Comments to the ERG Public Consultation on the

Draft Common Position Next Generation Networks

Future Charging mechanisms / Long term termination issues

December 2009

General comments

- Telefónica welcomes this opportunity to comment on the ERG Draft Common Position on Next Generation Networks Future Charging Mechanism / Long Term Termination Issues.

- Over the last number of years termination rates have been regulated across the European Union. It seems likely that the trend of decreasing MTRs is set to continue, regardless of the methodological approach regulators adopt. This would have a major impact on the business model of mobile operators. It is therefore important that any decline is managed appropriately and that glide paths are set such that companies get a chance to adapt their pricing structures.

- It is premature to already decide on a new interconnect model that could be adopted when that adjustment has taken place. It is difficult to already foresee the need, or all the issues related to it. For example, the precise requirements for IP interconnect are not yet known.

- Telefónica doesn't see advantages in mandating Bill and Keep (BaK). Unless significant call externalities can be shown to exist, BaK would lead to prices that are not cost oriented and, therefore, less consumer welfare. There would also be complications and uncertainty that would accompany BaK.

- Although BaK may possibly decrease the need for cost accounting regulation, it will not decrease the overall need for regulatory intervention. Rather, we believe it will merely displace the need for regulatory oversight to other areas, such as points of interconnects and quality of service. We currently don't see the need for such a transition and the uncertainty it brings.

- Rebalancing mobile pricing structures to allow for a transition to BaK, would have consequences for subscribers. Not only marginal prepay customers but also high volume postpay subscribers. For example, when mobile termination rates are regulated down to levels below cost (either by mandating BaK or by adopting LRIC) it is likely that operators will be forced to start charging customers for inbound calls or higher monthly subscriptions.

- In Telefónica's view none of the reasons that the ERG is putting forward in its consultation document offer evidential basis to support the changes to a BaK model as an efficient mechanism for termination rates.

- Changes of business models should be driven by the market and not by regulation. It is too complex for regulators to find a future solution for regulating termination rates that encourage investment and innovation. In this scenario, instead of looking for a new model for MTRs, regulators should be questioned whether there is a need to continue with the regulation of MTR and instead of leave the market to set its own rates.

- At a time when operators need to invest to ensure citizens and businesses benefit from wider coverage and capacity, the introduction of Bill and Keep would have the opposite effect; operators would be providing wholesale termination services for less than cost and would need to subsidise this by increasing retail prices and/or cutting back on investment.

1. Setting termination rates to zero would be economically inefficient - Need for cost orientation for termination charges

Telefónica believes that regulators should not impose charge controls that do not allow telecommunication operators to recover their efficiently incurred costs in supplying termination services. Any provision of a service has a cost that should be reflected in relations with other actors.

It is a well-established regulatory principle that the purpose of charge controls is to emulate the market, in the absence of effective competition. This means that a regulator's role is to set a charge control at a level that an effectively competitive market would generate; and not simplify the process imposing termination rates artificially equal to zero.

That is as true for voice call termination now as it has been in the past and as it is for any other electronic communications service; it is a cornerstone of the regulatory regime, reflecting economic theory and enshrined in both European and domestic law.

If in the future termination markets are found to be not effectively competitive, regulators should continue to set cost oriented charges. However, it must be recognised that there is a level of termination rates which maximizes market efficiency and welfare. This optimal level is the one which should inform regulatory decisions in dealing with termination rates.

The ERG should be aware that dramatic changes to termination rates, such as forcing the implementation of a BaK model, introduce a risk in the retail markets. Regulators should not assume that zero termination rates are better for the customer. As we will try to demonstrate in this document, we believe that the retail markets would be affected in a for consumers harmful, and not beneficial way.

2. Zero charge for termination rates would imply huge call externalities – in practice there is not evidence of that

The ERG sees "call externalities" as an important rationale for adopting a BaK model, yet no presence evidence for their existence. Even more, in the consultation document the ERG suggests that BaK is likely to internalize call and network externalities better than CPNP. However, Telefónica would like to observe that BaK would not be an optimal wholesale price mechanism and would give rise to other practical problems, including the need for additional regulation.

In our view, the principle of cost based pricing, with differences reflecting externalities, remains the right approach. Efficiency would be maximised if the utility between calling and called user is distributed in proportion to the relative cost distribution of the calling and called network. There is a recognition that BaK is not appropriate per se, but only when a number of assumptions hold, one of which is that there are huge (uninternalised) call externalities.

It is simply not good enough to oblige operators to move to a BaK model on the basis that call externalities might exist. If Regulators are minded to go down this road, they must demonstrate that externalities do, in fact, exist, quantify them, and the extent to which they are "internalised".

Furthermore, other externalities would need to be quantified. For example, if call externalities result in the reduction in termination rates, and operators responded by increasing other charges which led to a reduction in the number of mobile subscribers (as we explain, later in this response, it would be likely to do), then there would seem to be a network externality which would need to be captured by the reintroduction of the network externality surcharge on mobile termination rates.

In a report prepared for Ofcom, Jigsaw Research suggests that customers do not wish to pay for receiving calls, indicating that they do not attach value to them. For example, if charges were introduced for receiving calls, and these were offset by lower outbound call charges, 12% of pre-pay customers said that they would stop using their mobile. This result suggests that there are no significant call externalities that may be captured by reducing mobile termination charges.

In our view, efficient termination rates are usually cost oriented, network and call externalities would support departures from this benchmark, requiring detailed information for their implementation. BaK would not be an optimal wholesale price mechanism and would give rise to other practical problems, including the need for additional regulation.

3. BaK gives rise to other practical implementation problems, including the need for additional regulation.

A forced introduction of BaK would arguably prevent a return on investment of providing wholesale services, having effects on the operator's business model and strategies. It would also impact negatively on other factors like service quality and network investments and on end users. All these effects would force operators to change their business plan, due to the distortion that the provision of wholesale services at zero price, and therefore below costs, brings.

3.1 The mandatory introduction of BaK could produce important economic drawbacks

The strategic policy question that this raises in effect amounts to a proposal to replace the established and accepted objective (to seek to mimic a competitive price for call termination) with another, namely: to abolish termination rates to foster greater flexibility at the retail level. The implication is that the new objective would mean the replacement of established methodologies like LRIC+ with another approach. Telefónica believes that the ERG has not provided any reason at all to replace that current objective of mimicking the effect of a competitive market.

Many ERG members have spent the last few years promoting and defending cost models for termination such as LRIC, LRAIC etc. Telefónica is not aware of any sudden new argument that regulators have discovered that has persuaded them to change their view. The discussion around BaK seems detached from the previous lines of argumentation that regulators have been putting forward. This inconsistency does not contribute towards a stable and predictable regulatory environment, necessary for operators to make the substantial investment they need to in the years ahead.

BaK may be an efficient option under freely accepted commercial agreements when the economic value of the traffic exchange between operators is similar (BaK has emerged in contexts where interconnection results from common interests not from regulatory obligations).

BaK may cause distortionary behaviour, bring arbitrage opportunities and lead to inefficient traffic routing and inefficient network utilisation (inefficient routing of traffic from operators not participating in the Bill and Keep scheme). There may be incentives for small networks (including for example corporate private systems) to interconnect with public networks in order to be able to deliver calls outside of their private systems for free. A net interconnect deficit would inevitably arise in European countries moving to BaK. When the traffic flows are asymmetric then there may be a distortion of incentives which leads operators to be unwilling to interconnect.

Operators' incentives to continue to undertake investments to reduce the cost of supplying services will be harmed if operators are unable to gain a return on these investments, including the risks that they incur that the investments will be unsuccessful. A risk of BaK is that it encourages operators to determine their network design so as to shift costs on to other operators.

BaK may lead to a higher number of such unwanted calls because the costs of calling consumers for marketing and sales would be reduced. Low termination rates and low off net call prices help proliferation of certain type of calls which consumers do not value (for instance marketing calls or SPAM).

Finally, nowadays there is considerable doubt as to which model of termination payments is either desirable or sustainable in the future NGN world.

3.2 BaK will increase the need for additional regulation

Although the ERG assumes in its draft common position that BaK reduces regulatory cost and uncertainty, the reality would be quite different. Even assuming that BaK may reduce some transaction costs it is not obvious that it will diminish or eliminate the need for regulatory intervention in termination. Although interconnection billing would not be necessary, accounting equipment will still be in place, for instance to bill special numbers (exclusion of certain traffic categories such as information services from the BaK scheme). In addition, traffic will need to be classified according to whether the interconnecting network operator fulfils the BaK conditions. Furthermore, the ERG assumes that the application of BaK will be limited to termination at a specified boundary and therefore does not extend to transit services that must be billed anyway.

Telefónica does not believe that a move to BaK will in itself reduce the level of regulatory activity. There remains a fundamental problem in determining what the appropriate interconnection points are (big operators tend to want small numbers; smaller alternative operators tend to want more). Also it may be necessary to arbitrate on interconnection quality issues when variable quality levels are on offer at different prices.

3.3 The mandatory adoption of BaK could affect negatively some customers segments (e.g. mobile voice prepay customers)

There are many steps in the possible transition to a BaK regime and most of them have a cost implication. At its most basic the profitability of some customers will be reduced in the absence of a contribution from incoming calls.

If operators were not allowed to recover their efficiently incurred costs in providing termination services, they will seek to recover them elsewhere. There would be pressure on subscriptions, handset subsidies and call charges. Prepay customers, who tend to receive more calls than they make, might be particularly impacted; operators might be expected to seek a continual revenue stream, perhaps by implementing time expired credit. There is likely to be pressure to introduce charges for receiving calls. In the UK Ofcom's own research suggests that 5½ million pre-pay customers would stop using mobiles in these circumstances. The effect on welfare would be significant, particularly bearing in mind that almost a quarter of the lowest income households, who mainly use pre-pay, rely on mobiles for their communications needs.

But it is not just pre-pay customers who would be adversely affected. Contrary to the views of some regulators, medium-usage consumers and some, if not all, high-usage consumers are also likely to be worse off, insofar as they are likely to experience an increase in their average monthly bills, as mobile operators rebalance tariffs in an attempt to recover lost termination revenue.

Although it has been suggested that low termination rates would facilitate greater retail price flexibility, there does not appear to be a problem in the mobile market that needs to be addressed at all. Again, in the UK Ofcom concedes that prices continue to fall

(including off net prices), competition is fierce and there is plenty of innovation in retail tariffs.

3.4 The move to BaK will require developing new business models for certain services

The proposals in the consultation on Bill and Keep are not comprehensive but suggest excluding a range of services such as premium rate and free phone. These information services historically grew from overlay networks that handled the traffic separately from the normal switch network, primarily to allow a different charging mechanism such as free phone or premium rate. Over time further features have been added and the functionality included in the normal switching fabric. The premium rate and information services model is therefore very much an artefact of circuit switched technology. It is possible that new charging and billing mechanisms might change the nature of these types of services.

If there was a move to BaK retaining a "conventional" charging system just for these services which in terms of traffic are low-volume would potentially add significant cost. There is clearly a current market for these services, albeit small, varying by country, so some solution needs to be found. As stated earlier there are two elements to these types of services, the billing and charging mechanism and any additional functionality (usually special routing). Current products enable customers for these types of numbers to go to a single operator to buy the service and it is that operator who deals with the commercial arrangements with other operators.

In the situation where the routing of these calls is subject to regulation is not clear how that pricing will be done in the absence of pricing models that previously had been used for termination.

3.5 The coexistence of BaK model in Europe with the CPNP in other countries could produce arbitrage problems

A significant question arises with BaK concerning its boundary with other charging regimes. These issues fall into a number of categories:

- **The geographic limit** - a pair of operators, a country, a region and the EU. It is noteworthy that when mobile operator 3UK offered BaK arrangements in the UK it insisted that all other operators had to sign up or there was no deal. In the view of Telefónica it would be very difficult for a pair of operators to agree BaK between themselves in a country without raising questions of discrimination. The mandatory introduction of BaK to interconnect all kind of networks could produce important market distortions especially if asymmetries in the traffic and different network costs are not considered. The arbitrage problems will inevitably arise because many countries outside the European Union will not adopt BaK. Operators outside of BaK regions will develop arrangements to route traffic within that region to avoid paying termination charges but operators –and users- will still pay charges to terminate calls outside BaK areas.

- **The timing** - how long does this boundary condition remain, months and years or decades? The issue of timing arises because there may be imbalances in traffic and in traffic classes. These imbalances may vary over time and therefore may lead to varying cost implications at the boundary. The longer the transition greater the opportunity for arbitrage to arise. It is therefore likely that a faster transition would be better but clearly this is more complicated to synchronise.

  Any modification on the current equilibrium leads to changes in the business model with all the variables involved in it. The best way to avoid such unwanted subsidies is to keep the current interconnection as it is now. It does not harm any of the domains, since their relationship would remain evenly as at present where there are no major conflicts.

Regardless of the size of traffic imbalances and economic flows between different economic regions, it should be taken into account that European operators can not be worse off than operators in other regions. Economic flow should provide funding for networks and telecommunication service for the European operators as well. This will boost innovation and competition and offer new benefits to end customers.

3.6 Bill and Keep could be inadequate for future services beyond voice

Today there are a number of interconnection models in existence. In Europe for switched voice services the payments are primarily CPNP which is in most cases regulated but does include the normally commercially negotiated rates for information services.

IP data services tend to follow the Internet peering & transit model that is made up of three layers, Tier 1, Tier 2 and Tier 3. The Internet arrangement is not a BaK arrangement. At the Tier 1 level there are no normal charges for traffic between operators on that level but there are corrective payments to deal with traffic imbalances or differences in the economic value of the traffic. At the Tier 3 and 2 level there is an upward flow of payments to the T1 players and again some traffic balancing payments. This setup is a result of a system where every network operator charges the other operator for the traffic in the case he has the impression that the other operator has a bigger need for the interconnection than he himself. This is in total contradiction to the basic principles of BaK.

If switched networks were to follow this model that would still mean that there would be payments flowing between operators of some kind. This could therefore lead to disputes and requests for regulatory intervention. As data traffic from customers grows most of this traffic is currently carried on the Internet model which is why using the voice termination models that we currently have rates are reducing.

In terms of traffic volumes voice will become a smaller and smaller element on networks. Telefónica expect there to be a growth in new services and applications that will combine various media, voice, video, text and images in innovative new ways. These are likely to require new ways of charging. When looked at it from this perspective BaK for voice does

not solve the charging issue because voice is likely to be a part of many services are not necessarily a discreet product. It is therefore important not to create rigid charging models that might restrict the development of new services and applications.

Telefónica believes that it will not be possible for a number of years to predict how business models will evolve in an all IP world. It is in everyone's interests, customers, operators and application providers that business models are able to be experimented with and tested. It is important a fair return can be obtained by all players in the value chain otherwise services and applications will be slow to develop.

3.7 There is no legal basis to impose BaK charging mechanism in Europe

We do not believe that NRAs can implement charge control mechanisms that do not allow mobile operators to recover their efficiently incurred costs in supplying termination services, and much less to impose a zero price for these services. Therefore, we are firmly of the view that the proposals set out in the ERG consultation document are inconsistent with European and domestic law.

The ERG document mentions in several parts that BaK may be imposed as a regulatory obligation. However, the document does not explain what legal basis will be followed.

Art. 13 of the Access and Interconnection Directive (AID) foresees cost recovery and price control of wholesale services, and it is difficult to see BaK being consistent with that article. NRAs can use the exceptional procedure envisaged in art. 8.3 of the AID, that allows NRAs to impose other type of remedies in exceptional circumstances subject to Commission approval. However, it is disputable if it is necessary to use this type of resource.

A regulatory imposed BaK model will throw up winners and losers. As long as the legal basis can be challenged, there will certainly be litigation.

3.8 A more holistic analysis of the effect of the mandatory introduction of Bill and Keep is necessary

The introduction of mandatory BaK charging schemes would require a much more comprehensive and deeper analysis including such aspects as the effect on business models, effects on different customers segments, quality of services or incentives for investments.

Contrary to what the ERG concluded in its draft consultation paper, a change to an alternative system with radically different base principles, would be much more costly and may require different approaches, particularly in relation with the transition to a BaK model. It would require complex rules to determine the conditions and the boundaries under which BaK model should apply, including the configuration of hand over points to avoid ‘hot potato’ routing and other inefficient activities. It also would require additional

investment in complex systems to distinguish the origin of the calls in order to identify operators or traffic operating outside of the bill and keep frontier.

The potential benefits of forcing a migration to BaK are uncertain and today there is considerable doubt as to whether the BaK model is either desirable or sustainable in the near future.

The mandatory adoption through regulatory intervention of BaK systems would have highly unpredictable results. Absent a predictable view of the impact it is essential to allow the coexistence of several different charging models that can be used depending on the business models, the characteristics of services and the structure of the network. BaK could be one of those charging models.

ANSWER TO THE SPECIFIC QUESTIONS COVERED UNDER THE ERG CONSULTATION DOCUMENT

Question 1 - **Do you agree that in a multi-service NGN environment, in which different services use a shared transport layer, different interconnection regimes for different services could create arbitrage problems? If yes, could you describe the problems that you foresee or that have already occurred? If no, what prevents these arbitrage problems in your view?**

Arbitrage can arise were it is possible to access products with different cost bases that substitute at the retail level. The issue of arbitrage or substitution already arises in networks where customers can use a standard voice service or a VoIP service that have different pricing models. Callback services already exploit asymmetries in termination rates plus some international calls.

In the specific case of BaK, absent a charge for incoming calls, there exists an arbitrage opportunity involving the setting up of two incoming calls, instead of a conventional call involving a calling party and a called party. If incoming calls are free, and there are no wholesale termination charges, it is possible to establish a service that allows calling parties to effectively become called parties. The service provider sets up two calls: one to the original “calling party” (prompted by that party), and the other to the called party; and connects the calls. Under this arrangement, no payment is made for the use of either network, either by the end users, or by the service provider. In this sense, there is a “free rider” problem. Furthermore, these services do, in fact, exist in territories where there is no charge to customers to receive calls, and no termination charges.

Other arbitrage problems will inevitably arise because some operators outside of BaK boundaries will develop arrangements to route traffic within that region to avoid paying termination charges but operators –and users- will still pay charges to terminate calls outside BaK areas.

Accordingly, operators are incentivised to charge customers for receiving calls, even in circumstances where customers attach little value to this. More importantly, in circumstances where it costs subscribers more to make a call, than to receive one, if operators are not permitted to levy cost oriented charges, then an arbitrage opportunity exists, and operators would seem to be obliged to charge identical prices for receiving and making calls in order to prevent that arbitrage. This explains the paradox that consumers are unwilling to pay to receive calls, yet, in countries with low or zero termination rates, are required to do so.

Question 2 - **What is the influence of the separation of transport and service for the interconnection regime and in particular the charging mechanism and in what way are NGNs and BaK related?**

The proposals developed in the consultation for ex ante regulation for the interconnection transport and service interconnection seem premature, not in line with the objectives of the European framework and will probably have unpredictable effects on sector development.

The market for new NGN services, even though there are high expectations from many stakeholders, is still very immature and there are uncertainties about its possible evolution. It is unclear if the market will move to a structure with wholesale services at different layers or if vertical business models will be the evolution path. In addition there are also uncertainties about how competition will evolve. Regulators should observe the evolution and only intervene if there are clear signs of market failure.

Hence, the different levels where operators should guarantee access to their networks will depend on the analysis described above, and it should be carried out once these new infrastructure and business models are stable. In addition, it is important to emphasize that NRAs should trust commercial agreements between market players and proceed under “ex-post” regulatory criteria, after evaluating the market against the three criteria test.

On several occasions the advantages of promoting the evolution towards network and service models similar to the ones used in Internet have been put forward. The suggestion is that this has lead to all sorts of services and network infrastructure dramatically proliferating but it is necessary to take into account that this development has occurred with a low level of regulation which has been key to the great dynamism that has been observed in the development of services and infrastructure.

Although there is possibility that NGNs may have a greater separation between transport and service levels, it is currently unclear if a full complete separation for all services will be practical, especially if end to end service quality is required. For example a QoS guarantee is required for some services where there are demanding parameters such as delay or jitter. This may force operators to manage the transport and services together without implementing a complete separation.

The separation of transport and service can have an impact on network security and performance.

NGNs and BaK are not related. NGNs are principally IP-based networks. This perhaps would tend to suggest that they would follow an Internet-based (interconnect) model too. However, neither do NGNs have to follow a pure internet-like model nor does the Internet follow a pure BaK model. The Internet model is a hierarchical model where there are payment flows between different levels and even at the tier 1 peering level there are payments to deal with traffic imbalances.

BaK is therefore not per se related to a specific type of network model. It is used for some Internet backbone interconnection, when two operators find that the value that is provided to each other through interconnection is similar. In a commercial world that traffic balance would be the basis for deciding on a bill and keep model. The decision is not really related to a specific technology.

Question 3 - **How would you define the boundary for the application of BaK and where should it be located (i.e. points of interconnection where BaK is applicable)?**

Telefónica believes that NGN interconnection is still in an early stage of development, especially for new services, and would be highly premature to introduce through regulatory intervention, interconnection models that could influence its evolution with unpredictable results. Regulators should let market forces lead the evolution, monitor the competition in the market and intervene only if the situation makes it necessary.

The imposition of a regulatory model to define which operators would exchange traffic via BaK or where CPNP applies may cause arbitrage opportunities and lead to continuous source of conflicts and inefficiencies. There may be incentives for small networks (including for example corporate private systems) to interconnect with public networks in order to be able to deliver calls outside of their private systems for free, independently of whether the economic value of the traffic exchange between operators is balanced or not. Other players may place themselves as traffic hubs, seeking to terminate traffic from outside the BaK domain and exploit arbitrage opportunities.

The boundary for BaK application will have to be commercially agreed between operators.

It remains unclear whether a migration to a NGN IP network will occur and at which time or speed. It is clear that various interconnection models will coexist for a long period of time, making the definition of the boundaries for BaK more complex. This would also be the case for the location and characteristics of the interconnection points. Current networks exhibit a mix switched and IP architectures, indicating that a gradual migration of networks architectures is the most efficient behaviour for operators.

High performance service control and signalling systems of NGNs (that are more efficient with large amounts of data) and the need to cut costs implies that there will be (a large) reduction of the number of interconnection points. But it is still very unclear what the number and type of interconnection points will be.

The future number of interconnection point may also be affected by characteristics and requirements of the new NGN services. However, there is still a considerable amount of uncertainty about the capacity of interconnection points; the structure of the networks; the costs of transport; the robustness and the type of the services (bandwidth, real time requirements …).

The current level of development of new networks prevents us from achieving a real clear idea of the most suitable level of interconnection and what should be the limits of its application.

Moreover, the operator must be able to differentiate between the level of interconnection service offered, in terms of the quality of the service or other particular characteristics and, of course, this should involve a differentiation in price.

Question 4 - **What is your conclusion on the relationship between the charging mechanism and penetration, usage and price level?**

Telecoms markets have been very dynamic over recent years and it is clear as the market matures it does not have the same characteristics as it does in its fast growth stage. There is considerable evidence that prepay mechanism in mobile stimulated growth and brought in low usage customers who previously had no access to telecoms services. It has been remarked that the prepay charging approach has done more to bring unserved people onto the network than all universal service schemes put together. As stated in the consultation very low usage customers are often highly asymmetric in their traffic patterns and therefore termination contributes significantly to their profitability.

The Bill and Keep model could negatively affect end users

A move to BaK would cause significant disruption to the European mobile industry and the level of disruption would depend, among other things, on the level of MTRs at the time BaK is introduced. It doesn't allow operators to recoup common costs, such as network and marketing costs. This would mean that operators would have to recoup all their costs from their retail pricing as there would be no traffic related wholesale transactions. In other words, the retail charging regime would need to evolve, directly affecting European mobile users.

If operators were to recover the cost of terminating calls by increasing charges for mobile subscription then this is likely to have significant consequences for the number of mobile subscribers. All other things being equal this would lead to a reduction in the number of mobile subscribers. In particular, many customers on limited budgets who make few outgoing calls but receive significant numbers of incoming calls would choose not to subscribe. This raises issues of public policy and social equity as well as economic efficiency.

There would be similar allocative inefficiencies if the costs of mobile-to-mobile termination were met by introducing charges for receiving calls, or by increasing charges for making outgoing calls. For example, if mobile subscribers have to pay for receiving calls then they may become more likely to refuse to answer calls or even turn off their mobile phone.

In practice the introduction of a BaK/RPP system may lead to both increases in subscription costs and charges for receiving calls. In this regard it is instructive to consider low-end pre-pay tariffs from the United States (that operates an RPP system

where mobile operators receive the same payment for termination as fixed operators). Low end pre-pay tariffs in the US not only include charges for receiving calls, but also appear to have significantly higher subscription charges than equivalent European tariffs.

Finally, any migration process involves problems associated with the need for new network resources and investments which shall be remunerated accordingly. Past experience has shown that any development of a wholesale service needs long time for implementation in addition to significant costs, both in terms of network resources, information systems, etc…

The problems depend on the level of development and complexity of new networks.

Question 5 - **How does BaK affect regulatory certainty and the risk of legal disputes?**

Contrary to what is stated in the consultation document, Telefónica does not believe that the introduction of mandatory BaK systems would be the best solution to minimize the problem associated to termination bottlenecks.

Regulators may be tempted to think that a move to BaK would take away the need to regulate termination rates and that the associated litigation will disappear. However, Telefónica doesn't believe BaK would create more legal certainty, in particular not in the first number of years.

- The move to BaK will not work in everyone's favour, for example operators with a traffic deficit. When winners and losers are created, which is almost certain, then it is likely that some will seek to litigate;

- The introduction to BaK won't mean that no regulation is required. It will merely replace regulatory intervention in termination rates to other areas such as, for example interconnection points, QoS etc. In particular in the beginning these areas will be a source of regulatory uncertainty. Until such a time that there is a firm body of "jurisprudence" NRA decisions will be a source of litigation.

- All the effects of a move to BaK cannot be foreseen. Telefónica believes that the market will have to find a new equilibrium, all market players will have to get experience and they will make various unpredicted decisions. Some of these will need intervention by the NRA.

- If the Internet model for exchanging traffic were to be followed, then it is likely that there may still be compensating payments between operators to deal with basic traffic imbalances and imbalances in types of traffic. It seems inevitable that in some cases the intervention of regulators will be sought in relation to these agreements.

Telefónica believes that experience and relative stability that has been achieved with LRIC+ regulation should be maintained. Rather than a move to BaK Telefónica thinks that

the termination bottleneck will disappear in the future as competition develops in the access markets. This will be possible as the service and infrastructure layers of NGNs allow a service offering from different services providers.

Question 6 - **How do different wholesale charging mechanisms impact on the number of unwanted calls? Do you expect (other) effects on consumers/consumer groups? Where possible, provide a quantitative assessment of the expected effects.**

It is clear that spam is a major business on the Internet and it primarily works because the cost is so low. With the introduction of a BaK system for NGNs the cost of new forms of spam will also be very low. It is certain that customers will experience more unwanted incoming traffic than they do now.

Even a small interconnection charge would be a potential barrier to spam which once established is very difficult to remove. If a move to receiving party pays (to reduce arbitrage) occurs as a result of the introduction of BaK any unwanted call will be seen by customers as being highly irritating and is likely to lead to complaints.

Moving cost recovery to competitive markets will affect the structure of prices and will be inefficient. Although ERG says that low termination rates would facilitate greater retail price flexibility, there does not appear to be a problem in mobile that needs to be addressed at all. Mobile retail prices continue to fall (including off net prices) in all European countries and competition is fierce and there is plenty of innovation in retail tariffs. Sudden and dramatic changes to termination rates introduce a risk that the retail markets would be affected in a way that could harm, and not benefit, consumers.

Question 7 - **How do you assess the quantitative relevance of call and network externalities?**

The ERG sees “call externalities” as the main rationale for adopting a BaK model, yet no presence evidence for their existence. Even more, in the consultation document the ERG suggest that call externalities would lead to the conclusion that BaK is likely to internalize call and network externalities better than CPNP. However, Telefónica would like to observe that BaK would not be an optimal wholesale price mechanism and would give rise to other practical problems, including the need for additional regulation.

In our view, the principle of cost based pricing, with differences reflecting externalities, remains the right approach. Efficiency would be maximised if the utility between calling and called user is distributed in proportion to the relative cost distribution of the calling and called network. There is a recognition that BaK is not appropriate per se, but only when a number of assumptions hold, one of which is that there are huge (uninternalised) call externalities.

It is simply not good enough to oblige operators to move to a BaK model on the basis that call externalities might exist or that this model is likely to internalize call and network

externalities better than CPNP. If Regulators are minded to go down this road, they must demonstrate that they do, in fact, exist, quantify them, and the extent to which they are "internalised".

Furthermore, other externalities would need to be quantified. For example, if call externalities result in the reduction in termination rates, and operators responded by increasing other charges which led to a reduction in the number of mobile subscribers (as we explain, later in this response, it would be likely to do), then there would seem to be a network externality which would need to be captured by the reintroduction of the network externality surcharge on mobile termination rates.

In a report prepared for Ofcom, Jigsaw Research suggests that customers do not wish to pay for receiving calls, indicating that they do not attach value to them. For example, if charges were introduced for receiving calls, and these were offset by lower outbound call charges, 12% of pre-pay customers (equating to over 5½ million subscribers in the UK alone) said that they would stop using their mobile. This result suggests that there are no significant call externalities that may be captured by reducing mobile termination charges.

In our view, efficient termination rates are usually cost oriented, network and call externalities would support departures from this benchmark, requiring detailed information for their implementation. BaK would not be an optimal wholesale price mechanism and would give rise to other practical problems, including the need for additional regulation.

Question 8 - **How would your business be affected by a move from CPNP to BaK? Please explain the expected impact on prices, volume of supplied services and profit.**

The impact will depend on the timing and the scope of any move from CPNP to BaK. It will depend on the actual level of MTR at the time of transition, the mix of services on the network, the range of commercial interconnection arrangements (direct connections, open Internet, IPX etc) and the geographic scope. Clearly if regulators decided that they wished to introduce BaK and that a prerequisite was low MTRs, action to drive down MTRs aggressively for this purpose would have a negative commercial impact on operators. This would certainly mean that operators would need to look at the profitability of customers and in particular those with asymmetric traffic patterns, principally low users.

There may be savings in billing and charging systems. There may be also savings in the opportunity cost of not running a constant debate with regulators that requires detailed cost modelling and legal challenge. However it's not clear that even in a new charging regime we will be able to totally get away from cost modelling and legal challenges. The lower regulatory burden of BaK is likely to be replaced by other technical complexities and discussions related to the number and location of interconnection points, boundaries, etc.

In any case, it might be concluded that the mandatory introduction of BaK systems could introduce important distortions in the market dynamic and could have important

drawbacks for the sector limiting dramatically the business models that could be developed over new generation networks.

To the extent that the variety of services and players will increase it seems probable that several billing systems will coexist, some of not explored in the ERG document. Bill and Keep can be one of the billing systems used that could be appropriate for some types of services and networks but we do not see that it could be a general market trend to use it in all the cases.

It is clear that NGN interconnection will be based on much more complex business models and service scenarios, different than the present ones, requiring a news charging models that should evolve driven by market forces. NGN is, by definition, a multi-service network where BaK should play the right role, when necessary, but most possibly not the major role reflected in the document.

Question 9 - **Do you agree with the conclusion that operators/users in the BaK domain will subsidise traffic coming from outside the domain (regardless of the legal aspect)? Are there any mechanisms to prevent this and how will they work in your view, in particular to avoid arbitrage?**

A significant question arises with BaK concerning its boundary with other charging regimes. These issues fallen into a number of categories:

- **The geographic limit** - a pair of operators, a country, a region and the EU. It is noteworthy that when mobile operator 3UK offered BaK arrangements in the UK it insisted that all other operators had to sign up or there was no deal. In the view of Telefónica it would be very difficult for a pair of operators to agree BaK between themselves in a country without raising questions of discrimination. The mandatory introduction of BaK to interconnect all kind of networks could produce important market distortions especially if asymmetries in the traffic and different network costs are not considered. The arbitrage problems will inevitably arise because many countries outside the European Union will not adopt BaK. Operators outside of BaK regions will develop arrangements to route traffic within that region to avoid paying termination charges but operators –and users- will still pay charges to terminate calls outside BaK areas.

- **The timing -** how long does this boundary condition remain, months and years or decades? The issue of timing arises because there may be imbalances in traffic and in traffic classes. These imbalances may vary over time and therefore may lead to varying cost implications at the boundary. The longer the transition greater the opportunity for arbitrage to arise. It is therefore likely that a faster transition would be better but clearly this is more complicated to synchronise.

  Any modification on the current equilibrium leads to changes in the business model with all the variables involved in it. The best way to avoid such unwanted subsidies is to keep the current interconnection as it is now. It does not harm any of the domains,

since their relationship would remain evenly as at present where there are no major conflicts.

Regardless of the size of traffic imbalances and economic flows between different economic regions, it should be taken into account that European operators can not be worse off than operators in other regions. Economic flow should provide funding for networks and telecommunication competition and offer new benefits to end customers.

Question 10 - **Do you see any implementation problems for a migration period towards BaK? How could such problems be addressed?**

It is likely that a forced migration will throw up winners and losers. They will also be problems at the boundary level. The impact at the boundary level will depend on the traffic flows between operators at that point. It therefore seems logical to make the boundary as big as possible geographically as fast as possible. Whilst this may theoretically work at the macro level, it will be causes more problems individual operators.

So far there have been various schemes for interconnection based on time, capacity, and even schemes based on Internet traffic, which can justify the goodness of each and the need for coexistence based on the type of services and different quality levels.

An example of this is the major international traffic routes, where you can find different levels of quality and associated prices. This is a market where there have been no significant conflicts or major problems in traffic management. It is also a very dynamic market with the presence of multiple operators.

To ensure a correct management and dimensioning of the networks it is important that operators have the possibility to differentiate the prices by services. The model proposed by the ERG in its document, could lead to undue burdens of traffic that an operator carries downsize the networks of other operators, and so increase the need for new investment for the latter, without any possibility to recover it through its retail customers or by others alternative ways.

Finally, the ERG does not mention the potential disputes that may arise between end customers and operators in relation with the quality of services offered. They also shall obviate potential conflicts between operators regarding quality services issues as well.

Question 11 - Does the draft CP miss any other relevant issues?

As it has been explained previously in the document we believe the following issues would require additional consideration within the CP:

- **Application boundary.** The restrictions in the application boundary of BaK are proposed by the ERG as a solution to address arbitrage problems. We believe further elaboration of this would be required.

- **Legal basis.** Apparently the imposition of BaK charging systems could be inconsistent with present European legal frameworks. The CP documents should explain the view of the ERG on this issue.

- **Alternative charging models to BaK.** The CP document is focused on the evolution to BaK. This analysis should be extended to other alternative charging systems evaluating its suitability for services beyond voice.

- **Migration to BaK.** The transition to BaK could be especially complex due to the problems mentioned previously. A more detailed analysis on this issue could be convenient.

- **Impact assessment.** A more comprehensive impact analysis on the application of new charging systems, including aspects like effects on investments or on wholesale and retail services, should be included.