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**ERG Report on the regulation of access products  
necessary to deliver business connectivity services**

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## 1 INTRODUCTION

All NRAs have put in place an extensive package of regulatory measures under the European Framework in order to control the market power of the incumbent and release the full benefits of market liberalisation. The general approach has been to regulate in upstream (wholesale) markets so as to facilitate effective competition downstream, especially in markets for the supply of services to end users. This approach has been effective. There is a considerable degree of retail competition and consumer choice, continuing to grow in most markets and most member states. This is evident from retail market share statistics, which tend to show a considerable and growing share of mass market services supplied by alternative suppliers.

For the moment, however, regulation of a number of wholesale markets continues to be necessary to sustain retail competition. NRAs are required under the Framework to carry out regular Market Reviews to ensure that the package of regulatory measures continue to be appropriate in the light of market developments. And ERG is committed to regular reviews of best practice in regulation so that lessons from recent experiences can be learned and disseminated speedily.

The investigation described in this report relates to one particular aspect of wholesale regulation – whether businesses with “high end” needs for electronic communications services have as much choice and quality of supply as would be expected from a competitive market. If not, this might indicate the need for some adjustments to wholesale regulation, considering the types of wholesale service particularly relevant to this segment .

There is an immediate problem – to understand what we mean by “high end” needs. Businesses have very different needs, according to the nature of the business. Some businesses, most likely to be fairly small, may be served very adequately with services designed and configured to provide economical services to the mass market. Larger businesses tend to have more complex and sophisticated needs. But on the other hand, such needs are not limited to large companies. Smaller companies, especially those operating in certain industry sectors, may have very sophisticated needs.

It is apparent, therefore, that there is no clear line separating the needs of businesses from residential customers or between different types of businesses. Rather, there is a continuum of needs. Nevertheless, conceptually it is possible to distinguish between “high end” businesses which need to purchase a package of services of high quality and specification, in many cases over a dispersed geographical network, and “standard” users who are well served by economical services designed for the mass market.

ERG has received representations from ECTA, INTUG and EVUA that there is inadequate scope for competition in the supply of services to multi-site businesses where the sites are geographically dispersed, possibly within a single Member state but possibly spread through several MS. The stated reason is the inadequacy of current wholesale regulation to support competition in retail supply to this market segment. The segment identified by these stakeholders is certainly well-defined. Although any problems such companies experience in competitive supply would tend to be experienced also by some smaller companies, ERG has found it useful to use this segment as a proxy for those with “high end” needs in analysing the issues.

Similarly, there is no clear line dividing the wholesale access remedies suited to “standard” or “high end” users. Some are more or less equally relevant to all segments of the market. Others may be designed with the high end in mind but will be of some relevance to other points of the continuum.

Consequently, in this work, ERG has investigated whether there is scope to do more to increase competition at the “high end” of the market, while recognising that any adjustments to regulatory approaches would be likely to have wider impact.

Given the typically large value of spend on communications services by such end-users, significant competition in supply would be expected in a well-functioning market. And indeed, a considerable degree of competition is evident. One of the first areas of the market to be liberalised was the supply of data services, particularly to large corporate customers. Business data needs are often supplied via dedicated capacity (leased lines) where the incumbent's own services are in competition with services provided by alternative operators. The latter could be using their own infrastructure (most likely to be economically viable in business districts of cities and/or on trunk routes) or on the basis of wholesale services provided mainly by the incumbent but also by other operators with relevant infrastructure. As noted above, this retail competition is usually sustained by wholesale regulation, especially by extensive regulation of leased lines. In practice, where large multi-site users wish to purchase their electronic communications services in a single package, it would be unusual for there to be more than 1 or 2 suppliers which are able to supply the complete package using only their own infrastructure. This applies not only to multi-national users but also to a very great extent to users whose premises are confined to one member state.

So the question to be investigated is not whether some retail competition for supply of services to this segment is in place – this is evident. Rather, ERG has found it timely to investigate whether competition works as well as it might in the “high end” segment, taking into account the considerable buyer power that the larger companies in this segment may enjoy. Basic regulatory measures are in place and generally working well. Any adjustments which might be appropriate for “high end” needs are likely to be to the more complex and sophisticated measures which, by their nature, are less easy to specify perfectly or to assess. Moreover, considering the economic significance of this market segment and the contribution of transnational players to the development of the Single Market, it therefore deserves a fair share of regulatory attention.

While acknowledging the importance of mobile usage to this segment, the focus of this paper is on fixed networks as, in practice, regulation of mobile networks is relatively limited under the Framework.

## **2 MARKET DEFINITION IN THE PROVISION OF CORPORATE SERVICES**

A preliminary analysis has been made of the specificities, from a market definition perspective, of the provision of services to corporate end-users. The main issue to investigate is whether, looking at the demand/supply structure of the provision of electronic communication services to corporate and residential users, significant differences between user groups exist that would justify the definition of separated markets (or, alternatively, the definition of one single market with remedies tailored to the different segments, in case

more subtle differences exist that are not sufficiently significant to justify defining separated markets).

The preliminary analysis is set out in Annex 1. It is apparent that in order to serve “high-end” businesses, wholesale products are needed which are different from those used to serve the mass market. These products may differ in specification or in terms of the higher service quality required or both. It is also clear that many firms in this segment prefer to buy their services on a national basis, rather than in the form of a number of more local packages. While the preliminary work described in Annex 1 does not lead to firm conclusions as to the impact of these features on market definition, this is an area which appears to merit further investigation. In particular, there may be common guidelines on market definition which could be applied by NRAs in considering whether to segment the market along the lines above.

### **3 POTENTIAL COMPETITION AND REGULATORY PROBLEMS**

This section sets out some categories of competition and regulatory problems that, hypothetically, could affect high end businesses. It is for each NRA to consider if such problems exist within its jurisdiction and how to deal with them, in accordance with its national circumstances and the Framework.

#### ***Single bottleneck infrastructure, no wholesale services available to others***

This is obviously the most serious case. It would arise where particular wholesale network services are unregulated and the owner of the relevant infrastructure chooses not to make it available for use by others. Since regulation of leased lines and bitstream services is now standard, it should not be a common occurrence for current generation networks, but this presumption will need to be reconsidered in the context of next generation access networks.

Exceptions include the following:

- Where the national market for wholesale trunk leased lines is unregulated but only the incumbent covers some individual routes and wholesale trunk segments are not available from other network operators on these individual routes.
- Where the monopoly local access infrastructure is owned by a market player without SMP (this might occur within the context of a single national market, for example, in a business park where the infrastructure has been provided exclusively by another player).

#### ***Single bottleneck infrastructure, wholesale services exist but not of suitable specification***

This could be a case where regulation may not fully address high end business users' needs. It could arise where the incumbent is not required to provide a reasonable range of “business grade” wholesale services, including in regulated markets. The incumbent may or may not provide retail variants of the “missing” wholesale services. If it does, there could be an issue of discrimination towards competitors at the wholesale level, because the incumbent could supply to itself on more favourable terms. There could also be detriment to consumers arising from the dampening of competition (less choice, higher prices, less good

service). At the retail level, the service experienced by the end-user could be more expensive than necessary, degraded in some way or both.

ECTA/INTUG/EVUA have expressed concern that this problem occurs in practice. Specific problems cited by ECTA include:

- Wholesale Ethernet service not available – competitors can only in practice provide dedicated capacity via more expensive traditional leased lines
- Business-grade variants of wholesale bitstream service not available (e.g. low contention ratio, increased upstream speed) – competitors in practice forced to provide connectivity either by leased lines (to meet the service specification) or to offer a low specification service on the basis of the available “mass market” wholesale services

***Single bottleneck infrastructure, service level agreement for wholesale services inadequate***

This may also occur where regulation does not fully address high end business users’ needs. End-users will typically specify a certain level of service for their suppliers and require compensation for sub-standard service. To meet these requirements, the suppliers need to own or lease infrastructure and systems with the necessary capability and obtain a guarantee of service for the wholesale inputs that they purchase.

A problem could arise where the incumbent is unwilling to offer a premium service level agreement. Where the incumbent is capable of providing service at the premium level but does not do so (either at wholesale or retail levels), the end-user’s specification could not be satisfied. Where such a service is provided at the retail level but not at the wholesale level, any competitor could face the additional commercial risk of being liable for compensation payments to the end-user without being able to receive offsetting compensation from the incumbent. This would put them at a competitive disadvantage relative to the incumbent – they would need to raise prices to offset the risk of compensation payments. The incumbent, by contrast, would have no need in these circumstances to allow for compensation in its costing as it would know it is capable of meeting the level of service demanded. Apparently such issues often include an element of information asymmetry.

Again, ECTA/INTUG/EVUA argue that this problem has arisen in practice.

***Single bottleneck infrastructure, information asymmetry***

The incumbent normally has readily available all the information it requires to enable it to provide a retail service. A problem could arise where competitors relying to some extent on the incumbent’s network may lack key information. It could be unclear, for example, how quickly (or indeed whether) they can obtain a connection to the incumbent’s network at a particular location. This could pose a significant problem where a bid has to be prepared according to a tight deadline. This could again lead competitors to increase their bids, to guard against the risk of compensation payments to the end-user. Alternatively, under some circumstances it might lead to reluctance on the part of competitors to bid, to avoid gaining a reputation for late delivery. In any case information asymmetry could increase a competitor’s costs (transaction costs, risk premium etc.).

### ***Multiple infrastructures***

Where there is more than one infrastructure, it would be expected that the above problems would be less visible, if not disappear completely. The extent to which they will recede cannot be predicted using economic theory. There will probably never be a large number of alternative infrastructures available. Provision is likely to be oligopolistic in nature. This may in practice lead to either a high degree of competition or very little. So the question whether the above mentioned problems will prevail in oligopolistic markets rather depends on the market conduct of the operators which own infrastructure.

### ***Multiple infrastructures, no merchant market***

Even where there appear to be enough players in a market to suggest that supply of a service will be competitive, suppliers may not supply on a wholesale basis to companies because they are unable to meet the specification, or for other strategic reasons. Referring to the diagram in Annex 1, there may be several suppliers of bitstream services at a particular exchange based on their own infrastructure or on unbundled loops. This would tend to suggest that the wholesale and retail broadband access services would be competitive. On the other hand, if some of those suppliers were neither active in the supply of corporate networks nor willing to supply to others for that purpose, the degree of competition in corporate network connectivity would be significantly less. The same phenomenon could arise in respect of leased lines (for example, in the diagram in Annex 1, if the green and red suppliers were not prepared to supply to one another).

In the event that none those suppliers have SMP, there would not be much that NRAs could do under the current framework.

### ***Degree of user detriment arising from above issues***

It is impossible to generalise about this. One of the determining factors would be the relative importance of network connectivity and value-added services in the overall package required by the end-user. If the value-added component dominates, imperfections in the state of competition for network connectivity could have less impact. Where network connectivity dominates, competition problems in its supply could have a much larger effect downstream. The situation could only be assessed empirically, for example by studying the number of responses to calls for tender and the distribution of market shares.

## **4 EVIDENCE**

ERG has conducted three separate questionnaires to gather evidence against which to assess the representations of ECTA/INTUG/EVUA.

Questionnaire 1 surveys the general approaches taken by NRAs to regulation of wholesale services and the degree to which business-specific issues have played a part in the market definition and design of remedies.

Questionnaire 2 deals with the extent to which NRAs apply specific wholesale access remedies, which are considered to be especially relevant to the large business segment. The list of remedies was drawn up taking into account those mentioned in the ERG Common

Positions on Wholesale Broadband Access, Wholesale Local (unbundled) Access and Wholesale Leased Lines and the ERG Broadband Best Practices (ERG (06) 69rev1 – Common position on Wholesale broadband access, ERG (06) 70rev1 – Common position on Wholesale local access, ERG (07) 54 – Common Position on Best Practice in Remedies Imposed as a Consequence of a Position of SMP in the Relevant Markets for Wholesale Leased lines, ERG (07) 53 Best Practices in Wholesale unbundled and Bitstream Access).

Questionnaire 3 deals with the experiences of large multi-site business end-users in choosing a retail supplier. This was not intended to be regarded as a statistically robust sample survey. Rather the intention was that it should provide some indicative results.

#### **4.1 Questionnaire 1 on NRAs' regulatory approaches**

The questionnaire is broadly divided into two parts. The first one asks whether NRAs have received any complaints about the provision of business services. NRAs were asked to provide the number and a brief description of complaints received as well as which services the complaints referred to.

The second part assesses NRAs' approaches to the regulation of business services. In detail the questions seek to find out whether NRAs considered any potentially different demand and supply conditions when defining relevant markets for markets 1 and 2 (old recommendation) and markets 4 and 5 (new recommendation). We also asked for the conclusions of the analysis and the reasoning behind them. Most importantly, we asked whether the analysis concluded that there was a need to differentiate between residential and business (low / high capacity) segments when applying remedies and the underlying reasoning. We also asked whether NRAs received significant representations from stakeholders in favour of segmenting a market definition into residential and business segments and/or imposing certain remedies on the business market.

#### ***Summary of responses***

##### Disputes

The majority of NRAs (18 altogether) had not received any complaints regarding the provision of business services since their first market review. Six NRAs said they had received complaints, of which one referred solely to the retail level and one solely to the wholesale level.

In complaints on retail SMP, an incumbent's prices of bundles (fixed and mobile telephony) were reported to be below cost. Problems also came up because an incumbents' offers could not be replicated by competitors. At the wholesale level, problems were reported regarding the provision of Ethernet and LLU exchange capacity. Some operators requested specific, i.e. premium, services to be included in the LLU reference offer. Discriminatory conduct regarding access to the incumbent operator's bitstream services was also mentioned.

##### NRA's approach to the regulation of business services



NRAs were asked whether they considered any potentially different demand and supply conditions for different consumer groups (also regarding capacity use) at the retail and wholesale levels. Four NRAs did not make any distinction. Eight NRAs did not respond at all.

Most NRAs (in total 20) investigated potentially differing demand and supply conditions and the volume of capacity demanded. These considerations were mostly applied to markets 1 and 2 (old recommendation) at the retail level. In these markets, low / high capacity use was investigated regarding the possible segmentation of residential / small companies and large companies. NRAs used demand for leased lines and ISDN 2 and 30 as well as high traffic volumes in order to find any potential differences between residential and business users. NRAs found that customer groups were charged differently, usually the business users having to pay much higher charges than residential customers. At the wholesale level, any potential difference was examined on market 5 (new recommendation) regarding DSL for business users and ATM and IP bitstream access.

Although most NRAs examined criteria which could lead to separating markets for residential and business customers, in the end the majority did not define separate markets. Only seven NRAs defined separate markets at retail level in markets 1 and 2 (old recommendation). Limited substitutability of services offered between residential and business customers was one of the criteria for market segmentation, as well as differing access for high and low capacity. At the wholesale level, substitutability of tailor-made offers and standard offers were investigated and found to lead to differing market conditions. A distinction between high and low quality WBA was also the reason for segmenting markets. But in total only very few NRAs defined separate markets at the wholesale level.

When it comes to remedies, the majority did not apply different remedies for residential and business users. Only five NRAs said they differentiated markets with regard to remedies; eight did not respond at all. At the wholesale level, price regulation and different obligations were imposed regarding the prices of services depending on whether they were running on fibre or copper loops. Guaranteed bandwidth for business users and an obligation to notify ex-ante offers below a specific revenue level were applied to SMP operators as well. At the retail level, a transparency obligation had been imposed in one of the member states' markets for residential users only, but not in the non-residential market.

During market analysis procedures, most NRAs (15) did not receive significant representations from stakeholders favouring the definition of different markets for residential and business users and/or imposing different remedies on these markets. Five NRAs did receive complaints, although in one member state, complaints were not filed as part of the market analysis procedure. In another member state, two alternative operators asked for new "premium" service levels to be included in the reference offer for ULL. There was also a request for the NRA to consider the geographic distribution of demand, provision of integrated services, software applications and availability of different types of access when analysing markets.

### ***Lessons learned***

Regarding the number of disputes dealt with by NRAs, there does not seem to have been a pressing or strong demand by users or operators for segmenting different markets or defining a specific business services market.



On the question of market definition, even though most NRAs conducted a differentiated analysis of customer groups, most came to the conclusion that separate business and user markets should not be defined. It shows that the line between residential and business customers is very thin, especially when it comes to differentiating residential users from small companies. The thin line is shown clearly in one case where a supposed business service was distinguished but has so far not found any demand from businesses. Instead market players asked for a service that was designed to serve residential customers. NRAs have mostly put residential and small undertakings into the same market, assuming that they have quite a similar demand structure with regard, for example, to capacity and quality of service. Cases where NRAs separated large business users with volumes or billing exceeding a certain level were quite rare.

A similar approach was also taken with regard to remedies. Only one NRA has taken into consideration the availability of multi-site offers that business users need. The separation of large business users indicates that consideration of specific needs for large business users, when compared to residential users or small undertakings (higher capacity, higher speeds, higher traffic volumes and higher billing volumes, as well as tailor-made offers). In order to verify this idea the specific needs of large businesses has to be analysed.

But in any case, separating an individual market for large businesses in itself does not say very much about the state of competition in the market for these services. Also, the complaints received by NRAs are confined to companies competing with incumbent operators, i.e. referring to the wholesale level rather than the large businesses as end-users. With the findings of this questionnaire it is not possible to evaluate the quality of these services either. The results of the second questionnaire, summarised below, should give a better insight, at least on the supply and the quality of these services.

## **4.2 Questionnaire 2 on wholesale remedies**

As noted above, the set of remedies considered in Questionnaire 2 was developed on the basis of ERG's previous work. The second column of Annex 2 table explains the rationale for each of the wholesale remedies covered. The main points are summarised below.

### ***General issues***

It is standard practice to require SMP players to provide a reference offer, setting out the services they offer and the associated terms and conditions. However, SMP players will often try to limit the range of services offered. Indeed demand for certain service variants may only become apparent after the initial offer is finalised. Some mechanism is required therefore to oblige the SMP player to provide additional services, where there is reasonable demand. It is likely to be unreasonable to expect the SMP player to provide any variant of any service which may be requested. On the other hand, the SMP player should not expect to be able to adopt an unduly restrictive policy.

In principle, where an SMP player provides a network service in a regulated market to its own retail business, there seems little justification for failure to provide a wholesale variant, except where an alternative wholesale service of the SMP player already provides a level playing field for competition. SMP players have a tendency to develop the retail service first and think about the corresponding wholesale input only later. This risks conferring a

significant competitive advantage on the SMP player and explicit rules to prevent it may be considered appropriate. Where, there is no such existing downstream service, the issue is whether the incumbent should be allowed to control the pace of innovation. This raises the policy question mentioned above.

So far, some NRAs may have considered that dispute resolution provides a satisfactory way of dealing with any issues arising. Where a competitor makes a request for a new wholesale service which the SMP player refuses, a dispute can be submitted to the NRA. This assumes that the NRA is empowered to resolve the dispute by ordering the SMP player to provide the service in question. This may be an invalid assumption under the new Framework where the dispute resolution powers (Art 20, Framework Directive) will be limited in scope to disputes concerning “regulatory obligations”. If there is no existing obligation to supply a particular service, it appears that the NRA may not be empowered to consider a dispute on the matter.

### ***Inadequate service level agreements***

In a competitive market, SLAs will tend to reflect a reasonable balance between the interests of the supplier and the purchaser. SMP players however have an incentive to exploit their market power by offering SLAs which limit their exposure as much as possible without much concern for the needs of their wholesale customers.

It is understandable that those providing retail services to business customers requiring high levels of service should seek SLAs which provide guarantees which go beyond what is necessary for supply to the mass market. In many circumstances it would be unreasonable for the SMP player to refuse to make such an offering.

The details of the additional level of service and the premium paid for that can only be judged case by case. A balance will need to be struck between the extent of the additional guarantee and the cost of provision. However, unduly conservative targets should be avoided as this will undermine competition. The compilation of suitable key performance indicators (KPIs) is likely to assist the NRA's judgement of the appropriate levels to set targets. For example, if statistics show that a particular service has been offered with 99% reliability, it would not generally be reasonable for the SMP player to guarantee only 95% reliability in its SLA.

### ***Information asymmetry***

Clearly, information asymmetry takes many forms. The principle that SMP operators should be required to deliver as much information to third parties on the availability and performance of services offered as is available to its own retail arm is a sound starting point. KPIs have a primary function as tools to control discrimination. But they can also have a role, in alleviating information asymmetry. In the example quoted above, a requirement to compile and make available relevant network performance statistics would reveal that the SLA offered was unreasonably conservative. SMP players often claim that the key information which would be useful for this kind of purpose is commercially sensitive. This is possible but NRAs will need to balance that legitimate concern against the benefits to competition (and ultimately to end users) of full disclosure. Sometimes a compromise approach is offered whereby the relevant KPIs are made available to the NRA but not published. This will allow the NRA to check on discrimination but does little or nothing to

deal with information asymmetry which can only be adequately addressed by a policy of transparency.

To be fully effective, KPIs need to record not only the performance achieved in respect of services provided to third parties but also the corresponding performance in respect of services provided to the SMP player's own retail business.

### ***Lack of a merchant market***

Where a merchant market does not exist in practice even though it might be expected to flourish according to theory, one possible response is to consider whether upstream remedies are in some way inhibiting the development of the merchant market. However, if this is not the case and the lack of a merchant market causes a bottleneck which is currently unregulated, to may be necessary to look again at market definitions.

For example, referring again to the diagram in Annex 1, in geographic markets where there is widespread take-up of unbundled loops by several market players, this could provide a basis for a finding of effective competition in the downstream bitstream market. Even without a wholesale merchant market, effective competition for supply of retail broadband services to users with basic communications needs (typically, residential consumers but also a number of businesses) could be provided by vertically integrated players.

However, if those players are in practice neither interested in supplying corporate multi-site networks nor in providing a wholesale bitstream service to other network operators, the local loop would be a bottleneck in the provision of corporate networks to multi-site customers. It would seem in these circumstances that effective downstream competition for the supply of services to multi-site businesses may necessitate wholesale access remedies, even if no such remedies appear to be necessary for the mass market segment. This raises the questions of market definition discussed earlier.

### ***Lessons learned***

Annex 3 displays simple pie-charts analysing the results from Questionnaire 2. NRAs completed the questionnaire in full. The results show that NRAs have quite a diverse approach to applying wholesale access remedies in SMP markets.

The most striking example of this relates to wholesale line rental, which a slim majority of NRAs that responded require the SMP provider to offer. Further analysis would be needed to understand the reasons for this. A WLR remedy does most to promote competition in areas where there is little or no unbundling, usually because of insufficient density of users. It may be that NRAs that do not apply this remedy consider that it would provide little extra competitive pressure in their national circumstances.

This line of analysis illustrates a more general point. NRAs can sometimes achieve the same results in different ways. One route rather than the other may be more natural in the national circumstances. But this should not matter if the end result is much the same. It follows that the fact the wholesale access remedies are not uniformly applied by different NRAs in the corresponding SMP markets is not a problem in itself. The question for ERG is whether this diversity is responsible for variations in competitive intensity, as ECTA has also argued.

There is an important question about whether there is either economic or legal justification for the NRA to impose such a solution. The degree of detriment, however inconvenient for certain suppliers, may be insufficient to make intervention by the NRA proportionate. In other circumstances, it may seem impossible to cross the legal threshold of dominance in the relevant market defined (this may especially be the case in an oligopoly scenario) even where detriment is apparent. However, for the remainder of this report, it will be assumed that the wholesale service in question lies within a regulated market and appropriate intervention is possible.

The analysis in Annex 3 relevant to these points is not definitive. A deeper analysis would be necessary to draw firm conclusions. But some provisional conclusions are apparent.

The general non-discrimination obligation is applied almost universally and an obligation to produce a Service Level Agreement (SLA) is very commonly applied. The question is whether these by themselves are effective at preventing discrimination. On the face of it, a number of wholesale access remedies which appear to be complementary to the above measures, by virtue of helping to enforce compliance with the principle of non-discrimination, especially in the “high end” business segment, are missing from the remedies applied by a number of NRAs. For example, several NRAs report either that they do not require the production of Key Performance Indicators (KPIs) relating to the SLA or do not require the SMP player to deliver KPIs in respect of self-supply. In the absence of these, it would appear difficult to know whether or not the incumbent is favouring its own business in its supply of the wholesale service in question.

An issue of a different nature arises in respect of wholesale migration services. Especially in the business sector, entrants cannot usually rely on a growing market in order to build significant market share. For that, they will need to win customers from other players. This is likely to be difficult to impossible in the absence of an effective and effective migration process as “high end” business customers are unlikely to tolerate the cost and inconvenience of significant downtime. In this area, there appears to have been some progress by NRAs since the 2007 ERG Monitoring Report on conformity with ERG Common Positions in broadband markets, at least in the bitstream and unbundled access markets. However, for leased lines, the situation is very different with few NRAs having put migration obligations in place.

The differences in national approaches raise one policy question. Some NRAs take the view that SMP players cannot be required to deliver services other than those which are the same as – or substantially equivalent to – the services which they supply to themselves. Others take the view that SMP players can, subject to a test of costs and benefits or a more general test of proportionality, be required to provide “new” wholesale services. The rationale for this is to prevent the SMP player from gaining absolute control over the pace of innovation downstream. This difference of approach seems to explain why some of the wholesale access remedies are not imposed by some NRAs. Examples include the obligation to supply new services on reasonable request and the obligation to provide different grades of wholesale service. This is a fairly fundamental question which deserves further discussion.

ECTA advocates functional separation as a suitable tool to deal generically with problems of discrimination. However, most NRAs currently do not regard it as their preferred solution, certainly not to address a problem in one particular market. This paper has therefore not considered the availability of a functional separation remedy.

### 4.3 Questionnaire 3 on retail market experience

INTUG kindly agreed to act as distributors to their member associations (and then onward to member companies of those associations) of a short questionnaire aimed at getting indications of corporate end-user preferences and experiences. 154 responses were received. Of these, about 70% are multi-national; 60% had 11 or more sites and 75% more than 250 employees.

However, since 114 of these responses were returned by one national association from a medium-sized member state, it would be hard to argue that the responses are statistically representative of European “high-end” end users as a whole. Nevertheless, some interesting patterns emerged which generally provided a degree of independent support for the analysis described above. Some simple pie-charts are presented in Annex 4

#### *Summary of responses*

The first few questions attempted to gather evidence on user preferences. Slightly over half the group prefer to buy their electronic communications services from a single supplier. Although the questionnaire did not go deeper on this point, logically, the percentage buying their services within any one member state on a national basis (as opposed to a number of local packages) would be higher. There would be various reasons for this. For example, some users need a highly resilient network so need (at least) dual supply for that reason. However, they may still buy on a national basis from each supplier.

By contrast, a clear minority prefer to buy an integrated package of communications and corporate IT network. The majority seems content to handle any necessary systems integration in-house

For those who prefer a single supplier, about half felt that they could identify a reasonable number of suppliers to compete for their business. A similar number reported either that the incumbent was the only credible supplier or that there was at most one credible competitor.

For those who sometimes buy different packages from different suppliers, over half reported that they could not always find fit-for-purpose offers to compete with that of the incumbent.

About half reported that the majority of their services were supplied by the incumbent. Logically, the corresponding market share at the wholesale level would be higher, perhaps significantly higher. As noted above, alternative suppliers will often need to make significant use of incumbent wholesale services in order to put together a complete retail package.

#### *Lessons learned*

While for the reasons mentioned above, the results should be treated as indicative rather than conclusive, they do give rise to concern. The segment of the market inhabited by these respondents should be fiercely fought over. Contracts are often large and customers generally are prepared to pay for quality service, rather than being concerned mainly with the lowest possible price.

Yet this theoretical analysis is not consistent with the results obtained. On the contrary the results suggest that the intensity of competition is by no means vigorous. Combined with the results from Questionnaire 2, this provides a good reason to look further into whether wholesale regulation is fully satisfying the needs of this market segment.

#### **4.4 Preliminary conclusions from the questionnaires**

This exercise has not proved or disproved that there is a lack of effective competition for supply of services to multi-site large businesses.

It has identified that high end business users, in particular multi-site large businesses, tend to have different needs from other users in terms of connectivity and ancillary services. Some of them might prefer to use a single supplier for their electronic communications services and may look for a bespoke solution to a corporate network, rather than purchasing individual access services for each location. Others prefer to buy these services separately, relying on in-house systems integration. There are also undertakings which are well satisfied with “mass-market” products designed mainly with residential consumers in mind. Looking at this variety of needs makes it quite difficult to draw the line between high-end and standard services. Nevertheless high end business users tend to look for “higher grade” services and for premium service level agreements which guarantee shorter delivery and repair times than those which are common in supplying the mass market.

Individual NRAs may be able to identify the dividing line more easily, as there is a possibility that any national dividing lines do not coincide. Nevertheless, this is an area which suggests further investigation to see whether common principles on market definition could be identified to inform NRA exercises.

In particular, the main issue to investigate is whether, looking at the demand/supply structure of the provision of electronic communication services to corporate and residential users, significant differences between both user groups exist that would justify the definition of a separated market to some or all business customers (or, alternatively, the definition of one single market with separated remedies, in case differences exist but no sufficiently significant).

Regarding the imposition of remedies, ECTA has sustained the part of its case that wholesale access remedies applied by NRAs are not uniform – or even approximately so – across Europe. That does not settle anything in itself, however, since there are often different ways of achieving the same result.

A general non-discrimination obligation is applied almost universally. Some other obligations, for example, the imposition of SLAs, are applied in the great majority of cases.

But in the case of other remedies which appear to be of significant value in promoting compliance with the non-discrimination obligation, the incidence of application is lower. For example, an obligation to produce Key Performance Indicators which allow a comparison between the levels of service provided by the SMP player to its own business and the level provided to third parties is applied in only about half the cases surveyed. In the absence of such statistics, enforcement of non-discrimination in service levels will be difficult and slow.



Efficient migration processes are often regarded as an essential component of a well-functioning wholesale market. Without them, end users cannot easily transfer their business from one supplier to another without the risk of significant downtime and cost. While the possible gaps in regulation identified in the 2007 ERG Monitoring Exercise on conformity with the Common Positions in the Broadband Markets appear to have been reduced in scale in the areas of bitstream and unbundled access, there still appears to be a large gap in the area of leased lines.

It would therefore be appropriate for ERG to pay close attention to the special needs of “high-end” business end users, in carrying out its planned monitoring exercises in relation to the Common Positions on remedies in the relevant wholesale markets. These should reveal more about the reasons for national variations in approach. As set out in the Report on the elaboration and monitoring of Common Positions (ERG(09)36), the need for revision of the Common Positions will be considered. In the meantime, the analysis in Annex 1 can be used by NRAs as a starting point for consideration of the need for “high-end” wholesale remedies in any forthcoming Market Review of the relevant markets.

The differences in national approaches raise one policy question. Some NRAs take the view that SMP players cannot be required to deliver services other than those which are the same as – or substantially equivalent to – the services which they supply to themselves. Others take the view that SMP players can, subject to a test of costs and benefits or a more general test of proportionality, be required to provide “new” wholesale services. The rationale for this is to prevent the SMP player from gaining absolute control over the pace of innovation downstream. This difference of approach seems to explain why some of the wholesale access remedies are not imposed by some NRAs. Examples include the obligation to supply new services on reasonable request and the obligation to provide different grades of wholesale service. The underlying question is fairly fundamental and deserves further discussion.

## **5 ERG plans for future work**

ERG is planning to follow up the work described in this document with the items set out below. It welcomes comments from all interested parties on those plans. Comments on how best to pursue them would also be welcome. ERG will arrange a workshop to discuss the issues during January 2010.

1. ERG plans to investigate whether there are any common principles of market definition which could be applied by NRAs in considering whether to define a business market (or, some variety of “high-end business” market) for the purposes of their Market Reviews. This will include consideration of the effect of geographic segmentation of the market and of the application of differentiated “business focused” and “mass market focused” remedies within the context of an unsegmented market.
2. Pending the outcome of this further work, ERG has noted the absence, to different degrees in different cases, of wholesale access remedies which have considerable potential to be helpful in enforcing non-discrimination. These may in particular prevent SMP players from absolute control over the pace of downstream innovation



and improving the underlying conditions for competition, especially in the “high-end” business segment. NRAs have committed to place a special focus on competition in this segment in their forthcoming analyses of the relevant markets, in particular their Market Reviews carried out in accordance with the Framework Directive.

3. ERG postponed its monitoring exercise planned for 2009 into the application of its Common Positions on remedies in broadband and leased line markets, pending this exercise. In carrying out the exercise in 2010, ERG proposes to pay particular attention to the remedies especially relevant to “high-end business” applications.
4. ERG plans to consider further the question of whether – and if so, under what circumstances - NRAs should be entitled to impose on SMP players proportionate and objectively justifiable obligations to supply services which they do not at present supply to themselves. This question is a general one which goes well beyond the scope of regulation of business services.

## **ANNEX 1: PRELIMINARY ANALYSIS OF MARKET DEFINITION ISSUES**

In order to understand what market(s) are relevant to this discussion, both the retail and the wholesale scenario in the provision of business services will be addressed. It is necessary to define the retail services used by businesses, identifying the differences with residential services, in order to derive the related wholesale markets where obligations are imposed. The analysis of the wholesale level will give an insight into the obligations to be imposed (a full description of the possible obligations is covered by section 2), as these are usually related to this point in the value chain. Additionally, the relevance of the geographical scope will be addressed, in order to take account of the lower economies of scale faced by operators focused wholly or mainly on the corporate sector.

The technical aspects of the feasibility of a wholesale business definition will not be covered.

### **Analysis of the retail services supplied to multi-site business users**

#### ***Demand structure***

When considering the demand structure for residential and business users, it is difficult to draw a clear line separating the needs of businesses from residential customers or between different types of businesses. Nevertheless, it seems that a main differentiating feature lies in the quality requirements for connectivity services. In this sense, the needs of the low end of the business market are aligned with the needs of the mass market, whose requirements will usually be satisfied by standard products. On the other hand, at the high end of the market many business users demand very sophisticated communication products and their needs will often be satisfied via bespoke offers. In between, we encounter a wide range of business users with different quality requirements. Therefore, although not a strict rule, the needs of business users tend to vary according to the size of the company; the larger the company, the more complex the requirements tend to be in the area of connectivity services. Also a tendency for companies with a multi-site configuration to wish to buy a complete package of services is relevant to the analysis, as the requirements in terms of, for instance, geographic coverage of services offered will be different to other types of business users.

This paper is therefore focused on the business customers with more sophisticated requirements. For this purpose it is convenient to use 'multi-site large business as a proxy, as this group of users represents the highest end of the scale in terms of connectivity requirements.

However, even within the market segment of multi-site large business users, different needs will be found. Some will demand a complete network solution from a single supplier, involving a considerable amount of integration with the company's IT systems. Others will be willing to buy a package of basic retail services onto which they can graft their own corporate layer. Still others will buy individual network services from a variety of suppliers and perform their own network and IT integration. ERG has collected indicative information on user preferences, discussed in Section 3.

In any event, as mentioned above, a common feature is that the electronic communications services supplied need to be of a higher grade than those which are suitable for the mass

market. This relates both to the technical specification (for example, lower contention broadband services) and to network reliability (for example, guaranteed very low percentage downtime, very quick guaranteed fault-finding and repair). This applies in particular to the needs for narrowband, bitstream and unbundled access. Leased lines are of course classically aimed at the business segment almost exclusively.

In addition to this main feature, there are other elements that should be considered when analysing the differences in the demand for business and residential customers.

For example, although it is not specific to large business, another common feature of businesses is the demand for a full solution of communication services covering not only a range of fixed but also of mobile usage. The fact that both fixed and mobile services are usually bundled and sold together under the same offer to these clients should be considered when defining the boundaries of the market of products/services.

In addition, the willingness to pay of large business is higher than for residential customers. While for the latter the price is generally the main purchasing factor, the former exhibit lower price elasticity as other elements of the product such as quality and reliability are more valued. In the same sense, large companies are much more sensitive to disruption in service than standard users. Conversely, residential solutions are designed to reduce technological barriers to entry in the market with easy connection solutions.

The sales distribution channels, post-sale and technical departments are also a differentiating factor. Residential users will demand access to operators' services through mass media channels, general call centres and will rely on a well known brand. High end business customers will on the other hand require a direct sale channel, usually with direct marketing and highly qualified personnel.

In sum, multi-site large business users seem to have different needs when compared to residential users or to small business users:

- Different services such as leased lines, ISDN access lines, convergence products or IT value added services.
- Higher quality electronic communications services, very quick guaranteed fault-finding and repair and nationwide availability of services.
- An Account Manager or Key Account Manager who advises the enterprise on new products or how to improve its communication services.

### ***Supply structure***

Taking into account the very specific demand requirements of highest end of the business segment, it can be generally expected that, apart from the incumbent, which usually addresses both residential and business segments, the alternative operators that address the residential segment will not usually choose a business model which addresses the high end business segment .

From a supply perspective, and as it will be shown in more detail in the next section dealing with wholesale supply, a relevant factor is that the infrastructures used to serve both segments are different, probably due to the different capacities to exploit the economies of scale in both scenarios.

But coverage is not the only element relevant to address business requirements. As mentioned above, business customers will often demand a complete set of services, forcing

suppliers to expand their portfolio to include not just fixed connections but also other telecommunication services and even IT solutions.

Undertakings that provide corporate services will need:

- A complete portfolio of services that allows them to compete with the incumbent;
- Investment in innovation, services and applications;
- Same services and quality all over the country;
- Access to wholesale products from third party network undertakings.

Regarding the two last issues, there could be a case for segmenting some markets, separating the services suitable for serving high end business needs from those focused on standard needs. This possibility will be assessed in the next section.

### ***Preliminary findings***

Although it is difficult to precisely determine the threshold between residential and business customers, it seems clear that some business customers (multi-site large businesses) generally are more willing than residential users to pay higher prices for having higher quality products, while there tends to be a completely different scheme for distributing retail services. This makes it difficult to draw clear cut conclusions on the substitutability of the demand and supply sides of services designed for one or the other segment. This has been already pointed out by Competition Law Authorities (see European Commission in the Telefónica case) and NRAs (Netherlands and Austria).

### **Wholesale related markets for the provision of services to multi-site business users**

The initial analysis below tends to reflect current the topologies of current generation networks. It would need to be reviewed in due course to assess its validity in the context of actual deployments of next generation networks, especially access networks.

#### ***Demand and supply considerations***

Considering the specific needs of business customers compared to residential ones, it is necessary for regulators to assess whether a single market and set of remedies is appropriate for residential and business products or whether it would instead be justified to introduce some kind of differentiation at wholesale level regarding market definition or remedies to address different needs of high end business customers.

As an example, a multi-site business would need a large network to connect its Head Office with other main offices, a number of branch offices and a number of homeworkers. The Head Office and other large offices would usually require high bandwidth dedicated capacity, while branch offices and homeworkers could usually be satisfied by a lower capacity service. Even so, any such lower capacity service might well require a higher specification and availability/reliability guarantees than that provided to the mass market.

Taking into account this example, an undertaking that provides business services and does not have its own infrastructure would normally need high capacity wholesale leased lines alongside bitstream connections.

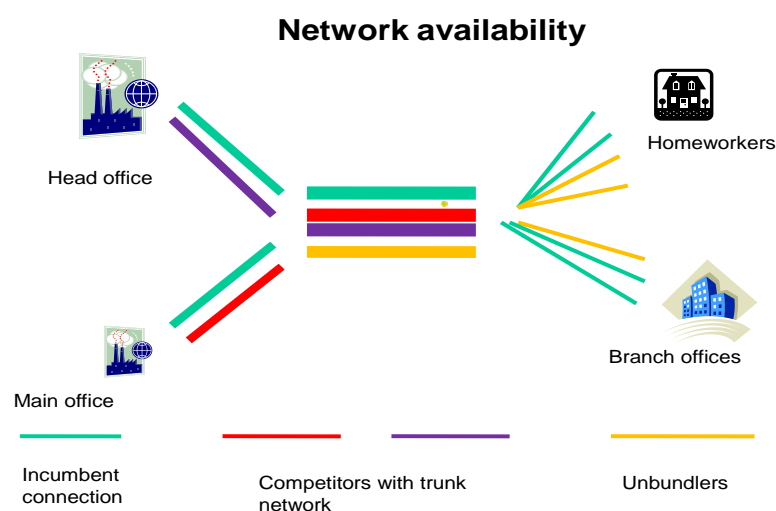
Dedicated business service providers may find it uneconomic to unbundle local loops due to the smaller economies of scale they can achieve taking into account the density of demand. They normally also ask for premium wholesale services provided by the incumbent to compete in the retail markets. If alternative operators are not capable of providing these premium services at competitive prices, such products will only be supplied by the incumbent.

In this sense, in terms of supply analysis it is necessary to consider the differences in the wholesale products used by suppliers providing services to multi-site large business.

On one hand, operators focussing on mass demand usually look for cost reduction through economies of scale and scope. Therefore, as they achieve a critical mass they will switch to a wholesale service higher in the ladder of investment where the average cost is lower.

On the other hand, suppliers that provide services to multi-site business customers will not find it in general profitable to deploy their own network to serve all customer's sites. Instead, they will demand regulated or non-regulated services from the incumbent or other suppliers of wholesale services.

This is illustrated in the diagram:



The "green", and "red" and "purple" suppliers have national trunk infrastructure and some local access fibre suitable for providing high capacity leased lines to large offices. Other large offices would face the choice of self-providing a new fibre connection or leasing fibre from others. Similarly, if their business strategy included ownership of local access infrastructure (e.g. cable companies or city carriers) or large-scale unbundling, they would be able to self-provide bitstream connections to branch offices and home workers. If not, they would need to purchase a bitstream service from others. Unless their business strategy includes providing connectivity for the mass market, unbundling may make little commercial sense. But even if their strategy includes unbundling, this is unlikely to extend to exchanges with medium to low population density.

The “orange” suppliers will be able to provide bitstream connectivity via their own or unbundled loops in exchanges where they are present, but will face the same issues as green and red suppliers to provide bitstream connectivity to locations in other exchanges. Many suppliers in this category do not in practice own high capacity trunk or access network fibre.

The geographical scope of a potential wholesale market for residential or business customers could therefore differ taking into account multi site business users. For example, while large scale unbundling may give rise to non homogeneous competitive conditions in downstream markets in the mass market case, this may be far less evident for the high end business segment.

### ***Preliminary findings***

In conclusion, and according to the specific characteristics of high end business users, it is appropriate for regulators to assess whether it is necessary to define a separate wholesale market for services supplied to some or all business customers. Where one single market is defined, regulators should also consider whether there should be a separation of remedies to differentiate between high end business and standard users.

In addition, the geographical scope for the wholesale market could differ, as between standard and high end services, in particular taking into account the needs of multi site business users.

**ANNEX 2 - RATIONALE FOR VARIOUS WHOLESALE ACCESS OBLIGATIONS ON SMP OPERATORS**

Description of obligation	Rationale	Extent imposed by NRAs in SMP markets
1. General non-discrimination obligation	A key enabler for effective competition	Almost universal
2. Obligation to produce Service Level Agreements (SLAs) covering delivery times and fault clearance times	<p>Competitors bidding for large business contracts need to be able to deliver and integrate a significant number of circuits in a relatively short time. To achieve this, they need clear information concerning delivery times they can expect in respect of the wholesale services they purchase from the SMP operator. Failure to meet the end-user's timing requirements will tend to lead to loss of contracts which should have been won or damaged reputation or both. This weakens competitive pressure on the SMP operator which therefore has an incentive to be unhelpful over delivery times.</p> <p>The situation for fault clearance is very similar. Large businesses tend to have a lower tolerance for circuit failures than the generality of users. Competitive suppliers need to be able to rely on good quality fault repair on the services they purchase from the SMP operator so that, in turn, their end-user customers experience minimum downtime.</p>	Normal – but missing in around 20% of cases
3. Role for the NRA in specifying the contents of the SLAs?	<p>An SMP player has no particular incentive to deliver good quality wholesale service to players which compete with it at the retail level. NRAs can therefore expect that SLAs offered by the SMP player will be unsatisfactory.</p> <p>NRAs will take different approaches to the drafting of SLAs. Some will take the initiative to produce the first draft, others will rely initially on a collaborative effort by market players, others will look to the SMP player to produce the first draft. Any of these can work effectively. What seems to be important is that the NRA should take all necessary steps to ensure that the process is completed in a reasonable time, ensuring that comments by market players are taken into account appropriately before finalisation. Otherwise, the finished product is liable to be biased toward the interests of the SMP operator, undermining effective competition</p>	Normal – but missing in around 20% of cases
4. Obligation to publish SLAs?	It is essential that those wishing to purchase a service know what service level to expect. It is not necessary for the SLA to be fully in the public domain. But it should be made available without delay to all those purchasers and potential purchasers who reasonably need to see it	Where SLAs are required to be produced, it appears to be almost always accompanied by a publication requirement.



<p>5. Obligation to offer “premium” SLAs (e.g. Guaranteed quick repair times)</p>	<p>SMP players have a tendency to construct retail SLAs (if any) according to the needs of typical (often residential) customers. Wholesale SLAs will then usually reflect the terms of those retail SLAs. However, large business customers often need higher levels of service and are prepared to pay reasonable additional charges to obtain those higher levels. Wholesale customers of SMP players therefore need to be able to purchase premium SLAs (at a price which allows the SMP player to recover reasonably incurred costs) in order to facilitate the delivery of the high service levels often required by large business end-users.</p>	<p>This obligation is fully imposed only in a minority of cases.</p>
<p>6. Obligation to produce Key Performance Indicators (KPIs) demonstrating performance in relation to the SLAs</p>	<p>SLAs are of limited value unless the wholesale purchasers of the service can rely on the published service levels, with delivery failure being confined to a small percentage of cases. Production of KPIs appears to be an essential technique to promote that reliability and service confidence.</p>	<p>This is not imposed by the NRA in almost half the cases</p>
<p>7. Obligation to publish such KPIs</p>	<p>Again, release into the public domain may be considered unnecessary. The minimum useful level of publication should allow purchasers to compare the results of their own purchasers with those of others (the identities of the others may be withheld) so that they can satisfy themselves that they are not being unduly disadvantaged by sub-standard service</p>	<p>This is not imposed by the NRA in almost half the cases.</p>
<p>8. Obligation to include results relating to SMP operator's self-supply</p>	<p>This is an important technique to ensure non-discrimination. The SMP player has an incentive not to promise the maximum levels of service which its systems are capable of delivering and to prioritise delivery and repairs to its retail customers over those to retail customers of its competitors. KPIs which allow comparison between the performance of the SMP player in serving itself and the corresponding performance in serving others is a significant deterrent to discrimination of this kind.</p>	<p>This obligation is imposed by NRAs in barely half the cases</p>
<p>9. Formal process (e.g. Independent audit) for verification of accuracy of published information about KPIs</p>	<p>It appears to be necessary for NRAs to take steps to assure themselves that the systems of the SMP operator are fit for the purpose of delivering accurate information. This can not be taken for granted. Some form of independent verification of accuracy may be found appropriate, depending on previous NRA experience with that SMP player</p>	<p>Almost no NRAs impose this obligation</p>
<p>10. Obligation to pay compensation to wholesale customers in case of non-compliance with SLAs</p>	<p>“Penalty clauses” or “compensation clauses” are a standard feature of freely negotiated commercial contracts. Players with SMP have the incentive and the ability to resist them. Their purpose is to incentivise actual delivery of the promised service levels. This is not the only technique available to NRAs to incentivise compliant behaviour. Nevertheless, the fact that it is standard commercial practice and the self-enforcing nature of the obligation (compensation payable automatically and according to pre-specified formula) for all failures to provide promised service levels) mean that it is a natural obligation to impose</p>	<p>The great majority of NRAs impose this obligation</p>

11. Formal obligation to consider new requests for access	This raises a policy issue. In what circumstances, if at all, should the SMP operator be required to provide wholesale services which do not correspond to services it supplies to itself? One line of thought is that it cannot be required to do so as that would amount to unreasonable levels of intervention in its business. The opposite point of view is that it would be intolerable if SMP operators held back service innovation or improvement at the retail level by using the excuse that it did not wish to provide that service itself. According to the latter point of view, all reasonable requests for wholesale services should be met. Reasonableness would be judged on a case by case basis, taking into account such factors as the extent of the obligation imposed, the ability of the SMP operator to recover reasonable costs of provision and the likely benefits to end-users.	This obligation is imposed in approaching half the cases
12. Existence of process (with specified timescales and deliverables) for SMP players to resolve new requests for access	An “obligation to satisfy reasonable new requests” is unlikely to work by itself. The SMP operator will need an incentive to reach an objective judgement about reasonableness of request in a timely manner. A formal process which requires the SMP operator to provide an objective analysis of the request in specified timescales can therefore be a helpful tool to incentivise compliance.	Very few NRAs impose such an obligation
13. Ability of SMP operator to provide new retail products without making corresponding fit-for-purpose wholesale inputs available	SMP operators have the incentive to seek first mover advantage in the provision of new services, in particular by making new retail services available in advance of the corresponding wholesale services which would facilitate retail competition. This is a form of discrimination which needs to be suppressed. NRAs may be able to rely on their general non-discrimination rules to enforce compliance; or they may need an explicit rule to deal with it	This practice is available to SMP operators in more than half the cases
14. Is the SMP operator obliged to provide different “grades” of service (e.g. speed, bandwidth) for appropriate prices	This is related to point 11. If SMP operators are permitted to restrict the choice of competitors over the way in which wholesale services are configured, various adverse consequences are possible. It can be used to prevent competitors using the most efficient technology or to restrict downstream innovation. It gives rise to the same policy question – whether or SMP providers should be obliged to provide whatever is reasonable or are entitled to refuse to provide any service which they do not provide to themselves	Only a minority of NRAs apply such an obligation
15. Is there an obligation covering efficient migration of end-users (e.g. bitstream to LLU) without significant break of service	This obligation relates to the efficiency with which competitors offer service and therefore their ability to compete in the retail market. As technology advances, providers may need to change the way in which services are provided to their users, in order to increase efficiency or functionality while avoiding as far as possible any break in service. Efficient migration processes between different wholesale services or service variants is key to such evolution	Such an obligation is applied in about three quarters of cases
16. Is there an obligation that allows a service provider gaining a customer	The absence of such an obligation makes it extremely difficult to capture the business of existing end-users, especially in the business segment, as they will be very reluctant to	Such an obligation is applied in rather more than half the cases

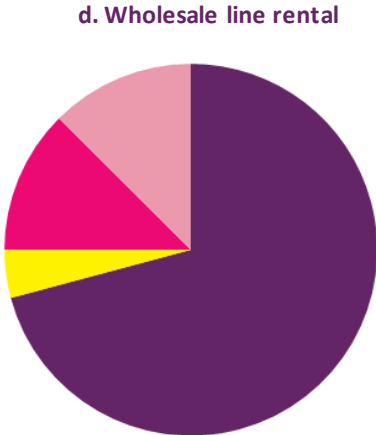
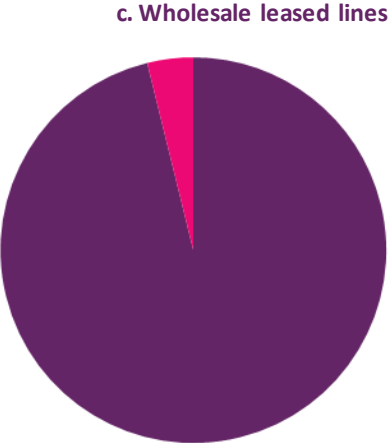
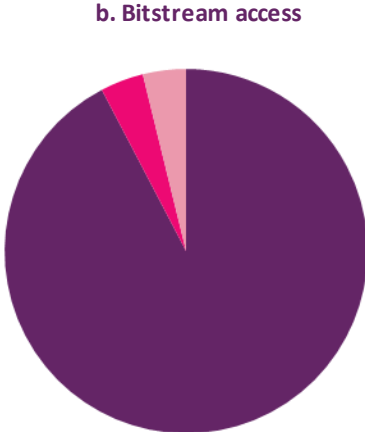
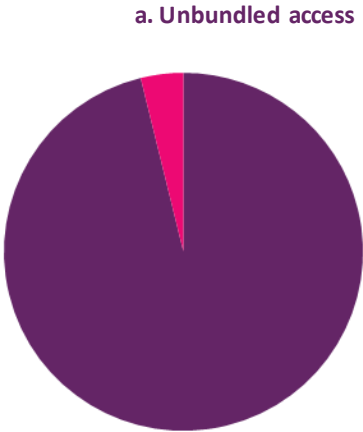
<p>to migrate that customer without significant break of service</p>	<p>accept the risk of a significant break of service. In the general case, migration processes need to cope with migrations between service providers using the same wholesale service (e.g. bitstream) and also migrations between different service providers using different wholesale services (e.g. bitstream to unbundled loop)</p>	
<p>17. Do the supply obligations benefit all potential wholesale customers or only those which satisfy certain criteria (e.g. minimum infrastructure build)</p>	<p>SMP operators may use eligibility criteria in order to set, de facto, a minimum scale or density of operation on their competitors. This may unreasonably restrict market entry. On the other hand, some criteria may be objectively justifiable to ensure that provision is efficient. A reasonable balance needs to be found between efficiency and inhibition of market entry.</p>	<p>Few NRAs impose such restrictions in practice</p>
<p>18. Is there an obligation to supply Ethernet leased lines on a wholesale basis?</p>	<p>This is related to points 11 and 14. Ethernet leased lines previously suffered from performance restrictions compared to traditional leased lines but these are largely historical. For many applications they provide sufficient functionality and quality to meet the end-user need while generally being considerably cheaper. It therefore appears unreasonable for SMP operators to decline to supply them on a wholesale basis, especially as they are now in common use throughout Europe. Some SMP operators apparently supply such wholesale circuits as an overlay to a traditional leased line while supplying native Ethernet leased lines to themselves. This creates a cost asymmetry which works strongly in the SMP operator's favour. It amounts to constructive refusal to supply and/or discrimination.</p>	<p>A supply obligation covering Ethernet leased lines is available in less than half the cases</p>
<p>19. Is there an obligation for speedy and cost-effective migration of existing retail leased lines to a wholesale basis</p>	<p>Where a user is already using a leased line supplied by the SMP player and wishes to change supplier, it is often more efficient simply to continue to use the same infrastructure for provision than to transfer the circuit onto alternative infrastructure. This requires an efficient process to "novate" the contract from retail supply to end-user to wholesale supply to the competitor. In the absence of an efficient novation process, end-users will experience financial and business costs of service disruption on changing supplier. This is a severe disincentive to switching and therefore suppresses competition.</p>	<p>Few NRAs impose such an obligation</p>

**ANNEX 3: RESULTS OF QUESTIONNAIRE TO NRAs**  
**WHOLESALE ACCESS REMEDIES APPLIED IN PRACTICE BY NRAs IN SMP MARKETS<sup>1</sup>**

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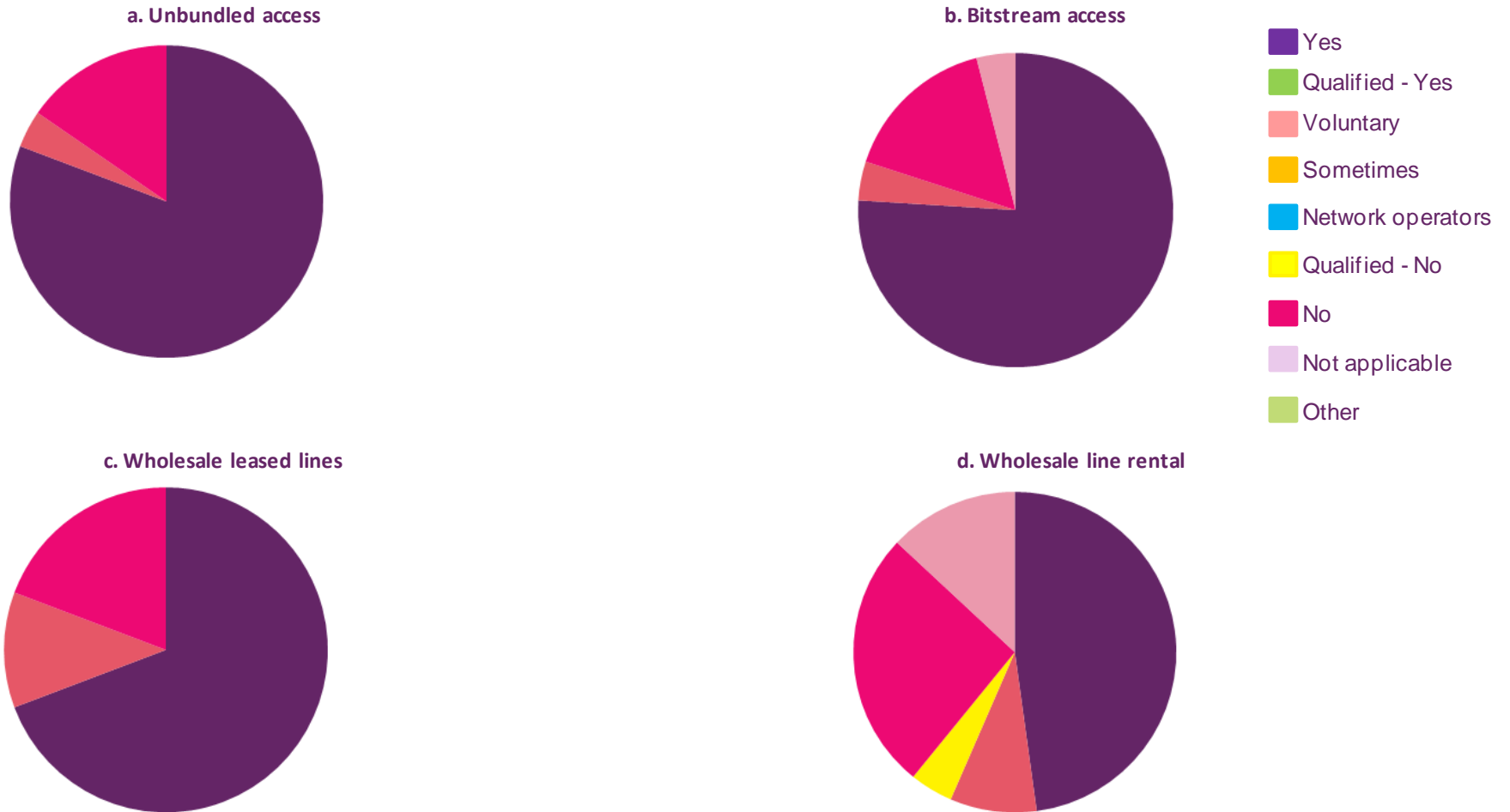
<sup>1</sup> The charts which follow are based on responses by 26 National Regulatory Authorities, except where explicitly indicated otherwise

# 1. Is there a general obligation for non-discrimination in place?

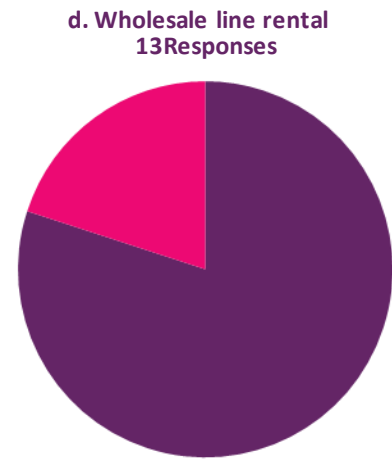
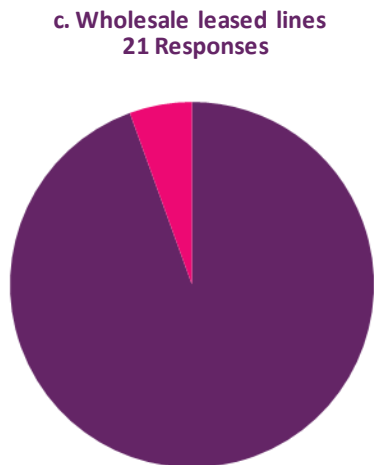
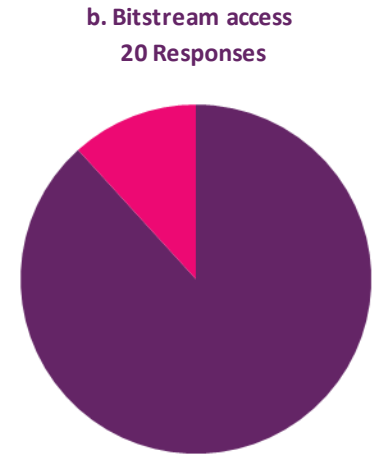
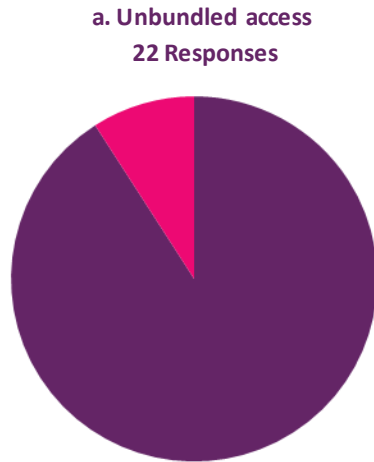


- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

## 2. Is there an obligation to produce service level agreements covering delivery times and fault clearance times?



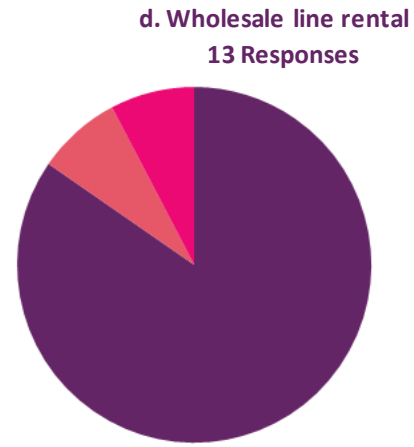
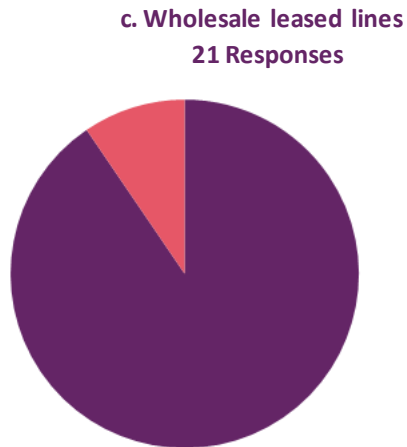
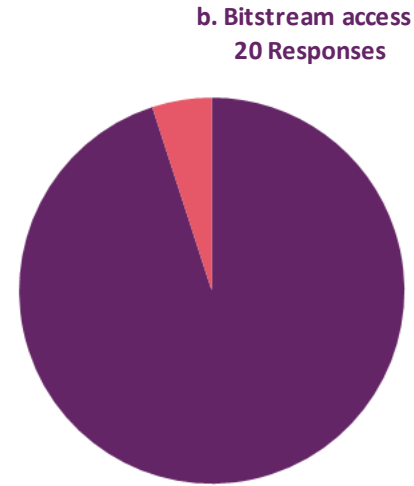
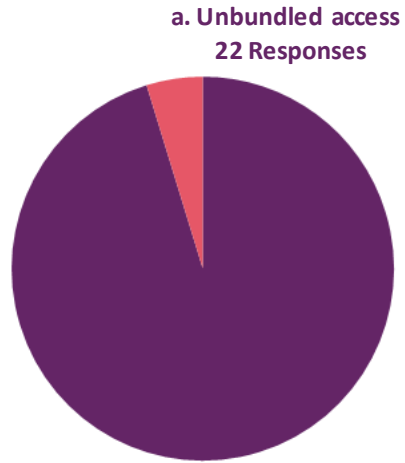
**3. If so, does the NRA have a formal or informal role in specifying the contents of the SLAs? (only if yes/voluntary to question 2)**



- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

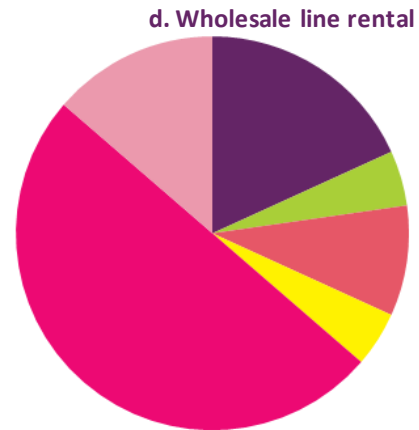
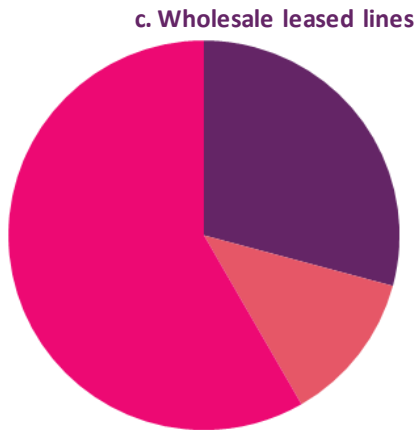
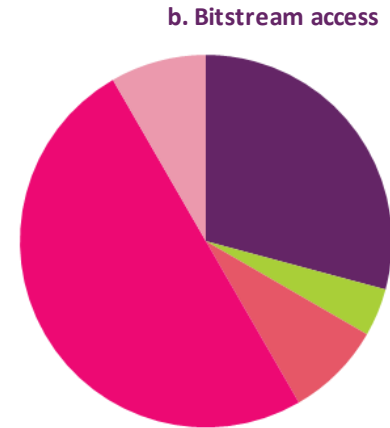
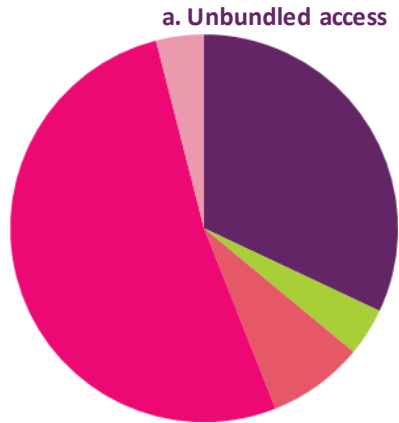


### 4. Is there an obligation to publish such SLAs? (Only if yes/voluntary to question 2)



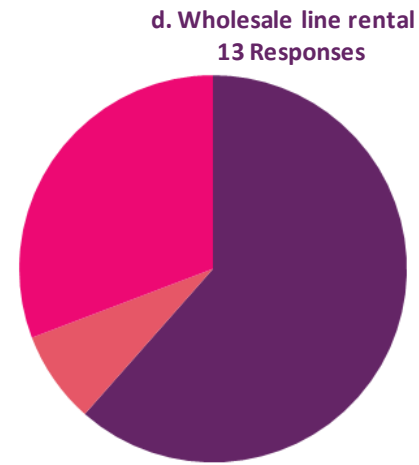
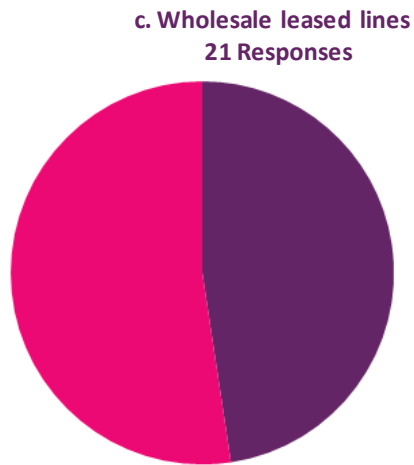
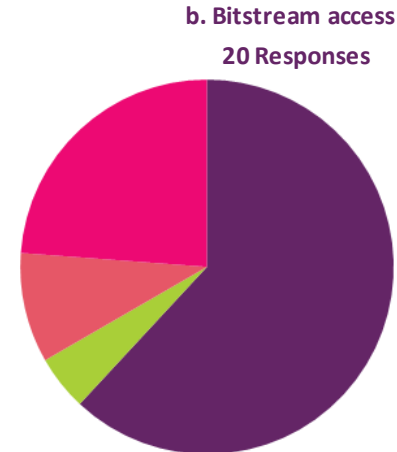
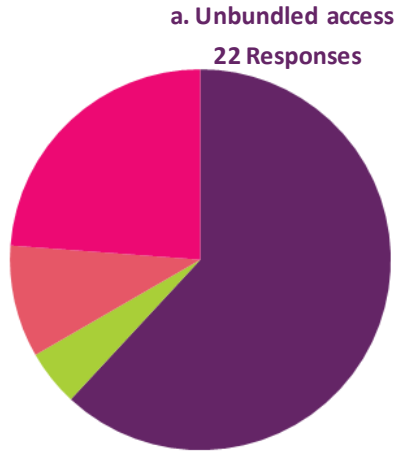
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

5. Is there an obligation to offer a product with "premium" SLAs (e.g. Guaranteed quick repair time)?



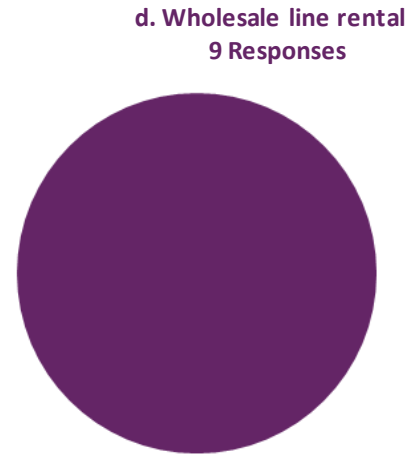
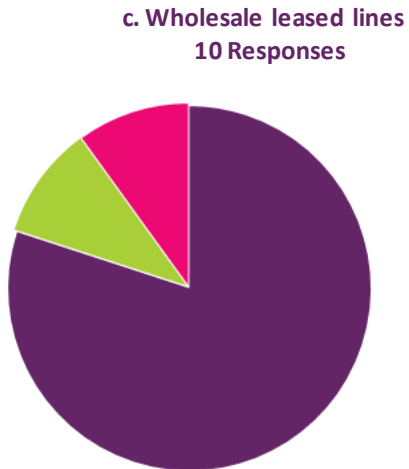
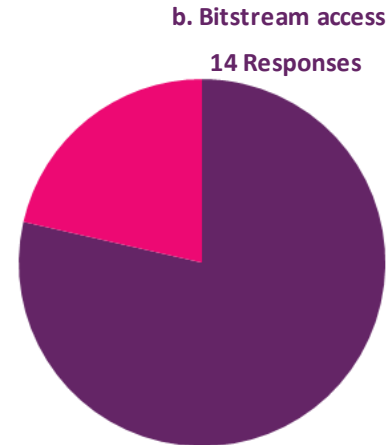
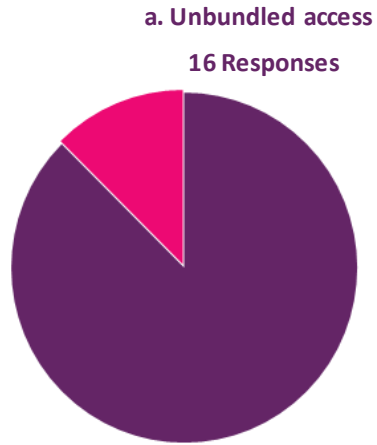
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

**6. Is there an obligation to produce KPIs demonstrating performance in relation to the SLAs? (only if yes/voluntary to question 2)**



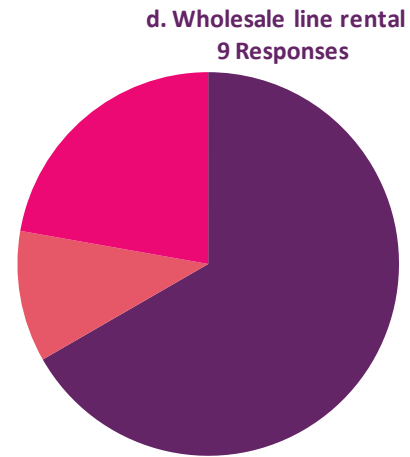
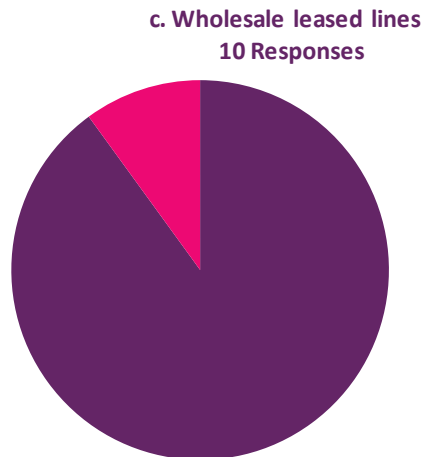
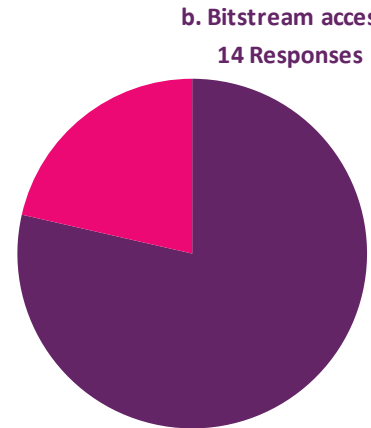
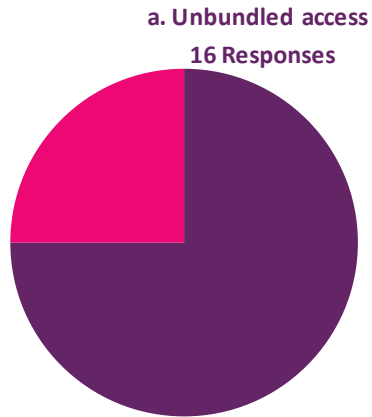
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

### 7. Is there an obligation to publish such KPIs? (only if yes to question 6)



- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

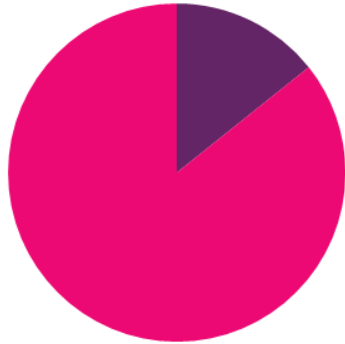
**8. Is there an obligation to produce comparable KPIs covering the SMP operator's supply of services to itself? (only if yes to question 6)**



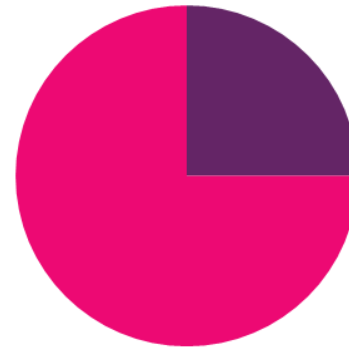
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

**9. Is there a formal process (e.g. independent audit) for verification of accuracy of any published information about KPIs? (only if yes to question 7)**

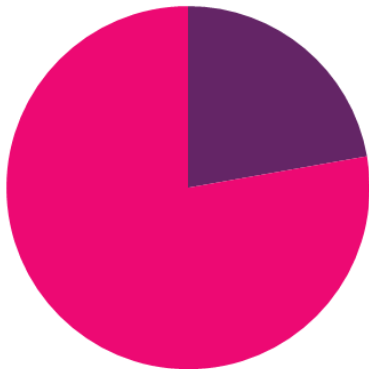
**a. Unbundled access**  
14 Responses



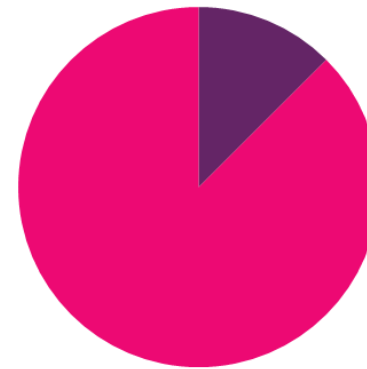
**b. Bitstream access**  
12 Responses



**c. Wholesale leased lines**  
9 Responses



**d. Wholesale line rental**  
8 Responses



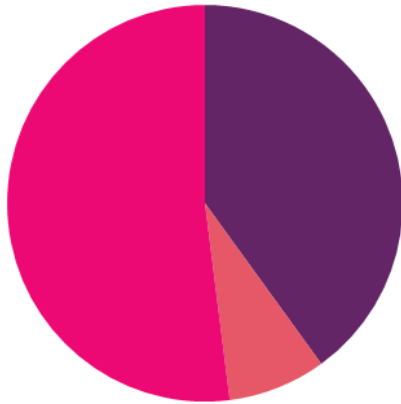
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

**10. Is there an obligation to pay compensation to wholesale customers in case of non-compliance with SLAs? If so, please summarise who determines the level of compensation and according to what principles (if any)? (only if yes/voluntary to question 2)**

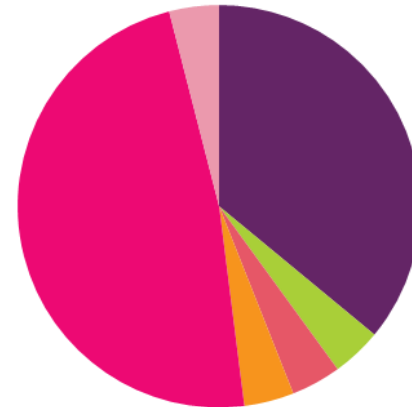


### 11. Is there a formal obligation on the SMP operator to consider requests for new forms of access?

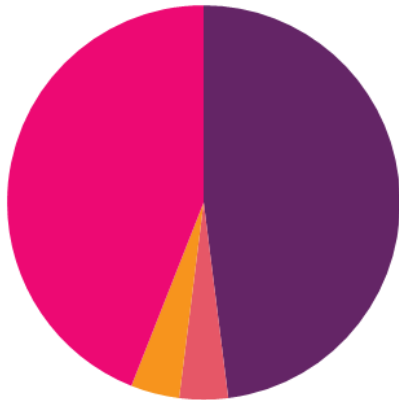
a. Unbundled access



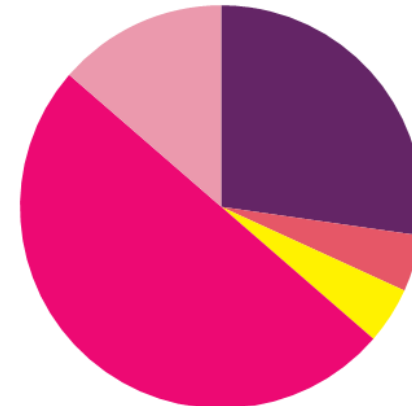
b. Bitstream access



c. Wholesale leased lines



d. Wholesale line rental



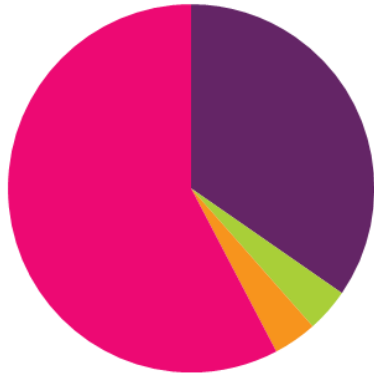


**12. If so, is there a process (with specified timescales and deliverables - separate from normal dispute resolution), which SMP players must use in resolving such requests? If so, please summarise process (only if yes to question 11)**

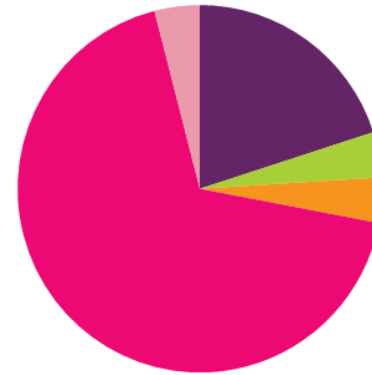


**13. Is the SMP operator able to provide new retail products without making corresponding fit-for-purpose wholesale inputs available?**

a. Unbundled access

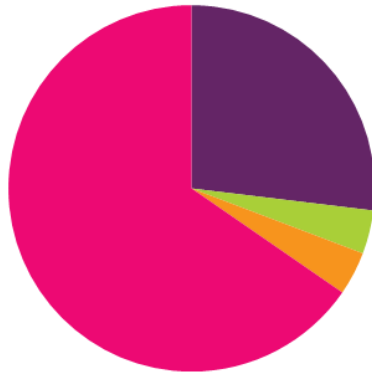


b. Bitstream access

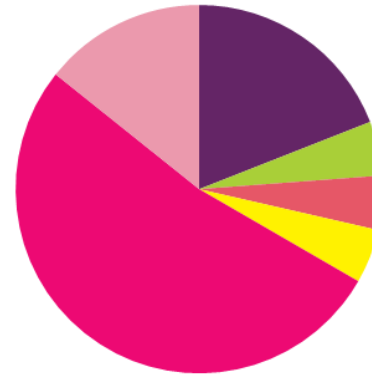


- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

c. Wholesale leased lines

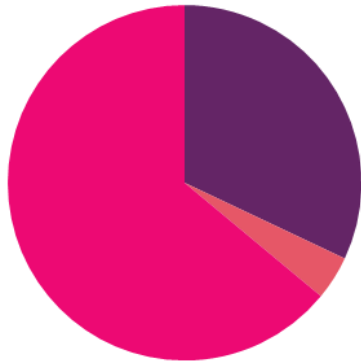


d. Wholesale line rental

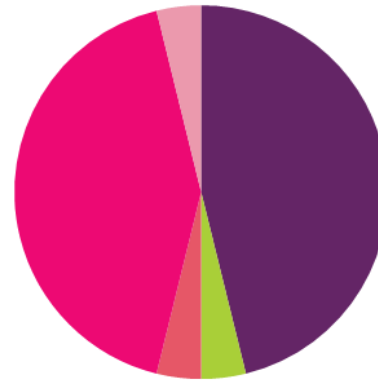


### 14. Is the SMP operator obliged to provide different "grades" of service?

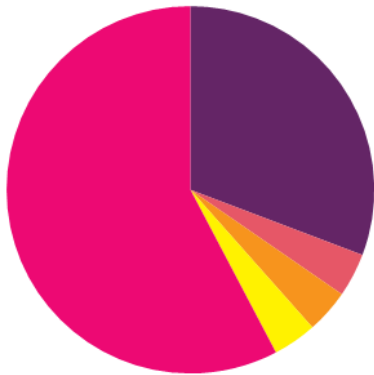
a. Unbundled access



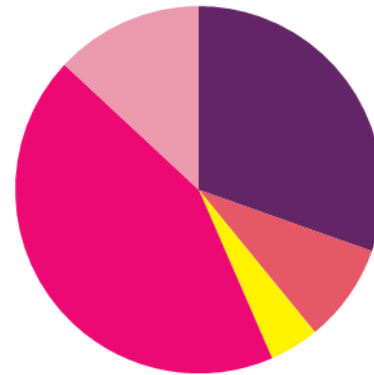
b. Bitstream access



c. Wholesale leased lines



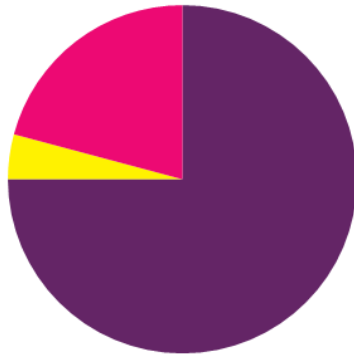
d. Wholesale line rental



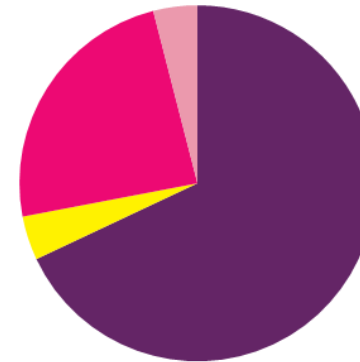
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

**15. Is there an obligation covering efficient migration of end users between different wholesale services without significant break of service?**

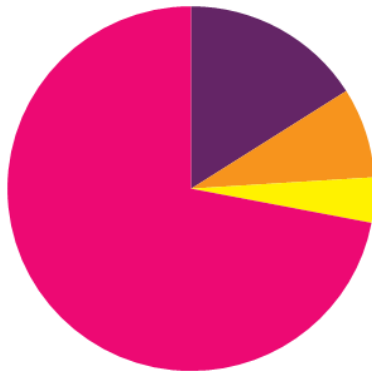
a. Unbundled access



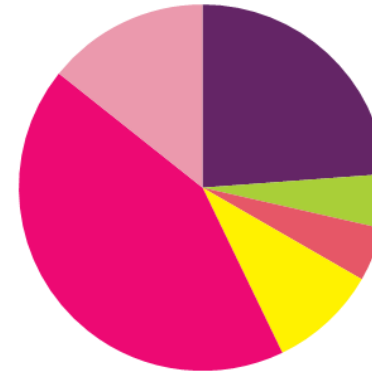
b. Bitstream access



c. Wholesale leased lines



d. Wholesale line rental



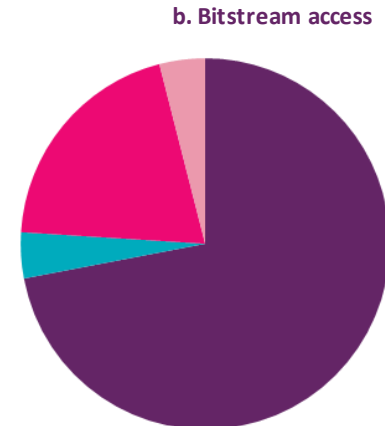
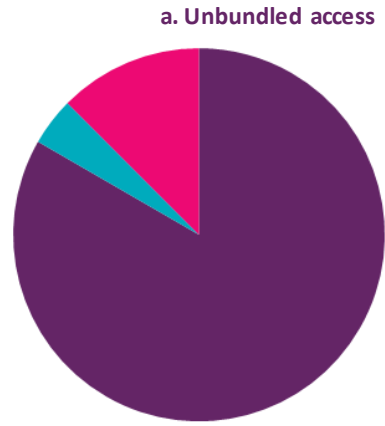
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other

**16. Is there an obligation that allows a service provider gaining a customer from a different service provider to migrate that customer without significant break of service?**

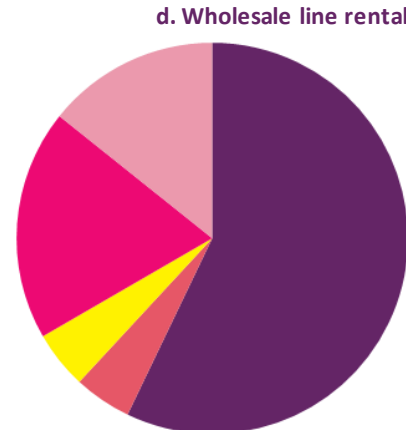
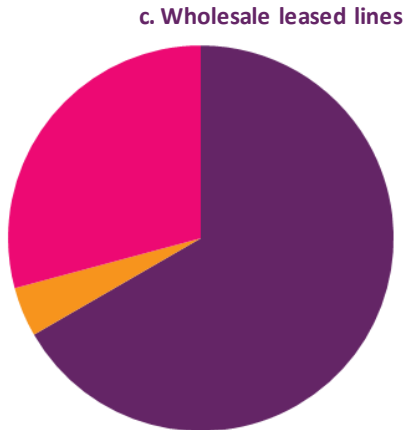
*(N.B. This question relates only to break of service arising from the need for the SMP operator to reconfigure the wholesale service; it is not intended to cover breaks of service arising from contractual issues)*



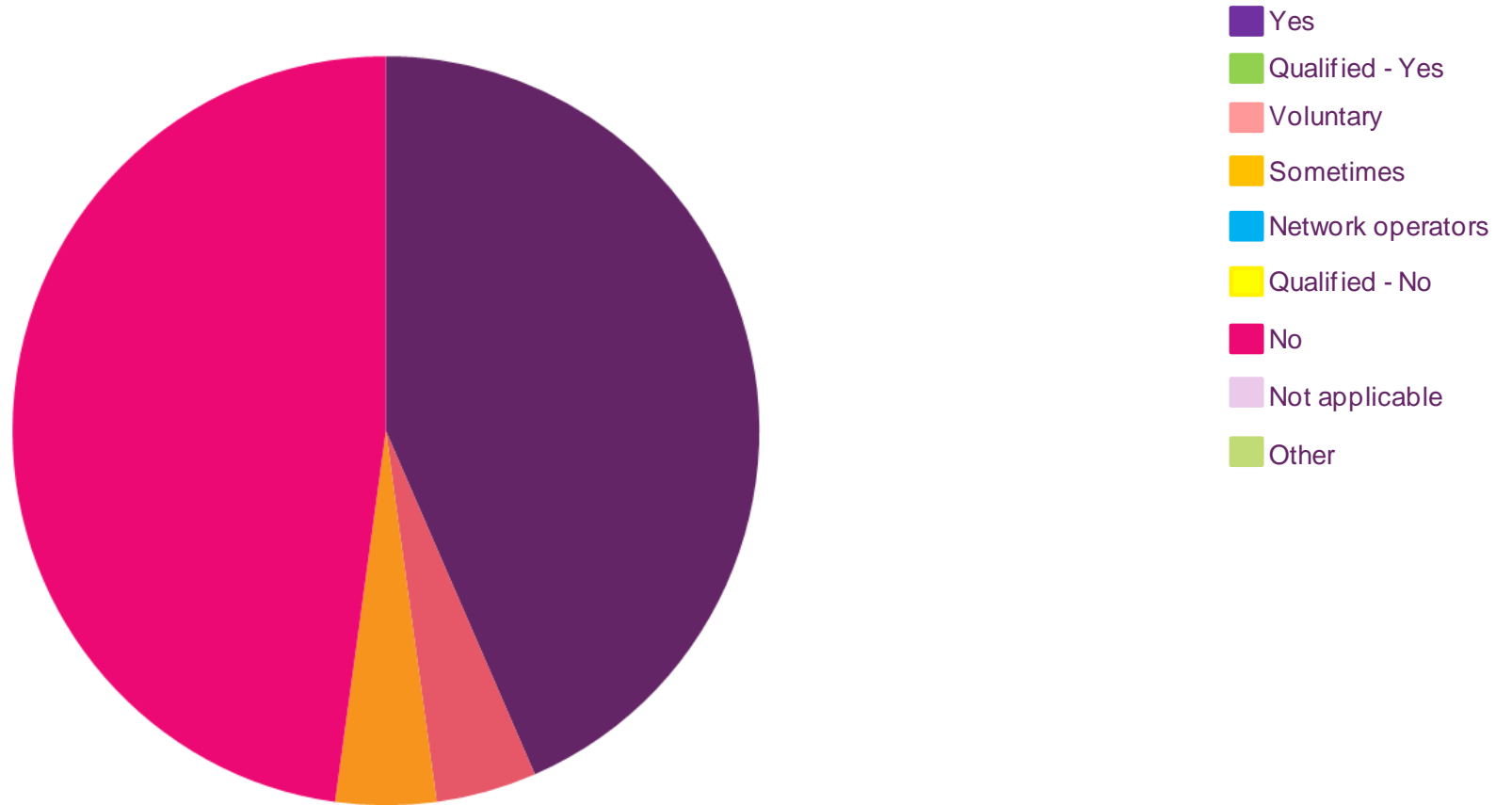
17. Do the supply obligations above benefit all potential customers or do they apply only in respect of customers satisfying certain criteria (e.g. minimum infrastructure build)? Please summarise any such criteria



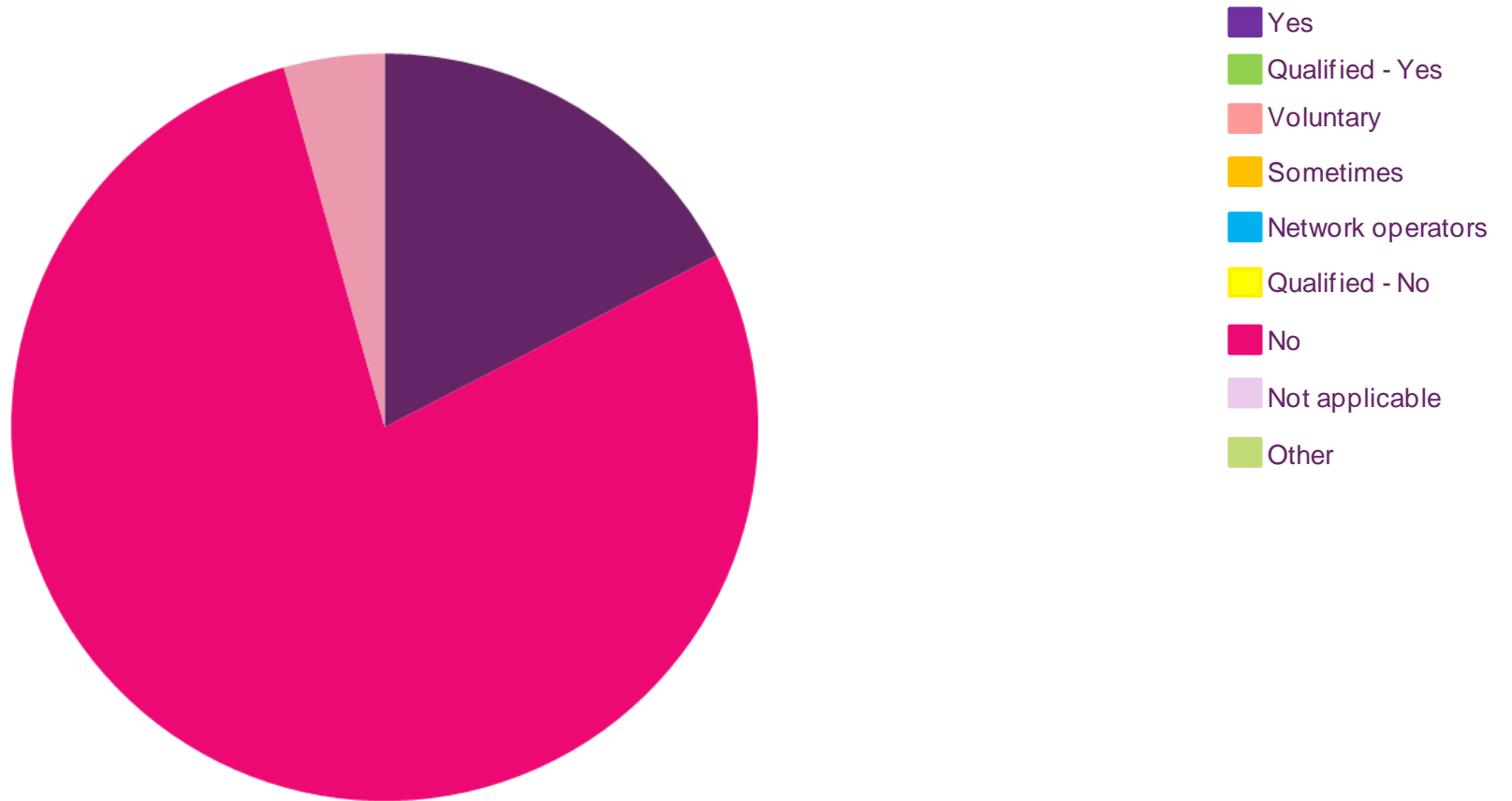
- Yes
- Qualified - Yes
- Voluntary
- Sometimes
- Network operators
- Qualified - No
- No
- Not applicable
- Other



# 18. Is there an obligation to supply ethernet leased lines on a wholesale basis?



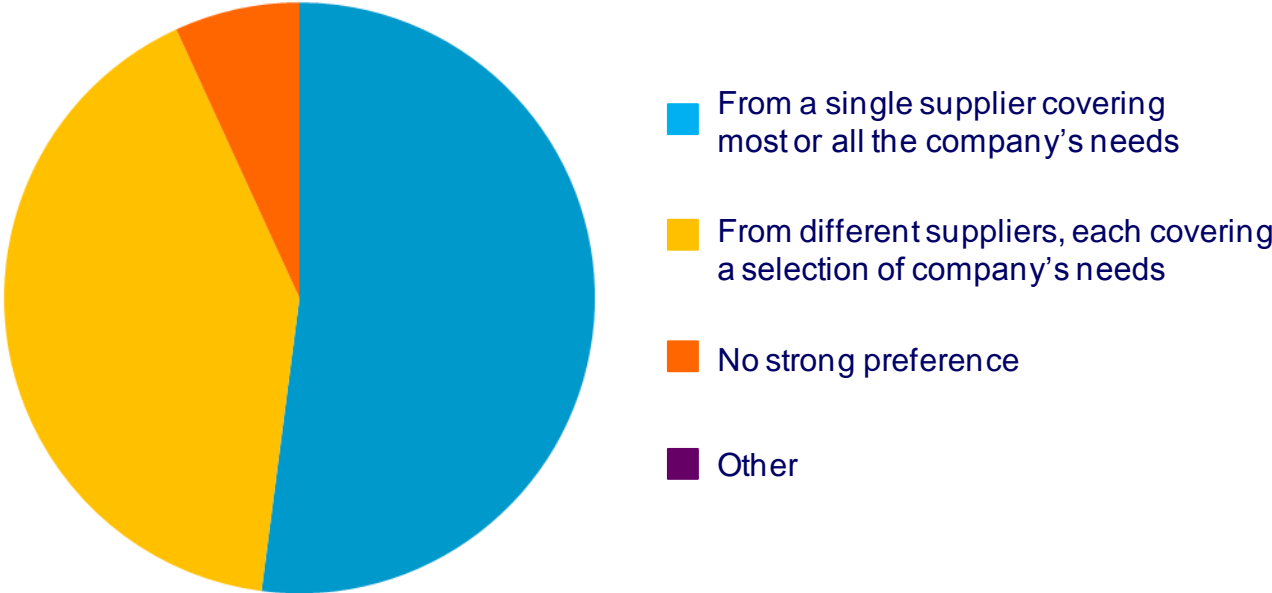
### 19. Is there an obligation for speedy and cost-effective migration of existing retail leased lines to a wholesale basis?



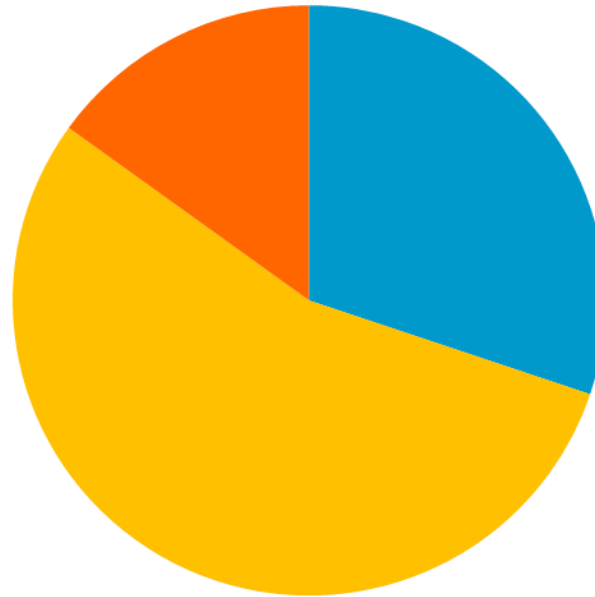


**ANNEX 4: RESULTS OF QUESTIONNAIRE ON EXPERIENCES OF END USERS (based on responses from 154 companies)**

**1. Do you prefer to buy telecoms services**

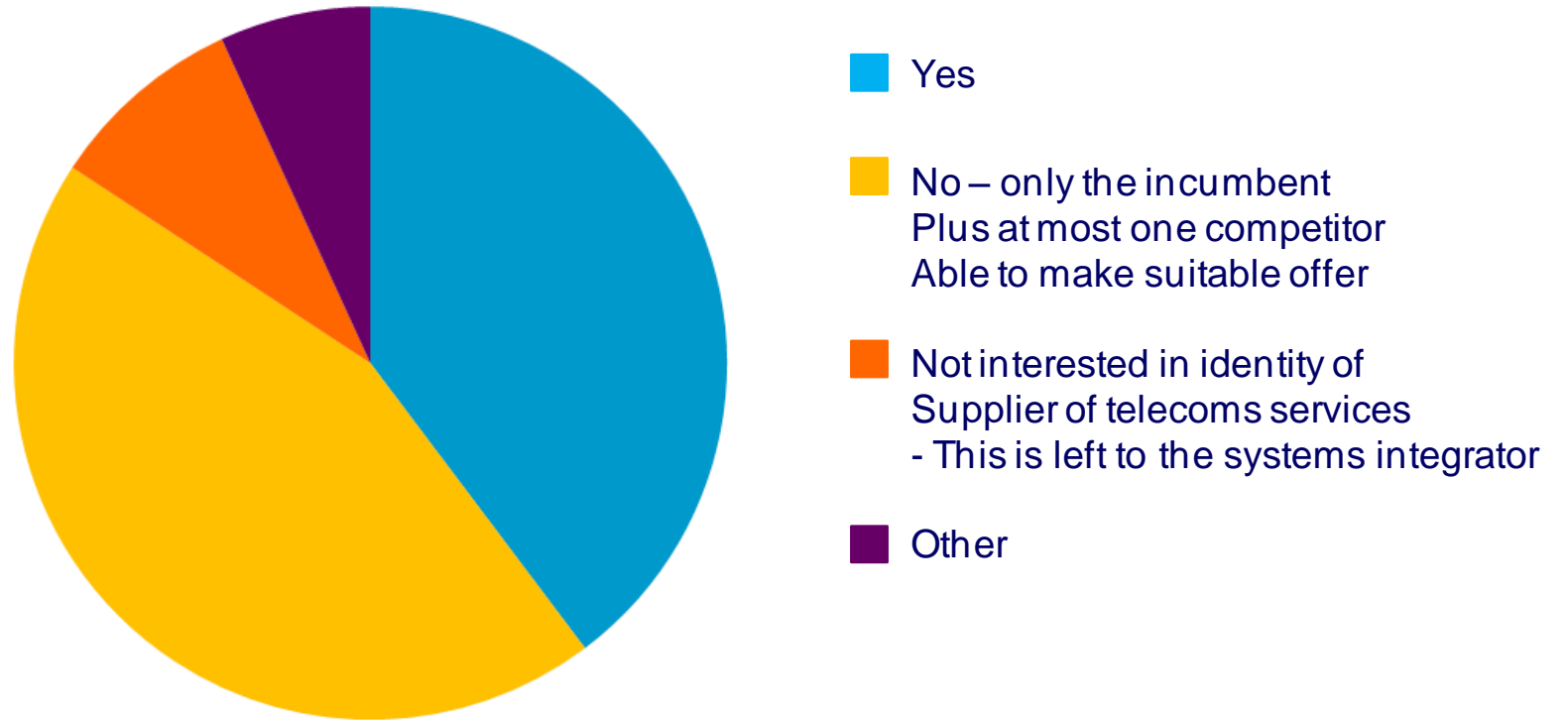


## 2. Do you prefer

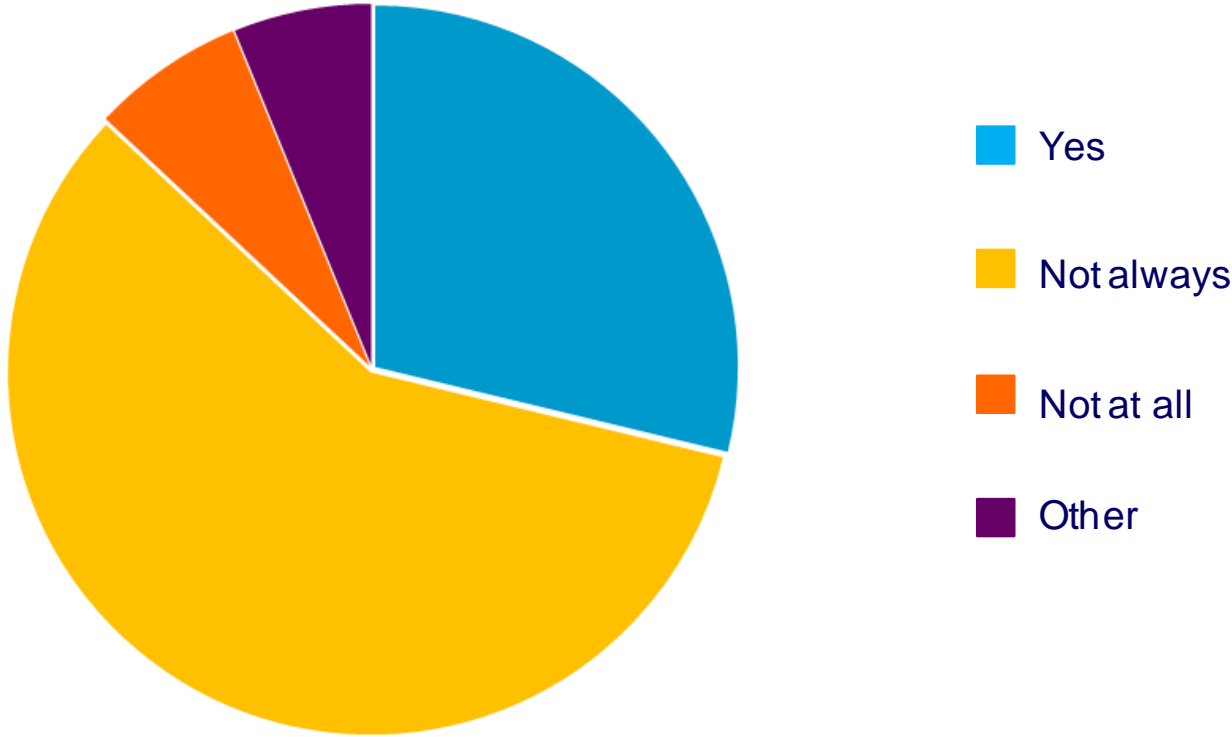


- To buy an integrated package of Telecoms and IT services
- To buy telecoms services separately, Handling the systems integration in-house Or obtaining the services an external Contractor for the integration
- From a single supplier covering most or all the company's needs
- From a single supplier covering most or all the company's needs

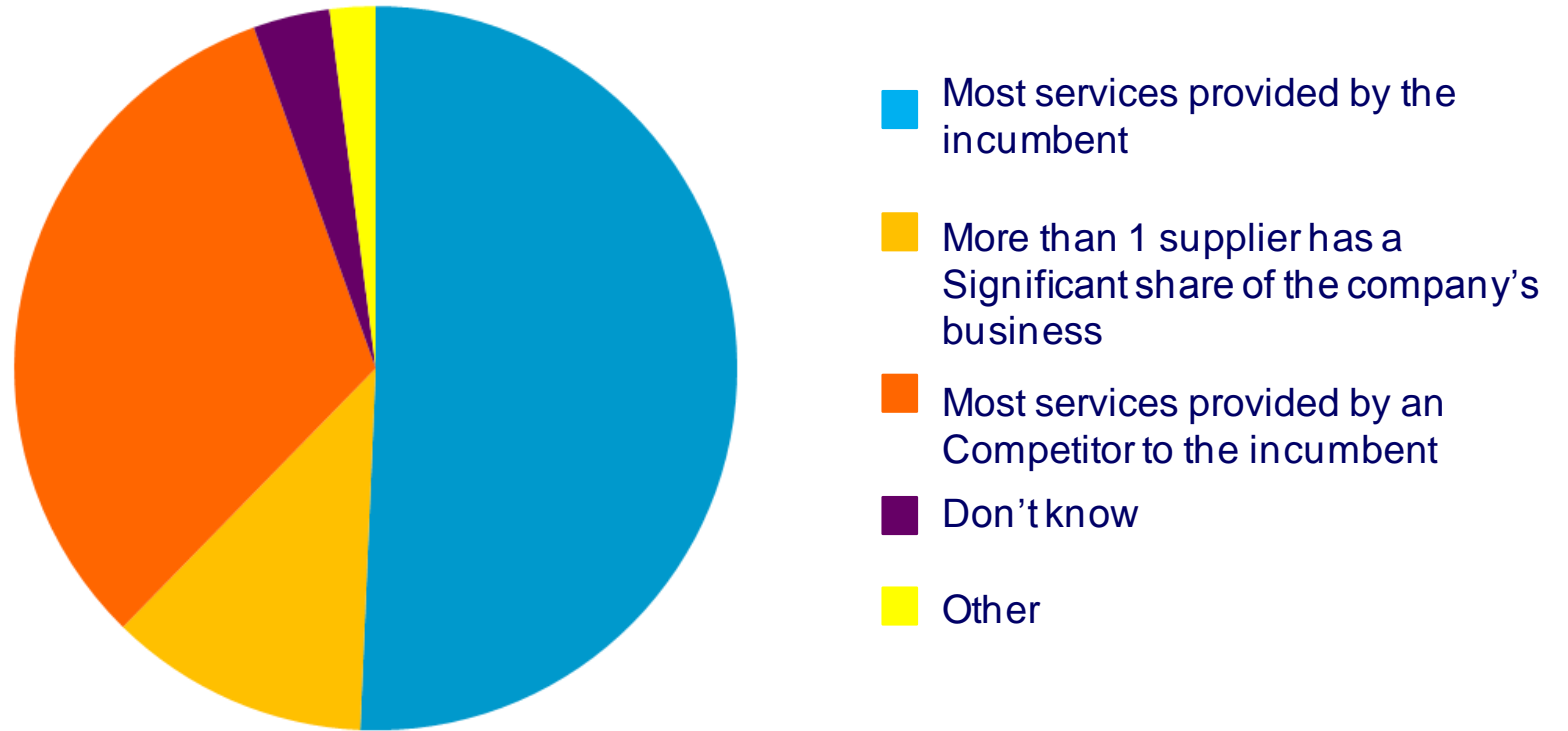
**3. Where you prefer a single supplier, have you found that there are several suppliers able to make a fit-for-purpose offer which is competitive with that of the incumbent**



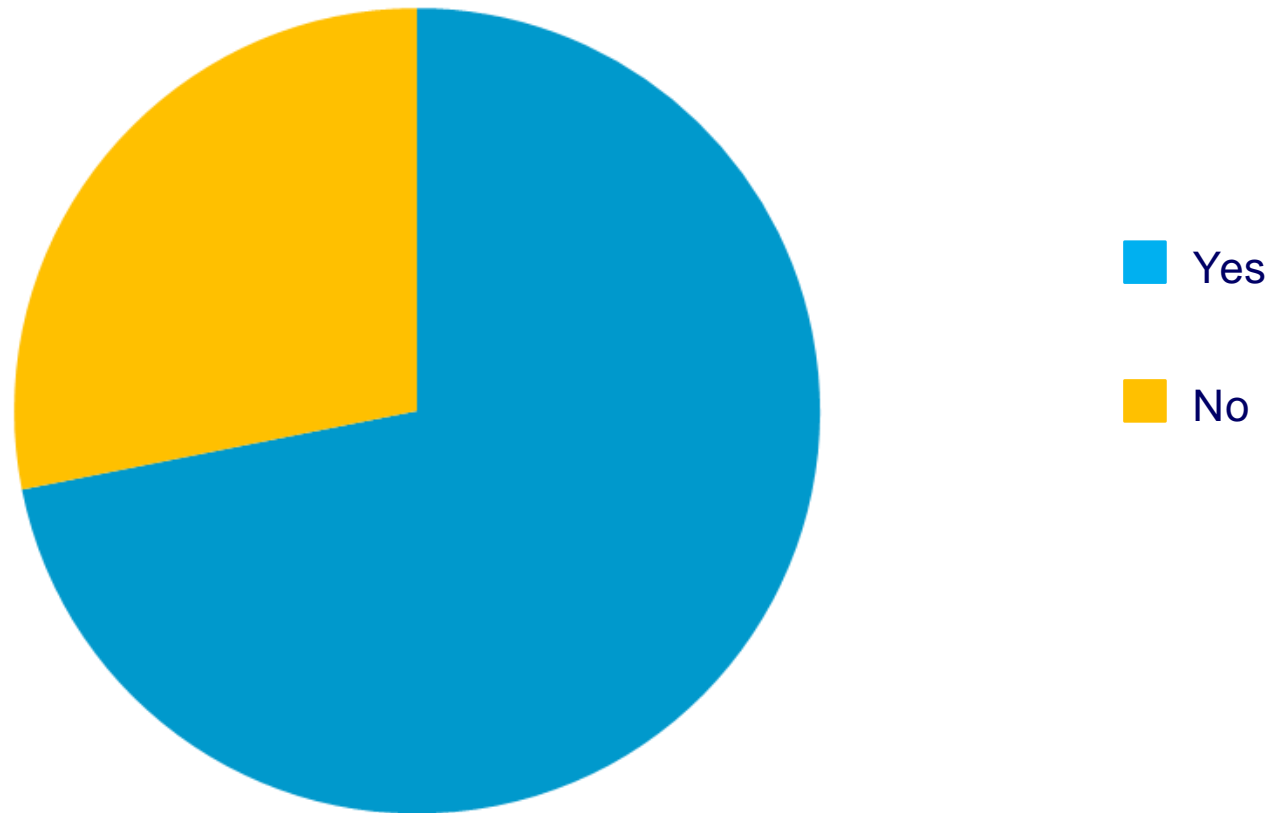
**4. Where you purchase several separate packages of telecoms services, have you found that several suppliers are able to make fit-for-purpose offers which are competitive with that of the incumbent**



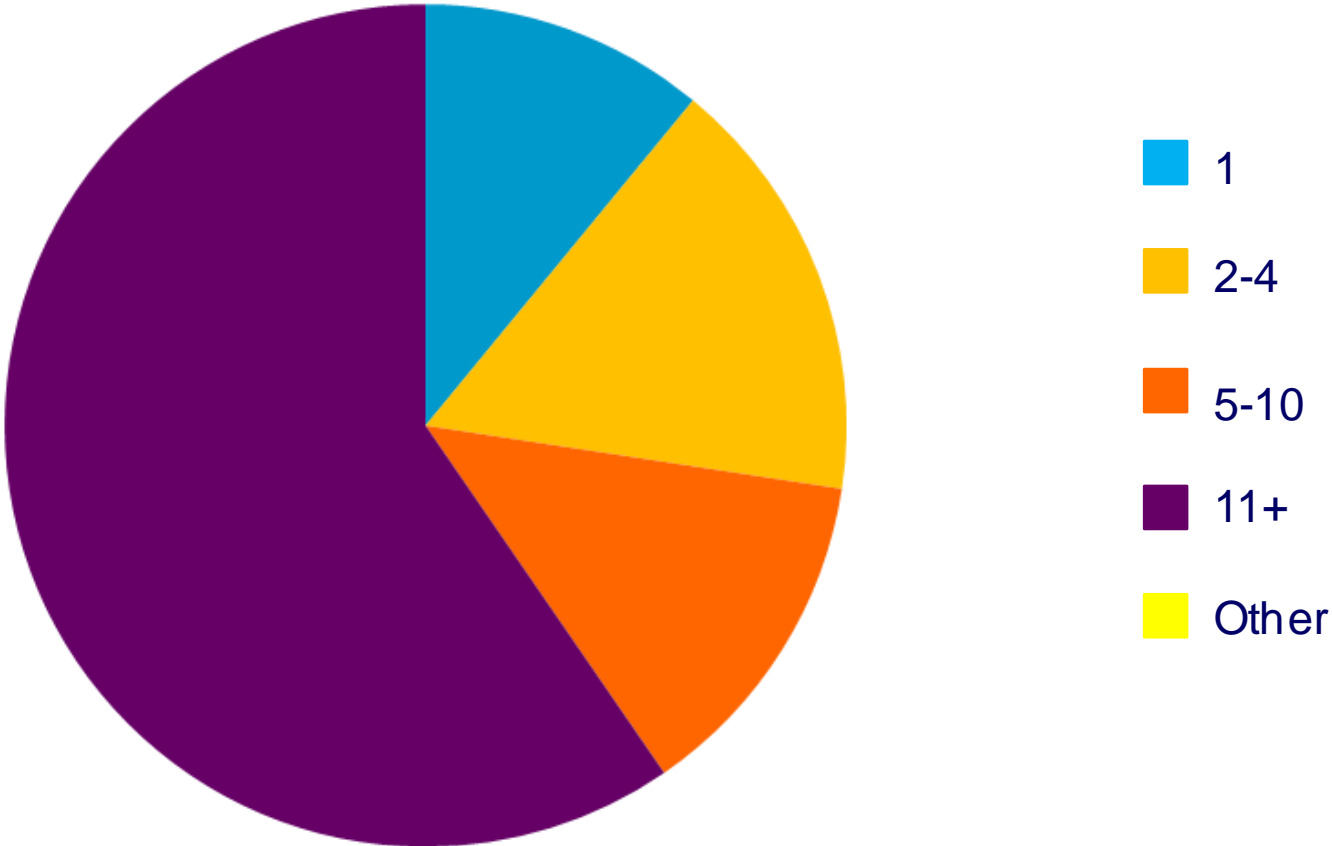
**5. Which of these best describes your telecoms supplier(s)**



### 6. Do you have sites in more than one country?



**7. Number of sites for the organisation:**



### 8. Number of employees:

