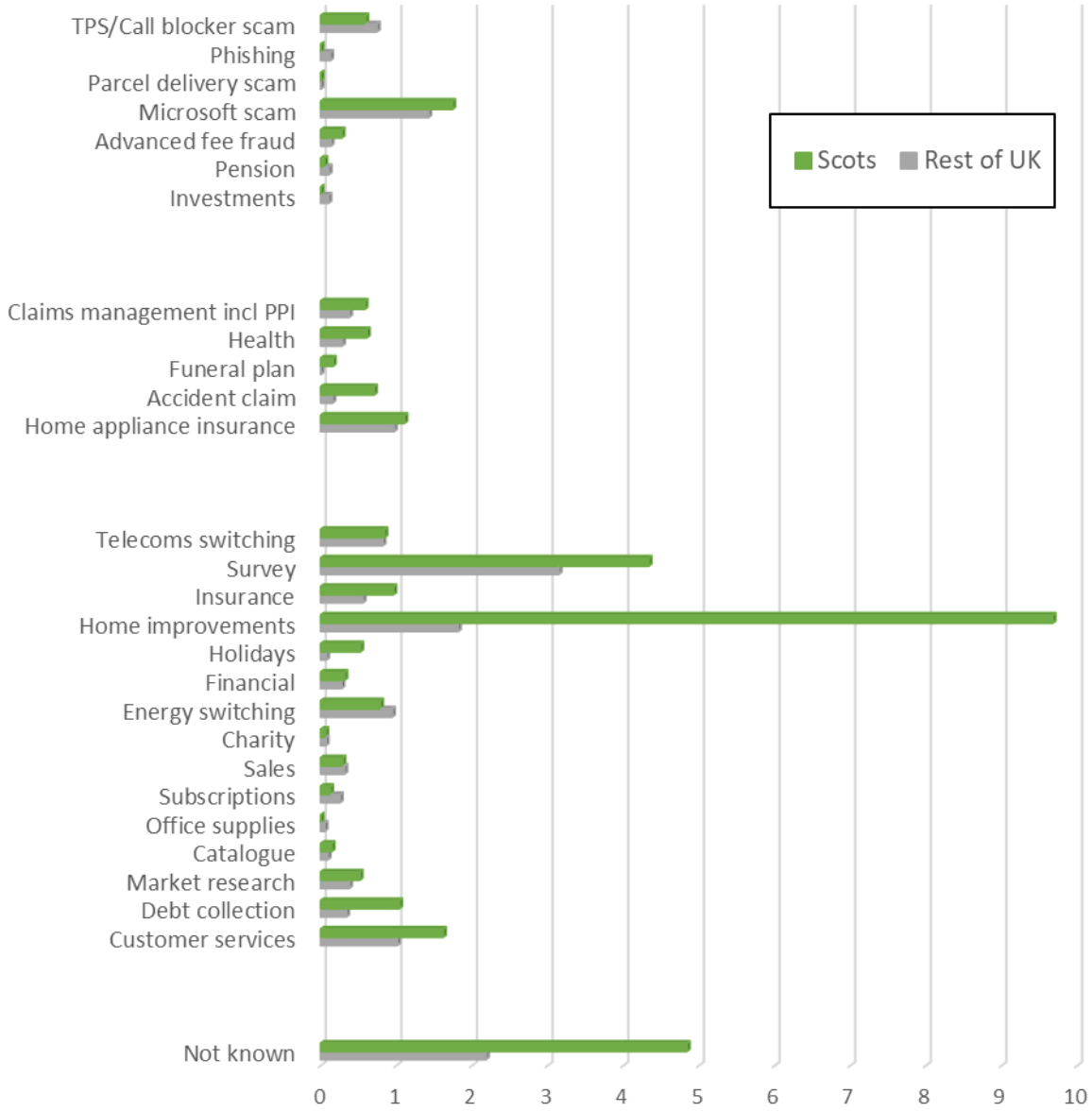
Source: Analysis of top 250 callers to standard trueCall units, January-June 2017

J.3.2 Call categories

Figure 57 shows the number of nuisance calls that standard Scottish trueCall users and standard trueCall users in the rest of the UK receive in each category from the top 250 calling numbers. They are grouped by whether they are clear scams (top), suspicious (middle) or legitimate (bottom).

Scots receive more calls in most categories – in particular, home improvements and surveys. There were no major categories where Scots receive significantly fewer nuisance calls.

Figure 57 Nuisance calls per month to standard trueCall units by category,



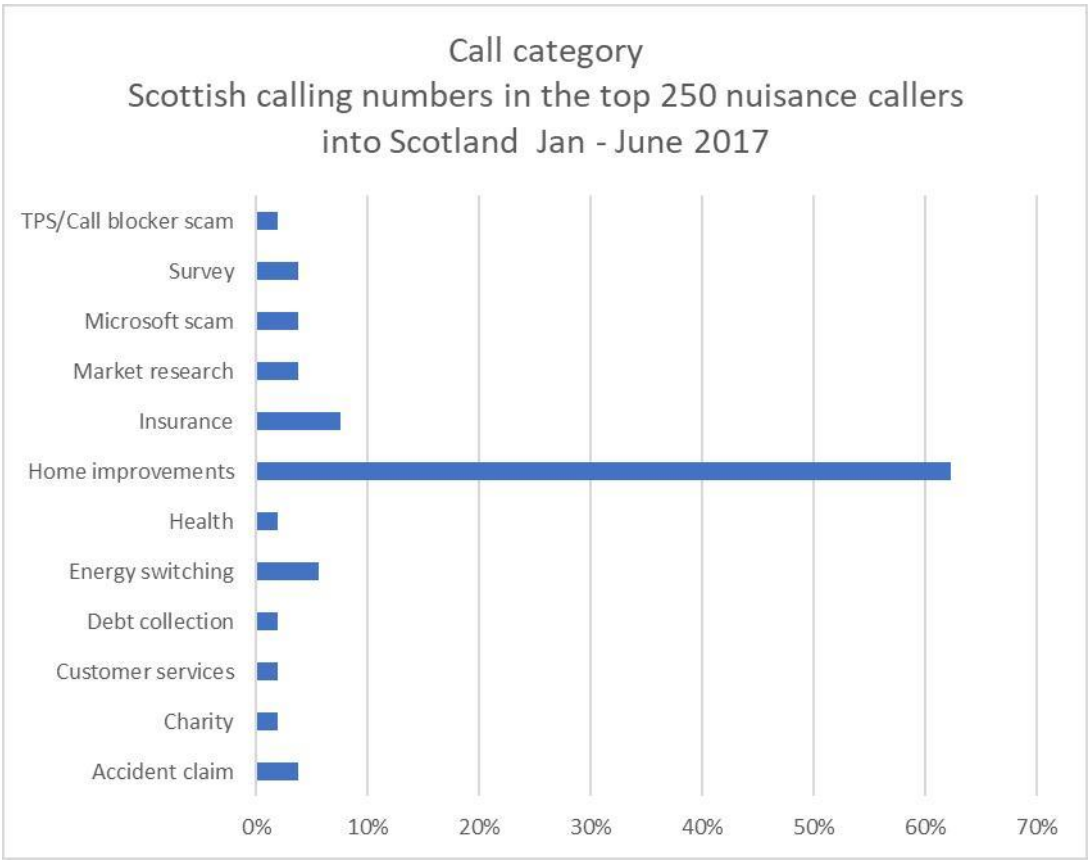
Scotland and UK

Source: Analysis of top 250 callers to standard trueCall units, January-June 2017

J.3.3 Analysis by category and originating region

Of the 57 Scottish call centres identified in the top 250 list we were able to identify the category for 53, as shown in Figure 58. The overwhelming majority were calling about home improvements.

Figure 58 Nuisance calls from 53 callers in Scotland to standard Scottish trueCall units, by category



Source: Analysis of top 250 callers to standard trueCall units in Scotland, January-June 2017

Note that this is an analysis of calling numbers, not companies. Also, we assume that these calls came from Scotland because of the caller-ID, but if numbers were spoofed then they could have come from anywhere else. Having said this, many comments in the online databases we checked (WhoCallMe, Tellows, etc) did mention a Scottish voice (but this is not conclusive, as Scots may work in call centres outside Scotland).

The area codes of the 57 Scottish calling numbers identified in the top 250 numbers are concentrated in a small number of geographic locations listed in Figure 59.

Figure 59 Locations of call centres (for top 250 calling numbers in Scotland)

Location	Number	Category
Glasgow	13	Home improvements (6), Microsoft scam (2), Accident claim (2), Debt collection (1), Energy switching (1), Insurance (1)
Kirkcaldy	11	Home improvements (11)
Edinburgh	7	Home improvements (2), Insurance (2), Market research (2), Customer services (1)
Dundee	3	Energy switching (2), Health (1)
Aberdeen	3	Home improvements (2), Survey (1)
Motherwell	2	Home improvements (1), TPS scam (1)
Falkirk	2	Home improvements (2)
Dunfermline	4	Home improvements (2), Charity (1), Insurance (1)
Others	12	

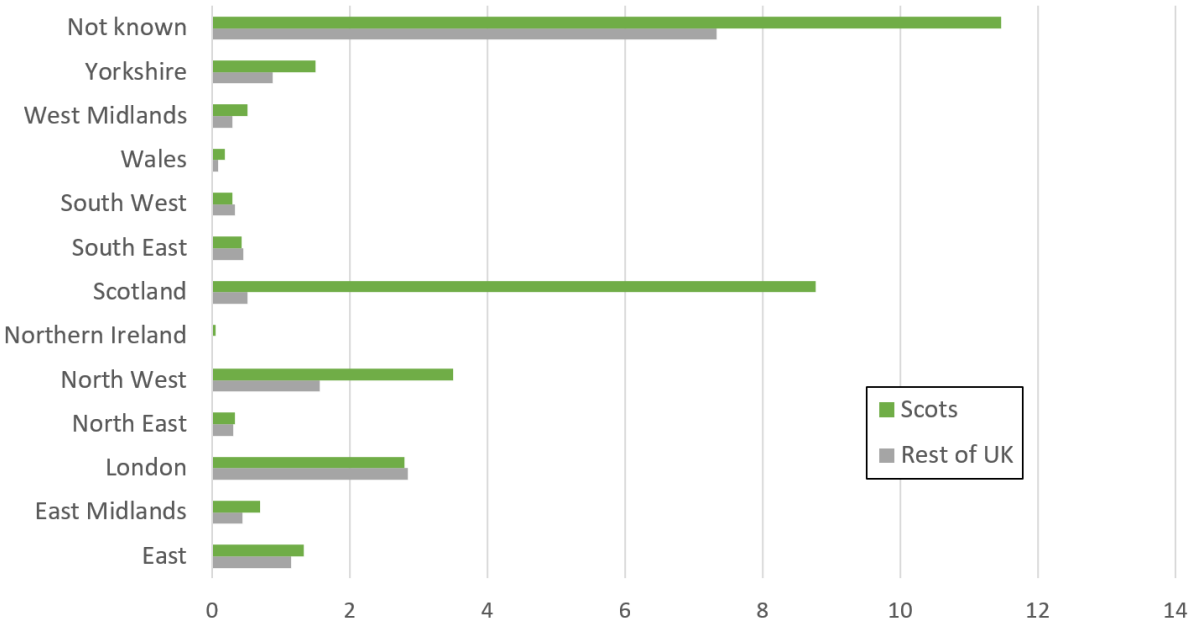
The concentration of home improvement calling numbers in Kirkcaldy is notable. Our research suggested that all of these callers were associated with a single company. This company was responsible for 970 calls during the six month period – 6% of nuisance calls received by standard Scottish trueCall users from the top 250 numbers, 22% of the calls originating from what we assume are Scottish call centres, and 50% of all home improvement calls received by Scots.

Taking these top 250 calling numbers as representative of all nuisance calls from major call centres, then 27% of nuisance calls into Scotland from major call centres come from Scottish numbers (or call centres spoofing Scottish numbers), whereas in the rest of the UK only 3% of such nuisance calls come from Scottish numbers. This additional 24% could make up a big proportion of the additional calls that Scots receive. Scots receive the same or more calls from all the other regions of the UK.

It would be expected that Scots would receive more calls from Scottish call centres – companies often do business locally – but the scale of this is surprising.

Scots receive more calls from the North West (of England), than people in other regions of the UK. This may be because of their geographic proximity to Scotland. Of course the North East (of England) is also relatively close to Scotland.

Figure 60 Nuisance calls to standard trueCall units per month, by calling region



Source: Analysis of top 250 callers to standard trueCall units, January-June 2017

Note that many of the callers categorised as ‘Not known’ will be from Scotland. For example, '08000355113’ - which is ranked number 7 for nuisance calls into Scotland – is a Scottish double glazing company.

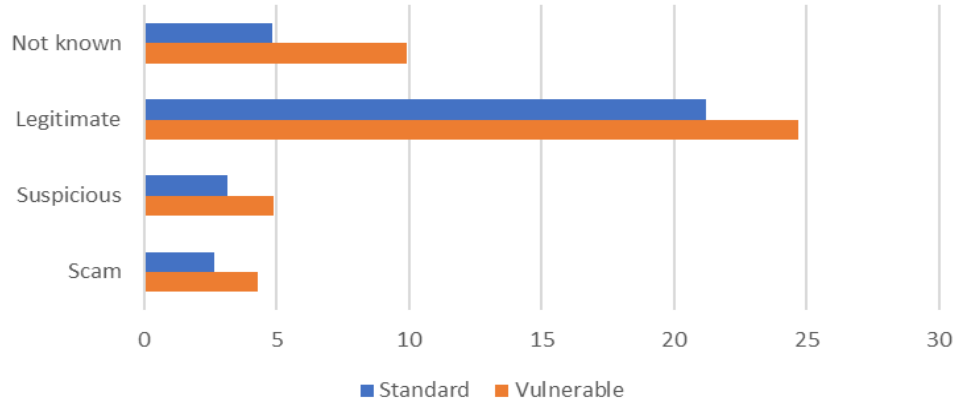
There is good news here. It appears that a good proportion of the additional nuisance calls that Scottish households receive are from legitimate call centres based in Scotland. Identifying scammers and suspicious callers is difficult – they are operating outside or at the edges of the law – but identifying legitimate call centres is much easier. The Scottish Government is uniquely positioned to take action here, along with its business partners (who may subcontract to these call centres) and citizens (who may work in them).

J.4 Nuisance calls received by standard and vulnerable trueCall users in Scotland

J.4.1 Scam and suspicious calls

Analysing the top 250 nuisance calling numbers, vulnerable Scottish users receive 38% more scam calls, 35% more suspicious calls and 14% more legitimate calls than standard Scottish users.

Figure 61 Nuisance calls per standard and vulnerable trueCall unit per month, by severity



Source: Analysis of top 250 callers to standard trueCall units in Scotland, January-June 2017

J.4.2 Call categories

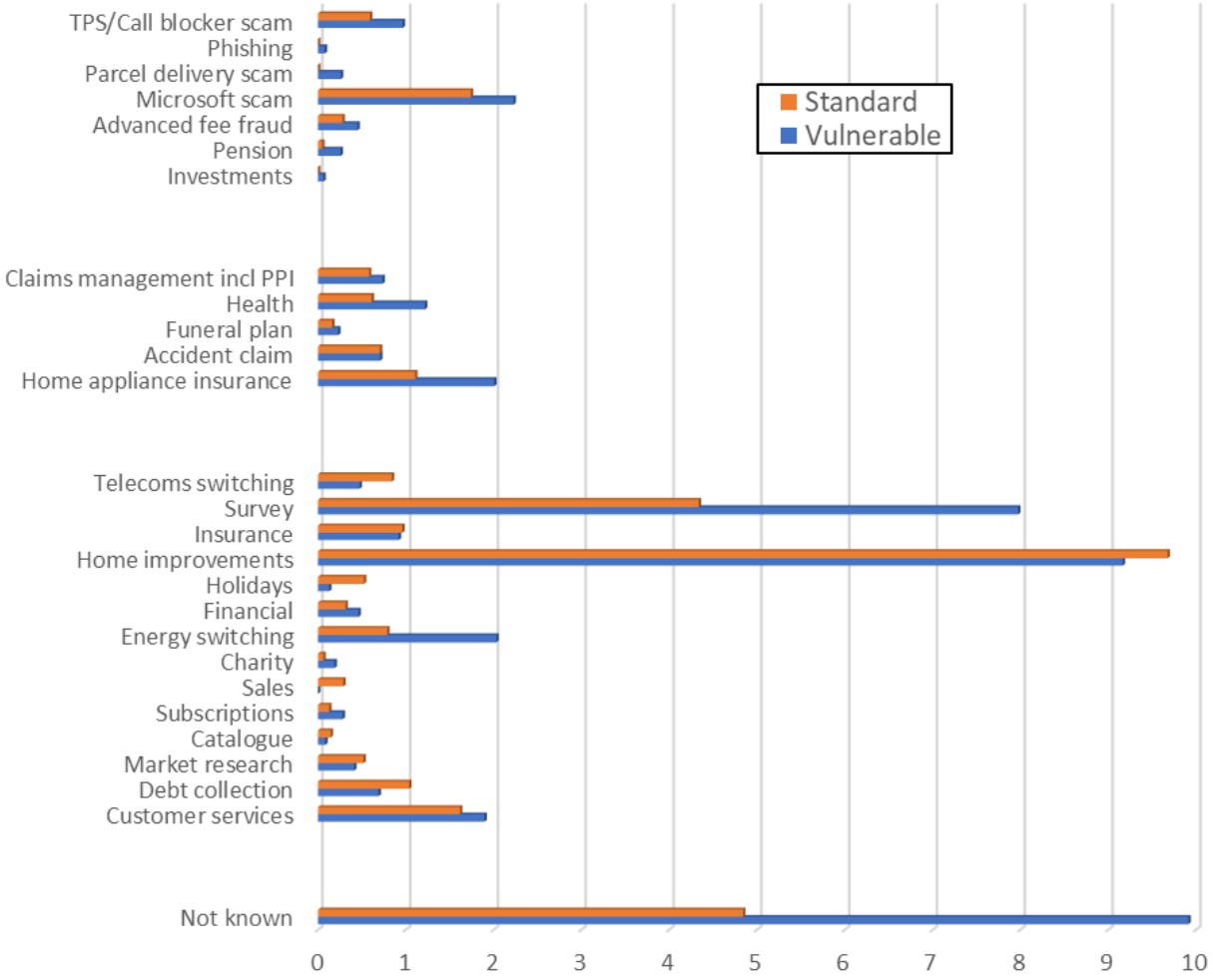
Figure 62 shows the numbers of calls that standard and vulnerable Scottish trueCall users receive in each category.

Vulnerable users receive more scam calls than standard users in every scam and suspicious category. Standard users received almost no parcel delivery, investment or phishing calls.

Standard trueCall users only receive more nuisance calls in a few categories, notably telecoms switching, home improvements, holidays, and debt collection.

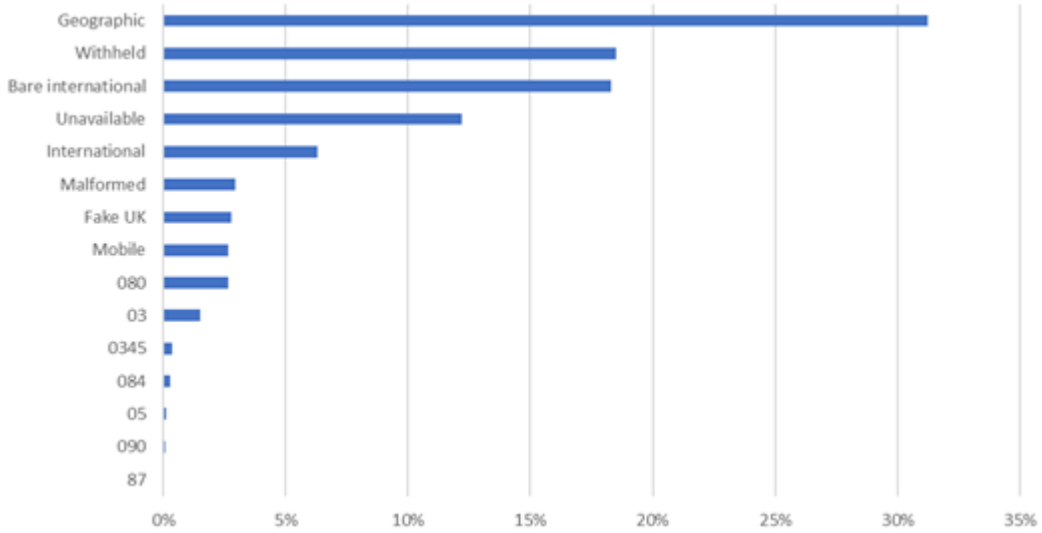
Vulnerable trueCall users receive significantly more nuisance calls in nearly all other categories, notably surveys and energy switching (from the “legitimate” grade of severity) as well as all categories graded suspicious or scam.

Figure 62 Nuisance calls per standard and vulnerable trueCall unit per month, by category



J.4.3 Nuisance call originating number types

Figure 63 Nuisance calls per Scottish trueCall unit, by type of number



Source: Analysis of top 250 callers to trueCall units in Scotland, January-June 2017

Figure 63 shows the types of originating number found in our analysis of the top 250 callers into Scotland.

Figure 64 provides more detail on these types, showing whether or not they probably originate in the UK. We estimate that around 40% of nuisance calls into Scotland are from international call centres. Among these are 6% with malformed or ‘Fake UK’ numbers, which some network operators can detect already.

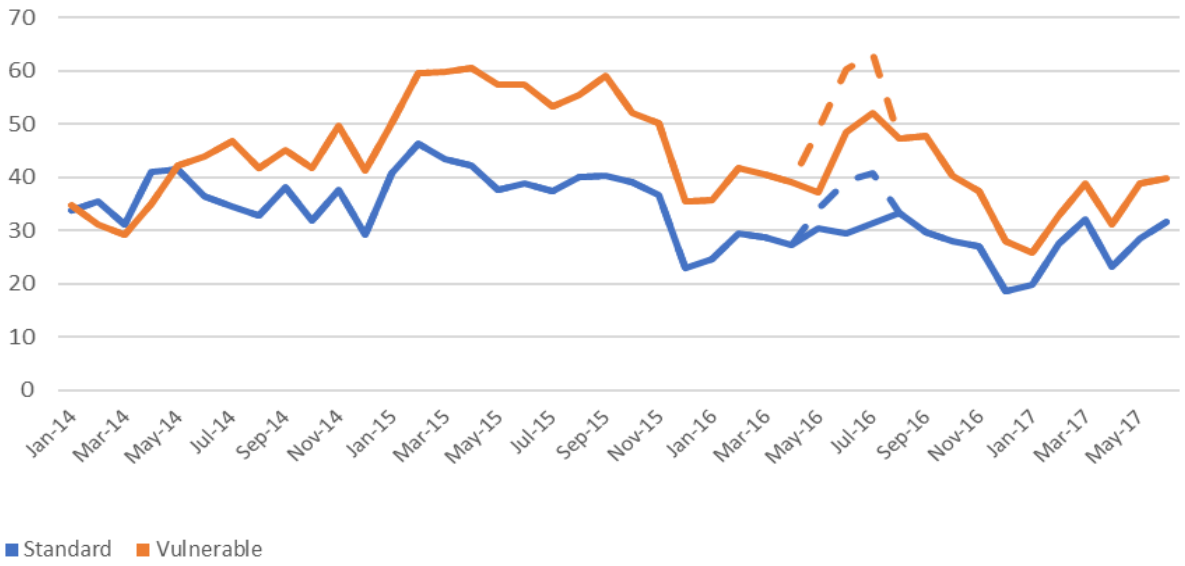
Figure 64 Origins of nuisance calls with different types of telephone number

Type	Definition	Proportion	Likely origin
Geographic	A call from a correctly formed UK geographic number starting ‘01’ or ‘02’	31%	Probably UK
Withheld	The caller withheld the number.	18%	Probably UK
Bare international	The call was flagged ‘International’ but there was no caller-ID number. BT is the only carrier to flag numbers as international.	18%	International
Unavailable	The caller-ID was unavailable	12%	Probably international
International	The number starts ‘00’ and looks like a correctly formed international number. Only very basic checks are done.	6%	International
Malformed	The number is incorrect: it has too few or too many digits, starts with an incorrect prefix, or has a UK area code that has not yet been issued.	3%	Probably international (as UK call centres might fix number formatting errors)
Fake UK	This is a UK format number that is flagged as ‘International’. Some may be legitimate (e.g. UK companies calling from abroad).	3%	International
080	A correctly formed 080 number	3%	Probably UK
Mobile	A correctly formed UK mobile number	3%	Probably UK
03	A correctly formed 03 number (except 0345)	2%	Probably UK
0345	A correctly formed 0345 number	<1%	Probably UK
084	A correctly formed 084 number	<1%	Probably UK
05	A correctly formed 05 number	<1%	Probably UK
09	A correctly formed 09 number	<1%	Probably UK
087	A correctly formed 0870 number	<1%	Probably UK

J.5 Investigation of a peak in nuisance calls

From April 2016 to July 2016 there is an unusual peak of nuisance calls in our Scottish results that is not so apparent in results from the rest of the UK. Figure 65 displays this peak as dotted lines.

Figure 65 Nuisance calls per trueCall user per month in Scotland



Six calling numbers were at the top of the nuisance calling list during these months and accounted for much of this peak: the solid lines in **F**igure 65 show the totals without calls from these six numbers. Of these six numbers:

- All were concentrating on Scotland: overall, standard trueCall units in Scotland were about 2.5 times as likely to receive any calls from these numbers as standard trueCall units elsewhere, and, among the standard units that received calls, those in Scotland received 12.0 per month on average while those elsewhere received 1.9 per month on average[141].
- All were associated with home improvements – either boilers or window replacement.
- All were calling customers who were registered on TPS.
- All were in use for between two and nine weeks only and in these months only (except that one was in very minor use for two separate weeks in two months much later).
- Three made calls into the trueCall HoneyPots, so they were presumably carrying out random or sequential dialling.

For each of the six calling numbers, looking at trueCall units that received their calls, most units received no more than three calls (except for the particular number examined further in J.6). This suggests that the large numbers of received calls shown in other trueCall data are made up by many call campaigns each making few

[141] In the North East (of England) the likelihood of receiving any calls was similar to that in Scotland, but the number of calls received was 6.6 per month.

call attempts per called number, rather than by few campaigns each making many attempts. The call blocking equipment, if detected by call centres, may help to bring about this low level of repeat calling – but this is only a hypotheses which needs further investigation.

Taking the six calling numbers together, the mean number of calls received per trueCall unit is 11.4, even though 60% of the units received no more than three calls: 32% received no calls, 16% received one call each, 8% received two calls each, and 4% received three calls each[142].

The calling patterns suggest that there were in some cases two or even more successive phases of calling. We look in more detail at one of these six calling patterns below, that for the number that was in use for nine weeks.

J.6 Investigation of the calling pattern for one particular calling number

The number that was in use for nine weeks had the Glasgow area code; callers from it said they were from the "Energy Council" and 99% of calls were made to households in Scotland. It seems to have been used in two successive phases (before and after 22 May 2017), each lasting four and a half weeks, as demonstrated in Figure 66. Calling volumes rose and fell during individual weeks in each phase; no calls were made on any Sundays, which are the dates identified in Figure 66, or on two Mondays, which were the bank holidays 2 May and 30 May.

Figure 66 Proportion of calls by date of call

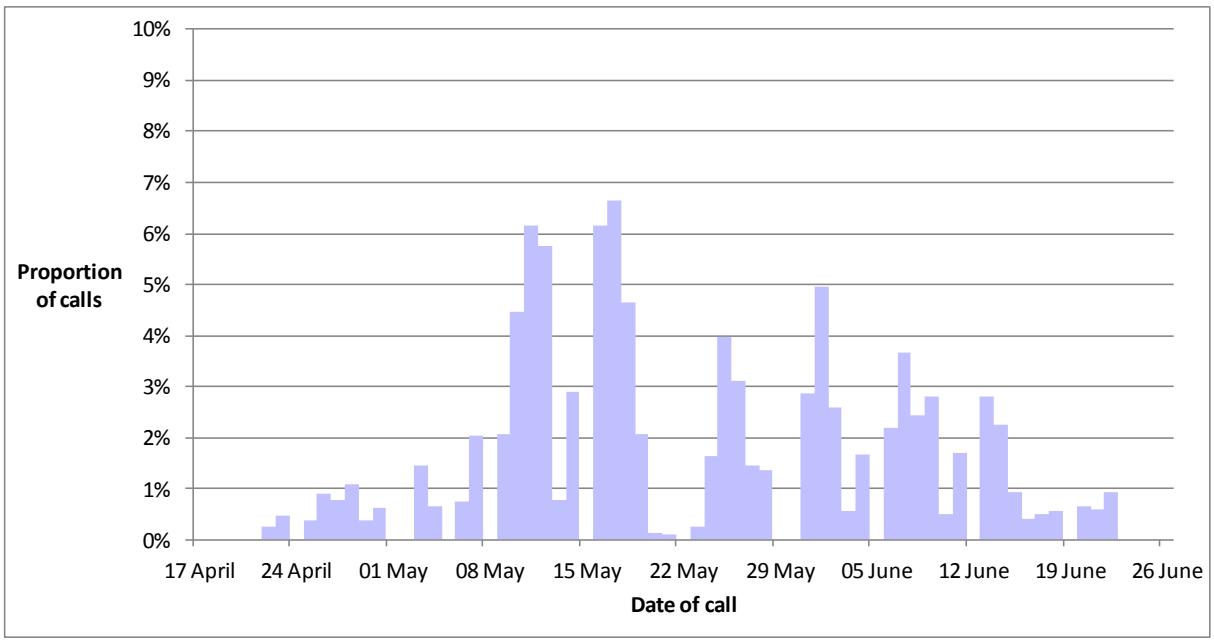


Figure 67 shows that, for this particular calling number, there were two peaks in the proportions of units receiving calls: unusually, because there were successive phases of calling, rather more trueCall units received twelve calls than received one.

[142]This geometric progression in the proportions of units receiving calls is not followed at higher numbers of calls.

Figure 67 Proportion of recipients by number of calls (considered as one pattern of calling)

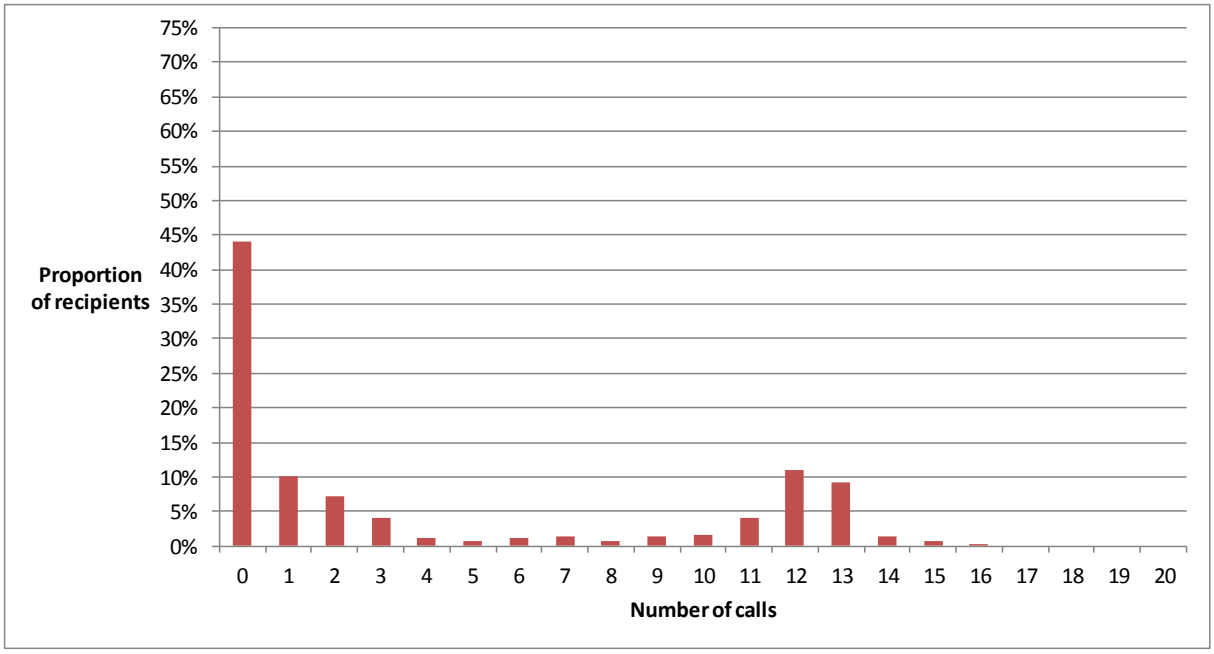
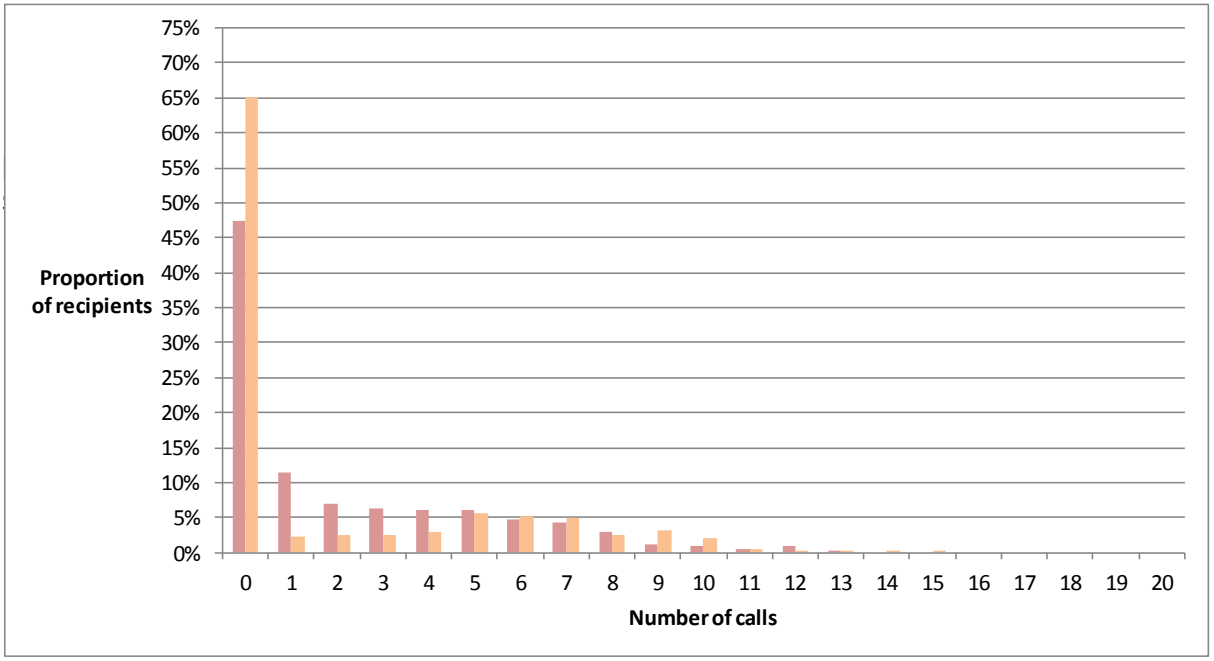


Figure 68 Proportion of recipients by number of calls (considered as two phases of calling)



Annex K Analysis of Ofcom data for Scotland

K.1 Proportion of people receiving nuisance calls

The Ofcom consumer issues surveys have been recording consumer experience of nuisance calls several times each year since 2009. They are mainly useful, in the current context, for indicating whether consumers remember that they had nuisance calls. Figure 69 summarises their implications most relevant to a comparison between the nations of the UK and the government statistical regions of England[143]. It provides results for the consumer issues surveys in the months when the landline nuisance call surveys start, and for the years from 2014 onwards[144].

In brief, the proportion of consumer issues survey respondents that report receiving nuisance calls on their landlines is consistently higher in Scotland than in most of the nations and regions but is rarely the highest. In particular:

- In four surveys (January 2017, May 2015, July 2014 and May 2014) out of the twenty-one the proportion for Scotland is the highest or equal highest; usually the proportion for East Midlands, North East or South West is the highest (and the proportion for Northern Ireland or London is the lowest)[145]. Nonetheless, the proportion for Scotland often exceeds easily the proportion for England; for instance, for January 2017 the 99% confidence interval for Scotland stretches from 62% to 90% whilst that for England stretches from 49% to 59%.
- In two years (2015 and 2014) the proportion for Scotland is the highest among those of the nations and regions. Overall, the proportion for Scotland resembles the proportion for Wales; for instance, for every year in Figure 69, the 99% confidence intervals around the proportions for Scotland and Wales overlap greatly[146]. However, some of the surveys reveal large differences between the proportions for Scotland and Wales.

[143] These are North East, North West, Yorkshire and Humber, East Midlands, West Midlands, East, London, South East and South West. Scotland has approximately (within 1/10) the same population as four of them, a higher population than two of them and a lower population than three of them.

[144] The consumer issues surveys asked about nuisance calls received "in the last four weeks" only from July 2013 onwards. Earlier surveys asked the same question without a time limit, so with other things equal, answers should have been higher.

[145] The surveys use samples, so though they have been weighted to be representative of the individual nations and regions they are subject to random variations. The results here are therefore expressed with '±' alongside, conveying a 99% confidence interval. Essentially '±2%', for example, means that if the survey occurred 100 times with different samples then in 99 of the occurrences the true value (which is assumed itself to be a percentage) would be within 2% on either side of the value estimated in the survey. The length of the confidence interval (which in this example stretches from -2% to +2%) depends on the size of the sample and the estimated value.

[146] This would be so even for 95% and 90% confidence intervals.

Figure 69 Incidence of landline nuisance calls in Ofcom consumer issues surveys

Period	Proportion of adults with landlines that reported receiving nuisance calls in four weeks in…												Most affected region	Least affected region
	England		Scotland		Wales		Northern Ireland		UK except England		UK except Scotland			
	%	±	%	±	%	±	%	±	%	±	%	±		
January 2017	54%	5%	76%	14%	50%	21%	38%	26%	62%	12%	53%	5%	Scotland	N Ireland
January 2016	58%	5%	62%	14%	72%	16%	63%	25%	65%	11%	58%	5%	North East	London
January 2015	62%	5%	65%	14%	76%	16%	70%	21%	70%	10%	63%	5%	Wales	East
January 2014	62%	5%	63%	14%	60%	19%	65%	24%	62%	10%	62%	5%	East Midlands	London
2017	56%	3%	63%	9%	65%	11%	43%	18%	60%	7%	56%	3%	Wales	N Ireland
2016	60%	2%	67%	6%	70%	7%	49%	12%	65%	5%	60%	2%	East Midlands	N Ireland
2015	67%	2%	74%	6%	73%	7%	58%	12%	71%	4%	66%	2%	Scotland	N Ireland
2014	64%	2%	74%	6%	68%	7%	64%	11%	71%	4%	69%	2%	Scotland	London
2014-2017	63%	1%	71%	2%	69%	4%	55	7%	68%	3%	64%	1%	Scotland	N Ireland

Note: % columns show overall proportions and '±' columns the width of 99% confidence intervals

Figure 70 provides the proportions of diarists that report receiving nuisance calls in the Ofcom landline nuisance call surveys from 2013 onwards[147]. In it there does not appear to be a significant difference between Scotland and the rest of the UK. In two of the five years the proportion receiving nuisance calls might have been higher in Scotland than in the rest of the UK, but this is not so for other years, and in all of the years the confidence intervals around the proportions overlap greatly.

[147] Ofcom kindly provided this study with datasets enabling analyses going beyond the published results, which do not distinguish between Scotland, Wales and Northern Ireland, or between the nine regions of England, as in some cases the sample sizes are so small that the confidence intervals are unsound. However, Figure 70 does distinguish between them, for ease of comparison with our other figures. To a reasonable approximation Scotland, Wales and Northern Ireland contribute respectively 1/2, 1/3 and 1/6 of the population of the UK except England (and therefore weight the results of surveys accordingly).

Figure 70 Incidence of landline nuisance calls in Ofcom nuisance call diary surveys

Period	Proportion of adults with landlines that reported receiving nuisance calls in four weeks in…												Most affected region	Least affected region
	England		Scotland		Wales		Northern Ireland		UK except England		UK except Scotland			
	%	±	%	±	%	±	%	±	%	±	%	±		
January 2017	81%	4%	82%	12%	91%	10%	82%	30%	85%	8%	82%	4%	North East	South East
January 2016	85%	3%	81%	12%	82%	15%	88%	16%	83%	8%	85%	3%	North East	West Midlands
January 2015	86%	3%	92%	8%	86%	14%	81%	25%	89%	7%	86%	3%	North East	London
January 2014	86%	3%	83%	11%	80%	16%	83%	18%	82%	8%	86%	3%	East Midlands	Wales

Note: % columns show overall proportions and '±' columns the width of 99% confidence intervals

The differences between the proportions in Figure 69 and the (much higher) proportions in Figure 70 are discussed in Annex H. Irrespective of them, the proportion of adults that receive nuisance calls seems to be greater at times in Scotland than in the rest of the UK, but the Ofcom data suggest that the difference is modest.

For completeness, we have looked at similar data for trueCall customers; the results are shown in Figure 71. This shows that the proportions of standard trueCall units that receive nuisance calls are similar in Scotland and the rest of the UK, especially when the confidence intervals around the proportions are considered[148]. This would be expected, as the motivation for buying a trueCall unit, to avoid receiving nuisance calls, is the same in Scotland as in the rest of the UK. However an absence of recorded calls for a month is more likely to mean that a unit has been switched off for a period than that no calls targeted its owner.

[148] The sample sizes for Northern Ireland are too small for the corresponding figures to be convincing or to justify identifying the 'most affected' and 'least affected' nations or regions.

Figure 71 Proportions of standard trueCall units receiving nuisance calls

Period	Proportion of units receiving nuisance calls in four weeks in…											
	England		Scotland		Wales		Northern Ireland		UK except England		UK except Scotland	
	%	±	%	±	%	±	%	±	%	±	%	±
January 2017	89%	1%	91%	3%	92%	7%	61%	38%	91%	3%	89%	1%
January 2016	90%	2%	94%	3%	91%	7%	77%	34%	93%	3%	90%	1%
January 2015	93%	1%	92%	4%	94%	6%	75%	37%	92%	3%	93%	1%
January 2014	92%	2%	94%	4%	92%	9%	77%	48%	93%	4%	92%	2%

Note: % columns show overall proportions and '±' columns the width of 99% confidence intervals

The proportions of recipients of given numbers of calls are typically higher for trueCall units than for diarists, because trueCall units pick up calls even when diarists are not at home and because trueCall units are bought by people who receive more nuisance calls than they can tolerate.

K.2 The frequency of nuisance calls

Figure 72 provides a slight contrast with Figure 70: in the landline nuisance calls diary surveys for four of the five years the mean number of nuisance calls is higher in Scotland than in the rest of the UK (labelled as 'UK except Scotland'). So, even though the proportions of adults receiving nuisance calls might be no higher in Scotland than in the rest of the UK, the number of nuisance calls received per person is higher.

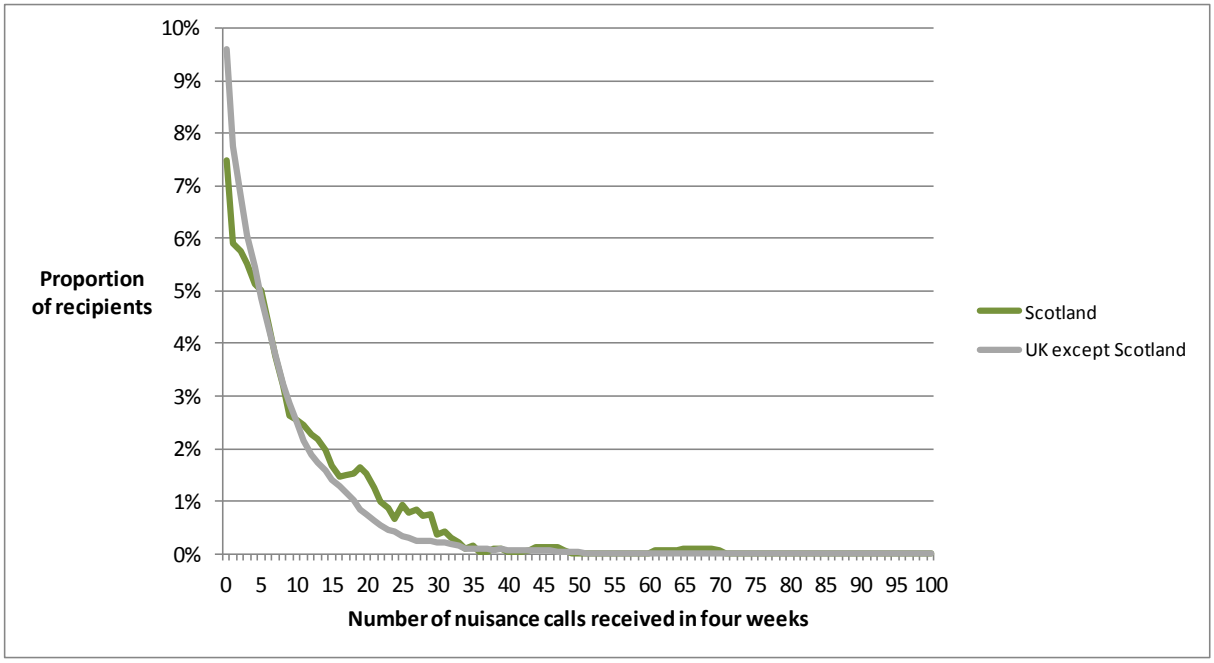
Figure 72 Numbers of nuisance calls received by users in Ofcom landline nuisance call surveys

	Average (mean) number of nuisance calls per user in four weeks in…												Most affected region	Least affected region
	England		Scotland		Wales		Northern Ireland		UK except England		UK except Scotland			
Period	ave	±	ave	±	ave	±	ave	±	ave	±	ave	±		
January 2017	6.6	0.7	6.6	3.1	7.6	2.7	7.5	6.8	7.7	2.1	6.7	0.7	North East	South East
January 2016	7.6	0.8	9.7	3.0	7.4	3.1	6.3	3.0	8.3	1.9	7.5	0.8	Yorks & Humber	West Midlands
January 2015	8.0	0.9	12.7	3.3	8.4	4.5	8.9	9.8	11.0	2.6	8.1	0.9	Scotland	West Midlands
January 2014	7.6	0.7	9.1	2.4	7.7	3.2	5.3	2.6	7.9	1.6	7.5	0.7	Scotland	N Ireland
January 2013	7.0	0.8	9.7	3.5	7.4	3.0	4.9	3.0	8.3	2.3	7.0	0.8	Scotland	N Ireland

Note: 'ave' columns show averages (mean) and '±' columns the width of 99% confidence intervals

This distinction between Scotland and the rest of the UK is illustrated in Figure 73, which plots the proportion of recipients of nuisance calls against the number of calls received in the landline nuisance call surveys from 2013 onwards, all taken together. The lines are smoothed by averaging the number of calls over a rolling five-number interval, in order to show clearly how the proportion of recipients for particular numbers of calls was lower in Scotland than in the rest of the UK for lower numbers of calls (roughly 1-5) and higher for higher numbers of calls (roughly 10-30).

Figure 73 Proportions of landline users receiving given numbers of nuisance calls, UK and Scotland



Source: Ofcom landline nuisance call surveys, 2013-2017

Figure 74 confirms the hypothesis that the number of nuisance calls received per person is higher in Scotland than in the rest of the UK. It summarises the mean numbers of nuisance calls reported by standard trueCall units, for the months when the landline nuisance call surveys start, and for the years from 2014 onwards. The mean numbers are lowest month-by-month for Northern Ireland or London; in that respect they match the consumer issues surveys. However, they typically show that units in Scotland receive many more nuisance calls than units in the rest of the UK: according to them a standard trueCall unit in Scotland has been receiving five nuisance calls for every three received by a unit in the rest of the UK.

Figure 74 Numbers of nuisance calls received by standard trueCall units

	Average (mean) number of nuisance calls per unit in four weeks in…												Most affected region	Least affected region
	England		Scotland		Wales		Northern Ireland		UK except England		UK except Scotland			
	ave	±	ave	±	ave	±	ave	±	ave	±	ave	±		
January 2017	13.4	0.7	18.6	2.0	14.1	3.4	12.7	13.2	17.6	1.7	13.4	0.7	Scotland	North West
January 2016	15.5	0.9	23.3	2.4	18.9	3.6	19.8	23.8	22.4	2.0	15.7	0.9	Scotland	North East
January 2015	20.6	1.0	38.4	3.5	21.8	5.3	6.3	6.3	34.3	3.1	20.6	1.0	Scotland	N Ireland
January 2014	19.2	1.5	32.0	3.8	20.8	4.8	10.5	7.8	29.2	3.2	19.2	1.5	Scotland	N Ireland
2017	14.8		24.8		17.0		19.4		23.2		14.9		Scotland	London
2016	16.1		27.8		17.1		19.1		25.5		16.1		Scotland	London
2015	19.0		35.5		20.0		16.3		32.0		19.1		Scotland	London
2014	21.7		32.5		21.9		11.4		29.8		21.7		Scotland	N Ireland
2014-2017	17.9		30.4		19.0		16.9		27.8		17.9		Scotland	London

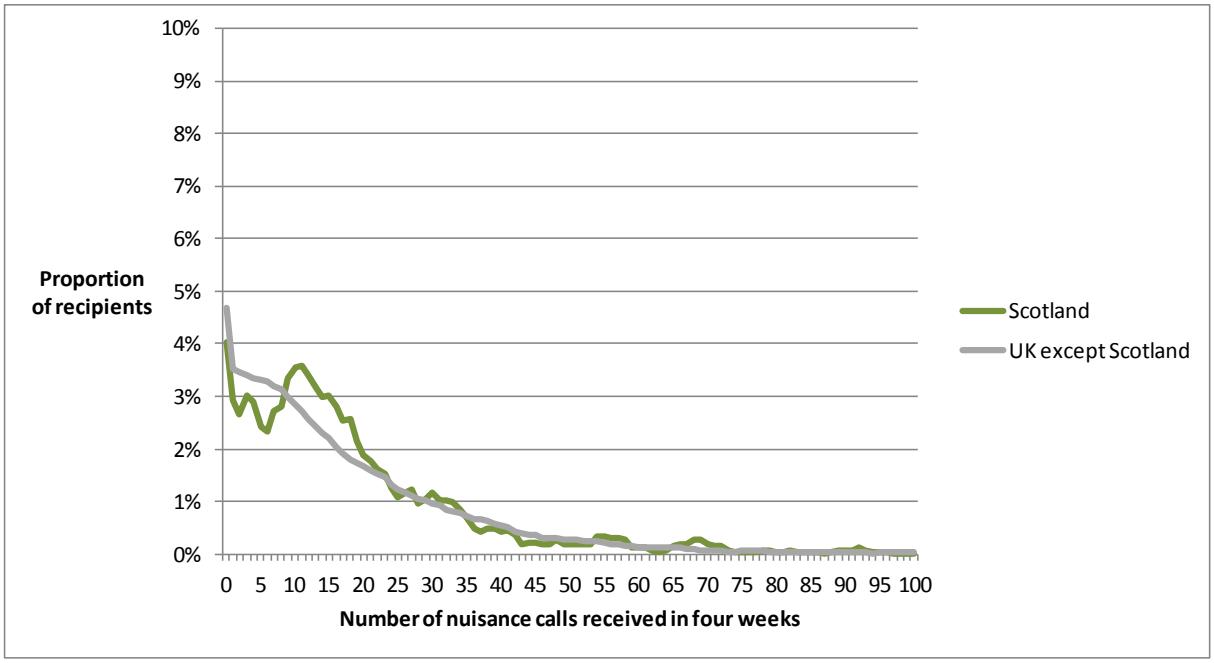
Note: 'ave' columns show averages (mean) and '±' columns the width of 99% confidence intervals

Figure 75 illustrates the same distinction, between Scotland and the rest of the UK, as Figure 73. It plots the proportion of recipients of nuisance calls against the number of calls received (averaged over a rolling five-number interval) by standard trueCall units from 2014 onwards[149]. Again the proportion of recipients for particular numbers of calls was lower in Scotland than in the rest of the UK for lower numbers of calls (roughly 1-10) and is higher for higher numbers of calls (roughly 11-20)[150].

[149] The figures used are those for the months when the landline nuisance call surveys start, in 2014-2017, adjusted to cover four weeks (as in the Ofcom landline nuisance call surveys) instead of one month.

[150] For the trueCall data the proportions for Scotland settle down to resemble those for the rest of the UK when the number of calls received is at least 26, while for the Ofcom data the proportions resemble each other only when the number of calls received is at least 36. This might reflect random variation in the Ofcom data: despite its aggregation of the data for 2013-2017 the Ofcom sample size for Scotland remains much smaller than the trueCall sample size for Scotland.

Figure 75 Distribution of nuisance calls to standard trueCall units, 2014-17, UK and Scotland



Figures for 2014-2017 derived from the analyses just discussed are consolidated in Figure 76[151]. The differences between the figures provided by the standard trueCall units and the figures provided by the landline nuisance call surveys are discussed in Annex H. As discussed in 3.4 and 0, demographic and socio-economic differences do not clearly help to account for the differences between Scotland and the rest of the UK; government energy efficiency schemes appear to be an important part of the explanation.

Figure 76 Summary distribution of landline nuisance calls per user, 2014-17, UK and Scotland

Data source	Proportion of recipients receiving in four weeks a number of calls in the range…									Mean number received in four weeks
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	
UK except Scotland										
Ofcom landline nuisance call surveys	15%	39%	21%	11%	7%	3%	2%	1%	1%	7.4
Standard trueCall unit records	9%	15%	16%	14%	10%	8%	6%	5%	3%	17.9
Scotland										
Ofcom landline nuisance call surveys	16%	26%	24%	12%	8%	7%	4%	2%	0%	9.8
Standard trueCall unit records	9%	18%	12%	18%	4%	9%	6%	5%	2%	30.4

[151] The consolidation uses the full range of records available for standard trueCall units until October 2017 and the results of the landline nuisance call surveys covering four weeks in each year.

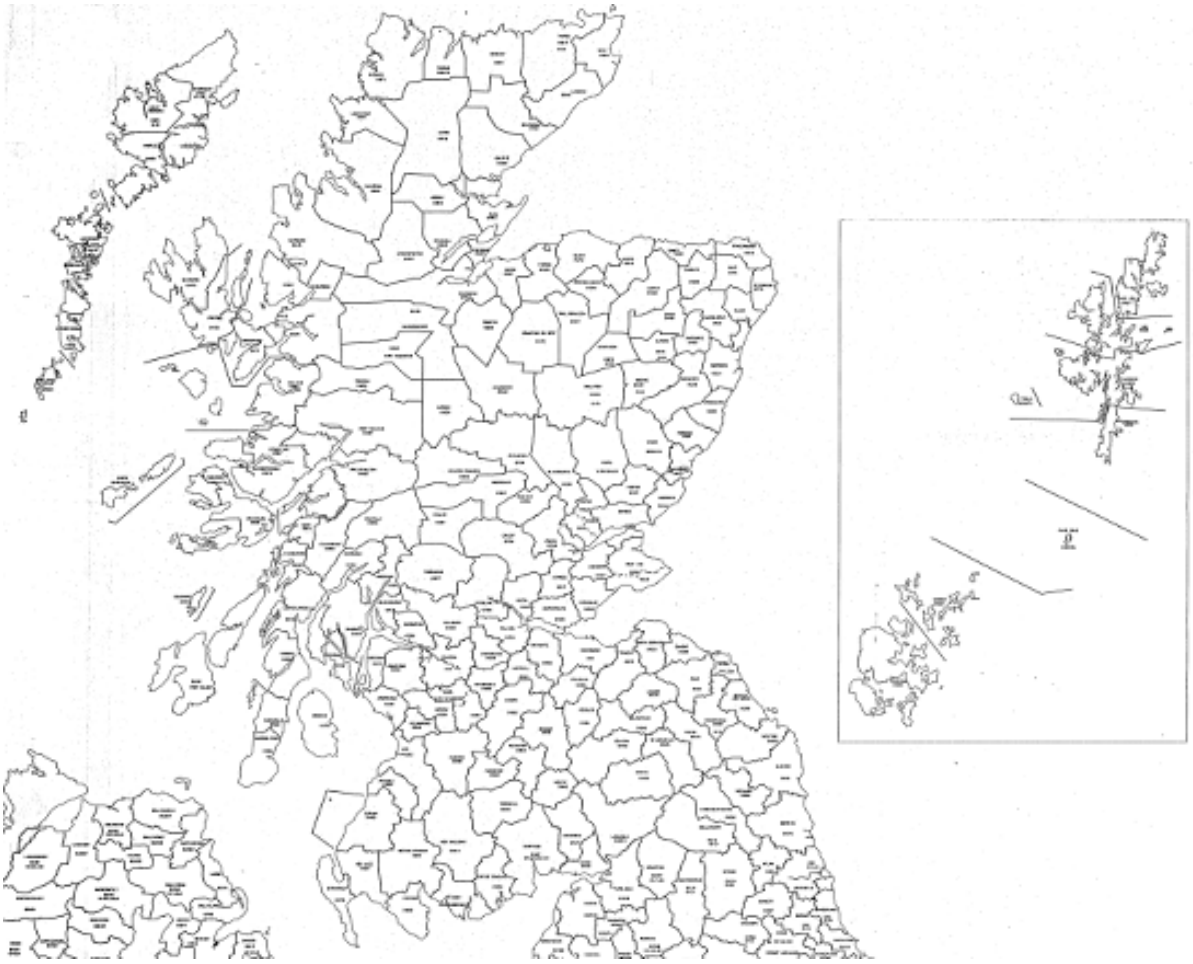
Annex L Telephone area codes and local authority areas in Scotland

L.1 Telephone area codes

Figure 77 (originally provided by BT) is more than twenty years old; it is included only to give an idea of the complexity of the Scottish landline telephone system. It shows the rough coverage of each of the telephone area codes. With network competition, area code boundaries are less clearly defined: close neighbours using different operators may have landline numbers with different area codes. Indeed, several among the ranges of telephone numbers in such telephone areas as ‘0131’ (Edinburgh) and ‘0141’ (Glasgow) are allocated to an operator other than BT and used throughout various adjoining council areas. The porting of numbers between operators is likely to have muddled the ranges further.

Each telephone area might cover parts of several council areas though it has its main switching centre in one of them. This is so for both urban centres and rural districts. Consequently the numbers of inhabitants (and numbers of TPS registrations) vary greatly between telephone areas: ‘0141’ has about 10,000 times as many as ‘01951’ (Colonsay).

Figure 77 Telephone area codes in Scotland



L.2 TPS and census data

TPS identifies telephone numbers and therefore telephone area codes, so we know the number of TPS registrations in each telephone area. For this purpose we have used 2017 figures. However, operators do not always notify TPS when service stops on a telephone number, so TPS figures probably include some telephone numbers that are no longer active, and the register could contain other discrepancies[152].

The household figures that we use in assessing TPS registration density are the 2016 estimates of "occupied dwellings"[153]. While most households have a single landline, a growing proportion has none and a small proportion has more than one.

L.3 The mapping

As the basis for the mapping we have used the 2011 census intermediate zones. These also vary in size, but less extremely than telephone areas: the smallest has 1,314 inhabitants and the largest has 11,754, but the sizes of many of them are quite well clustered around the mean (4,395) and the median (4,083).

An intermediate zone lies within a single council area but does not necessarily lie within a single telephone area[154]. Where an Intermediate zone lies in multiple telephone areas, we have divided its number of households equally between those telephone areas, and we have assumed, as a starting point for the algorithm, that for each of those telephone areas its number of TPS registrations is proportional to the number of TPS registrations in Scotland as a whole[155]. Local knowledge of the telephone numbers in particular intermediate zones could refine this division, and postcode information from TPS (where available) would greatly simplify the mapping task.

We have no reason to suppose that the figure for Eilean Siar is wrong, despite its contrast with the figures for Argyll & Bute, Orkney Islands and Shetland Islands: though all of these council areas might be suited to distance sales, Gaelic is used in 40% of homes in Eilean Siar but at most 1% in these other council areas.

[152] For instance, the figures for Colonsay indicate that there are 89 TPS registrations (in 2017) and there were 124 inhabitants (in 2011).

[153] These estimates are available at http://statistics.gov.scot/data/household-estimates.

[154] Intermediate zones contain up to nine data zones. However, the algorithm is unable to match data zones to telephone areas more accurately than it can match intermediate zones to telephone areas, because the names of the data zones in an intermediate zone are just the name of the intermediate zone with numerical suffixes.

[155] An alternative to using the number of TPS registrations in Scotland as a whole would be using the number of registrations in the council area of the main switching centre for the telephone area. However, there are no main switching centres in East Dunbartonshire and East Renfrewshire, so there are difficulties in constructing an algorithm that converges when iterated starting with this alternative.

The algorithm relies on matching place names associated with ranges of telephone numbers to place names associated with localities, settlements and intermediate zones[156]. Some names are used in more than one intermediate zone in the source data; they have been changed slightly to eliminate mismatches.

[156] The names of intermediate zones in West Dunbartonshire and East Lothian are completely unhelpful in this respect, as they are essentially just numerical. This does not appear to cause any seriously wrong assignments of place names to council areas, because the algorithm also uses the names of localities and settlements, for place names associated with each range of telephone numbers or, in the absence of matching with that range, for place names associated with a range enclosing that range.

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