

The Danish Interconnection Policy

(non-binding translation)

Forskningsministeriet

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Telepolitisk Kontor
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A. Introduction

On 6 December 1995, the Danish government (the Social Democrats, the Social Liberals and the Centre Democrats), the Liberal Democrats, the Conservatives and the Socialist People's Party made an agreement in principle on total liberalization of the telecommunications sector in Denmark. The agreement presumes the implementing will be made by two stages (stage 2a and 2b).

Stage 2a was passed by the Danish Parliament to take effect from 1 July 1996. Among the Acts was Act No. 467 of 12 June 1996 on Competitive Conditions and Interconnection in the Telecommunications Sector.

The Act contains a provisional regulation of the framework for establishing and modifying interconnection agreements between telecommunications networks and/or telecommunications services.

On the subject of the calculation of interconnection tariffs the Act stated that interconnection agreements shall give access to interconnection on objective, transparent and non-discriminatory terms at cost-based prices with the addition of a reasonable profit.

On 10 June 1997 the government passed stage 2b of the liberalization of the telecommunications sector in Denmark.

Among the stage 2b Acts was Act No. 391 of 10 June 1997 amending the Act on Competitive Conditions and Interconnection in the Telecommunications Sector. The central idea of the Act was to lay down regulations on the calculation of interconnection tariffs and thereby implement those parts of the European Unions Open Network Provision (ONP) Directives, which are concerned with interconnection and access to networks and services.

Based on the Act on Competitive Conditions and Interconnection in the Telecommunications Sector Executive Order No. 657 of 18 August 1997 has been issued. This Executive Order contains a elaboration of the method for calculating interconnection tariffs stated in the Act. The Executive Order came into force on 27 August 1997.

B. Methodology used to determine interconnection tariffs

The central idea of the Danish legislation concerning interconnection tariffs is to lay down regulation on the calculation of interconnection tariffs ensuring that these will be sufficiently low for a great number of providers of telecommunications networks and services to find it attractive to start telecommunications activities.

1) The situation after 1 January 1999

It is stated in section 2a of the Act on Competitive Conditions and Interconnection in the Telecommunications Sector (as amended by the Act No. 391 from 10 June 1997), that the Long Run Average Incremental Cost (LRAIC) method should be used when calculating interconnection tariffs.

However, the Act also states, that the LRAIC method will be put into practice by 1 January 1999 at the latest. The reason for this is that experience from abroad, e.g. the United Kingdom and USA has shown that long and extensive analysis is needed before the method can be used in practice.

Since further clarification of the LRAIC method thus seems necessary, it is proposed in the Act that the Minister of Research and Information Technology should be authorized to undertake this clarification.

The Minister of Research and Information Technology has already initiated analysis for the purpose of making the LRAIC method useable in practise. The telecommunications industry and the National Telecom Agency will be involved in this clarification.

2) The situation in the period: 1 July 1997 - 1 January 1999

Until the LRAIC method can be adopted, a simpler and more practicable method for determining interconnection tariffs will be used, as stated in the Executive Order No. 657 of 18 August.

The exact wording of the provisional calculation model is given in annex 1.

Who is covered by the model:

The provisional calculation method is to be used by providers who have significant market power in 1) the total market for fixed network and mobile communications, 2) in the fixed network market or 3) the market for leased lines.

According to the EU-Commission's interpretation of the Interconnection Directive, providers of mobile communications only have to give access to switched interconnection at cost-based tariffs if the provider has significant market power in the total market for fixed network and mobile communications.

This implies that companies such as Sonofon and Tele Danmark Mobil, which have significant market power in the mobile market but not in the total market for fixed network and mobile communication, will not be under obligation to give interconnection at cost-based tariffs.

Which elements goes into the model:

The provisional calculation model consists of 5 cost elements.

The first element consist of the additional operating costs involved in realizing interconnection. The additional operating costs involved in realizing the interconnection should be understood as the increased operational costs resulting from handling the interconnection traffic. These costs would therefore cease if traffic stopped, which means that the costs are incremental as assumed in the LRAIC method.

The second element consist of a proportion of the amounts written off and paid by way of interests on investments necessary to realize the interconnection, and is concerned with cases where interconnection necessitates direct new investments. It has been found reasonable here that the provider who desires interconnection should pay his share of such investment.

The third element consists of a proportion of the amounts written off and amounts paid by way of interest on investments in such part of the network as is used for realizing interconnection. It serves the purpose, among other things, of ensuring the provider with significant market power a contribution towards coverage of such parts of the joint costs as concern the portion of the network used for interconnection.⁸

In calculating the contribution towards write-offs in connection with the determination of interconnection tariffs, the starting point will not be actual operational write-offs by individual market operators or the timescale for depreciation used by these firms. Instead, a linear scale will be used, where the depreciation period is basically set at 20 years for buildings and 10 years for exchanges, transmission equipment and cables and cable routes.

By formulating depreciation principles in this way for use in calculation, there is no risk that differences between operators or changes in principles will affect interconnection tariffs in an undesired direction.

The fourth element consists of a proportion of a share of the operating costs, which are closely linked to production of the interconnection traffic.

The purpose of initially allowing only a minor share (30%) to be included of the operating costs closely linked to the production of the interconnection traffic, is to ensure that real competition in the telecommunications market is brought about as early as possible. Only when a dominating provider's market share comes down to 80% or less will it be relevant to say that effective competition exists. On the other hand, when this level is reached, it will be reasonable to include a share of all operating costs closely linked to production of the interconnection traffic.

In calculating interconnection tariffs for leased lines, there may be included a proportional share of all operating costs closely linked to the production of the interconnection - irrespective of the size of the market share.

As a starting point, the calculation of market shares should be based on as new data as possible, e.g. averages for one year back.

The fifth element consists of a profit of 12% of the sum of the first four elements in the calculation method.

Besides the above stated 5 cost elements the provisional model contains the following elements:

It follows from the Executive Order that costs relating to subscriber lines cannot be included in connection with setting interconnection tariffs for switched interconnection. The reason for this is that these costs are assumed to be paid by end-users via subscription rentals etc.

The Executive Order also states that the burden of proof as to whether the calculation of interconnection tariffs follows the specified rules lies with the providers with significant market power, who are under an obligation to give interconnection at cost-based prices.

As regards the usage of “best practise” the Executive Order states that the National Telecom Agency may reduce the calculated interconnection tariffs if documentation can be produced to show that the price level of similar interconnection services in similar Danish or foreign interconnection agreements is lower than the interconnection tariffs calculated according to the model described in the Executive Order.

The aim is to ensure that also the provisional model outlined in Annex 1, like the LRAIC model, will make it possible for the parties requesting interconnection to avoid paying an additional price motivated by an earlier monopoly provider's (inefficient) production apparatus. The aim is also to improve the evidential balance between the two parties, of whom the provider receiving the request for interconnection will have an immediate advantage of having at his disposal the information, which forms the basis for calculating interconnection tariffs.

The rule will thus afford the opposite party the possibility of invoking “best practise” for pricing of parallel interconnection services globally speaking. It is a condition of being able to use the rule that documentation is produced to demonstrate that the services in question are parallel interconnection services. The Interconnection Directive requires all interconnection agreements to be made public, and this will make it easier to use the “best practise” possibility. The National Telecom Agency may use “best practise” to fix interconnection tariffs lower than indicated by calculations under the rule of subsection (1), in the same way as one of the parties to an interconnection agreement,.

The use of tariffs for parallel interconnection services in connection with the determination of interconnection tariffs presupposes, among other things, that the networks and equipment in question are nearly the same age and use approximately the same technology. It is also presupposed that the prices of the invoked interconnection agreement express a stable price level at the time in question, and are not exceptionally low because of e.g. a price war etc.

On the subject of tariffs for lease of infrastructure capacity the Executive Order states that the tariffs shall be calculated as indicated in the model, provided that the proportion of the amounts written off and paid by way of interest referred to in the model shall be taken to mean the percentage of

interconnection traffic in relation to the total capacity in such parts of the network as is used to realize the interconnection. In addition the operation costs closely linked to the production of the interconnection service shall be calculated as a proportion of the operating costs associated with the network leased in the whole or in part.

It should finally be noted that interconnection agreements regarding lease of infrastructure capacity may be demanded by everyone.

C. Data on interconnection tariffs

Since 1995, when the first steps towards liberalization of the telecommunications sector in Denmark were taken, 14 interconnection agreements have been entered into, and so far the National Telecom Agency has only mediated twice. (It is only when the parties cannot decide on terms for interconnection that the National Telecom Agency can mediate. If the mediation ends without the parties having agreed on the terms for the interconnection agreement the National Telecom Agency sets the terms and thereby also the interconnection tariffs.) So far the involved parties have expressed satisfaction with the work of the National Telecom Agency.

The above mentioned interconnection agreements have all been entered into on the basis of the Act from 1996, which stated that interconnection agreements shall give access to interconnection on objective, transparent and non-discriminatory terms at cost-based prices with the addition of a reasonable profit.

Since the Act amending the Act on Competitive Conditions and Interconnections in the Telecommunications Sector and the Executive Order concerning interconnection tariffs, which stated clearer rules for calculating interconnection tariffs did not come into force until recently, there is yet only scarce data on interconnections tariff agreed upon on the basis of the new legislation.

Of the 14 interconnection agreements, so far only two interconnection agreements have been revised due to the amendment of the Act. The two agreements are entered into by:

- 1) Tele Denmark and Global One Communications A/S, and
- 2) Tele Danmark and NetCom Systems.

Interconnection tariffs in these two interconnection agreements have been changed due to the amendment of the Act to the following (the tariffs are without 25% VAT):

DKK	Previous tariffs		New tariffs	
	Call set-up charge	Per minute	Call set-up charge	Per minute
Local	0,04	0,12	0,04	0,06
Within interconnect area*	0,10	0,18	0,08	0,11
Outside interconnect area	0,10	0,22	0,08	0,14
Transit, within area	0,04	0,10	0,04	0,08
Transit, outside area	0,04	0,14	0,04	0,12
*interconnect area: area in Tele Danmark's fixed network serviced by a couple of interconnect switches"				
Source: Tele Danmark, 27.8.97				

The tariffs per minute are halved during 19.30 and 08.00 and on Sundays.

As can be seen from the above the new Danish interconnection regulation has already had an effect on the interconnection tariffs and the hope is that in the future the interconnection tariffs will be even lower by means of the LRAIC-method.

ANNEX 1.

The provisional calculation model (Non-binding translation):

- (1) Providers of public telecommunications networks or telecommunications services who have significant market power in the total market for fixed network and mobile communications, the fixed network market or the market for leased capacity (including leased lines) shall in connection with agreements on switched interconnection give access to the aggregate charge for an interconnection service that does not exceed the sum of the following amounts:
 - 2) The additional operating costs involved in realizing the interconnection.
 - 3) A proportion of the amounts written off and paid by way of interest on the new investments necessary to realize the interconnection.
 - 4) A proportion of the amounts written off and paid by way of interest on other investments in such part of the network as is used to realize the interconnection.
 - 5) A proportion of a share of the operating costs that are closely linked to the production of the interconnection service.
 - 6) A profit of 12 % of the sum of the first four elements in the calculation method.
- (7) The additional operating cost involved in realizing the interconnection referred to in subsection (1) nos. 1, shall be understood as the increased operational costs resulting from the handling of the interconnection traffic and which would therefore cease if this traffic stopped.
- (3) The proportion of the amounts written off and paid by way of interests on the investments necessary to realize the interconnection, as referred to in subsection (1) nos. 2, is calculated as the proportion of the total traffic in those parts of the network belonging to the provider with a significant market power that are affected by the interconnection. Only investments that are of benefit both to the provider with significant power and to the provider who desires interconnection are concerned.
- (4) The amount paid by way of interests referred to in subsection (1) nos. 2 and 3 is the National Bank bank rate plus 4%.

- (5) The proportion of the amounts written off referred to in subsection (1) nos. 2 and 3 shall be set by use of a linear scale where the depreciation period is set at 20 years for buildings and 10 years for exchanges, transmission equipment and cables and cable routes.
- (6) The proportion of a share of the operating costs that are closely linked to the production of the interconnection traffic as referred to in subsection (1), nos. 4, will be fixed as follows:
- 7) 30% of the operating cost when the market share of the provider is more than 80%
- 8) 100% of the operating costs when the market share of the provider is 80% or less.
- (7) The proportion referred to in subsection (1), nos. 2-4, shall mean the percentage of interconnection traffic in relation to the total traffic in such part of the network as is used to realize the interconnection.
- (8) Costs relating to subscriber lines cannot be included in connection with the fixing of interconnection tariffs for switched interconnection.
- (9) The amounts written off and paid by way of interests on new investments necessary to realize the interconnection and which are exclusively to the benefit of the party requesting interconnection shall be paid in full by the party concerned when interconnection is established.
- (10) At the request of the National Telecom Agency or the party requesting establishment of an interconnection agreement, providers who have significant market power in the total market for fixed network and mobile communications, in the market for leased lines or in the fixed network market shall produce documentation to demonstrate that the interconnection tariffs they charge in connection with switched interconnection have been calculated according to the rules of subsection (1) and that the tariff charged for leased lines is calculated according to the rules of subsection (12).
- (11) The National Telecom Agency may reduce the interconnection tariffs calculated according to subsection (1) if documentation can be produced to show that the price level of similar interconnection services in similar Danish or foreign interconnection agreements is lower than the interconnection tariffs calculated according to subsection (1).

(12) The tariffs for lease of infrastructure capacity shall be calculated as indicated in subsection (1), always provided that the proportion referred to in subsection (1), nos. 2-4, shall mean the percentage of interconnection traffic in relation to the total capacity in such part of the network as is used to realize the interconnection, and that the cost element referred to in subsection (1), no. 4, shall be calculated as a proportion of the operating costs associated with the network leased in whole or in part.

Non-binding translation