20th September 2007

Regulation of VoIP Services:
Access to the Emergency Services Consultation

The VON Coalition[1] welcomes the opportunity to comment on Ofcom's proposals regarding access to emergency services for VoIP users. The Voice on the Net or VON Coalition consists of leading VoIP companies on the cutting edge of developing and delivering voice innovations over Internet. The coalition works to advance regulatory policies that enable consumers and businesses to take advantage of the full promise and potential of Internet voice communications.

The VON Coalition agrees with the importance of ensuring the ability of consumers to make 999/112 calls in the UK using PATS and PATS-substitute VoIP services (type 4) and believes that VoIP offers the ability to further extend the reach and capabilities of emergency services. However, the VON Coalition is concerned that the proposals set out in Ofcom's consultation document dated 26 July 2007[2] ("Consultation Document") are premature – particularly any mandate to provide auto-location -- and could harm public safety, stifle innovations critical to people with disabilities, stall competition, and limit access to innovative and evolving communication options where there is no expectation of placing a 999 call. Such an abrupt reversal of Ofcom's existing VoIP 999 access policy has the potential for vast unintended consequences that could put the UK at a strategic and competitive disadvantage at a crucial phase in the introduction of advanced broadband services. We are particularly concerned about Ofcom's proposal to mandate 999 access for so-called 'type 2' or 'VoIP Out' services, which will impose significant regulatory burdens on a broad range of VoIP offerings that are not substitutes for traditional PSTN-based services.

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[1] The VON Coalition, which includes AT&T, CallSmart, Cisco, Covad, EarthLink, Google, iBasis, i3 Voice and Data, Intel, Intrado, Microsoft, New Global Telecom, PointOne, Pulver.com, Skype, T-Mobile USA, USA Datanet, and Yahoo! works to advance regulatory policies around the world that enable users to take advantage of the full promise and potential of VoIP. The Coalition believes that with the right public policies, Internet-based voice advances can make talking more affordable, businesses more productive, jobs more plentiful, the Internet more valuable, and citizens more safe and secure. Since its inception, the VON Coalition has promoted pragmatic policy choices for unleashing VoIP's potential. http://www.von.org.

[2] Ofcom, *Regulation of VoIP Services: Access to the Emergency Services Consultation*, 26 July 2007 (available at http://www.ofcom.org.uk/consult/condocs/voip/voip.pdf).

Furthermore, while the VON Coalition fully supports efforts to deliver the best possible 999 services to the public, it opposes any regulation that would impose a specific technology or technological standard on VoIP providers for the implementation of 999.

Consultation questions:

Q.1 Do you consider Ofcom should consider any other policy options? Please describe your proposed option(s) and explain what you consider would be the advantages and any disadvantages.

Before adopting Option 2, Ofcom should consider the following three policy options:

1. Ofcom could forbear from introducing any further requirements on VoIP services until the European Commission completes its review of the regulatory framework for electronic communications networks and services and any amendments to the framework directives are adopted. As access to emergency services is an important area for the Commission's review, it appears premature for Ofcom to mandate emergency services access requirements on a broad class of VoIP services before legislation is finalised at the European level. Acting in advance of the conclusion of the framework review is counterproductive as it could result in the imposition of obligations that are inconsistent with a harmonised European approach to VoIP services regulation, which would result in even greater fragmentation within the European communications market.

2. Ofcom could consider giving its current rules a chance to work, while embarking on an aggressive effort to update its data on 999 accessibility and the state of VoIP technology (which is largely based on a survey that was completed nearly one year ago) and develop a better understanding of the wide variety of services now on offer that could be considered type 2 or type 4 VoIP services. Particular areas for additional study could include the following:

   ▪ If Ofcom is concerned about the effectiveness of consumer warnings, it could also engage in an exercise to explore options for improving upon the consumer warnings that are now being deployed. VON Coalition members would be happy to assist Ofcom in this effort by sharing their experience in designing effective consumer notices for use in similar products and services.

   ▪ Ofcom could also take this opportunity to explore the barriers to, and potential advantages of, harnessing the power and potential of IP communications as part of a broader public safety effort to develop more survivable communication options. Other countries have begun

investigating greater use of IP technologies in public safety networks.[3] The UK could also benefit from transitioning to survivable communications systems but so far has lagged in its adoption of these potentially live-saving technologies.

3. By only considering either imposing 999 requirements on all type 2 and type 4 VoIP services or imposing no 999 obligations at all, Ofcom has not given itself the opportunity to differentiate between services that are replacements for home telephone services and other services that may permit calling to traditional telephone numbers but do not replace a home telephone service. For example, Ofcom could consider requiring only type 4 "replacement" services to enable users to call 999. Imposing emergency services access requirements on such services – specifically, an ability for callers to reach 999/112, but *not* an auto-location requirement -- might be justified as a user might no longer have a traditional telephone service and may need or reasonably expect the VoIP service to provide access to emergency services. However, Ofcom should not impose such 999 requirements on services that are not marketed as substitutes for traditional PATS services (such as type 2 services) or those VoIP services that are used to supplement traditional PATS services or used in a substantially different way than PATS services. Such expansion of the 999 mandate is not justified as it introduces unnecessary burdens on innovative services. However, even if Ofcom were to impose 999 calling obligations on PATS replacement services, it should forbear from imposing location functionality obligations on type 4 services until a suitable non-legacy system is developed, *e.g.* in the ECRIT working group of IETF.

The VON Coalition supports Option 1 as described in the Consultation Document. However, if Ofcom ultimately concludes that some action must be taken at this time, we strongly recommend that Ofcom not impose any new requirements on VoIP services until it has had an opportunity to study the effects of the existing Guidelines and the Code of

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[3] In the US, for example, policymakers are embarking on effort to move the entire 911 emergency network to a VoIP-based network in order to achieve breakthrough advantages in emergency communications. See, for example, http://www.its.dot.gov/ng911/ and http://www.vonplus.org/benefits/Benefits%20webpage/Emergency%20Communications.pdf, while the Department of Homeland Security is harnessing the unique capabilities of VoIP to foster interoperable and survivable communications. The Department of Homeland Security Roundtable on VoIP found that IP-based systems have several critical disaster-recovery applications, including: radio system connections (*i.e.,* connect communications centre to a mountain top transmitter); radio system to radio system interface (*i.e.,* connecting two or more radio systems via a VoIP link); dispatch interface (*i.e.*, using VoIP to enable dispatchers to communicate with each other); bridging systems (*i.e.,* using VoIP to connect radio systems that do not support direct interconnection); system and subscriber unit interfaces (*i.e.,* communications from radio system to radios, PDAs, wireless laptops, or direct communications among such devices, in the event of infrastructure failure). *See* Department of Homeland Security, Office for Interoperability and Compatibility, Roundtable on Public Safety Interoperability and Voice Over Internet Protocol (2007) (*available at http://www.safecomprogram.gov/NR/rdonlyres/F5097180-FD4C-463A-8050-F24489853ED7/0/2ndRoundtableonPublicSafetyInteroperabilityandVoIPmeetingreport.pdf*). Businesses are also transitioning to VoIP in order to provide continuity of communication in a disaster.

Practice. This code should be given sufficient time to operate in the marketplace, at least one full year, followed by a further study by Ofcom on its effectiveness that would take into account consumer and industry input. Gathering additional information will also provide an opportunity to get greater clarity on what changes will be made in the regulatory framework at the EU level.

Furthermore, it is important that more consideration should be given to a policy alternative that is not as far-reaching as Option 2. As explained in detail in our Q4 response, VoIP services– particularly type 2 services, which only allow outbound calling to the PSTN – are not the same as traditional fixed line and mobile services. Ofcom has not given enough consideration to a policy that takes into account this distinction and does not group type 2 and type 4 services together for the same regulatory treatment.

Q.2 Do you have any comments on Ofcom's evaluation of policy Option 1, which is to not require VoIP services to allow 999 calls?

In its previous consultation on VoIP services and in its March 2007 Statement on the Regulation of VoIP Services, Ofcom demonstrated important pragmatism which attempted to balance public safety needs and consumer education with innovation, competition, consumer benefits, and available technology. We believe this pragmatic approach should be given a chance to work, for at least one full year, followed by an additional survey of the effectiveness of the current rules with feedback from consumers and industry, before embarking on a policy sea-change that could unwind Ofcom's successes to date in fostering the development of innovative services.

As discussed in greater detail below, although Ofcom relies on a VoIP services study completed in October 2006 as a basis for imposing a 999 calling requirement, Ofcom's research shows that users in the UK – by an overwhelming margin – are *not* using VoIP services for PSTN calls. In fact, only 14% of VoIP users surveyed used their VoIP service to make or receive calls from the PSTN.[4] An overwhelming 86% were using a PC-to-PC 'type 1' service[5]; thus, they would have no expectation of being able to call 999.

Furthermore, Ofcom's study noted that UK VoIP users are *not* treating VoIP services as substitutes for PATS landline or mobile services. In fact, as the Ofcom research indicates, VoIP users are more likely to have a mobile or fixed line service than non-VoIP users.[6] This shows that VoIP users retain traditional fixed line and mobile services even when utilizing VoIP, and thus can use these services to call 999. Thus, there is no need for immediate action to adopt Option 2.

Option 1 would give Ofcom more time to monitor and review the impact of the recently adopted Guidelines and the Code of Practice on the provision of 999 access by VoIP providers – which only came into force in May 2007. In light of VoIP's impressive track

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[4] Ofcom, *Research Report: Voice over Internet Protocol (VoIP)*, 12 October 2006 ("Ofcom Research Report"), at paragraph 1.9 (available at http://www.ofcom.org.uk/research/telecoms/reports/voip/voip.pdf).
[5] Consultation Document, at paragraph 3.12.
[6] Ofcom Research Report, at paragraph 1.13.

record and largely untapped potential, Ofcom should avoid imposing unattainable regulatory hurdles that would serve only to jeopardise the technology's role in public safety communication.

Q.3 Do you consider Ofcom should adopt policy Option 1? Please give your reasons.

Yes. Ofcom's reasoned decision in March 2007 was the correct one -- VoIP services should have certain obligations to notify consumers of the availability of 999 calling but should not be required to provide access to emergency services, particularly given the predominant use by UK consumers of **non-interconnected** VoIP services. The Code of Practice was adopted after significant discussion and feedback from multiple stakeholders and represents the best possible option at this time. Ofcom should not adopt Option 2 now, but let its existing policy take hold in the marketplace for at least one full year, followed by an additional survey of the effectiveness of the current rules with feedback from consumers and industry. Abandoning its current approach and reversing course could have vast unintended consequences.

Q.4 Do you have any comments on Ofcom's evaluation of policy Option 2, which is to require VoIP services that allow calls out to ordinary numbers to allow 999 calls?

The VON Coalition has concerns that Ofcom has overestimated the need to impose 999 calling obligations across a wide range of VoIP services. Option 2 appears to be justified by the following misconceptions, based at least in part on out-of-date or incomplete data:

- Likely under-provision of 999 access due to growing take-up of VoIP services that replace traditional PSTN services;

- VoIP services will not provide adequate 999 access, even taking into account Ofcom's recently adopted Guidelines and Code of Practice; and

- Rising confusion amongst consumers about 999 access from VoIP services resulting from increasing similarity to PSTN services.

The Consultation Document also suggests that there is a consensus amongst national regulators in Europe and elsewhere and key stakeholders in favour of Option 2 when the picture is much less clear.

We examine each of these justifications below.

Greater consumer take-up of VoIP services is not resulting in under-provision of 999 access

Ofcom has noted its concern that VoIP services will "cause the under-provision of 999 access to society as a whole and that, without regulation, that situation will grow worse as VoIP develops and consumer take-up grows".[7] The VON Coalition does not believe that this concern is justified. As an initial matter, it is not clear that UK VoIP services are

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[7] *See* Consultation Document, at paragraph 4.27.

failing to provide adequate access to emergency services. Ofcom has provided no new data since the implementation of its Guidelines and the Code of Practice, which only went into effect in May 2007, to suggest that its existing rules are not working or appear unlikely to work in the future. At the time Ofcom issued its draft Guidelines, it suggested that the Guidelines and its related consumer disclosure requirements would produce an increase in 999 access because VoIP providers would have an incentive to offer 999 access in order to more effectively compete with traditional services.[8]

Even assuming that VoIP services do not provide sufficient 999 access, there is no evidence that the growing take-up of VoIP services will result in consumers having no access to emergency services. Ofcom did not measure VoIP services that are replacements for traditional telephone services, separate from other forms of VoIP. For example, there is no evidence of customer substitution of type 2 services for their traditional PATS service. Indeed 86% of VoIP users in the survey were making PC-to-PC calls between customers of the same provider.[9] Only the remaining 14% used VoIP products exclusively for PSTN calls.[10] Furthermore, only 14% of survey respondents said they used it daily – in the way they would use their traditional home phone (paragraph 1.8 of survey). Thus, there is no basis for concluding that the growing pervasiveness of type 2 services would leave someone without 999 access.

In fact, more recent data released since the current consultation began conflicts with Ofcom's findings in the Consultation Document. In its Communications Market 2007 Report released on 23rd August 2007, Ofcom found that "despite the sharp increase in users, there is as yet little evidence that VoIP is substituting entirely for other voice networks."[11] Ofcom further points out that "VoIP users are more likely to have a fixed line and to have the use of a mobile than the average UK adult" and thus such users are more likely to have 999 access.[12] The report concludes, "Our research finds that, to date, VoIP services have not replaced fixed or mobile services."[13]

Indeed, Ofcom's survey referenced in this consultation shows that no VoIP consumers are without 999 access at all. Ofcom's own survey shows that "**ALL** respondents (who were all VoIP users) had access to either a landline or a mobile phone" (emphasis added) and thus access to 999 service (*see* paragraph 4.7 of survey).[14] Thus, the "crisis" of a lack of 999 access simply does not exist – every VoIP consumer in the survey has 999 access.

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[8] *See* Ofcom, *Regulation of VoIP Services: Statement and Further Consultation*, 22 February 2006, at paragraph 8.22 (available at http://www.ofcom.org.uk/consult/condocs/voipregulation/voipregulation.pdf).
[9] *See* note 5 above, and Ofcom Research Report, at paragraph 5.2.
[10] *See* Ofcom Research Report, at paragraph 5.2.
[11] Ofcom, *Communications Market 2007 Report*, 23 August 2007, at paragraph 1.9.2 (available at http://www.ofcom.org.uk/research/cm/cmr07/cm07_print/cm07_1.pdf).
[12] *Ibid*
[13] *Ibid*, at paragraph 4.1.11.
[14] *See* Ofcom Research Report, at paragraph 4.7.

VoIP services are generally dissimilar from PSTN services and do not increase consumer confusion

Ofcom justifies Option 2 by erroneously arguing that "VoIP services and technology are becoming increasingly similar to PSTN services, increasing the risk of confusion."[15] In the same way that early PCs mimicked typewriters in looks, so too have some early type 4 VoIP services initially replicated many features of traditional fixed line services in order to gain consumer acceptance. However, as VoIP matures, services are becoming even more distinct from PSTN services rather than similar. VoIP services are often harnessing the power and potential of the Internet to do things never before possible with fixed line services. They are becoming increasingly dissimilar to the PSTN. The number and types of VoIP services available to people are exploding. Type 4 services are incorporating features that go beyond the capabilities of the PSTN – like 'find me/follow me' services, forwarding voicemail as e-mail, ability to use any available broadband network, transcribing voicemail into text, and in some cases providing wideband audio or two-way video. In addition, one of the overall trends in type 4 communications used for businesses is the move towards unified communications -- the integration of different streams of communication such as e-mail, instant messaging, voice, and video into a single location where it can be accessed from a variety of different devices.[16] Of the major trends in VoIP overall, all of them involve VoIP services becoming increasingly different rather than resembling PSTN services.[17] And if type 4 VoIP services represent an increasingly diverse garden of various types of features and services, type 2 services represent a tropical rainforest full of diverse and varied species (as discussed below). Thus, consumers do not necessarily confuse these new VoIP features with traditional PATS-like services.

Many countries oppose or remain undecided about imposing emergency call obligations on a broad category of VoIP services

In paragraph 3.42 of the Consultation Document, Ofcom appears to justify its support of Option 2 by seeking to understand how other countries are treating these services and taking a position consistent with the consensus view. To the extent that Ofcom is concerned about consistency, Ofcom should forbear from introducing new obligations until the EU's review of the electronic communications regulatory framework has been completed and final legislation is adopted. This would avoid pre-empting EU-wide directives while they are being developed and help avoid a disaggregated communications marketplace.

More significantly, there is not yet a broad consensus among national regulators as to how these services should be regulated. Ofcom's poll of European countries requiring

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[15] *See* Consultation Document, at paragraph 4.13.

[16] *See*, for example, *Simple VoIP, shifting to Unified Communication* at http://www.tmcnet.com/usubmit/2007/08/22/2878674.htm.

[17] *See*, for example, analyst Rich Tehrani's list of top VoIP trends – all of which make VoIP even more substantially different than traditional phones, and none of which supports Ofcom's conclusion that "VoIP services and technology are becoming increasingly similar to PSTN services, increasing the risk of confusion," see   http://blog.tmcnet.com/blog/rich-tehrani/itexpo/top-voip-investmentstrends.html.

emergency service access (see Figure 3 of the Consultation Document) appears inaccurate and incomplete as does paragraph 3.44's characterization of VoIP service obligations in other countries. Figure 3, for example, is misleading because Ofcom has taken its own self-created service category (type 2) and then asked foreign NRAs to interpret their own regulations to see how/where type 2 fits in. As such, it is an artificial exercise. In addition, we understand that, contrary to what has been included in the chart, the German regulator has not yet decided between the option to impose emergency call obligations to any type of VoIP providers on one side, or to impose such obligations only on those VoIP providers who offer a substitute for traditional telephony services. Indeed the characterisation of other countries' VoIP regulation in the Consultation Document's paragraph 3.44 appears to be incorrect. For example, Canada does not apply emergency obligations on type 2 services, as has been indicated. In Canada, "Local VoIP Services," which are required to provide access to emergency services, are defined as services that use the PSTN numbering plan and provide access to and from the PSTN (the equivalent of a type 4 service, not a type 2 service).[18] In any event, the results of Ofcom's poll show a mixed picture at best and in fact show only limited support for the imposition of emergency calling obligations on type 2 VoIP services.

Important stakeholders have cautioned against imposing 999 obligations too widely

Ofcom also relies upon stakeholder responses to justify its decision to abruptly reverse its policy course. In its rationale, Ofcom cites the opinions of groups like the Association of Chief Police Officers (ACPO) to justify its decision.[19] However, rather than supporting Option 2, ACPO suggests following the regulatory route taken in the U.S. by the FCC,[20] which specifically has **not** applied 911 obligations on type 2 VoIP services as Option 2 would. Rather, the U.S. only requires type 4 VoIP services to provide users with an ability to call 911, and there is no current auto-location requirement.[21] Comments by the

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[18] *See Emergency service obligations for local VoIP service providers*, Telecom Decision CRTC 2005-21, 4 April 2005 (available at http://www.crtc.gc.ca/archive/ENG/Decisions/2005/dt2005-21.htm?Print=True), and *Follow-up to Emergency service obligations for local VoIP service providers, Decision 2005-21 - Customer notification requirements,* Telecom Decision CRTC 2005-61, 20 October 2005 (available at http://www.crtc.gc.ca/archive/ENG/Decisions/2005/dt2005-61.htm?Print=True).

[19] *See* Consultation Document, at paragraph 4.18.

[20] "ACPO would in no way advocate blindly following the lead of our American colleagues, it is worthy of note that following a number of highly publicised incidents in the US, the national regulatory authority, the Federal Communications Commission (FCC), intervened so as to remove the regulation of VoIP from local State control, and furthermore has mandated the provision of 911 emergency access on VoIP system providers." *See* http://www.ofcom.org.uk/consult/condocs/voipregulation/responses/acpo.pdf.

[21] FCC rules require Interconnected VoIP providers (the equivalent of type 4 but not type 2) to provide E911, but has not required the auto-location of the user. The FCC further requires interconnected VoIP to distribute warning stickers or other appropriate labels warning subscribers if E911 service may be limited or not available and instructing the subscriber to place them on and/or near the CPE used in conjunction with the interconnected VoIP service. *See* 47 C.F.R. §§ 9.1, 9.3, 9.5. The FCC is currently considering whether to introduce E911 auto-location requirements for Interconnected VoIP services, but has not yet reached any conclusions. *See Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling; 911*

Home Office also suggest that the US approach should be followed in the UK.[22] Yet Ofcom is not following that advice. In the U.S., the FCC's 911 regulations rely upon the very warning stickers that Ofcom would undermine by adopting Option 2, and do <u>not</u> apply any obligations to VoIP services that are not replacements to home telephone services (such as type 2 VoIP services).

However, we agree with Ofcom's analysis of stakeholder views that this issue has much to do with disability services, and the types of communications that blind and deaf constituencies can access. But we are deeply concerned that Option 2 would limit disability access to many type 2 VoIP services which have proven to be especially promising technologies for the millions of people with disabilities – with the ability to provide new benefits not possible in today's legacy phone network and features that especially empower the disabled.[23] So, rather than imposing an existing 999 mandate on these alternative VoIP services, Ofcom should continue to let the marketplace develop and bring such new technologies to UK consumers.

For example, type 2 VoIP services often can converge voice, video, instant messaging, and data to facilitate accessibility more than in any technology before it. Many deaf or hearing-impaired people are agreed that type 2 VoIP video conferencing services – which enable communications by phone in sign language – are one of the greatest access tools ever invented, giving the deaf and hearing impaired community the ability to communicate independently, comfortably, and accurately in their native language for the first time.[24] Some type 2 VoIP providers make their VoIP-enabled video-calling software available for download for free on the Internet; the only end-user cost may be an inexpensive video camera. VoIP's ability to converge voice, video, and data into one application makes it possible for VoIP service providers to implement accessibility options not possible previously. IP-enabled VoIP services can offer:

- <u>Clearer audio communications</u> for people who are hard of hearing. Two-thirds of the frequencies in which the human ear is most sensitive and 80 percent of the frequencies in which speech occurs are beyond the capabilities of the public switched telephone network. Some VoIP providers are delivering "wide-band" audio quality which goes beyond the PSTN's limited audio quality.
- <u>Improved video communications</u> for people whose primary mode of communication is sign language.
- <u>Simultaneous transmission</u> of information to consumers in text, audio and video for people with cognitive or multiple disabilities.

Requirements for IP-Enabled Service Providers, PS Docket No. 07-114, CC Docket No. 94-102, WC Docket No. 05-196, Notice of Proposed Rulemaking (rel. June 1, 2007) ("VoIP Auto-location NPRM").

[22] "It is significant that this is the approach in the United States." *See* Response of the Home Office at http://www.ofcom.org.uk/consult/condocs/voipregulation/responses/homeoffice.pdf.

[23] *See* http://www.vonplus.org/benefits/Benefits%20webpage/Disabilities.pdf.

[24] *See*, *e.g.,* http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2003/10/06/BUGUO24GQC1.DTL.

Yet as explained below, we are concerned that Option 2 would stifle, stop, and stall some these impressive disability access tools from reaching UK consumers.

Most VoIP services are not replacements for traditional PSTN services

Ofcom also bases its decision to act on the fact that VoIP services are becoming popular as a replacement for traditional fixed line services. The Consultation Document argues that "[t]here is also a growing trend for VoIP to be marketed and used as a replacement for a fixed line service".[25] While this is true of type 4 VoIP services which are often marketed as replacements for fixed line service, this is not true of type 2 services.

Indeed by Ofcom's definition, type 2 services only make outbound calls to the PSTN, and cannot receive incoming calls from the PSTN. Such services are hardly likely to be a replacement for a PATS service if other fixed line or mobile services cannot call you.

There are a number of reasons why type 2 services are not viewed by users as substitutes for wireline services:

- **Marketing and Customer Perception**: Type 2 VoIP services are not intended or typically marketed (nor generally viewed by the public) as a substitute for wireline service. Moreover, users generally do not terminate their fixed line and wireless telephone service when they sign-up for and use free VoIP services (as Ofcom data demonstrates).[26]
- **They look different**: Type 2 services are often free services, often PC-based using a software interface, microphone, and the PC's speakers.
- **They work differently**: Users expect lower call quality and lack of reliability -- *e.g.*, if the underlying broadband connection or power goes out – from such free VoIP services.

Ofcom is fundamentally incorrect in suggesting that there is a growing trend of type 2 services being marketed and used as a replacement for fixed line services. We therefore believe it is helpful to describe a few of the vast array of innovative and beneficial type 2 services now available to consumers – and which could be adversely impacted by Option 2. These often free type 2 communications tools, while not a telephone replacement service, are transforming the way people are communicating nonetheless. They are:

- Providing a 24/7 lifeline for new mothers by clicking on a web site[27] -- yet consumers do not have an expectation that a baby food web site can reach 999.

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[25] Consultation Document, at paragraph 2.7.

[26] *See* Ofcom Research Report, at paragraph 4.7.

[27] The Gerber baby food web site, for example, includes an innovative help line for new mothers. If a new mother has an urgent question at 3a.m. about feeding their new born or warming a bottle, they can today click on the web site using a click-to-dial one-way VoIP service that immediately connects the parent to an infant care specialist 24/7. It is one of many new and exciting click-to-dial services. (*See* https://www.gerber.com/contactus). Yet consumers do not have an expectation that a web site can reach 999.

- Delivering a powerful new tool for people with disabilities to communicate[28] -- yet consumers do not have an expectation that a text based desktop software widget can reach 999.

- Giving voice to online games[29] -- yet consumers do not have an expectation that their video games can reach 999. (In fact, connecting children's video games to 999 may deluge the 999 system with unknowing prank calls from young children anytime aliens visit the planet, or someone is evaporated by a laser ray gun in a game – further taxing the emergency network and delaying a potentially life-saving real emergency call.)

- Converging voice and TV in new ways[30] -- yet consumers do not have an expectation that their TV remote control can reach 999.

- Adding voice to social networks and blogs[31] -- yet consumers do not expect to reach 999 through an online blog.

- Allowing a classified ad seller to connect by phone with potential buyers without giving out their personal phone numbers and protecting their privacy[32] -- yet consumers don't have an expectation that their online classified ad can reach 999.

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[28] Call Notify is a powerful new tool for people with disabilities. This VoIP-based software desktop widget allows a person with a speaking or hearing disability to type text and have it delivered as a computerized voice message to someone's telephone. The application is a one-way VoIP service that uses a text-to-speech synthesizer to generate a voice message and call the designated number. (*See*: http://wiki.cdyne.com/index.php/Phone_Notify). Yet consumers do not have an expectation that a desktop software widget can reach 999.

[29] VoIP is now giving voice to a variety of online and console games. For example, one technology popular in the online world, Second Life, allows virtual avatars to place a call to real world telephones. Such a technology enables real world people to address virtual gatherings, and encourages greater collaboration and conversation. VoIP technology by Vivox integrates gameplay, social interaction, instant messaging, and voice to millions of gaming subscribers. (*See*: http://www.vivox.com/). Yet consumers do not have an expectation that their video games can reach 999.

[30] TVCallME is converging voice and TV in new ways. Zodiac's TVLocalSearch integrates TV with VoIP and allows a user to click on the TVCallME button on their remote to speak to the local business. Zodiac's TVCallME service calls the viewer first and then the business, instantly connecting them through VoIP technology. (see: http://zodiac.tv/) Yet consumers do not have an expectation that their TV remote control could reach 999.

[31] Jaxtr is one of several services that is bringing voice to social networks and blogs. Jaxtr offers a free service that lets users link their phones with their online network to hear from callers worldwide while keeping their existing phone numbers private. (*See*: www.jaxtr.com). Yet consumers do not have an expectation that they can reach 999 from an online blog.

[32] New VoIP services also allow users to connect by phone without giving out their personal phone numbers – for example when selling something in an online classified service. A variety of innovative services now allow users to talk without sharing their real telephone number. Craigsnumber, for example, provides consumers with a way to sell services online using a temporary, auto-expiring phone number that can forward to the number of their choice in order to protect privacy and user anonymity. The service provides users with a free temporary phone number that will forward to a number of their choice

- Integrating voice into web pages, online directories, and online maps[33] -- yet consumers do not expect to use an online map to reach 999.

- Integrating voice into instant messaging and presence technology[34] – yet consumers do not have expectations that a software IM application can reach 999.

- Bringing anonymous voice calling to Internet dating services[35] – yet consumers do not expect to turn to their dating service to reach 999.

- Linking documents and e-mail with the PSTN[36] – yet consumers do not have an expectation that by clicking on their e-mail they can reach 999.

Even this very document allows readers to click on a link and connect to the PSTN using a type 2 VoIP service as we have provided in this footnote[37]. Yet we do not believe that consumers have an expectation that this Ofcom filing should be able to access 999 by

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for an hour, a day, a week or a month before expiring. (*See* http://craigsnumber.com). Yet consumers do not have an expectation that their classified ad can reach 999.

[33] Innovative new services allow voice to be integrated directly into web sites. Some of the most exciting applications including online mapping and yellow page services that allow web surfers to find and communicate with local businesses. (*See* www.live.com) Yet consumers do not expect to go to an online map to reach 999.

[34] Today instant messaging applications and services are integrating voice video and data to transform the way people communicate and create a whole new dimension to the idea of "conversation." Exciting technologies from Google, Microsoft, Skype, Yahoo! and others are keeping far-flung families connected, and integrating text, voice, video, data, and even hardware in ways previously not possible. They are enabling kids to learn the piano or a foreign language from experts around the globe, a mother to watch over their children remotely at day care, and people to converse with others around the globe – helping bridge cultures and communities around the globe. Most provide chat rooms, free video conferencing, some allow software ad-ins that allow collaborative game playing, creation of avatars, real-time translation from one language to another, white boards, collaboration meeting tools, software lie-detectors to detect stress levels, sound effect generators, integration with web browsers for click-to-call services, and the ability to share files online. Yet consumers do not have expectations that a software download can reach 999.

[35] New services now allow users to take their online community to your phone. Jangl, for example, allows people to communicate, without exchanging telephone numbers. Jangle has teamed with online dating site Match.com to provide user anonymity called matchTalk. The computer-based VoIP technology allows each person to talk to each other without fear of giving away their real phone number. (*See* http://www.jangl.com/) Yet consumers do not have an expectation of using their dating service for reaching 999.

[36] New VoIP services allow phone connectivity to be embedded into an HTML hyperlink in any email, web page, word document, or any other document which accepts an HTML hyperlink. (*See* www.click4me.net, www.estara.com) Yet consumers do not have an expectation that by clicking on their e-mail they can reach 999.

[37] Click here to call the VON Coalition via a VoIP connection that connects to the PSTN, or paste this url into your browser: http://www.click4me.net/Click4MeCall.aspx?username=jkohlenberger then type in your phone number and you will be connected to the VON Coalition's executive director.

clicking on a link in a footnote. Although "Ofcom considers the users of those services are likely to expect to be able to call 999", we respectfully disagree.

In addition, Ofcom appears to argue throughout the Consultation Document that a reduction in dependence on the wireline PSTN, which is the primary means of accessing 999, is another rationale for applying an obligation onto the service that causes the reduction.[38] Yet data from J.D. Powers and Associates demonstrates that PC-based VoIP is having an almost immeasurable impact (the smallest impact) on the reduction on wireline calls as compared to a variety of other communications medium – including e-mail, text messaging, wireless services, and pre-paid calling cards.[39] We do not suggest 999 obligations for these services that are replacing wireline calls, but offer it as an illustrative point that these communications tools, while decreasing dependence on the PSTN, can be additive to consumer communication options without undermining 999 availability.

Further, Ofcom is basing its whole approach on a subjective interpretation of what people "might" do (*e.g.*, paragraph 2.11), without any evidence that they have or will. This is particularly true for type 2 services.

Lastly, Ofcom has done only cursory analysis of the impact of such an abrupt reversal of course. Warning labels and stickers have just been deployed to consumers to conform to existing rules. What happens if these stickers are unable to be detached from devices? Would an immediate reversal in policy (within just a few months time frame) further exacerbate consumer confusion?

For these reasons, the VON Coalition believes that Ofcom should not proceed with Option 2 as its decision is based on several misconceptions and an incomplete view of the type of technology landscape impacted, and could actually harm some of the very stakeholders it seeks to protect.

Q.5 Do you consider Ofcom should adopt policy Option 2? Please give your reasons.

No. There indeed is a balance to be struck between protecting public safety, and protecting innovation and consumer benefits, as Ofcom has recognized previously.[40] However, Option 2 fails to protect either public safety or consumer benefits. Indeed, adoption of Option 2 could harm both public safety and a consumer's ability to take advantage of new and exciting ways to communicate.

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[38] *See*, *e.g.*, Consultation Document, at paragraph 4.45.

[39] Surveying the "Incidence of Alternative Methods in Replacing Wireline Calls," JD Power found that a variety of communications technologies were replacing wireline calls including: e-mail 48%, wireless phone 31%, instant messaging 22%, pre-paid phone cards 18%, dial around service 4%, and IP telephony using PC 3%. *See* presentation by Steve Kirkeby, J.D. Power and Associates, May 8, 2007, *Applications And Its Implications For Traditional Telecom Services (i.e., The Impacts Of IM, Email, Voip On Voice Telephony In Particular) –Impact Of Competition Thus Far*, page 8, KMB Video Conference.

[40] *See* note 8 above, at paragraph 3.23.

First, adopting Option 2 could further exacerbate the customer confusion and delays in reaching 999 that it seeks to avoid. Ofcom uses as a rationale for Option 2 the fact that "Ofcom is concerned that consumers and citizens are confused about whether they can call 999 from VoIP service. That could cause delays in contacting the emergency services, which could result in serious harm."[41] However, applying 999 obligations to type 2 services in particular could: (1) exacerbate customer confusion about the types of services that can be used to dial 999; and (2) lead to further delay in accessing emergency services which could result in serious harm. Even though there is no expectation today that in an emergency a user would plug in their laptop, boot up their computer, log into the Internet, surf to an online yellow pages directory services, search 999, click on a link in order to connect to emergency services. Yet creating such an expectation could in fact create new public safety issues – the expectation that a consumer could reach 999 using any laptop, any webpage, any TV, and any IP-enabled device, application or service. Consumers may not know which websites offer click-to-dial communication and which ones do not, which software applications can and cannot communicate. Making a mistake by choosing the wrong website, software, TV or laptop – could lead to the very delays in reaching 999 that it seeks to avoid. As more and more Internet-connected websites, applications, and services begin to include voice capability, consumer confusion over which Internet-connected applications could connect to 999 could skyrocket.

Second, adoption of Option 2 is likely to undermine the critical role that VoIP services can play as part of robust emergency communication networks. Recent disasters have shown that additional and redundant forms of communications – even those that do not provide 999 access – can prove essential in an emergency. VoIP, utilizing a network designed to withstand nuclear attack, has proven to be resilient in emergency situations. After the terrible events in London on 7th July 2005, many citizens found that the only means of communicating with friends and relatives was via VoIP, as mobile networks were overwhelmed by the number of calls being made. Likewise, in an assessment issued following the September 11th attacks, the National Academies concluded that the Internet had been far more reliable than other communications networks and that network operators turned to VoIP for communications when traditional networks failed.[42] Similarly, Hurricane Katrina saw similar results as VoIP was the only tool available to communicate with the outside world. This situation was replicated again after the recent Peru earthquake. Furthermore, government agencies around the world are adopting VoIP because of its mobility, features, ability to use any network, and route around network

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[41] *See* Consultation Document, at paragraph 1.5.

[42] *See* National Academies, Computer Science and Telecommunications Board, *The Internet Under Crisis Conditions: Learning from September 11* (2003) ("As a whole, the attacks affected Internet services very little compared with other telecommunications systems. Telephone service was disrupted in parts of lower Manhattan, and cell-phone service suffered more widespread congestion problems. Nearly one-third of Americans had trouble placing a phone call on the day of the attacks. The Internet, however, experienced only a small loss of overall connectivity and data loss, the report says. With phone service impaired, some individuals used instant messages on their wireless handheld devices and cellular phones to communicate instead. Websites were created to distribute lists of missing persons and other information to help people try to locate loved ones.").

failures. In other cases, public safety leaders are recognizing that VoIP can be the lynchpin technology for achieving interoperable communications between a variety of different communications tools essential in an emergency.[43] However, premature application of 999 requirements would slow the deployment of technologies that may have profound public safety advantages.

Third, Option 2 is fundamentally inconsistent with Ofcom's statutory duties and regulatory principles[44] in at least three specific areas: (1) "Ensuring that a wide range of electronic communications services -- including high speed data services -- is available throughout the UK"; (2) "Ofcom will always seek the least intrusive regulatory mechanisms to achieve its policy objectives"; and (3) Ofcom "will aim to remain at the forefront of technological understanding."

Imposing such 999 mandate on type 2 and type 4 services is an overly intrusive solution and may result in the disappearance of some existing free VoIP offerings from the marketplace. Mandating Option 2, as Ofcom acknowledges, is not the least burdensome approach for the VoIP industry. In comparison, the current rules requiring notice to consumers place lesser burdens on providers. Also, as discussed above, imposing Option 2 ignores the technical realities that would be faced by the VoIP industry if this proposal were adopted and represents a step backward from Ofcom's leading role in helping to establish benchmarks for balanced VoIP policy in the EU.

Fourth, Option 2 will seriously stifle the growth or emergence of new, innovative VoIP services. As described above, there has been an explosion of innovative new VoIP services over the past few years, many of which are not intended to be substitutes for PATS services and are not viewed by consumers as doing so. If Ofcom were to impose 999 and location obligations on type 2 services, many of these new innovations may never emerge in the first place.

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[43] The U.S. Department of Homeland Security roundtable on VoIP found that IP-based systems have several critical disaster-recovery applications, including: radio system connections (*i.e.,* connect communications centre to a mountain top transmitter); radio system to radio system interface (*i.e.,* connecting two or more radio systems via a VoIP link); dispatch interface (*i.e.,* using VoIP to enable dispatchers to communicate with each other); bridging systems (*i.e.,* using VoIP to connect radio systems that do not support direct interconnection); system and subscriber unit interfaces (*i.e.,* communications from radio system to radios, PDAs, wireless laptops, or direct communications among such devices, in the event of infrastructure failure). *See* Department of Homeland Security, Office for Interoperability and Compatibility, Roundtable on Public Safety Interoperability and Voice Over Internet Protocol (2007) (*available at http://www.safecomprogram.gov/NR/rdonlyres/F5097180-FD4C-463A-8050-F24489853ED7/0/2ndRoundtableonPublicSafetyInteroperabilityandVoIPmeetingreport.pdf*).

[44] *See* http://www.ofcom.org.uk/about/sdrp.

Q.6 Ofcom invites information on (a) the current means, future possibilities and limitations for providing caller location information; (b) how long it is likely to take a VoIP provider to meet current requirements on caller location information, in the event that Option 2 is adopted.

It is premature to require caller location information for VoIP services. As Ofcom found previously, "Providing such location information for a VoIP service is more difficult than for a PSTN service, since the location is not linked to the Calling Line Identity ("CLI")."[45]

In Ofcom's March 2007 Statement on the Regulation of VoIP Services, it was suggested that "Ofcom would encourage industry to work together and with NICC in the first instance."[46] The industry has responded and is working together to accelerate the development of a solution. NICC is addressing the issue of how to develop a more robust solution as are other standards bodies. Indeed, VON Coalition companies are at the forefront of innovative technological solutions. They are working actively with standards bodies including ECRIT, IETF, in partnership with NENA, and in their own labs. Nonetheless, it is unreasonable and unnecessary to replicate the existing emergency arrangements of fixed network operators, which were designed specifically for legacy networks. Such a requirement would undermine the important progress that is currently taking place and potentially stall future solutions.

In fact, one of the key benefits of certain types of VoIP services is their ability to be location independent. For certain type 4 services, this allows users to plug their VoIP phone or terminal adapter into any available broadband connection in the world. For type 2 services, it can mean users can access these services sometimes from any web browser in the world. Requiring CLI may have the effect of requiring such services to be fixed – drastically limiting consumer options, undermining one of VoIP's public safety advantages, and choking off one of the key advantages of using the Internet to communicate in the first place.

It is simply impossible today to know the location of where a VoIP service is being accessed from. For example, as discussed above, we have included a link at footnote 37 in these comments that will connect anyone accessing this document to the PSTN using a click-to-dial type 2 VoIP service. To the extent that the type 2 services needs to know the location of the user (thus the location of this document), how would Ofcom propose that the users of this document be located when it will be downloaded by various people throughout Ofcom, throughout the country – indeed around the world?

Regarding the consultation question "how long it is likely to take a VoIP provider to meet current requirements on caller location information, in the event that Option 2 is

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[45] Ofcom, *Regulation of VoIP Services: Statement and publication of statutory notifications under section 38(1) of the Communications Act 2003 modifying General Conditions 14 and 18*, 29 March 2007, at paragraph 4.70 (available at http://www.ofcom.org.uk/consult/condocs/voipregulation/voipstatement/voipstatement.pdf).

[46] *Ibid*, at paragraph 4.77.

adopted," making a user's location known to any piece of software on the Internet is likely to take significant time to develop – as the UK government has noted previously. In questioning the EU's assertion that it should be technically feasible to provide caller location information for VoIP services by 2010, the UK government commented, in its response to the European Commission's Communication on the EU Regulatory Framework, regarding the obligations to pass caller location information to emergency authorities[47] that "VoIP calls are routed via many diverse paths, and the CLI of the final leg may not yield useful information to the called party." Experience in other countries, such as the U.S., suggests that it has taken wireless carriers more than 10 years to develop and deploy technologies for locating users, and their job is still far from complete. In a recent 911 proceeding before the FCC in the U.S., the broad consensus was that no technologies exist to provide location capabilities for type 4 VoIP services, and it will take a significant period of time to develop such technologies.[48]

While work is underway for type 4 services, it is impossible to estimate the timeframe for type 2 service to gain location capabilities because they are more likely to disappear from the marketplace if Option 2 is adopted. The result may be that communications providers that offer these often free services to users around the globe would instead invest in ways to block UK Internet users from accessing these innovative and beneficial services.

Therefore at this time, we believe obligations regarding location information should only apply to PATS and PTN providers only to the extent that is technically feasible and within control of the relevant provider.

Q.7 Ofcom invites information on (a) the current means, future possibilities and limitations for providing network integrity and service reliability; (b) how long it is likely to take a VoIP provider to meet current requirements on network integrity and service reliability, in the event that Option 2 is adopted.

By disconnecting voice from the underlying network, VoIP allows consumers to benefit in a variety of ways. The ability to use a VoIP service over any network from any location allows people to communicate in geographically dispersed locations in the event of a major emergency. However, an over-the-top VoIP provider can provide no assurances that the underlying broadband provider's network will be available to the user. This is very different than traditional wireline service (for which Ofcom's network integrity and service reliability rules were designed) where the carrier owns/controls/manages its phone network, and barring a catastrophic event, ensures a high quality of service.

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[47] *See* paragraph 2.4.2 at http://www.dti.gov.uk/files/file35579.pdf

[48] "It is not currently technologically feasible for IVSPs [Internet Voice Service Providers] to automatically locate their subscribers." *See* Comments of Vonage America, Inc., FCC VoIP Auto-location NPRM (see note 21 above), August 20, 2007 (available at http://www.harriswiltshire.com/harriswiltshire/backoffice/upload/documents/Strandberg08202007.pdf). Numerous telecommunications network operators, equipment manufacturers and VoIP service providers also commented in the VoIP Auto-location NPRM on the current lack of technologies available to provide location information for VoIP calls (see, for example, the comments of AT&T America, Inc. and Sprint Nextel Corporation).

As Ofcom concluded in its March 2007 Statement, "Ofcom remains of the view that the network integrity requirements in Article 23 of the USD (as transposed in GC 3) would not be relevant when the service is used in locations which were not fixed in their nature."[49] Nothing in the architecture of the Internet has changed since March that would make the application of these requirements any more relevant today.

In addition, there is no sign of a consumer problem. In a recent survey, nearly 90 percent of VoIP early adopter households claim the same or better voice quality and service reliability than traditional landline service.[50] Another study found 85% of VoIP calls exceed PSTN quality, and that VoIP calls connect quicker than PSTN calls[51]. Likewise according to J.D. Powers, while customer satisfaction with traditional phone providers fell slightly, new entrants selling VoIP had subscriber satisfaction scores 30 points above the overall industry.[52]

Furthermore, Ofcom should not adopt any technology mandates here that may hurt or stifle innovation in the VoIP provider ecosystem. Currently, there are a wide variety of VoIP applications, type 2, and type 4 services all using different technologies. Any attempts by Ofcom at this point to mandate technology standards may hurt such innovation. Moreover, the industry has already on its own adopted VoIP quality-of-service standards for use in such services.

As a result, the VON Coalition submits that it is premature and inappropriate for Ofcom to implement network integrity and service quality standards on VoIP providers at this time. Providers of VoIP services accessed from networks over which the VoIP service provider has no control or knowledge should have no obligations in respect of network integrity.

Q.8 Do you have any comments on complying with the other PATS General Conditions, in the event that Option 2 is adopted?

Reflexively applying yesterday's rules to tomorrow's technologies, without first rethinking the rules for the Internet era, may mean that consumers and businesses miss

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[49] *See* note 45 above, at paragraph 4.86.

[50] March 2006 survey by Telephia.

[51] According to Minacom's *Standards-Based, North American & Global VoIP Testing Study* (August 2006), VoIP service had an average Mean Opinion Score (MOS) of 4.2, compared to 3.9 for the PSTN - MOS is a scale commonly used to describe speech quality, ranging from 1 (worst) to 5 (best). In addition to superior sound quality, calls over VoIP connected quicker overall - 8.2 seconds on average, compared to 8.9 seconds for those placed over the PSTN. See http://www.whitefence.com/blog/whitefence/2006/09/study_voip_quality_continues_t.html and http://www.minacom.com/modules/minaweb/download/Internet%20Phone%20Quality%20Increases%20 Significantly%20and%20Steadily%20_2_.pdf.

[52] Customer satisfaction with traditional phone providers fell 3.3% in 2005 to 670 on a 1,000-point scale, according to J.D. Powers. Cable operators entering new markets, many selling broadband and VoIP, had subscriber satisfaction scores 30 points above the overall industry. *See* Communications Daily, 13 July 2006.

out on the vast new services, increased choices and better prices that VoIP can deliver. VoIP can help deliver new innovations and more affordable ways to communicate. It also can be a force for increased competition, a platform for innovation, a driver of broadband deployment, and an enabler of economic growth. VoIP is not just another flavor of telephone service. It's a whole new frontier in communications for individuals and businesses alike, and it requires forward-thinking regulatory approaches. Forcing innovative Internet technologies to squeeze into legacy regulatory boxes, without rethinking rules for the Internet era, merely constrains innovation to those boxes, delays consumer benefits and prevents whole new types of communication services from unfolding.

In fact, enforced compliance with all PATS obligations will likely force most small players from the UK market. Such an outcome not only hurts small business but also reduces competition and limits consumer choice.

PATS conditions were designed for PSTN-based services and simply do not fit well with Internet-based communications which span boarders, enable a variety of new ways to communicate not previously possible, and operate in a competitive communications landscape.

Q.9 Referring to the full Impact Assessment in Annex 5, do you agree with Ofcom's approach to assessing the potential costs and benefits of policy Options 1 and 2?

Ofcom's Impact Assessment of the potential costs and benefits of Option 2 estimates there would be significant benefits for consumers and citizens, which would exceed the costs of compliance for the VoIP providers affected.[53]   However, Ofcom's financial modeling appears incomplete and underestimates the detrimental effects both to public safety and to consumers of adopting Option 2.

Ofcom fails to take into account the costs to consumers of the possible delay in competition of type 4 services, the potential impact Option 2's requirements would have in limiting the types of services offered to UK consumers, and the quantitative and qualitative impacts on public safety by further increasing customer confusion.

Ofcom, for example, estimates Option 2 would cost the industry a total of £9,418,946 in 2007/08 (table 9). Such high costs would likely deter new entrants from entering the UK market, delaying the onset of robust competition in type 4 services and costing consumers millions in savings. In general, type 4 based-VoIP competition has the potential to cut consumer phone bills substantially – for both those who do subscribe to VoIP and those that do not (because competition forces a reduction in retail prices for all services). Ofcom's Communications Market Report 2007 shows that, even though VoIP is in an "early adopter" stage, consumers saved £0.4 billion between 2004 and 2005 because of falling prices and usage as mobile and VoIP services use grows.[54]   Yet the costs of

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[53] *See* Consultation Document, Annex 5.
[54] *See* note 11 above, at Figure 4.20 (available at http://www.ofcom.org.uk/research/cm/cmr07/ cm07_print/cm07_3.pdf).

Option 2 fail to include an analysis of such an impact. In paragraph A5.119, Ofcom acknowledges that its rules would likely raise barriers to entry by new VoIP competitors and would likely even cause the exit of some existing providers, but then completely ignores the consumer impact from an acknowledged decline in competition because of its rules. These costs to consumers are likely to dwarf the industry's costs.

Furthermore, if Ofcom is right that type 2 as well as type 4 services compete with PATS services (and we completely disagree that type 2 services compete with PATS), then it has completely failed to take into account the impact its rules would have on that competition as well. If type 2 services do not compete with PATS services (as is undeniably the case), Ofcom still underestimates the impact that its rules would have on type 2 services – even though it assigns most of the costs to the type 2 services which are often provided for free or supported by advertising. Because many type 2 services generate only a limited amount of ARPU, the additional compliance costs – even if we assume Ofcom's modeling is correct – will have a significant impact. Thus, Ofcom rules may eliminate many of the free or low cost type 2 services now beginning to emerge on the Internet. Companies could be forced to block access to these innovative and beneficial Internet websites and services to UK consumers. The loss of these innovative type 2 services which are now proving essential -- to people with disabilities, to low income and minority populations, to business productivity, and to consumer mobility -- are so vast as to be un-estimable. Further, most of these innovative services have no substitute in the market.

Ofcom's benefits assessment similarly misses the mark. Ofcom concludes that "[t]he intended benefits of Option 2 are eliminating the consumer or citizen confusion that could result in critical delays in accessing the emergency services, potentially leading to loss of life."[55] We fully agree that real-life customer confusion could lead to delays and potentially cost lives. However, as discussed in response to our answer 4 above, we do not believe this confusion has arisen for type 4 and 2 services (as Ofcom's study supports, most customers retain fixed line and mobile services and use these PATS services to make PSTN interconnected calls), and Ofcom's rules are likely to lead to greater confusion and delays, not less.

By requiring, and thus creating an expectation that some laptops, some websites, some online directory services, some online instant messaging, some online maps, some televisions, some blogs, and other creative type 2 services could reach 999, Ofcom would inadvertently create further consumer confusion about which TVs, which laptops, which software, which websites can reach 999. Creating a scenario where a consumer has an expectation that they can plug in a laptop, boot up the computer (*e.g.*, 2 minutes), log on to the Internet (*e.g.*, 30 seconds to 1 minute), launch a web browser (*e.g.*, 30 seconds), go to an online web directory (only to find out that they went to the wrong website that has discontinued its type 2 VoIP service), surf to another web directory (or download an Internet application), search for 999, hook up a microphone, click on a link, in order to connect to emergency services -- when picking up a traditional phone would be faster –

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[55] *See* Consultation Document, at paragraph A5.133.

could indeed delay emergency service and cost lives. Yet the additional confusion that Ofcom's Option 2 would create is not cataloged or evaluated.

Furthermore, Ofcom's impact assessment on type 2 services may be too narrow because its understanding of type 2 services may be too narrow. For example in paragraph 2.12 Ofcom argues that "[o]ur proposal does not address PC-to-PC services (calls made using IP addresses instead of telephone numbers) because we consider it unlikely people will try to dial 999 or 112 using a service which is accessed using alphanumeric characters." Likewise, we believe it is similarly unlikely that people will try to "dial" 999 or 112 using the vast array of type 2 services that would by captured by Option 2. Other regulators agree and have refused to apply such a mandate to type 2 services.[56] Rather than "dialing" to connect to the PSTN, some type 2 services utilize buddy lists, computer icons, television remote controls, web links, voice commands, a computer keyboard, the click of a computer mouse, and indeed the same alphanumeric characters utilized in PC-to-PC services in order to initiate a call to the PSTN. Yet each of these techniques, like the use of alphanumeric characters, is similarly unlikely to be utilized to "dial" 999 or 112.

There are other costs and benefits that aren't evaluated as well. As ITSPA has previously pointed out after Ofcom's previous decision, "Voice over IP will be subject to a stricter regulatory framework than any other technology within the UK telecommunications industry."[57]

Unfortunately, ITSPA was correct and the results are now becoming clear. Ofcom's most recent Communications Market Report finds that UK VoIP use is actually on the decline in the UK[58], with use falling from 20% in Q4 2006, to 18% in Q1 2007. Indeed, the UK is now falling behind other world leaders in enabling its consumers and businesses take advantage of the vast benefits of VoIP. According to DigiWorld's analysis of the world VoIP market[59], the UK is behind other Internet leaders like Japan, France, Italy, South Korea, and Germany in VoIP adoption. One of the key factors cited by the report as the root of this boom in other countries is the light regulation of VoIP services in other countries.

UK's businesses are falling behind too. Even though the UK is ahead of the US in broadband penetration, according to a study by Datamonitor, UK enterprises lag far behind the US and the rest of Europe when it comes to adoption of VoIP -- half as many UK enterprises have taken up VoIP and unified communications than in the US.[60]

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[56] Such countries include the U.S., Canada and Germany. We also note the 9 ERG countries referenced on Figure 3 of the Consultation Document that do not impose emergency services access on type 2 services.

[57] "ITSPA responds to long-awaited VoIP statement", ITSPA Press Release, 29 March 2007 (available at http://www.itspa.org.uk/).

[58] *See* note 11 above, at Figure 1.73 "Awareness and use of VOIP" (available at http://www.ofcom.org.uk/research/cm/cmr07/cm07_print/cm07_1.pdf).

[59] *See* http://www.idate.fr/pages/download.php?id=262&rub=etude_telech&nom=eng_35705_VoIP_Br.pdf

[60] Only 28 per cent of enterprises in the UK have deployed VoIP, compared to 53 per cent of companies in the U.S. The UK is also behind other European countries, trailing the Benelux countries' 44 per cent

In fact even Ofcom's own analysis[61] finds that "the UK had one of the lowest levels of paid-for VoIP service take-up among the countries analysed, with 0.4 VoIP users per 100 population. According to Ofcom data, the UK, with 14%, was the second lowest in take-up. The economic impact of loss of leadership in such a critical Internet technology is difficult to measure, but it is likely to be felt in business productivity, lack of consumer competition, and other immeasurable ways.

Q.10 Do you agree that 3 months would be a suitable compliance period, taking into account the steps VoIP providers would have to take to comply with the modification to General Condition 4 and any additional General Conditions and the need to reduce the risk of harm to consumers and citizens? Please give detailed calculations and reasoning to support your response.

While we disagree that any compliance should be mandated for either type 2 or type 4 services, three months is unworkable and unsupported. In no case should type 2 VoIP services be required to comply with this mandate in such a short time. Technology simply does not exist today to accurately and automatically provide a caller's location to emergency services when they dial 999; this problem is compounded if the VoIP service is nomadic and not used at a fixed location. As discussed above, experience in other countries, such as the U.S., suggests that it has taken wireless carriers more than 10 years to develop and deploy technologies for locating users, and their job is still far from complete. In a recent 911 proceeding before the FCC in the U.S., the broad consensus was that no technologies exist to provide location capabilities for type 4 VoIP services, and it will take a significant period of time to develop such technologies.[62]

While work is underway for type 4 services, it is impossible to estimate the timeframe for type 2 service to gain location capabilities because they are more likely to disappear from the marketplace if Option 2 is adopted. The result may be that communications providers that offer these often free services to users around the globe would instead invest in ways to block UK Internet users from accessing these innovative and beneficial services.

However, if Ofcom ultimately concludes that some action must be taken at this time, we strongly recommend that Ofcom not impose any new requirements on VoIP services until it has had an opportunity to study the effects of the existing Guidelines and the Code of Practice. This code should be given sufficient time to operate in the marketplace, at least one full year, followed by a further study by Ofcom on its effectiveness that would take into account consumer and industry input. Gathering additional information will also provide an opportunity to get greater clarity on what changes will be made in the regulatory framework at the EU level.

and France's 35 per cent, matching Germany and ahead only of Switzerland on 28 per cent. *See* "UK businesses slow to take up VoIP," 21 August 2007 at http://www.onestopclick.com/news/UK-businesses-slow-to-take-up-VoIP_18252632.html.

[61] *See* Ofcom, *International Communications Market 2006*, at page 47. Available at http://www.ofcom.org.uk/research/cm/icmr06/telecoms.pdf.

[62] *See* VoIP Auto-location NPRM at note 21 above.

Q.11 Do you have any comments on Ofcom's proposed approach to monitoring, review and enforcement?

Given our support for Option 1, the VON Coalition has no comment on this question.