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**Response from the Danish Business Authority to:
Questionnaire for the public consultation on the revision of the recommendation on relevant markets**

Question 1-3

In Denmark, the penetration of broadband is high, and the evolution of VoIP retail services have entailed that many end users have chosen to switch from PSTN to VoIP. The end users are today offered a fixed telephone service with the same features and quality¹ that is known from traditional PSTN/ISDN telephony. Furthermore, VoIP can be provided as a cheaper and more flexible fixed telephone service than traditional PSTN/ISDN telephony.

From medio 2010 until today the number of PSTN telephony subscriptions have declined from 1,391 million to 1,025 million. It is expected that the number of PSTN/ISDN telephony subscriptions will continue to decline in the coming years, and that there will be less than 1 million PSTN subscriptions in Denmark at the end of 2012. Contrary to PSTN and ISDN, subscriptions via VoIP have become more widespread and the number is now approaching 1 million. Thus, it is expected that within 2013 there will be more VoIP subscriptions in Denmark than PSTN subscriptions.

The large penetration of broadband and the evolution of VoIP retail services has entailed that today it is easier for companies to establish themselves as a provider of a VoIP service than it was previously to establish themselves as a provider of PSTN/ISDN.

This has entailed that there are now more providers (including regulated providers) of voice telephony in the wholesale market for fixed termination (market 3) than in the past. The size and business models among the operators differ considerable. This creates considerable challenges in relation to the regulation, as the regulation has to cover a wider field and a mix of large and very small operators who are only marginal on the total retail market for providing fixed telephony.

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¹ It is though only a fixed telephone service with Quality of Service (QoS) that can be compared with and found as a substitute to traditional PSTN/ISDN telephony, and not all companies today provides a fixed telephone service with the quality (Quality of Service).

Many end users have also chosen to switch from PSTN to mobile solutions and mobile voice traffic has grown steadily over the years. This is not only due to the fact that more end users get a mobile subscription, but also because the traffic volume per mobile voice subscription is growing.

Today, end users are using their mobile phone significantly more than their fixed telephone, and voice call via mobile phones counted for 2.3 times more than voice call via fixed telephones.

Smart phones, tablets and dongles have resulted in a significant increase in the demand for mobile broadband. Today, almost half of the Danish mobile users have a smart phone and the amount of mobile data traffic has increased significantly in the last years. The growth has been most significant for mobile data traffic to mobile phones which in the last year has increased by nearly 240 percent. Most of the mobile data traffic is though still related to the use of computers.

Today, most mobile operators offer mobile packages (bundles) where a quantity of voice, free SMS and MMS and often a certain amount of data traffic are included in a fixed monthly price. Thus, the mobile market is currently characterized by a large variation in the provision of mobile services, where companies not only compete on the unit price, but also on the package.

In order to be competitive, the mobile companies in that context adjust several parameters. The typical adjustments consist of the inclusion of a higher consumption in the subscription without adjusting the price or just lower the price of the subscription. In a few cases, both the consumption has increased and the price has been lowered.

Regarding broadband, there has been a continued significant increase in subscriptions via fibre and a slight decrease in subscriptions via DSL during the last years, although there has been a continued limited demand for high bandwidth (at least 100 Mbit/s) in the retail market.

TV is an important/crucial factor regarding the supply of bundled services on the retail market on the broadband market. Indications suggest that television at least in the near future is still to be delivered as a broadcast service, either through IP-TV (multicast) or DVB-C. However, Netflix has recently been introduced in Denmark, and HBO Nordic will follow in the near future. The incumbent, TDC A/S, has recently introduced a similar service to be launched in the last part of 2012. The effect on the Danish market from OTT is still to be observed but it is expected to put pressure on the existing TV services, and it might help to push the price of television in triple-play solutions and help to promote the emergence of new services.

End users are increasingly buying total telecommunications packages - so-called triple-play subscriptions – when they invest in telephone, television and Internet subscriptions.

In just four years the number of triple-play subscriptions where all services are delivered via fixed network has increased from 35.000 to 299.000 – an increase of 763 percent. This development has an impact on the sustainability of operators focused on stand alone services. The challenge seems especially to be the difficulties in delivering broadcast/TV services via broadband, as these services require a large customer base for it to be a reasonable business case. Also on the market for IPR, the big players are favoured, which enhances the challenges for smaller players to be sustainable.

With regard to convergence of network and services, it is important to notice that on the Danish market this does not at the moment lead to a positive impact on the competitive conditions. This is due to the fact that TDC controls both the traditional copper network and the most widely deployed cable-TV network. Some competitive pressure, however, comes from the utility companies which are deploying fibre to Danish households and offer triple-play solutions through this infrastructure.

Recent acquisitions of companies and the consolidation of divisions within some companies will entail that in the near future “quadruple play”, where wireless communications is introduced as another platform to deliver video, Internet access and voice telephone service, could be offered on the retail market. This will further enhance the pressure on operators focused on standalone services.

For example, TDC A/S has recently announced a new strategy with an increased focus on providing comprehensive solutions for the home in relation to fixed and mobile telephony, broadband, TV and other services under the TDC brand. To enable this strategy, TDC has integrated one of its mobile divisions in its cable-TV division with the purpose of adding a supply within mobile telephony.

The demand on the retail market for new, better or different services has an impact on the roll out of NGA networks. The evolution shows that the end users still have an increasing demand for capacity-intensive services and thus higher bandwidth. This means that it is necessary for telecommunications companies to provide higher speeds to meet this demand. The evolution within IP-TV, triple-play and in the future “quadruple play” will play a significant part in the roll out of NGN network, since these services demand intensive capacity.

Question 7

The Danish incumbent TDC has during our market analysis process of the broadband markets 4, 5 and 6 expressed its interest into merging market 5 and 6 and analyse these two markets as one. However as it is ex-

plained in more detail below the DBA does not consider it appropriate to merge these two markets at the moment as the products on these markets can not be considered as real substitutes. It is therefore justified to analyse all three markets separately.

The DBA acknowledges that, while the market definition of market 5 apparently is laid down in a reasonable homogeneous way by the European Commission NRA's market definitions of market 6 is more troublesome and correspondingly performed differently among the NRA's.

The Danish approach to the market 6 definition has been not to distinguish between technologies but only to focus on the characteristics of market 6 products. Market 6 products are characterized by dedicated capacities defined as capacities available on demand, high quality of service and correspondingly price, while market 5 products are best effort products and a lower level of service quality. The prices for market 5 products are typically also comparably lower. However, the DBA recognizes that some fibre based symmetric products resemble some of the properties of market 6 products. But the quality of service (and prices) is typically significant lower than for leased lines. Due to the differences in characteristics, market 5 products are not attractive for (business) customers who demand dedicated capacities. Market 5 products should therefore not be considered as real substitutes for market 6 products.

Question 11-12

The DBA considers that wholesale SMS termination should be added to the list of relevant markets in the next recommendation.

The DBA and ARCEP are working on a document which will be presented to the Commission later. In the document it is argued that the structural barriers on voice termination markets are also present on SMS termination markets. A fact that has also been recognized in the explanatory note to the present recommendation.

According to the concrete market analyses conducted by ARCEP, UKE and the DBA, these structural barriers imply competition problems which can not be overcome in time and which cannot be solved appropriately based on the remedies available in the competition law.

The conclusion of permanent high and non-cost based termination tariffs is supported by figures which clearly show that there are significant competition problems on wholesale SMS termination markets.

Seen from a European perspective, end users of SMS services experience a significant loss in welfare as a result of not addressing the identified competition problems. In this regard the present lack of harmonized rules where the decision of analysing SMS markets is left to the individual NRA's leads to sub-optimising behaviour among member states. This effectively leads to less welfare for European customers.

Consequently, the DBA strongly advocates for including wholesale SMS termination in the next recommendation of relevant markets.