

Migration to all IP Networks - the regulatory perspective

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Today's Agenda

1) What is happening and why:

- PSTN switch-off
- What issues does this raise?

2) Interim solutions and future considerations:

- Are there any short term solutions?
- What should OTT providers do?
- What should we keep in mind?

3) What is Ofcom and industry doing?

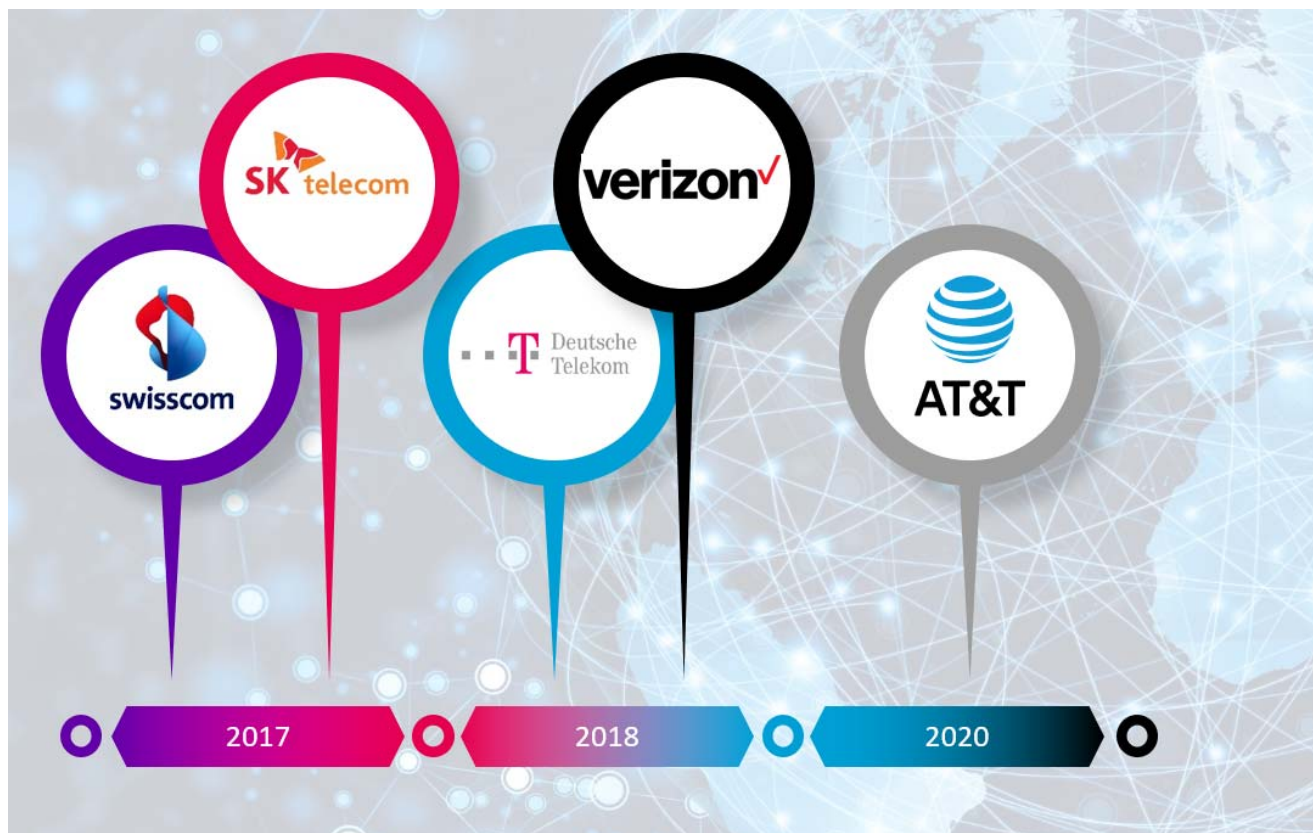
- Migration led by Communication Providers
- Ofcom's role

What is happening and why?

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- The PSTN (public switched telephone network) has been the traditional basis for the provision of fixed voice services, but this will change
 - The PSTN systems used by Communications Providers such as BT, Virgin and KCOM are now approaching the end of their life
 - Many systems are obsolescent and support costs are increasing rapidly as both hardware and software are more difficult to maintain
 - The providers have signalled their intention to retire the PSTN and deploy a fully IP-based voice service by 2025.
- Providers are moving to Voice over IP (VoIP) call services
 - This will use a broadband connection to make calls over both copper and full fibre connections. Such IP services are already available and commonly used by businesses and will be more common in the mass market over next few years
- Initial migration strategies focussed on “emulating the PSTN” but may be an interim step
 - Continue the use of traditional analogue transmission on existing copper networks between the exchange and the home. This approach is being successfully adopted by some incumbents in Europe and elsewhere but is now seen as only an interim step to full “Voice over Broadband”
- Initially, Providers will voluntarily migrate customers to VoIP services (some already started). However, at some point customers will be forced to migrate
 - We expect the start date and length of this voluntary migration window to vary by Provider but all need to be completed by 2025 at the latest
 - The date by which providers will switch off their PSTN networks will vary, so there is no set date for a UK-wide switch off

Part of an international trend



- Many other telecommunications providers are already migrating to all-IP networks.
- Deutsche Telekom has completed the migration of its customers to VoIP in Macedonia, Slovakia and Croatia and is due to complete migration in Germany by the end of 2018.

What issues does this raise?

- Voice over Broadband may not fully support the ‘over the top’ services that the current PSTN does
 - Some copper network based security services such as the current version of Redcare may cease to work (however Redcare is being upgraded)
 - Differences between the old and new technologies may make other types of security, fire and care alarms that use PSTN connectivity to reporting centres malfunction

- Voice over Broadband will also not have the “line powering” capability of the PSTN
 - Means that services that rely on the PSTN for power such as telecare will need alternative power arrangements, and users/providers will need to make arrangements so that they continue to operate if the local mains fails.

- Ofcom has been working with a range of industries to highlight potential impact:

	Potentially affected services
Health	Telecare alarms
Finance	Retail card payment terminals; ATMs; BACs
Transport	Traffic control and monitoring; comms systems in smaller airports; ticket machines; heritage railways
Utilities	Network control and monitoring
Other	Security & fire alarms; communications systems in lifts; services using ISDN2

Interim solutions and future considerations

Interim solutions

The issues faced by those customers that are migrating to all IP have led to multiple possible solutions:

Analogue Telephone Adapter (ATA) on the back of the router

- Some Providers and third party manufacturers of broadband routers will/do offer an ATA port so that existing telephones can be used with the new VoIP services
- This will supply power and a dial tone, but only if local power is available, unless a separate UPS is provided.
- Customers who wish to continue to use existing alarm services etc post-migration can plug their existing device into the ATA port **but** full functionality and high reliability is not guaranteed for tone based signalling.
- Providers have signalled that suppliers will be able to test this solution in their testing facilities.

Service re-engineering and fine tuning of applications

- Some customers may need service re-engineering and/or complete service provider equipment replacement to rectify. The testing facilities will aid in this process.
- Some Providers have already “fine tuned” their applications to work better in the new environment and we have advised all stakeholders to check that they operate within international and NICC specifications

... but most importantly suppliers of OTT services need to define desired attributes to meet applications needs (coverage aspirations, resilience, data throughput required, preferred network protocols, etc) and then look to procure

Future considerations

- Longer term solution is to move to a fully “data centric” or “all IP” approach – those solutions already using this approach should be unaffected
- Generally, existing broadband connections may be supporting multiple services – in order to ensure any new service works effectively, some level of prioritisation for the relevant data traffic may be necessary
- In the absence of well defined international standards, some compatibility issues may be encountered with “home hub”/router configurations
- Wireless solutions may give better coverage, security and resilience than fixed broadband and may be easier to deliver seamlessly

What is Ofcom and industry doing?

Migration is being led by Providers

- Responsibility for ensuring that the migration is efficient and straightforward therefore lies with them because:
 - Taking the commercial decision to switch off the PSTN
 - Setting the timescales (different timings, depending on the company)
 - Communicating with users and over-the-top service providers
 - Particular focus on protecting vulnerable consumers and those identified in the migration process as having OTT devices connected to the line
 - Offering test facilities for over-the-top service equipment that are representative of the eventual

However...

- As the regulator Ofcom also has a role to play:
 - Helping to ensure that key services and industries that rely on the PSTN are aware of the potential impact of the change and can make the necessary upgrades of equipment ahead of switch off; and
 - emphasising to Providers contemplating PSTN switch off that they have a number of responsibilities to both consumer and broader stakeholder groups, particularly with regard to service compatibility issues

There are a number of groups working on this

Ofcom is only involved in some of them but we are monitoring overall progress:

NICC

- Delivering the standards
- Communicating the standards (Ofcom supporting)
- Defining high-level test approach (Ofcom supporting)

Ofcom

- Industry working group
- Consumer comms group
- Communicating to Government and other stakeholders
- Reviewing rules and compliance

PSTN Providers

- Leading own engagement work with consumers, OTT providers
- Supporting NICC standards work
- Testing facilities (Ofcom support as requested)

OTT providers

- Leading own engagement work with consumers, PSTN providers, discussing with internal stakeholders on PSTN migration (Ofcom and providers support as requested)

Summary

- This change is happening
- OTT services will be impacted
- Ofcom and industry are managing the change and contacting those industries and stakeholders that may be impacted
- Testing facilities are being made available by Providers so that stakeholders can make sure that their equipment works
- **Most importantly... OTT providers and other stakeholders are encouraged to contact Providers to discuss potential issues**
- **Customers of OTT services should be told by their service provider if they think they will be affected by migration – it may be a useful part of future insurance policy checklist processes**

Thank You