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Dear Sir / Madam

Digital Communications Infrastructure Strategy: Consultation

We welcome the opportunity to respond to the above consultation. SSE is a large UK-based energy company with interests in that industry across electricity generation, transmission and distribution; gas transportation; and retail supply of energy. We also have a relatively small retail business in the communications market, having entered that market a little over 10 years ago.

For almost all of that time, we have engaged with successive Ofcom initiatives on the topic of retail switching, which we recognise as a very important area of consumer experience and also one that significantly affects the competitive dynamics of a market. We note that the consultation discusses this area briefly around paragraph 4.34 and agree that the ability of customers to switch suppliers easily is fundamental to the competitive provision of services. In this response, we have restricted our comments to the switching issue in retail communications markets as, in our view, this has yet to be placed on a sustainable footing. It may therefore require some intervention by government to ensure better outcomes for consumers, competition and investment.

In the consultation, reference is made to the issue of customers being able to switch suppliers being common across regulated utilities and also of communications infrastructure becoming regarded more as a utility itself. We agree with the latter statement and, coming from a utility background, believe that SSE is well placed to make comparisons between the switching frameworks in energy and communications.

Our main concerns about the switching framework in communications are as follows:



- There is no underlying comprehensive model of how the retail market operates, which would be a pre-requisite for determining and documenting comprehensive industry switching processes; and
- There is no mechanism for governing retail switching processes.

As a result, there is no change control, no oversight and no proactive planning for how switching processes should be amended to take into account new technologies, products and market developments. This situation has naturally resulted in fragmented, ad-hoc developments led by a small number of vertically integrated operators, which in turn has led to many of the 'principal problems' in switching provider that Ofcom's most recent switching project has identified:

- multiple processes for switching the same service or bundle of services;
- consumer difficulty and unnecessary switching costs;
- erroneous transfers due in part to shortcomings in address maintenance;
- loss of service on switching;
- lack of platform neutrality; and
- the existence of 'reactive save' opportunities in existing switching processes that require contact with an existing supplier in order to switch supplier.

In energy, as well as in the existing retail water market in Scotland and the one that is under development for England and Wales, switching processes are characterised by inclusive, independently-run and transparent industry-led governance. Data models upon which those processes are based are also readily available. Given the relative complexity of communications technology and products compared with energy and water, we believe that the scope for consumer harm from the lack of coordination between market participants is actually greater in the communications market than in these other utility industries where the service is naturally left 'on' when a consumer switches supplier.

We welcome the fact that Ofcom has recently mandated a move to a harmonised switching process for the Openreach copper infrastructure. However, it has not yet addressed the matter of governance for switching and may not have the powers to require such a framework to be set up. We would therefore urge the Department to work with Ofcom to see if its powers can be suitably extended in order to mandate the introduction of switching governance in relation to the mass-market of domestic and small business customers so that switching in this market can be placed on a more 'utility' footing. We believe that it is only with such a framework in place that the communications industry can itself begin to pro-actively manage and adapt market processes to avoid issues for consumers rather than wait for the due process of regulation whereby Ofcom can direct change only once consumer harm can actually be proven to have occurred.

Another area of benefit, were such a governed switching framework in place, is that new fibre networks could be brought within its scope. We understand that there are a number of new fibre networks planned, some of which plan to offer wholesale access to other communications providers rather than provide retail services themselves. We imagine that such network providers would welcome the opportunity to 'join' a harmonised switching process and avoid having to work out from scratch how to allow consumers attached to their networks to switch between different service offerings.



To help illustrate our points in more detail, we have attached an extract from our response to Ofcom's most recent call for inputs on the topic of consumer switching.

I hope these comments are helpful to the development of the Department's strategy for communications infrastructure and we would certainly be happy to discuss the themes of this response further.

Yours sincerely

Aileen Boyd
Regulation Manager



Extract from SSE's response to Ofcom's call for inputs on
Consumer Switching dated 17 July 2014

Appendix 2

Proposals on market coordination for switching

In our view, **coordination** between industry parties on 'back-end' switching processes is the key enabler in achieving smooth transition processes for customers in network-based service markets. As Ofcom has already identified earlier in the switching project, it is necessary for industry parties to 'work together' (along with Ofcom) to sort out the process changes required to implement phase 2 of the first stage of the project. In our view, such coordination is actually a continuous requirement: necessary changes to existing switching processes need to be identified, developed, implemented, monitored, maintained and amended as required in a transparent, change-controlled manner. This continuous requirement is best served by an ongoing coordination arrangement that can deliver efficiently on all the activities mentioned for the benefit of the market and its customers.

The requisite degree of coordination in other similar markets such as gas, electricity and water has been achieved through formal, impartial and transparent **governance** of market processes such as switching. We therefore consider that Ofcom's stage 2 work on switching should include consideration of how to develop appropriate and enduring governance arrangements for switching. Not only will there be business-as-usual changes to be made to processes but it is likely that there will be post-implementation issues that need to be fixed from stage 1 of the project. There are also a number of items in this project that have been de-scoped from the 20 Jun 2015 Harmonisation Date but which should be reconsidered once the higher priority changes have been implemented: an example of this is the harmonisation of BT Wholesale's 'wholesale calls' product in terms of cancellation codes used.

Assuming that the original objective remains that harmonised processes should be in place for all consumers looking to switch their voice and/or broadband services to a new supplier on the Openreach platform, then such anomalies should be ironed out. In our view, there needs to be a governance vehicle in place to ensure that appropriate actions to achieve this are captured and progressed. Otherwise, there will be no incentive for relevant CPs to carry out the required work.

We believe that well-designed and strong central governance (with Ofcom acting as the ultimate "authority") will both enable the fair and democratic participation of all types of CP and form a legitimate 'industry body' with whom Ofcom can formally engage to influence the direction of travel of industry developments without the need to become involved at a detailed level when issues arise. We welcomed Ofcom's recognition at paragraph A7.142 of the August 2103 statement that there would be benefits in a governance process:

"We anticipate that such a governance process would have benefits in future as a result of providing a framework for industry cooperation, for example in adapting to future changes in the market."

We acknowledge that there is a cost (and this can be made transparent through appropriate funding arrangements) entailed in formalised industry cooperation but there



are also significant costs entailed in the continuation of various forms of harm to customers and competition without such coordination. We whole-heartedly agree with Ofcom's comment at paragraph 3.18 of the August 2013 statement that the competitive market operating freely does not necessarily guarantee robust and smooth switching processes.

It is, in our view, intuitively obvious that an assembly of CPs acting in their own best interests in a market does not produce the best-coordinated switching arrangements for the benefit of customers or competition. Furthermore, the existence of the problem of "multiple switching processes" illustrates that these have been developed at different times in an uncoordinated manner over time. As a further example: unbundling of BT exchanges was introduced to the market without any thought for how unbundled customers would be able to switch back to the BT Openreach network. This led directly to the peak of complaints to Ofcom some years ago about broadband switching that led eventually to the introduction of the original version of General Condition 22. When balanced against the costs of all the harm caused to customers and competition, together with all the effort expended by Ofcom since it was formed to address these issues, we believe the transparent cost to industry of developing a suitable form of coordination and governance would be outweighed by the reduction in harm and hidden costs that such an arrangement would bring.

Independent, formal governance would provide a transparent and equitable mechanism whereby all industry parties (not just the largest vertically integrated CPs) could have input to propose changes to and raise concerns with current arrangements. It would be a means to develop consensus on how to amend market switching processes to cater for new developments or issues. It would bring a standardisation of approach to market change that would allow the industry to 'work together' to agree a way forward; this can be seen in operation in other similar network-based markets such as energy and water provision.

A formal governance arrangement is one created with a constitution, a set of rules for operation and a transparent and fair funding arrangement – based, for example, on the relevant market shares of retail CPs at a particular point in the year or perhaps on data that Ofcom already has about the relevant revenue earned by larger CPs in the market. Whilst the Office of the Telecommunications Adjudicator (OTA) has been a useful body, able to be tasked by Ofcom to investigate various industry issues, it is not a governance body in this formal sense. It does not have formal links with all relevant CPs, there are no rules to govern its proceedings or how its decisions are made and it thus lacks formal legitimacy to make decisions on behalf of the market.

Drawing on the look and feel of governance arrangements in other similar markets where services are delivered over a network infrastructure suggests that a successful governance model for switching is likely to involve two distinct levels:

- a level that deals with the mechanics of representation, funding and process; and
- a level that deals with the description of the switching arrangement – the object that the above level governs; this is likely to involve the development of a detailed rule set describing who does what to deliver the customer switches within scope of the governance arrangement. This document could be termed a 'switching code' and would be change controlled via the governance process. It would be extended and amended as necessary



via a transparent industry-owned process of proposed, discussed and agreed modifications.

We recommend that Ofcom's switching work now explicitly considers how best to develop and enforce independent governance of switching processes in order to cement the cross-industry coordination required to protect consumers' interests on an ongoing basis in this aspect of communications market processes.

The need for a market data model

Introduction

Appendix 2 has discussed the benefits of coordinated and independent governance of switching processes, concluding with a discussion on the separation between change control processes and the formal description of the retail switching processes, which forms the object that is change controlled. At any time, the current version of the latter exactly describes what market data is held, what industry flows can amend that data and the required actions from each relevant market participant in what timescale in order to formally effect a change of supplier event for a particular retail communications product provided to a particular consumer. Separately, the change control level has a set of formal processes in place which govern how proposed changes to the retail switching processes are considered and introduced.

This appendix focuses on the development of the underlying model, which gives rise to the way that switching processes work. In terms of systems analysis and design, it is necessary to have a blueprint – a vision – for how the market works in a logical sense before processes can be designed and required data items specified. It is worth noting that other similar industries where networks are used to deliver competitive retail services use this type of logical model of how the processes work. For example, in electricity, the Master Registration Agreement, managed by a Service Company (MRASCo), is underpinned by the MRASCo Model available publicly at <http://www.mrasco.com/mra-products/mrasco-model>; and the planned introduction in April 2017 of retail competition for non domestic water customers in England will be based on a Market Architecture Plan that is currently under development – see <http://www.open-water.org.uk/market-architecture-plan/>

Use and development of market models in communications

At one time, before the advent of local loop unbundling (LLU), Openreach will have had such a model to underpin the processes used to allow retail switching using the required regulated wholesale line rental (WLR) product via the 'equivalence management platform' and its predecessors. It will have had an overview of the whole competitive retail market via its own internal database and reporting tools and was in a position to impose on other CPs the processes they had to follow and the interfaces to be used in order for them to gain retail customers. With the advent of LLU, that market overview was broken, as acknowledged in Ofcom's August 2013 document, and no one party now has an overview of the market or a control on the development of switching processes used. This situation has already led to various types of consumer harm: multiple switching processes; consumer difficulty and confusion; lack of consumer awareness of the implications of switching; erroneous transfers; loss of service on switching; lack of platform neutrality; and the range of difficulties faced by consumers wishing to switch back from LLU to Openreach based broadband services some years ago, since the processes to facilitate this had not been designed at the time that these customers were encouraged to switch to LLU services.

Ofcom's current call for inputs considers a number of other networks and switching situations beyond fixed voice and broadband delivered over the Openreach access



network. We very much support extending consideration of retail switching in this way and believe that the ultimate aim should be that every possible type of supplier switch that domestic and small business consumers wish to undertake in relation to a retail mass-market communications product is served by processes that provide a standard GPL process for the consumer as well as standard interfaces for retail suppliers and relevant wholesalers in the supply chain. Such standardisation is precisely what a properly designed data model of the whole retail communications market can readily provide. As well as dealing with bundle switching involving pay TV, with the KCOM area network, with the cable network and with mobile networks, we believe that any new fibre-based networks serving mass market customers and BT's own fibre to the premises (FTTP) access network should be brought into scope in due course as well.

A data model that explicitly allows for the existence of other networks (which the original Openreach data model will not have been designed to do) will also logically and efficiently allow for 'front end' switching processes that the retail CP interacts with to be designed in a stand-alone manner so that they work in the same way, no matter what network the customer is switching to, from or within. Similarly, efficient standardisation is brought into the systems that relevant wholesalers and access networks use to initiate and acknowledge the switch. The concept of a central 'hub' is often used to deliver this standardisation: rather than retailers building a one-to-one interface with every network in scope to deliver switching systems, they build a one-off interface to the 'hub' and then, as each network is taken on to the market switching systems, a one-off interface between it and the hub is also built. In logical terms, retailers and their wholesalers send flows to a central point (the hub) and the hub sorts out the derived flows that need to be sent to other CPs, including the relevant access networks. It can be seen that this approach provides economies of scale, as well as minimising effort by existing market participants, as new networks come into the scope of the market systems.

SSE has previously discussed a potential data model for the communications markets with Ofcom and others in the industry. For ease of reference and clarity, some slides outlining the idea are set out in Appendix 4. Although the term 'database' is also used in these, there is no suggestion that a new centralised data repository necessarily has to be created as part of this approach. What can be re-used from existing systems and processes and what should be newly developed are implementation considerations distinct from the logical cohesion of the final data model. It is convenient to consider, however, that in some form, there will be an auditable and addressable record of which supplier is providing which products to each customer on each network in scope at any point in time and this is the 'database' element of the 'hub/database' description used in the slides.

What the data model approach does require is a formalisation of industry participation and rigour in how certain necessary data items are described. The following entities would be expected to be formalised: industry participant identification (who is switching the customer?); switchable product set (what is being switched?); network termination points (which bit of the network serves this customer?); premises identification (where is the bit of network that serves this customer?); and network identification (which network is the customer being switched on/from/to?). Currently, there is no formalisation, no data model and no overall oversight of the switching processes that are happening in the retail communications market. We believe this illustrates why current switching processes are

not sustainable. Apart from the harm that, in our view, has been and is continuing to be caused to consumers, the situation is detrimental to competition, investment and market entry due to the lack of comprehensive documentation of an overall process, data model and change control framework that would give comfort and understanding to potential retail competitors and other types of investor.

Benefits of a 'Hub' model development

Throughout the August 2013 consultation, Ofcom acknowledged the capability of a 'database' approach to resolve the issues discussed. In the December 2013 statement, where Stage 2 of the planned work on switching is described, Ofcom also refers to further consideration of a 'hub and database model'. In light of this, we discuss below how a hub/database approach deals more comprehensively and in a future-proof manner with the problems identified at the consultation stage of Ofcom's switching project – particularly where these are only partly solved in Stage 1 of the implementation of GPL switching arrangements.

1. Multiple switching processes

The current problem of multiple switching processes is being addressed by Ofcom's decision to harmonise on the GPL 'NoT+' option. This decision deals with the processes that have developed up to now for current products being supplied over the Openreach copper network but going forward, it is still the case that further services – and the means of migrating to these services – could develop in an ad-hoc manner if the discipline of switching governance is not also in place. An industry hub/database approach providing standard interfaces via a uniform front end to gaining suppliers could more readily be extended to allow further copper product sets and those on other networks and technologies, than an initial bespoke arrangement that does not naturally allow for logical expansion.

2. Consumer difficulty/switching costs

The decision to move to the single harmonised GPL process will largely deal with the costs and hassle for customers of multiple processes, contact points and potential frustration of the intended process by LPs. As above, however, customers are likely to face difficulty again if ad hoc development of services outwith the main switching framework is allowed to occur over time. It is also worth noting that the costs of extending an initial implementation of a central hub/database approach will benefit from economies of scale in contrast to the alternative of CPs being required to develop new interfaces in order to 'consume' new products that has characterised the development of the industry to date. These system development costs of acquiring customers have had to be passed through to customers and our expectation is that the more coordinated approach of a central hub/database will allow these prospective costs of extending the scope of the initial implementation to be minimised.

3. Awareness of the implications of switching

Ofcom considers that improvements in the specification of the 'exit' letter will address this area of harm and we agree that this regulated letter will form a long-lived element of switching arrangements. Going forward, we believe that a further benefit of an industry hub/database approach is that it would be able to show a prospective GP an agreed set of information about the services and technology available or in use at the

relevant premises. This would enable the GP both to assess the suitability of the premises for the provision of his products and to discuss some of the implications of switching with the customer instead of all the information on the topic coming from the losing letter alone. As a result, we believe there could be a more balanced explanation for the customer and a more level playing field for competition whereby all suppliers can have access to the same agreed information about the way that the site is currently supplied with communications services.

4. Insufficient customer consent/reactive save

Standard database functions of access controls, record keeping and the facility for audit reports can provide the benefits of central monitoring of CP activity. A comprehensive hub/database is naturally set up to record the use being made of it and this can provide assured market information to the regulator or any other market authority independently of reliance on any market participant. Thus, any noticeable trends in, for example, customer cancellations by attempting gaining CP and by losing CP could provide the basis for further investigation of these two issues respectively.

5. Erroneous transfers (ETs)

Ofcom acknowledged in the August 2013 document that a hub/database approach will result in ETs being extremely unlikely and we agree that a well designed data model will uniquely identify assets to a particular geographic location. A unique line identifier (the ALID for Openreach networks) should be a key component of the hub/database architecture. The line identifier would uniquely identify assets and – when linked with accurately maintained address data – be accurate as to the postal address of those assets. It is possible for a single premises to have multiple lines but these would have different line identifiers and therefore different database entries, which could be differentiated by their attributes such as CLI. Looking ahead to scenarios where CLIs are less effective at identifying services, SSE sees benefit in access line identifiers being made available to customers on their bills – so that customers themselves could quote this number to their CP to assist with switches or house-moves. This labelling could also be applied to the communications termination sockets inside premises in much the same way as a meter number can help to identify relevant physical energy supplies.

The maintenance of address data is an important consideration for any set of market processes that control customer switching and we note that there still seem to be problems in this area for Openreach. This is a weakness in current market arrangements and a clear benefit of moving to a central hub/database arrangement is the possibility of maintaining address data in one place for the benefit of the whole market as a single source of truth. Our preference is for the access network operator to hold the master data due to their operational relationship with the geographical network but there should also be processes in place to allow the address data to be amended if better information is in the hands of any other market participant. We note, in particular, that retail CP records might be accurate for billing address but do not have the same incentive for accuracy in the site address where the service is supplied, if this is different – whereas the access network operator should have an operational interest in address accuracy.

It is also worth noting that a refreshed approach to address accuracy should take into account a reference code known as the UPRN (Unique Property Reference Number) as maintained by the National Land and Property Gazetteer database¹. This unique property reference is increasingly used by government and commercial organisations to identify premises and, in our view, could help to firmly link premises to assets when used in a data model in conjunction with the access line identifiers used by different networks as these come into the scope of harmonised switching arrangements.

6. Loss of service

Loss of service on switching is an important issue that should not have been allowed to become a worry for customers in the communications market. As reliance on communications technology continues to grow (e.g. in personal finances and healthcare management), our view is that communications infrastructure is assuming the characteristics of a basic utility service. While the relevant statutory backgrounds might support a 'service always on' approach in other markets such as electricity and water, we believe that this approach could develop commercially in the communications market if the same hub/database framework for comprehensive identification of services and supplier(s) to premises as underpins those markets is adopted for communications.

7. Lack of platform neutrality

The August switching document acknowledged that a hub/database approach could be extended to accommodate future technologies and other infrastructures as required more readily than the NoT+ process specified for Stage 1. We agree with this and consider that equal treatment of all products and infrastructures in scope is a strength of the hub/database approach. It naturally allows a uniform front end for customer; similar wholesale processes for GPs and LPs; and is based on a data model where the level of abstraction readily allows other access networks as well as other products to be brought within scope. In this approach, there are also economies of scale: once the coordinating central hub, database and interfaces are established, new access networks can be added without all CPs having to build bespoke interfaces to them – the underlying data model represents one logical view of the whole market, as this develops over time. It is a vision that we have sought to illustrate in the slides describing the data model set out in appendix 4.

8. Other advantages

Below we set out brief reference to other advantages that a coordinated central hub/database approach is likely to bring.

- In a hub/database approach, a record of a customer's previous supply arrangements is readily available. When combined with appropriate market processes, this would facilitate speedily returning a customer to his previous arrangements where necessary and sorting out billing matters.
- It would avoid the need for each CP to maintain their own set of information about network termination points they serve – they could instead make more use of centrally held market data, which may lead to greater efficiency across

¹ See <http://www.nlpg.org.uk/nlpg/link.htm?nwid=19> for more information



the market.

- Inventories for billing of wholesale services could be linked to independent market data, leading to potential efficiencies and greater accuracy.
- It would avoid the need for tactical fixes such as the MPF helpline, whose workings are not, in any case, subject to independent control.
- It provides a discipline for new entrants to the market who would undergo formal take-on procedures via the governance mechanism so that they can interact effectively with the central systems – this also provides assurance to other market participants that new entrants are supervised at take-on.
- A database structure provides a means for new networks – for example, the range of new fibre networks – to join a coordinated switching system and allow their connecting customers to access a range of service providers.
- It provides an ongoing coordinating force for product and market development. Any new product proposals on ways of doing things would have to be assessed in terms of how it affects the switching processes and reference data requirements – thereby ensuring that the switching experience of customers is prospectively taken into account and disruption avoided when changes are introduced to the market.

Proposed outline data model for retail communications market

Basic Features of GPL switching model

What the model does do ...

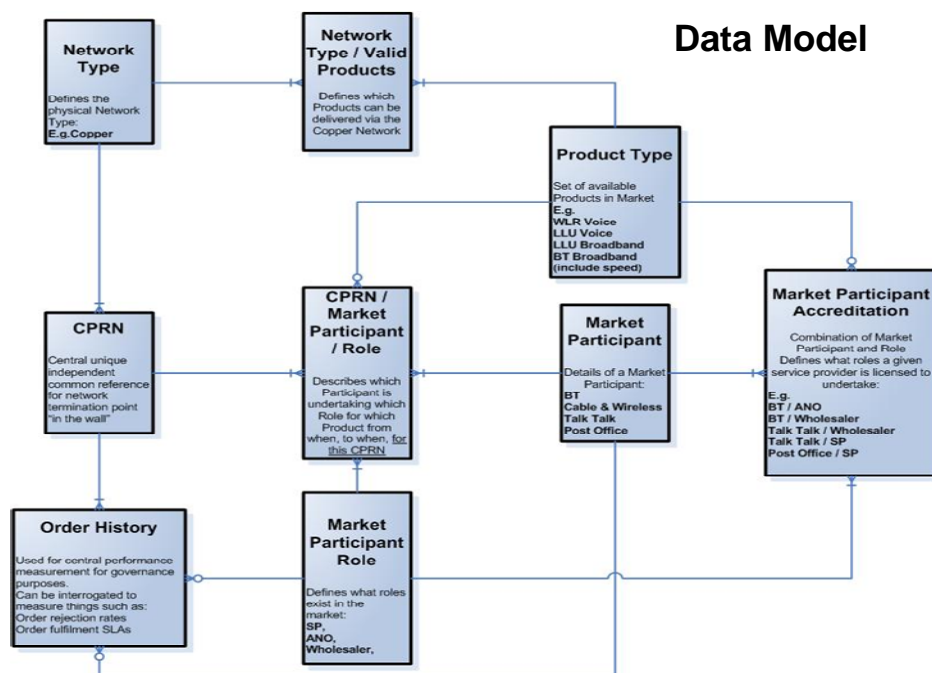
1. The model is based upon a robust & flexible **data model**, which is easy to apply to both the Openreach copper network and, in due course, to other networks e.g. cable, fibre, mobile, Pay TV or other emerging networks – bringing the benefits of GP switching at the earliest opportunity to these further areas.
2. Uses a **database** – similar in concept to a title registry
3. Uses a unique reference code for communications network termination point (NTP)
4. Provides an enduring view of NTP status – location, technical options for service delivery, participants involved, actual services provided.
5. Allows actual behind-the-scenes switching process to happen as at present using Openreach EMP
6. Independently governed messaging systems keep the database updated so that a 'single source of truth' is available to authorised users
7. Customer interacts with their chosen GP, who can enquire into relevant characteristics of customer's NTP in order to provide good advice on switching.

What is the Data Model?

The **data model** describes the logical organisation of how data can be used and represented.

If you get it right, the model can be long lived and can cater for different market situations and developments - it will be flexible enough to apply to other network arrangements.

Our data model is organised around a unique reference for the comms NTP in the property. We have used the generic acronym Comms Point Reference Number (CPRN). For copper, this is equivalent to the BT Openreach Access Line ID (ALID)



Description of the logical Database

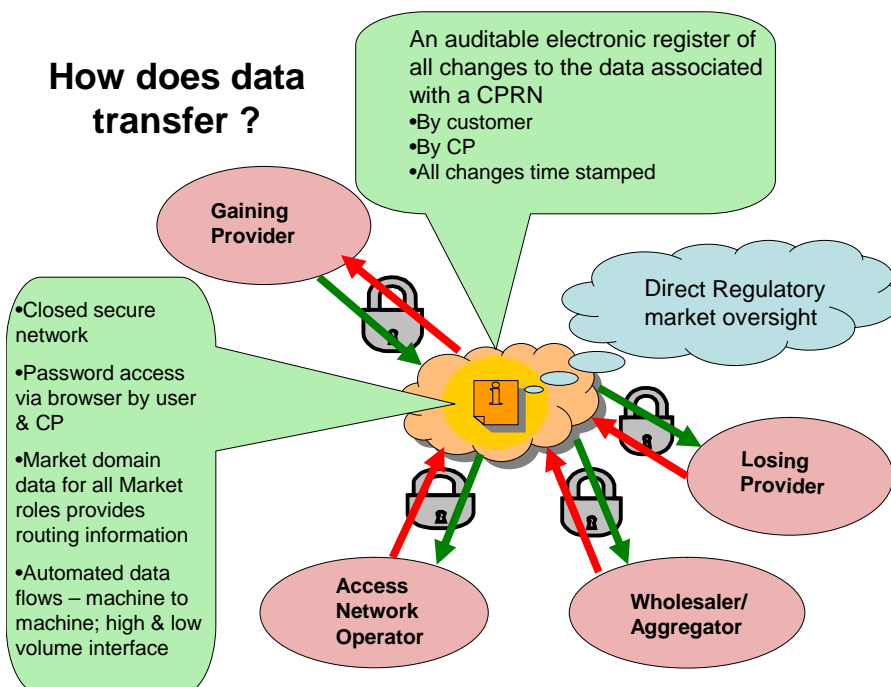
The **database** in our model has the following key features:

- An inventory of all CPRNs in the UK for all participating networks
- Contains regularly updated Market Participant details for all participants and roles in scope
- Stores relevant service details against CPRNs for all market participants
- Uses a closed, secure data transfer mechanism
- Uses defined, standard data flows, where all participants use the same language to communicate with the database
- Provides web browser access for all market participants to see details for which they are authorised
 - Logon credentials identify the individual agent, the participant and the market role.
 - An audit trail of use is maintained for all transactions and enquiries
- Thus provides a regulatory/governance “eye” on the entire marketplace
- Forms a central ‘hub’ linking all players in the communications market

Database table – example schematic

CPRN	Role	Service Type	Market Participant
1234567890001	SP	WLR Voice	SSE
1234567890001	Wholesaler	WLR Voice	BTW
1234567890001	ANO		Openreach
1234567890001	SP	Broadband 10Mb	Tesco
1234567890001	Wholesaler	Broadband 10Mb	Pipex
1234567890002	SP	LLU Voice	Talk Talk
1234567890002	Wholesaler	LLU Voice	Talk Talk
1234567890002	ANO		Openreach
1234567890002	SP	Broadband 10Mb	SSE
1234567890002	Wholesaler	Broadband 10Mb	Thus
1745678930001	SP	LLU Voice	Talk Talk
1745678930001	Wholesaler	LLU Voice	Talk Talk
1745678930001	ANO		Kingston
1745678930001	SP	Broadband 10Mb	SSE
1745678930001	Wholesaler	Broadband 10Mb	Thus

Red and Blue show how CPRN number ranges can be allocated to ANOs



How Does this GPL model work? - process

A customer wishing to switch a service would provide the CPRN to the GP, or address/service details that allows the GP to identify the CPRN on the database, thus uniquely identifying the point at which the service(s) to be switched are located. CLI will also provide help in identifying the CPRN – but not in the longer term.

Views onto the database allow the technical details and capability of the NTP to be assessed by the GP agent for compatibility with the service he can provide. Once the GP agent has then had the discussion with the customer to establish that the customer wishes to switch service X to the GP, he puts a “service gain” request through normal ordering processes - the CPRN is added to this

Back End Process

- Relevant data flows are sent to the database in parallel with normal ordering processes, containing only necessary data items such as future switching date.
- The database records the pending date and other relevant information.
- Once the physical service switch is confirmed by the ANO, the Hub updates its stored reference information, such as services and participants, against the CPRN.
- Transaction history is maintained by the Hub and can be used for various reports on SP activity and order fulfilment performance over the market as a whole.

Other Considerations

1. Independent running of the database and ownership of the model
 - This is seen as important for market confidence, allowing the switching system to be run equitably by the industry for the industry
 - It provides transparent market control of market systems
 - It allows democratic control of future developments
2. Governance is needed to cover administration, funding, representation and change control
 - Different models for this exist in other utilities
 - Funding could be proportionate to market share of NTPs in scope in order to be competitively neutral

Future Development

Cable/Fibre/Pay TV/Mobile or new entrants

The strengths of this proposal are the Hub and the flexibility of the underlying Data Model.

Having established a standardised central architecture which provides a single view of all telecoms services on the BT Openreach copper network, using CPRN as the universal unique reference, the model can be extended to handle specific entities in other networks – for example the IMSI for mobile networks.

There will no longer be a need to introduce bespoke migration processes as and when new networks emerge – there will be one standard interface to the marketplace and the data model can be adapted to cope.

Once a premises can have more than one CPRN from different networks, the need for a robust property referencing becomes essential and this will need to feature in the adapted Data Model, along with other network specific entities such as IMSI.

To extend this model to Fibre, the CPRN would represent a unique combination of ALI/Port/VLAN. It may be feasible to consider labelling CPRNs on the NTE in customers' premises to assist in identification of the correct comms socket – in much the same way as electricity or gas meter numbers can act as a useful additional co-ordinate to confirm the identity of the relevant supplies.

Conclusion

Key aspects of the GPL switching model we have outlined:

- A flexible data model, which is capable of simplified use for immediate application to the Openreach copper network **but is also future proof** in its detailed form, especially for inter network operation and the proliferation of fibre ports/VLANs
- Would be independently controlled at the centre on behalf of the market
- Would have transparent Governance
- Use would be audited and visible to the Regulator and/or Governance Authorities
- Has been done before e.g. water, gas, electricity
- Has the potential to complement other market processes such as Number Porting