



Competition in the Norwegian market for directory enquiries - an analysis and evaluation

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1 Introduction

1.1 Summary

This report is an analysis and assessment of competition in the Norwegian market for directory enquiries carried out by the Norwegian Post and Telecommunications Authority (NPT) one year after new legislation to improve the framework for competition in directory enquiries activities entered into force.

First there is a brief overview of developments in the directory enquiries market in Norway and the EU. The report also looks at data access (Section 2) and at the markets for manned and electronic directory enquiries (Sections 3 and 4 respectively), including an overview of the costs associated with the use of these services. Finally, there is an assessment of competition in the overall market (Section 5).

Section 2 describes the players' access to data, an element which is fundamental to and crucial for the operation of directory enquiries. The section focuses on problems relating to access to data, which has been one of the most important and in some ways one of the most difficult points in NPT's effort to create the conditions for better competition in this market. Key elements in this regard are principles such as non-discrimination and cost-orientation in the supply of data.

Section 3 describes the market for manned directory enquiries. The section looks at the allocation of new numbers for directory enquiries services and some conditions for the actual services linked to the allocated numbers (e.g. that services on these numbers shall cover subscribers of all telephone services, and cannot be used exclusively for SMS-based services). The section also provides an overview of the actual conditions for the market, such as technical conditions. There is also an overview of the various elements in charges to end-users for directory enquiries services. There is a clear link between the charge to end-users and efficiency (i.e. how quickly a call is answered). Most providers answer calls more quickly today than a year ago. Statistics collected by NPT with regard to this show that charges to end-users fell somewhat between 2002 (average for the year) and February 2003. Comparing manned and electronic directory enquiries services, it is cheaper for end-users to use the electronic services.

Sub-section 3.3 provides an overview of developments in the market on the basis of statistics collected from the players. The statistics show in a succinct way that the overall market is declining, while new players have gradually taken a larger share of this market.

In connection with the evaluation work a survey of the directory enquiries market was carried out. This showed that many people know the number for directory enquiries services, but most still use the old monopoly service for which you now dial 1881. However, as far as customer satisfaction is concerned, there is little difference between the established and the new services.

Section 4 provides an overview of the market for electronic directory enquiries, i.e. SMS or web-based services. More than half of users still prefer manned directory enquiries, but there is clear growth in electronic services. Today there are around 30 distributors of SMS-based

directory enquiries services and they have roughly doubled their turnover in the past eighteen months.

Section 5 contains a summary and assessment of competition in the market. Over the course of a year three competitors to Telenor's former monopoly service have been established. In spite of the high costs and some problems with access to data of a satisfactory quality in the start-up phase, it can be seen that competition in the market has become substantial. Among the contributory factors to this are probably extensive marketing in the form of advertising by all players and the answering service on 180 which gave out the new numbers in random order. With regard to access to data, the players have been given access to basic data at a cost-oriented price, but not on terms which are objective and non-discriminatory. NPT will monitor future developments in the market closely and will assess whether changes in legislation are necessary to achieve even better competition.

1.2 Use of terms

The meaning of some of the terms used in this report is clarified below.

A directory enquiry undertaking means a provider of directory enquiries services, including both electronic and manned services. Sometimes the term "player" is used for such undertakings.

Basic data for directory enquiries are the subscriber's name, address and telephone number as well as a unique ID which identifies the end-user concerned. The short form "basic data" is used for all this information combined.

Value-added data means basic data which has been processed and to which information has been added which may be regarded as adding value to the basic data. An example of value-adding information is a subscriber's e-mail address.

A VAS provider provides VAS services, i.e. a value-adding service based on a basic telecommunications service which is enhanced through the use of routing, an information element or other intelligent network functions.

1.3 Background and objectives

In the autumn of 2000 NPT initiated a project to assess how to create better conditions for competition in the market for directory enquiries. There were two motives for the project. In part the project was motivated by Directive 98/10/EC (the Voice Telephony Directive) which required Norway to create the conditions for competition in the directory enquiries market. However, the initiative was also taken because NPT was contacted by companies which were considering starting directory enquiries services or telephone directory (phone book) services in competition with Telenor. However, they could see that the basis for the activities, i.e. access to data which would be used in the service, posed considerable problems. At that time Telenor was alone in having manned directory enquiries activities in Norway. The company had a de facto monopoly, although the legislation was no obstacle to the establishment of competing undertakings.

The purpose of the project which was initiated was thus primarily to implement existing EU directives in order to bring Norwegian legislation into line with them and thereby to create the conditions for more players in the directory enquiries market. NPT had no clear idea of whether or not more players in the market would lead to new types of service or better content in the services. However, it was considered probable that more players would lead to some degree of price competition. It was considered more difficult to compete on service content.

During the course of 2001 an assessment was made of what regulatory changes were required to create the conditions for more competition in the market. A number of meetings were held with existing and potential players to discuss which points required regulation and what shape the regulation should take. Consideration was also given to whether or not regulation of the directory enquiries activities themselves should be proposed. In NPT's assessment, the Norwegian Telecommunications Act did not provide a legal basis for the regulation of such activities. NPT also took the view that it was not the task of the authorities to regulate the design of the actual service. Against this background no licensing scheme or other approval scheme was introduced for the operation of directory enquiries. However, some conditions were attached to the allocation of numbers (see sub-section 3.1 below).

A draft amendment of the Number Allocation Regulation (nummerforskriften) was distributed for comment in autumn 2001. There was a lot of useful feedback both from providers of telecommunications services and from active and potential directory enquiries undertakings.

The new legislation entered into force on 15 February 2002. The legislation consists largely of the regulation of access to basic data which can be used in directory enquiries activities. Pursuant to Section 12 of the Number Allocation Regulation¹ basic data means the end-user's name, address, allocated telecommunications service number, a unique identification number and, if the information is available, and type of use (e.g. whether the number is used for a fixed-line telephone, mobile telephone or fax). The legislation is based on the above-mentioned Voice Telephony Directive and on Directive 95/46/EC on data protection and Directive 97/66/EC concerning the processing of personal data and the protection of privacy in the telecommunications sector. Section 12 of the Number Allocation Regulation requires everyone who is allocated a number series by NPT to make basic data available to directory enquiries undertakings. This shall be done at a cost-oriented price and on objective, non-discriminatory terms. Through this provision NPT sought to create the conditions for more players in the directory enquiries market, both for electronic and manned services.

It is now just over a year since the legislation entered into force and the conditions for the entry of new players into the market was created. In connection with this NPT has carried out an evaluation of competition in the market in order to gain an impression of how far the objective of the new legislation has been achieved. On the basis of information collected and its own experience of the market as a regulator, NPT is conducting an assessment of how the market has developed over the last year. The result of the evaluation, together with this assessment, will form the basis for a decision on whether or not it is appropriate to propose changes in legislation in order to improve conditions for competition in this market.

1.4 Method

In its evaluation NPT has used statistics which it gathered on a monthly basis from the players in the market for manned directory enquiries. Against the background of this NPT shall make an assessment of the market over the past three years, with particular emphasis on 2002/2003.

NPT commissioned Norsk Gallup to research the users' perception of the market. This was done through a questionnaire survey of 1,000 people carried out in mid-February 2003. The results of the survey are presented in this report.

NPT has also researched the players' perception of the situation in the market and collected some information about contract conditions etc. through written questions. Reference is also made to surveys the players themselves have conducted among their customers. Consideration has been given to the fact that some of the information provided by the players is commercially sensitive. NPT has therefore included the part of the information which it was proper to present in the report in the appropriate contexts. Other information which was collected will be used in connection with the follow-up work which NPT will carry out after this evaluation report.

In addition, some numerical data were collected to assess the market for electronic directory enquiries.

1.5 Development trends

1.5.1 Developments in Norway

For years it has been Telenor (formerly Televerket) that has operated the manned directory enquiries service in Norway. As part of its licence Telenor has been obliged to operate a nationwide, universal directory enquiries and telephone directory service¹. In recent years there has been no regulatory obstacle to prevent others from starting competing services, but there is reason to believe that, among other things, problems with gaining access to basic data has obstructed the entry of new players. Since Directive 98/10/EC, which is a directive with EEA relevance, was annexed to the EEA Agreement, Norway has been obliged to create the conditions for competing undertakings in the directory enquiries market.

When the legislative amendment entered into force in Norway on 15 February 2002, three new players were ready to start their services on the newly allocated numbers for directory enquiries in addition to Telenor Teleservice (formerly 180). The new numbers were 1880 (Current), 1881 (Telenor Teleservice), 1850 (SOL) and 1890 (EasyConnect). On 30 April 2002 directory enquiries also became available on 1888 (operated by Phonec). This means that one year after the legislative amendment there were five different providers of manned directory enquiries services in the Norwegian market. Of these there is only one which provides international directory enquiries. This is available under 1882 and is operated by Telenor Teleservice. In addition there is a Sami language directory enquiries service under 1860 (EasyConnect). On 1 March 2003 a new company applied for a four-digit number in the series allocated to directory enquiries, so new players may enter the market in the period ahead. The company behind 1888 applied for bankruptcy on 5 March 2003. The bankrupt estate has been bought by an operating company which is continuing the operation of the service.

In addition to several new manned services there has also been a growth in electronic services over the last year. This applies in particular to directory enquiries via SMS. There are a

number of new distributors of SMS-based directory enquiries services. They obtain all their data from three of the directory enquiries undertakings. There has also been some development in electronic directory enquiries via the Internet. Electronic phone books containing private numbers are provided by Telenor (*Opplysningen online* – “Directory Enquiries online”) and by Findexa (*Gule Sider* – “Yellow Pages” – and information on private subscribers).

Nationwide directory enquiries in the form of paper telephone directories are offered only by Findexa. By outsourcing this task to Findexa, Telenor is fulfilling its licence obligation in this regard. This kind of directory enquiries will not be discussed further in this report.

1.5.2 Developments in the EU

Directive 98/10/EC obliges EU and EEA countries to ensure that all those who allocate numbers to end-users make them available for directory enquiries services and the production of phone books. At the same time the preamble to the Directive indicates that directory enquiries services, including the publication of phone books, shall be open to competition. Access to directory enquiries information must be provided on objective, non-discriminatory terms. With this legislation the EU has created the conditions for opening up the market for directory enquiries services, and Norway is not the only country which has recently been working to meet the EU’s requirements and objectives.

In most countries in the EU/EEA¹ the former monopoly providers have been put under an obligation to ensure that there are manned directory enquiries services as well as paper and/or electronic telephone directories. In general, these providers are required to do this as a USO obligation, i.e. a service which the provider is obliged to provide to all end-users in the market. Most EU/EEA countries have regulated access to data for directory enquiries undertakings to a greater or lesser extent. In general, all providers of public telephone services in these countries are obliged to make their number information available for use in directory enquiries activities. This applies both to providers who are obliged to operate directory enquiries services and to others who operate such services. It does not appear that the content of directory enquiries activities is subject to special regulation in any country. Nor, on the whole, is any special operational licence required to operate these kinds of services. One exception in this regard is the United Kingdom which requires new players to obtain a licence from the sector organisation, Icstis, before they can commence their operations.

Most EU/EEA countries have stipulated that access to data shall be provided on non-discriminatory terms and at cost-oriented prices. This is in line with Article 6(3) of Directive 98/10/EC. The strictest price regulation is found in Denmark, the Netherlands and Norway. The cost-orientation requirement is interpreted relatively strictly in these countries. This contrasts with Sweden, for example, where the price for basic data is not regulated, owing to the lack of a legal basis for such regulation at present.

In a few European countries end-user charges for directory enquiries services are also regulated. Examples include Spain, Iceland and Belgium. The latter two also have cost-orientation as a pricing principle for end-user charges. Telenor is also obliged to have cost-oriented end-user charges for directory enquiries services.¹

¹ Licence to Telenor ASA, issued on 2 March 1999 with later amendments, paragraph 9 on directory enquiries services

With regard to the numbers which can be used for directory enquiries, the situation varies greatly from country to country in Europe. The European Conference of Postal and Telecommunications Administrations (CEPT) recommends that directory enquiries services should be given numbers in the series 118(x). However, there are many countries which use different number series. Some countries have introduced new numbers for directory enquiries and started using them, while other countries are still working on number allocation.

It is a general trend in European countries that the number of calls to manned directory enquiries services is falling, both in total and from fixed-line telephones in particular. However, there is an increase in the number of calls from mobile telephones. The use of online phone books also appears to be increasing.

2 Data access

2.1 How is the data collected?

For all players in the market for directory enquiries, access to data is crucial for successful operation. It is therefore important to explain how this works in practice in order to get a complete picture of the market.

Pursuant to Section 12 of the Number Allocation Regulation, all providers of public telephone services who allocate numbers, names or addresses are obliged to make relevant directory enquiries information available to providers of directory enquiries services. This means that the obligation is incumbent on all those who themselves allocate telephone numbers in one way or another to end-users. However, what they are obliged to provide is limited to relevant directory enquiries information (also called basic data). The meaning of the term is elaborated in Section 12, second paragraph: it is the name, address, number, type of use (e.g. fax), if such information is recorded by the provider, and identification information which makes it possible to make an unambiguous identification of the person registered. In addition, the parties are obliged to ensure the fitness for purpose of the personal information.

There has been some disagreement between directory enquiries undertakings and providers of public telephone services concerning the scope and extent of these requirements. The players argue that they should be provided with the organisation numbers of undertakings and the dates of birth of individuals if the providers are in possession of such information. The providers of public telephone services argue that they are unable to provide such information, either because they do not possess the information or for data protection reasons. The key point here is that there is an obligation to facilitate an unambiguous identification of numbers provided by the individual telephone service providers in order to simplify subsequent amendments to entries. The Regulation puts different types of identification information on the same footing.

According to the Regulation, each individual directory enquiries undertaking must approach each individual provider of public telephone services that allocates numbers and enter into an agreement on the supply of basic data. According to the Regulation, a precondition for an undertaking to be able to demand to be provided with basic data is that it shall use the information in its directory enquiries activities. What constitutes “directory enquiries activities” is not set in stone and has to be assessed each time a new service is provided.

If directory enquiries activities are to be operated, providers are obliged to enter into agreements concerning the supply of data. At present agreements have been entered into between undertakings and the following providers: Telenor Plus, Telenor Mobil, Netcom, UPC, Sense, Zalto, You, Tele2, Teledanmark Internordia, Song and Ventelo.

According to Section 12 of the Number Allocation Regulation, basic data shall be made available on objective, non-discriminatory terms and at a costs-oriented price. The cost-orientation requirement is defined in this regard as meaning that the provider and recipient of data must each bear their own costs for facilitating the transfer of data, while the recipient shall pay for the actual transfer. In the agreements entered into prices for data vary from NOK 0 to NOK 50,000 per provider per year.

The Regulation also imposes an obligation to supply the data in a specific format², but allows a different format to be agreed between the parties. Most data is provided in the format indicated in the Regulation. However, the undertakings say that they also receive data in many formats other than that stipulated. This can lead to subsequent difficulties with regard to automatic updating and amendment processes. The reason why such agreements are nonetheless entered into or other formats are accepted may be that the undertakings prefer to receive these formats than to be left entirely without the data.

The chart below shows how the market for directory enquiries operates in practice in terms of access to data.

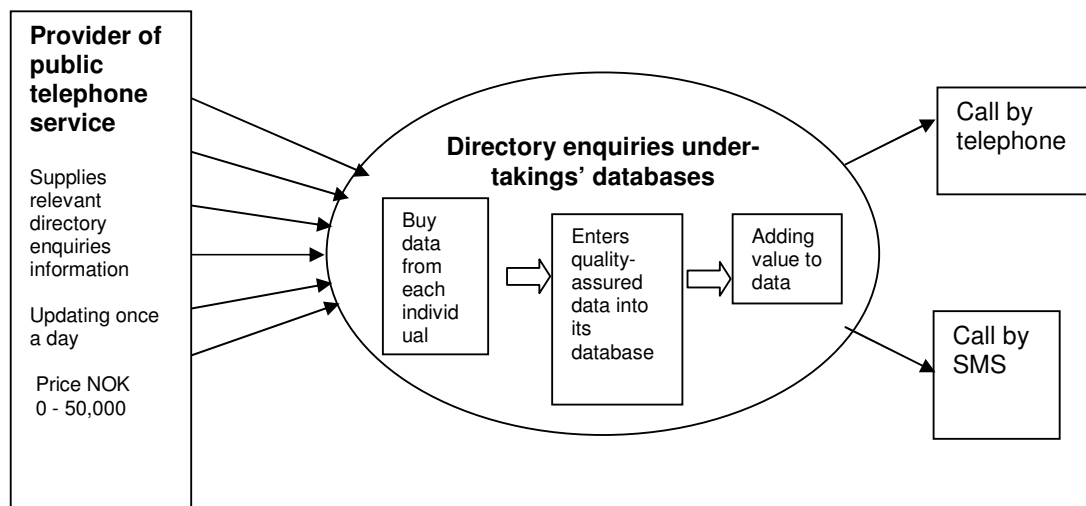


Figure 1: Data access in the market for directory enquiries

² ISO 8859-1 8-bit single-byte coded graphic character sets

2.2 Findexa in brief

Players in the market for directory enquiries and others find it difficult to understand Findexa's role in this market. One misunderstanding is that Findexa is a subsidiary of Telenor which provides Telenor's own directory enquiries service. It may therefore be appropriate to give a brief account of Findexa's position.

Findexa was formerly Telenor Media, but it was sold by Telenor in 2001. Since then Findexa has been a company without any formal links with Telenor. Like all other players in this market, Findexa must obtain basic data from all the providers of public telephone services. Findexa carries out quality assurance and adds value to the information it obtains.

Findexa operates as a provider of directory enquiries services through the compilation of telephone directories in both paper and electronic format. Findexa produces the paper directory on behalf of Telenor, which is obliged as part of its licence to compile such a publicly available directory of all subscribers to public telephone services in Norway (cf. subsection 1.5.1). Findexa does not carry on manned directory enquiries activities, but has its own SMS-based directory enquiries service.

In addition to its own directory enquiries activities, Findexa sells value-added data to other providers of directory enquiries services, both manned and SMS-based. Some players buy a lot of value-added data. Others find it too expensive, since the price depends on the volume requested, and therefore wish to develop their own value-added databases.

The chart below illustrates Findexa's place in the market for directory enquiries.

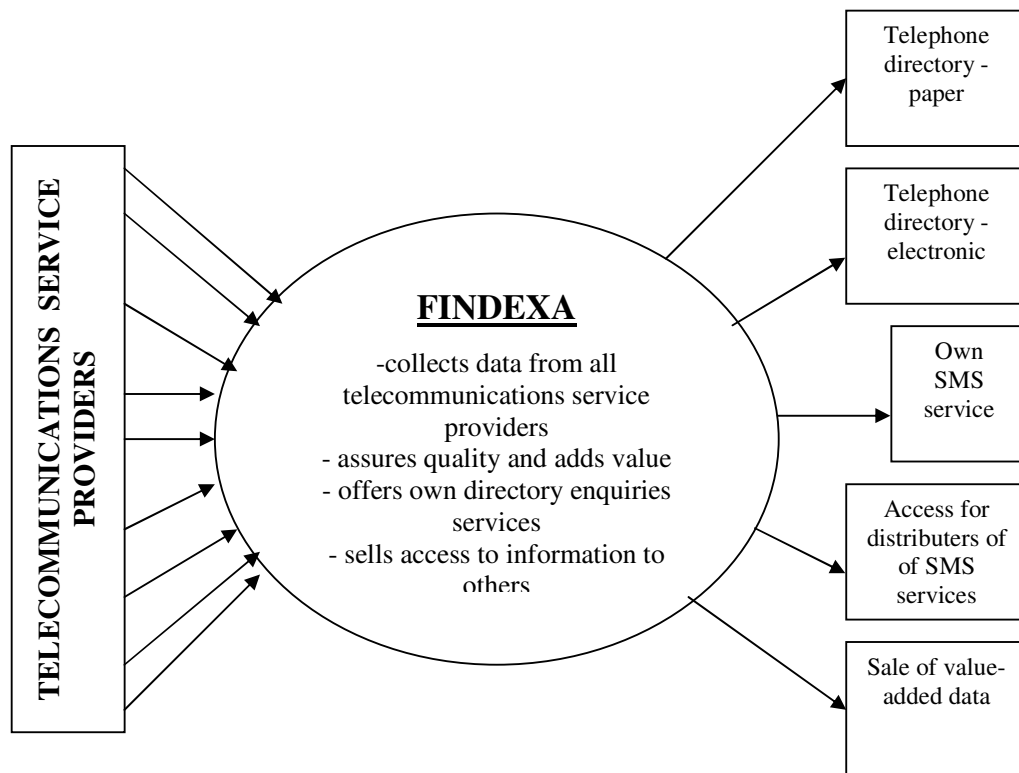


Figure 2: Findexa's role in the market for directory enquiries

3 Market for manned directory enquiries

3.1 Creating the conditions for competition – allocation of new numbers

3.1.1 Reserving number series for directory enquiries activities

When directory enquiries services were to be opened up to competition, it was a precondition that all interested players should have access to the same type of number in order to be able to offer their services on the most equal terms possible. The choice of number series for this purpose and the method of allocating numbers to the players was therefore of crucial importance and was dealt with very carefully by NPT.

In the national number plan the number series 100 to 189 is set aside for use for special standardised numbers. This series contains only 90 numbers. Because the proper use of number resources is of great importance, NPT took the view that no more than ten special standardised numbers could be set aside for directory enquiries services.

Against the background of several applications to NPT for 3-digit numbers for directory enquiries services and experience from the Swedish directory enquiries market, it was assumed that there was need for more than the ten numbers which were planned to be allocated for this purpose. For this reason the numbers set aside for directory enquiries services were given four digits. The number series 180x to 189x was the most appropriate in view of, among other things, the fact that 180 and 181 were already used for directory enquiries. The new 4-digit numbers would thus have some similarity to the numbers which were familiar to the public.

By expanding to four digits, 100 numbers in the national number plan were reserved for directory enquiries services (1800 to 1899). 50 numbers (1850 to 1899) were made available for allocation immediately, while the remaining numbers (1800 to 1849) were held in reserve.

NPT did not follow the CEPT recommendation to use the special number 118(x) for directory enquiries services because of the specific circumstances in Norway. Norway has three emergency services numbers (110, 112 and 113) and there would be a high probability of getting an emergency services number by dialling 118(x) incorrectly. NPT therefore feared that this could lead to a large number of wrong number calls to the emergency services.

In addition to the fact that it was necessary to move to 4-digit numbers to provide enough numbers for directory enquiries, it was, as previously pointed out, of great importance that all players should have the same access to numbers. Therefore, in order to create a level playing field for competition on the number side, Telenor's directory enquiries numbers had to be withdrawn. Consequently, the numbers 180 and 181 were withdrawn with effect from 30 April 2002.

3.1.2 Allocation of numbers – conditions for directory enquiries service

In order to achieve a fair distribution of numbers for directory enquiries services, the players were allocated numbers by drawing lots among all the applications which had been received by NPT by 10 December 2001. Telenor was not given any preference on the basis of the numbers they already used, and was treated on the same terms as the other applicants.

In the decisions on the allocation of numbers, NPT laid down a number of conditions for anyone wishing to start directory enquiries on a 4-digit number. The conditions include, among other things, that the directory enquiries service shall be available to everyone and that the number cannot be used for directory enquiries services offered exclusively via SMS.

In addition, the owner must have up-to-date lists of all subscribers to public telephone services in Norway, in both fixed and mobile networks, apart from subscribers who do not wish information to be made available (i.e. subscribers who have chosen to be ex-directory). It was also stated explicitly that the service may provide facilities for call completion to a chosen number and that when a call is completed the rate charged for the directory enquiries service shall stop and the rate for ordinary calls shall start.

3.1.3 Additional conditions for Telenor

As previously mentioned, the reason for opening up the allocation of numbers in the 18xx series and for withdrawing Telenor's directory enquiries numbers was to contribute to effective competition between providers. For this reason great emphasis was placed on the fact that new providers should have the same opportunities as Telenor to offer their services in order to help make it easier for them to enter the market.

For this reason some additional conditions were included in the decision on the allocation of numbers to Telenor. The main point of the conditions was to limit Telenor's ability to use the 180 number as a marketing channel for its new numbers, since this would be a unique marketing channel which others were precluded from using. Telenor's 180 and 181 numbers were very familiar to end-users and there was a substantial level of calls to the numbers.

In the period from 15 February 2002 to 30 April 2002 Telenor was allowed to use the 180 and 181 numbers in parallel to the 4-digit numbers it was allocated through the drawing of lots. One condition was that, as long as the 180 and 181 numbers were operative, Telenor could not actively use the numbers for the marketing of its new numbers. This meant, among other things, that Telenor could not inform customers about its new 4-digit numbers unless and until the customer himself or herself asked about them.

It was also clear that the number of calls made to 180 and 181 would be substantial after the directory enquiries services on 180 and 181 were closed down on 30 April 2002. If information was then only provided about Telenor's new numbers, this would have been a major competitive advantage for Telenor and would have meant that end-users could easily be channelled to their new numbers. On the other hand, not having any answering service at all would have caused problems for end-users. Consideration for end-users and the desire to contribute to effective competition were thus arguments in favour of having a neutral answering machine with information about the directory enquiries numbers of all the providers. In that way the end-users would receive information about all providers and thus have a real opportunity to choose a directory enquiries service themselves.

For this reason it was made a condition that from 1 May 2002 an answering service should be set up which provided information about all the 4-digit numbers of the new directory enquiries services in a neutral, non-discriminatory way. The company name or brand etc. should not be given. In order to make the answering machine as even-handed as possible a mechanism was set up which meant that the numbers would be read out in random order.

The answering service will be available until 1 May 2003 and will then be shut down. Information about this can be found on NPT's website, together with information about the providers offering directory enquiries services. According to statistics from Telenor, there were up to 9,000 calls an hour at busy times in the period after the withdrawal on 30 April 2002, while at the end of march there were around 400 calls a day. The relatively modest number of calls today indicates that the end-users have learned the new numbers and that there is therefore no longer a great need for the answering machine.

3.2 Actual conditions for the market

3.2.1 Overview of players in the market

The following companies currently offer manned directory enquiries:

- **1850**, owned by SOL, but operated by EasyConnect
- **1860** Sami language directory enquiries, also operated by EasyConnect
- **1880 Nummeropplysning**, operated by Current
- **Opplysningen 1881**, operated by Telenor Teleservice
- **1888 Nummeropplysning**, operated by Phonec until 5 March 2003, now taken over by the operating company Almu AS
- **Opplysning 1890**, operated by EasyConnect

3.2.2 Technical conditions

Manned directory enquiries services have a lot in common with manned premium-rate services offered under the number series 820 and 829. These services are produced largely in the same way. The directory enquiries undertaking is responsible for producing the actual content of the service (similar to a content supplier for premium-rate services), while billing for the use of the service is done via the provider of the public telephone service used by the caller to convey his calls.

The following different functions/players are part of the value chain for manned directory enquiries services:

- The directory enquiries undertaking – responsible for the production of the actual content in the call, i.e. for answering queries which are made to the directory enquiries service.
- The VAS provider – responsible for the technical added value of the call, including, among other things, “intelligent management” of the calls to the service. This may, for example, entail the distribution of calls to several directory enquiries call centres which may be located in different parts of the country and associated queuing functionality. Examples of VAS providers include companies such as Consorte, Legion, Telenor Link and Teletopia. It is also possible for the directory enquiries undertaking to take care of the VAS production itself.
- The provider of public telephone services (the network operator) to which the VAS provider is connected. A VAS provider can be connected to a provider of public telephone services who has interconnection agreements with other providers of public telephone services. Several of the VAS providers who undertake VAS production for the directory enquiries undertakings are connected to Telenor's network, but there are

also examples of VAS providers who are not attached to Telenor's network. It is also conceivable for network operators and VAS providers to be one and the same company.

- The provider of public telephone services which the caller (A-subscriber) uses for the conveyance of the call – responsible for the conveyance of the call from the caller and onwards to the network operator to which the relevant VAS provider and directory enquiries service are connected. The caller can be either directly linked to the relevant provider of public telephone services, or use the provider with the help of a prefix (the 18xx series is not currently covered by carrier preselection). The provider concerned invoices the caller for the use of the service in the same way as for other calls. Examples of such providers include Telenor, Tele2, UPC and Song on fixed networks, and NetCom, Telenor Mobil, Chess, Sense and You on mobile networks.

Sub-section 3.2.3 describes in more detail how the settlement of accounts between the various players in the value chain is carried out.

3.2.3 Cost elements for calls to directory enquiries services

NPT provides a brief description here of how the charge for directory enquiries services is determined, and the relationship between the payment to the directory enquiries undertaking and the charge to the end-user. For the sake of simplicity it is assumed that the directory enquiries undertaking is on Telenor's network, although in reality a directory enquiries service can also be physically connected to other networks.

The actual provider of the directory enquiries service sets a per-minute charge for the content of the service. In addition, the VAS provider used by the directory enquiries undertaking will take a payment for the VAS production. On the basis of the charge for the content of the call and the VAS provider's mark-up, Telenor calculates a specific interconnection charge for calls to the directory enquiries service concerned. This specific interconnection charge is the price other providers of public telephone services (e.g. NetCom or Telenor Mobil) must pay to Telenor to have calls conveyed to and terminated with the relevant directory enquiries service connected to Telenor's network.

On the basis of this charge, each individual provider of public telephone services sets the charge its own end-users must pay for calls to the directory enquiries service. The difference between the charge to the end-user and the specific interconnection charge covers the cost for the conveyance of the call in the provider's own network, administrative costs, profit etc. Variations in charges can be put down to cost structures and competition.

The chart below shows the relationship between the charge set by the provider of the directory enquiries service (content of the call) and the charge to the end-user. The payment flows will be in the opposite direction.

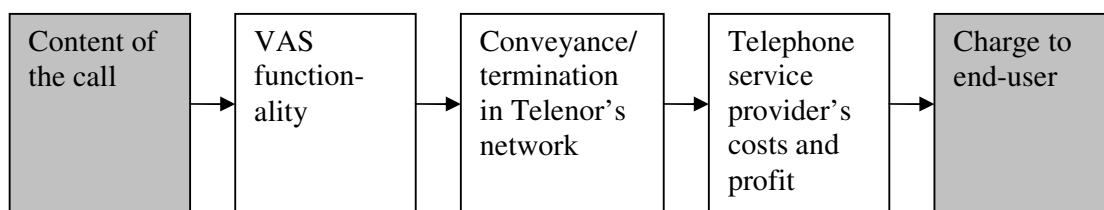


Figure 3: Relationship between directory enquiries service provider and charge to the end-user

In order to illustrate how much of the charge goes to each individual stage, we have an example based on average content charges from directory enquiries service providers, Telenor's payments to VAS providers and Telenor's interconnection charges and charges to end-users (amounts are in øre).

Stage	Player	Per min.charge excl VAT	Share	Setup charge	Share	60 second call	Share
Content price	Directory enquiries service provide	6,7	89,1 %	0	0,0 %	6,7	83,8 %
VAS functionality	VAS provider	7,02	4,3 %	0,038	8,0 %	7,058	4,50 %
Interconnection charge	Telenor	7,068	0,6 %	0,103	13,7 %	7,171	1,40 %
Charge to end-user	Telenor	7,516	6,0 %	0,476	78,4 %	7,992	10,30 %

Figure 4: Division of income

For the sake of simplicity the table above only includes daytime charges. The provider of the directory enquiries service is left with just under 84 per cent of the income from a one minute call, the VAS provider ends up with 4.5 per cent and Telenor (end-user element) has 10.3 per cent. However, if we exclude the start-up charge, the directory enquiries undertaking is left with around 89 per cent.

3.3 Developments in the market

This sub-section uses statistics collected monthly by NPT from the directory enquiries undertakings to provide an overview of how the overall market has developed since the introduction of new legislation.

3.3.1 Total number of calls answered and total length in minutes

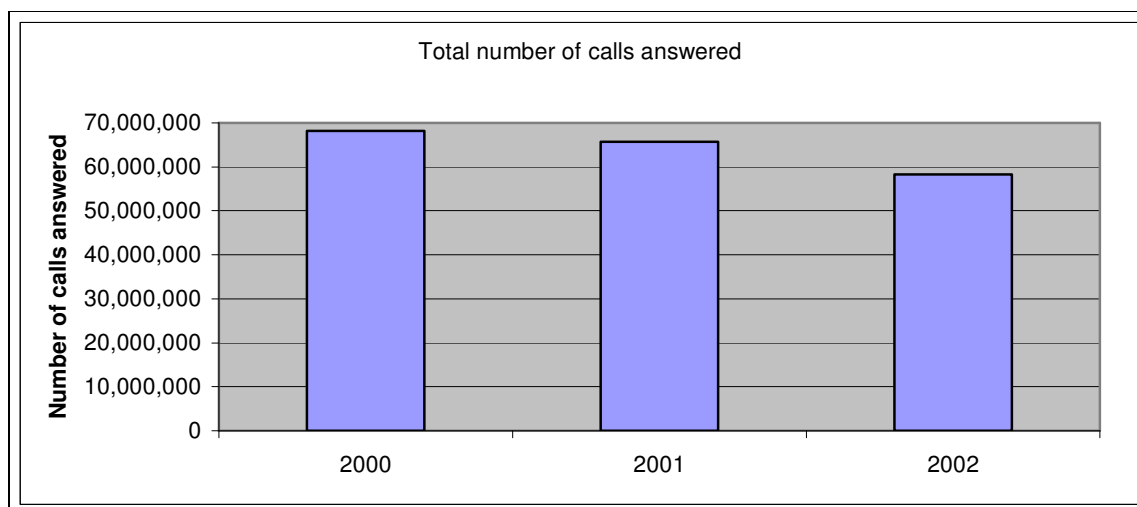


Figure 5: Total number of calls answered 2000-2002

Figure 5 shows the development in demand for manned directory enquiries services in the period 2000 – 2002. As the chart shows, there is a declining trend. The number of calls

answered fell by 3.7 per cent in 2001, and in 2002 the fall was as much as 11.2 per cent. The sharp decline in 2002 is quite startling. In this period there has been competition and directory enquiries have been marketed much more than before. It would have been reasonable to expect this to lead to increased awareness of directory enquiries services and thus to increased demand. However, one explanatory factor may be a shift from manned directory enquiries to electronic directory enquiries, such as SMS and the Internet (see Section 4).

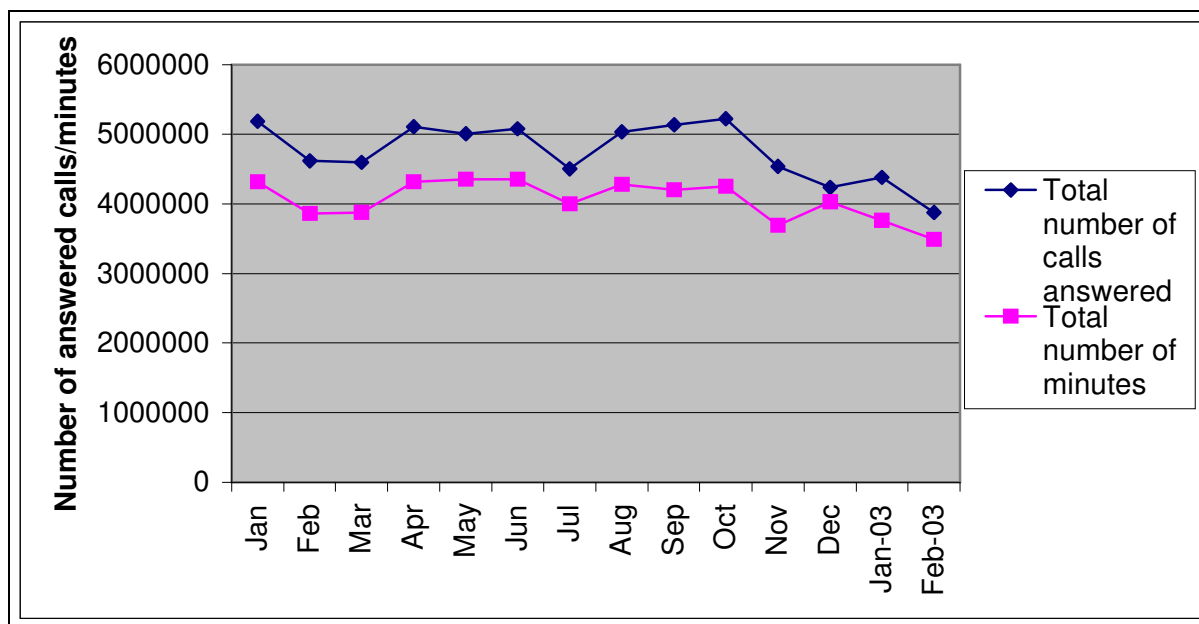


Figure 6: Total number of calls answered and total number of minutes

Figure 6 shows the development in the number of calls answered and the total number of minutes in the period from January 2002 to February 2003. With the exception of Norway's common holiday period, traffic was relatively stable in the second and third quarters of 2002. However, between October and December 2002 there was a full 19 per cent decline in the number of calls answered.

3.3.2 Number of people employed in directory enquiries

The table below shows the number of people employed in directory enquiries. There was a sharp decline during 2001, but an increase in 2002. This is somewhat at odds with traffic development, which saw a larger downturn in 2002 than in 2001. This may be partly explained by the fact that it has taken some time for the new players to properly get up and running with procedures and operations, so in the start-up period a large number of man-years of work was needed. However, in January 2003 the number of employees was reduced to 870, which is more in line with developments in general.

	2000	2001	2002
Number of employees as at 31/12	1006	968	1164

Figure 7: Number of people employed in directory enquiries

3.3.3 Turnover in directory enquiries

	2000	2001	2002
Turnover in NOK	401 151 658	389 614 422	358 982 588

Figure 8: Total turnover in the market for manned directory enquiries

The table above shows net turnover for manned directory enquiries over the past three years excluding VAT. As mentioned above, it is the providers of public telephone services who invoice the end-users, and their turnover is therefore larger than the turnover of the directory enquiries undertakings. Turnover fell by 3 per cent in 2001 and by a further 8 per cent in 2002.

3.3.4 Market shares

Market share can be measured using several different parameters. In connection with directory enquiries NPT has chosen to use incoming traffic, measured in terms of the number of calls, as an indicator.

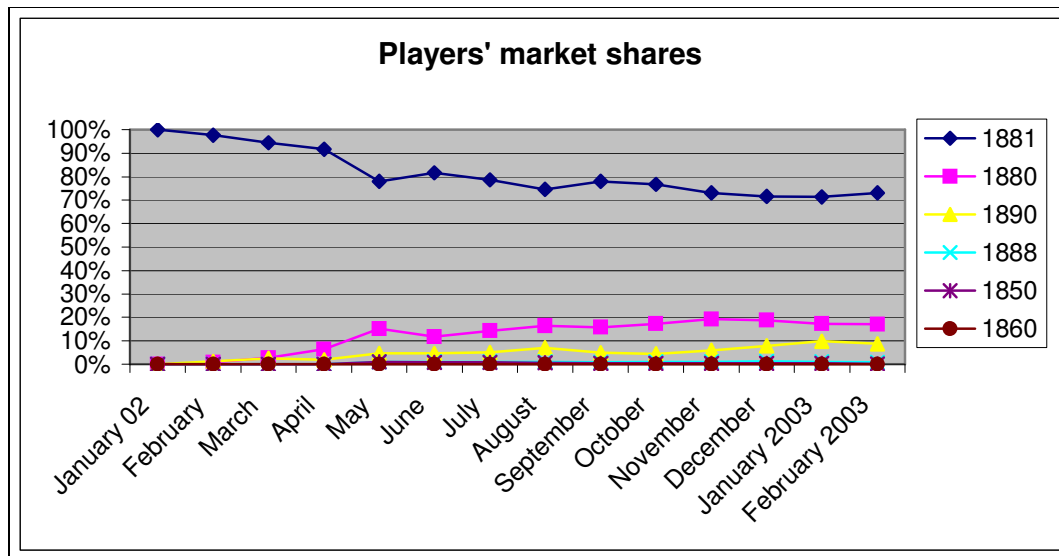


Figure 9: The players' market shares in terms of calls answered and minutes

The chart above shows the distribution of market shares between January 2002 and February 2003 among directory enquiries undertakings in the form of a graph. The numbers 1880 and 1881 together had 90 per cent of the market in February 2003, but have lost market share to 1890 over the past three months (apart from February). In February only the number 1881 recorded growth.

The table below shows market shares in terms of calls answered in table form for all players.

Market share	1881	1880	1890	1888	1850	1860
January 02	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
February	97.7 %	0.8 %	1.4 %	0.0 %	0.1 %	0.0 %
March	94.5 %	2.8 %	2.5 %	0.0 %	0.1 %	0.1 %
April	91.7 %	6.4 %	1.8 %	0.0 %	0.1 %	0.0 %
May	78.0 %	15.1 %	4.8 %	1.0 %	1.1 %	0.0 %
June	81.7 %	11.8 %	4.6 %	1.0 %	0.8 %	0.0 %
July	78.6 %	14.4 %	5.1 %	1.0 %	0.9 %	0.0 %
August	74.6 %	16.5 %	7.1 %	1.0 %	0.7 %	0.0 %
September	77.9 %	15.9 %	4.8 %	0.8 %	0.5 %	0.1 %
October	76.6 %	17.3 %	4.5 %	1.1 %	0.5 %	0.0 %
November	73.1 %	19.3 %	6.0 %	1.1 %	0.4 %	0.1 %
December	71.5 %	18.8 %	7.9 %	1.3 %	0.4 %	0.1 %
January 2003	71.4 %	17.4 %	9.8 %	1.0 %	0.4 %	0.1 %
February 2003	73.0 %	17.1 %	8.8 %	0.8 %	0.3 %	0.1 %

Figure 10: The players' market shares in terms of calls answered

During the course of 2002, the number 1881 lost almost 29 per cent of the market, mainly to 1880, but also to 1890. Since November 2002, however, it is 1890 that has seen the largest growth, and in January 2003 the number 1890 had almost 10 per cent of the market, although this fell back somewhat in February. The three smallest players combined have only 1.2 per cent of the total market.

3.4 Awareness, usage patterns and satisfaction

3.4.1 Introduction

This sub-section looks at the various players from the users' point of view. As mentioned in sub-section 1.4, in February 2003 a market survey was conducted for NPT. The aim of the survey was to map the users' awareness of and satisfaction with the directory enquiries undertakings.

3.4.2 Awareness of the players

In order to map awareness of the players, respondents were asked to name the players they were aware of. The chart below shows how many people named a particular player first (top of mind) or second and which players the respondent was aware of when the name was read out to him/her. The sum of these gives the total awareness of a player. 84.2 per cent were aware of 1880. For 1881 the level of awareness among respondents was 2 per cent lower, and 60 per cent were aware of 1890.

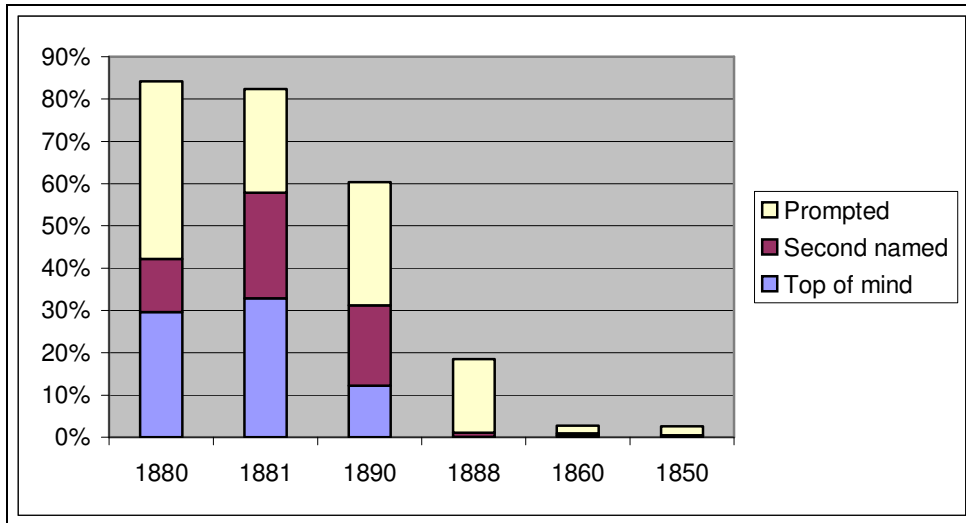


Figure 11: Awareness of the players

3.4.3 Usage patterns

The chart below shows which services the respondents say they use. However, these figures are not entirely consistent with the market shares shown in sub-section 3.3.4. On the other hand, the market shares tell us little about how many people use the various services, but more about how much they are used.

The chart below shows that more than 40 per cent of people said that they always use 1881. According to figures collected by NPT for calls answered, 1881 handles around 70 per cent of all directory enquiries traffic. 30 per cent said that they only use 1880, but 1880 handles less than 20 per cent of the traffic. This may mean that those who use 1881 are “heavy users” of directory enquiries. According to the market survey, a typical heavy user (i.e. someone who uses directory enquiries daily) mainly uses 1881 and has the following characteristics: male, 30-44 years old, married/cohabiting, working in the private sector or self-employed, from Oslo or Akershus, well-educated (university/college) and a high earner (more than NOK 300,000).

As with the market shares above, 1890 comes out as the third most used directory enquiries service. 7.5 per cent of users say they only use 1890, and NPT’s figures show that 1890 serves just under 10 per cent of the traffic.

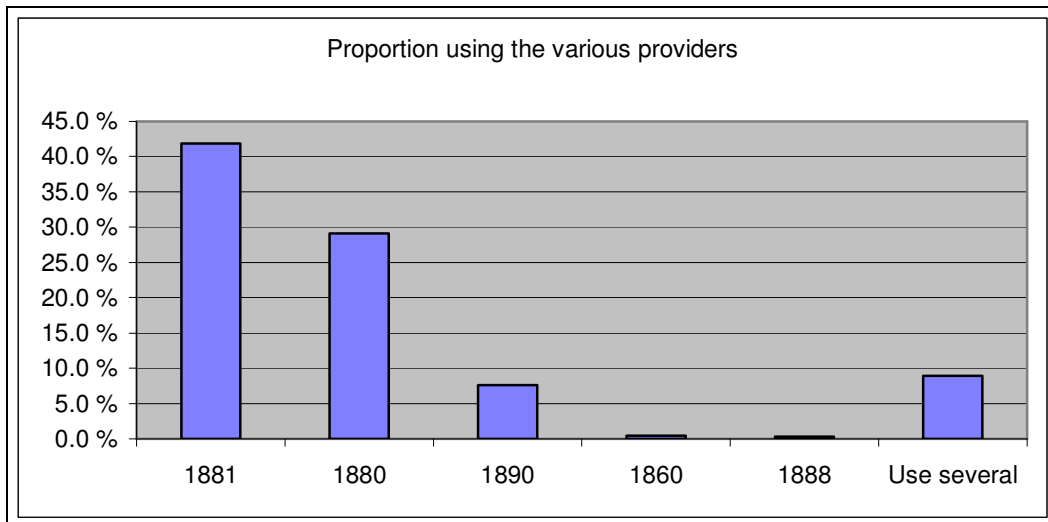


Figure 12: Usage pattern

On the question of why a person always uses one particular directory enquiries service, it is clear that awareness of the telephone number is an important factor. 66 per cent of respondents said that they use the directory enquiries service which has the simplest number, or which they last saw advertised. The advertising effect is therefore large for directory enquiries. Users like to call the number which is freshest in their mind. It is also interesting to note that only 2 per cent of respondents give price as a deciding factor, while efficiency, and thus, indirectly, price, ranks higher than the “quality” of the service.

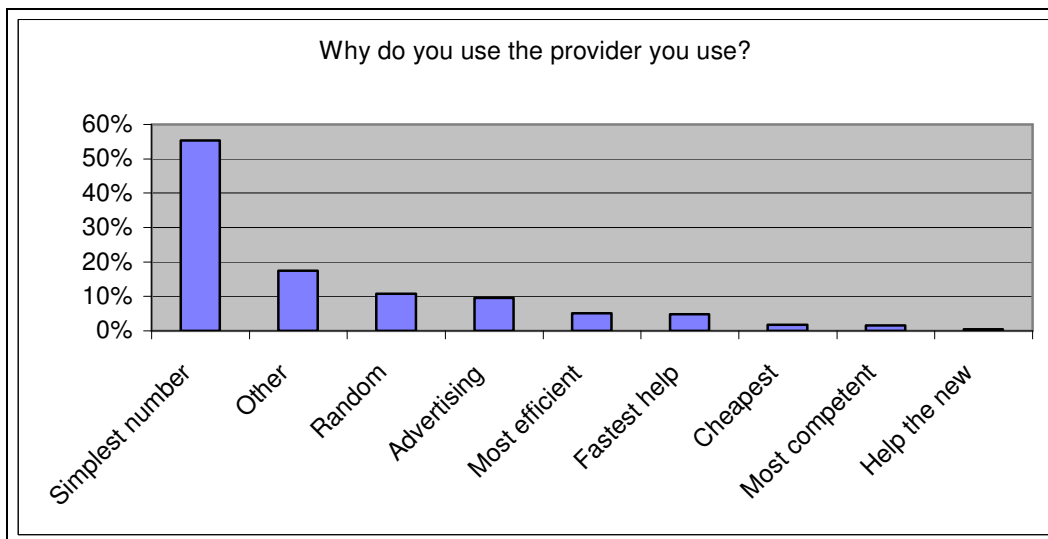


Figure 13: Reasons for use

The respondents were also asked why they did not use one of the other directory enquiries services of which they were aware. The replies to this reinforce the presumption of arbitrariness and the importance of awareness of the telephone number. 60 per cent of respondents gave “arbitrary” reasons for not using the other directory enquiries services.

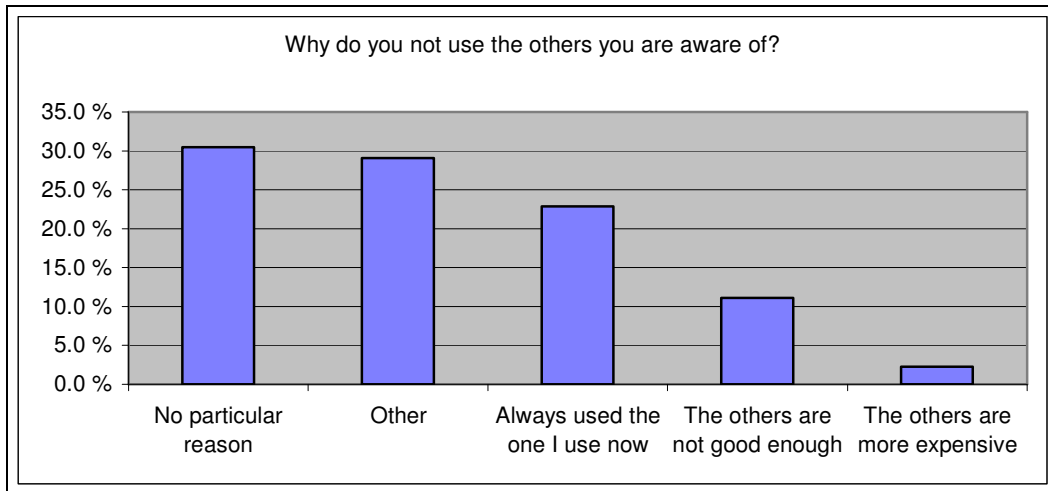


Figure 14: Usage pattern

3.4.4 Satisfaction

The respondents were asked to say, on a scale of 1 to 6 (where 6 is very satisfied), how satisfied they were with the directory enquiries service they usually use today compared with the old 180 service. The results are shown in the chart below. There is little difference between the various players. 1890's customers are most satisfied, with an average score of 4.51, closely followed by 1881. In last place comes 1888, whose customers gave it an average score of 4. Thus there is a gap of only 0.51 points between the one that did best and the one that did worst.

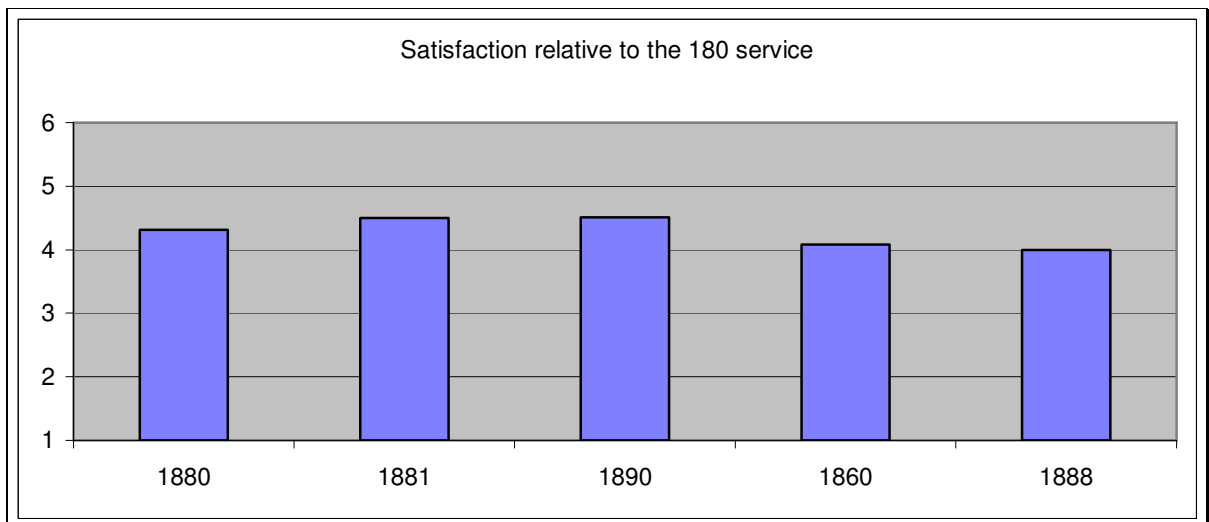


Figure 15: Satisfaction with the directory enquiries service the customer uses today compared with the 180 service

3.5 Costs for the user

In the market survey carried out by Norsk Gallup a third of those questioned said that they believed the new providers were more expensive than the old 180 service, while a quarter believed they are cheaper. The majority of those who expressed an opinion on price believed that the new players were just as cheap or cheaper than the old 180 service.

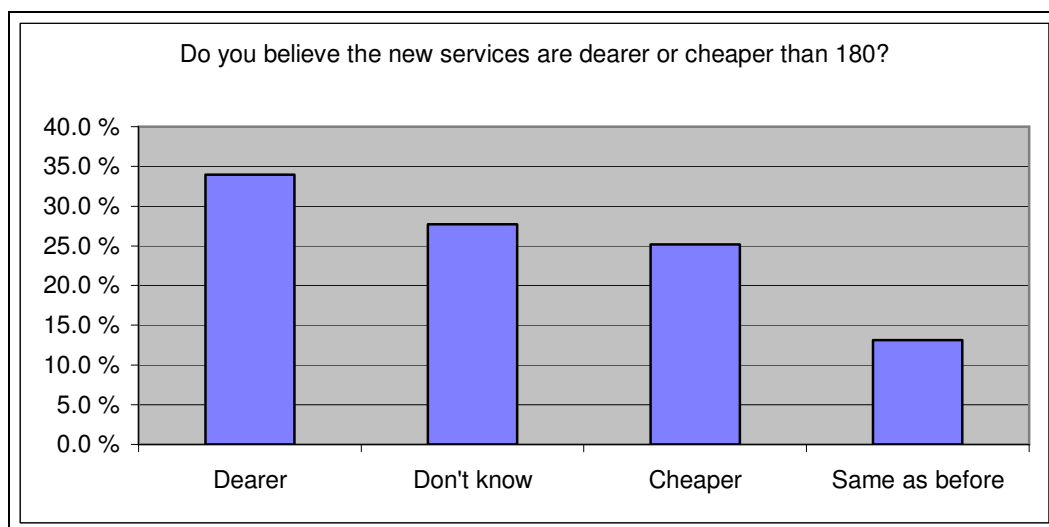


Figure 16: Awareness of costs

Against this background it is interesting to look more closely at how much a call to a directory enquiries service costs on average for a customer. As mentioned in sub-section 3.2.3, it is the providers of public telephone services who determine the exact per-minute charge for directory enquiries. We have therefore used the charges applicable from Telenor's fixed network as a basis. Other providers of public telephone services may have different charges, but since Telenor has the largest share of the fixed network subscribers, we believe it makes most sense to take this charge as a basis. The charge for calling the various services during the day as at April 2003 was as follows:

Phone number	Setup charge	Charge daytime
1881	0,59	9,32
1880	0,59	9,32
1860	0,59	9,32
1890	0,59	9,14
1850	0,59	9,32
1888	0,59	9,32

Figure 17: Charges (NOK) for directory enquiries as at April 2003

Based on the figures for average response times (Figure 21), the costs of an average call during the day will be as follows:

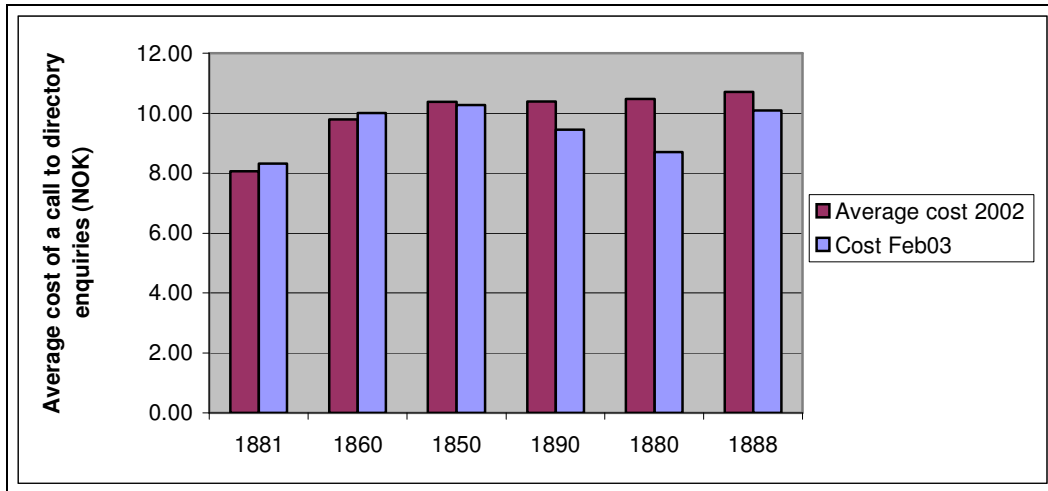


Figure 18: Cost of calls to directory enquiries in daytime

The chart above shows that, although charges are fairly similar, there are still cost differences between the providers. This is related to how long the various providers take to deal with a call. When competition was introduced into the market, 1881 was by far the cheapest and was 20 per cent below the average for all the providers. 1860 was also below average, while the other providers were up to 7.5 per cent above average. It is important to note that the differences may be due to factors such as teething problems in the first few months of 2002 for the new providers, and it can also not be ruled out that there are different kinds of enquiries to the different directory enquiries services.

If we look at the results for February 2003, however, the directory enquiries services are moving towards roughly the same cost. For the three largest players in particular the cost levels have evened out. Because of a lack of reported figures for the number 1888, an estimate has been made for this player for February 2003. It is perhaps worth noting that developments show that 1881 and 1860 have become somewhat more expensive for customers to use over the past year. In spite of this, 1881 is still one of the cheapest directory enquiries services to use.

3.6 Efficiency

As mentioned above, the efficiency of the directory enquiries service is of crucial importance for the charge users must pay for the service. We have chosen to assess efficiency on the basis of the number of calls answered, how long it takes to get through to the various services on the telephone and then how long it takes on average for the call to be dealt with. The first two indicators are based on surveys which the players themselves have conducted among their customers and reported to NPT. The media have also conducted similar surveys. The last indicator is based on reported figures from the players, and is calculated on the basis of the total number of minutes taken dealing with calls divided by the total number of calls answered.

The chart below is based on figures reported to NPT and shows what proportion of calls each player has missed on average. It shows the number of unanswered calls relative to the total number of incoming calls in the period in which they have been in operation, and how many calls they missed in January 2003 (the most recent representative figures NPT has received at

this time). The proportion of answered calls is thus implicit. Because of various teething problems, the average for most players was relatively poor in 2002, but the chart shows that all the new players have made great improvements during the time they have been in the market.

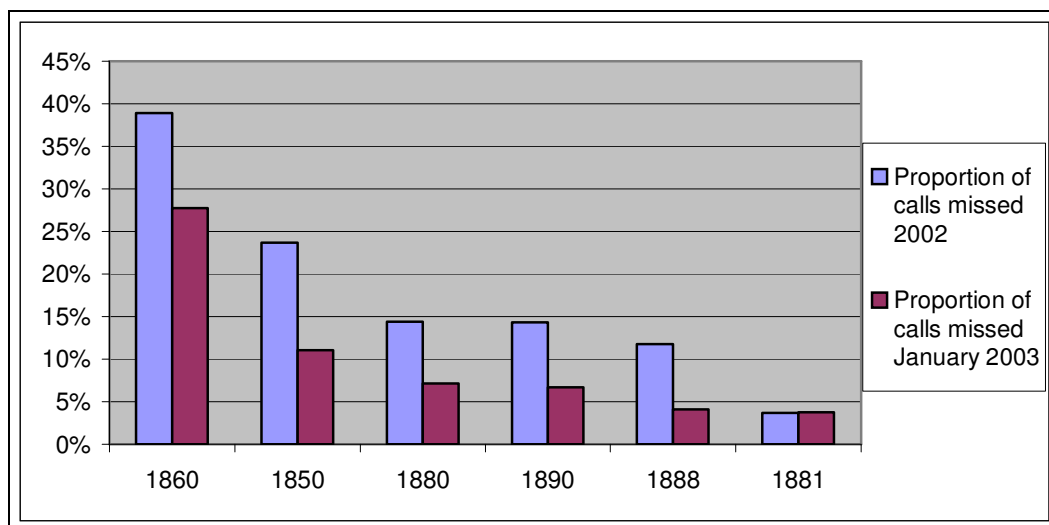


Figure 19: Proportion of calls missed

The table below shows how much time the players themselves estimate that it takes before a call is answered. This is how long it takes for the customer to make contact with the directory enquiries service. Of course, the customer does not have to pay for this time. 1888 is the fastest service, while 1881, 1880 and 1890 take a little longer to answer calls. However, the average response times are relatively similar, and there is no reason to believe that this parameter is of great significance for the choice of service.

Response time/seconds	1890	1850	1881	1880	1888	1860	Average
September	5,9	5,9	9	10	8	5,9	7,5
October	7,1	7,1	10	10	12	7,1	8,9
November	6,5	6,5	10	8	4	6,5	6,9
December	13	12	10,5	12	3	17	11,3
January	8	8	10	8	4	14	8,7

Figure 20: Time before calls are answered

The chart below shows how long call handlers take on average to deal with a query – i.e. to find the information the customer is seeking (or to give up). The table is based on data collected in the period from February 2002 to February 2003. 1881 is the service which deals with queries fastest, while 1888 is the service which takes the most time to deal with queries. However, it is important to remember that differences in the time taken may be due to factors such as teething problems for the new players in the first months of 2002 and different kinds of enquiries etc. When the average times for the whole period are compared with the results from February it looks as if the development is heading towards roughly the same level. This is also suggested by Figure 22 which shows the monthly development for each individual

player. However, on average for the whole period the fastest service provides assistance 36 per cent faster than the slowest provider. What this means in terms of costs for the user is discussed above in sub-section 3.5. It may be worth noting that 1881 has seen a small rise in the average call duration.

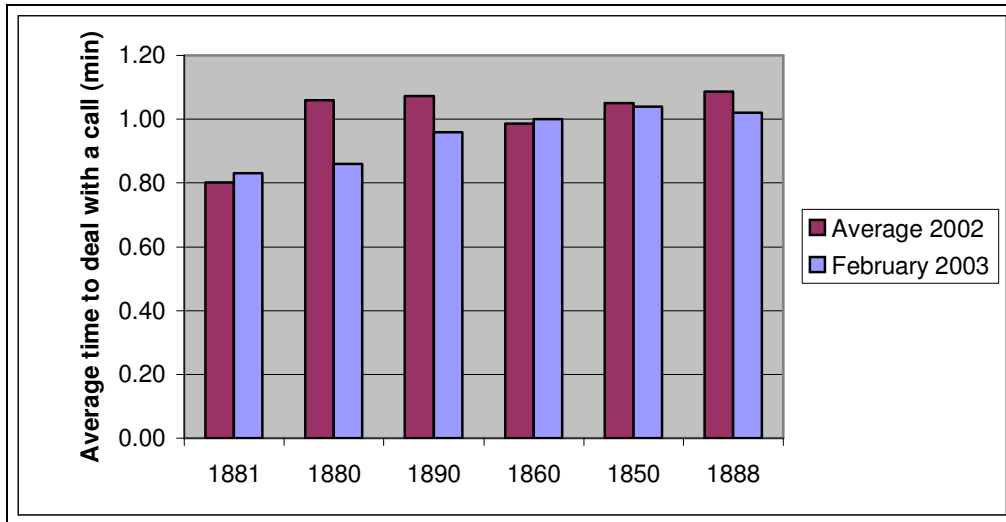


Figure 21: Average call duration

The chart below shows the development for each individual player over the past 12 months.

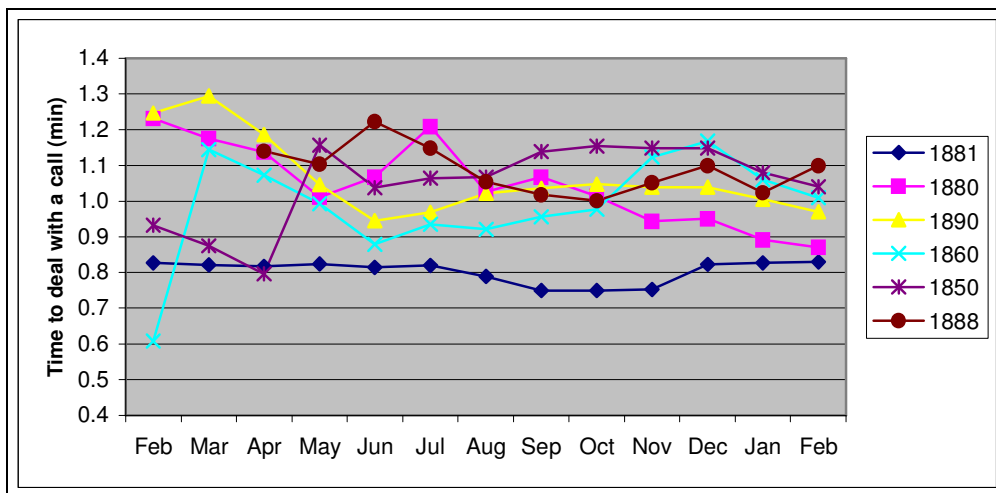


Figure 22: Month-by-month development, time taken to deal with queries

4 Market for electronic directory enquiries

There are various ways to distribute directory information. In addition to manned directory enquiries services, customers can make use of SMS-based services and the Internet services www.telefonkatalogen.no (provided by Findexa) or www.opplysningenonline.no (provided by Opplysningen 1881). There are just under 30 distributors of directory enquiries services via SMS. According to the survey, manned directory enquiries services are still the most frequently used, but almost a third of those asked prefer to use SMS or the Internet.

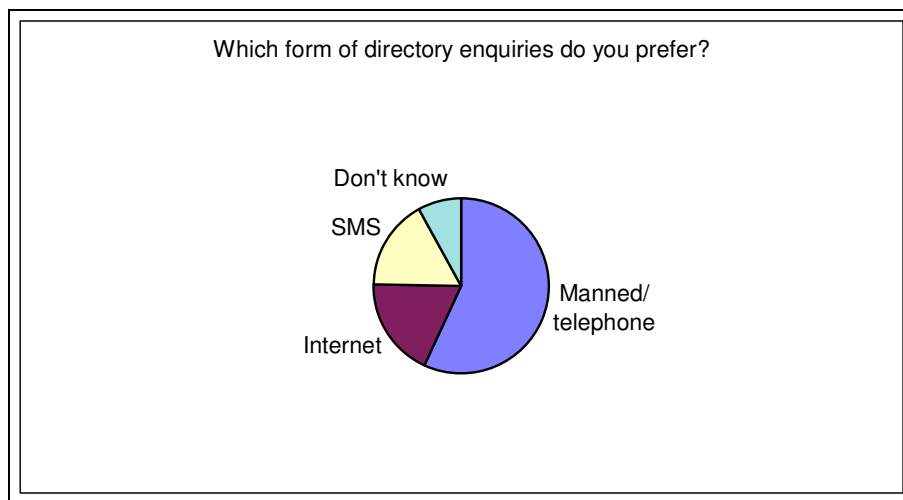


Figure 23: Preferred forms of directory enquiries

Access to good, reliable data is also of crucial importance for the quality of the service in the market for electronic directory enquiries. Therefore, similar challenges to those faced by the players in the market for manned directory enquiries will also apply in this case (see subsection 2.1 above). However, it is the case that those who provide SMS-based services are either themselves players in the manned market, so they can use their own database to look up information, or they have entered into agreements with such players concerning access to or enquiries in their databases. Problems with the quality and collection of data will therefore be expressed in a more indirect way for these services.

The chart below illustrates this. Current, EasyConnect, Findexa and Telenor Teleservice are the players that currently offer directory enquiries via SMS in addition to manned directory enquiries. They have their own databases for SMS enquiries. In addition to providing SMS services direct to end-users, three of these also have distributors connected to their databases.

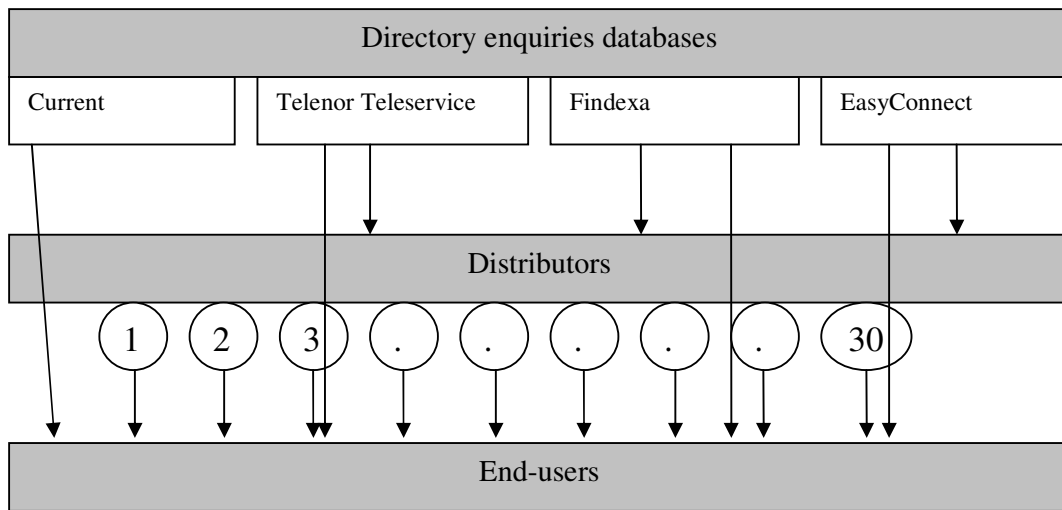


Figure 24: Suppliers of directory enquiries via SMS to end-users

The chart below shows how many enquiries were made via manned and SMS directory enquiries services in each half-year in 2001 and 2002. We have assumed that a call to a directory enquiries service can be counted as one enquiry, which is of course not entirely true. The chart clearly shows a declining trend for manned directory enquiries and a relatively sharp increase for SMS-based electronic directory enquiries. The chart also shows that the total market for directory enquiries is growing, but that there has been a shift from manned to electronic services. In the first half of 2001 some 18 per cent of the total number of enquiries were made via SMS, while the corresponding figure in the second half of 2002 was 35 per cent.

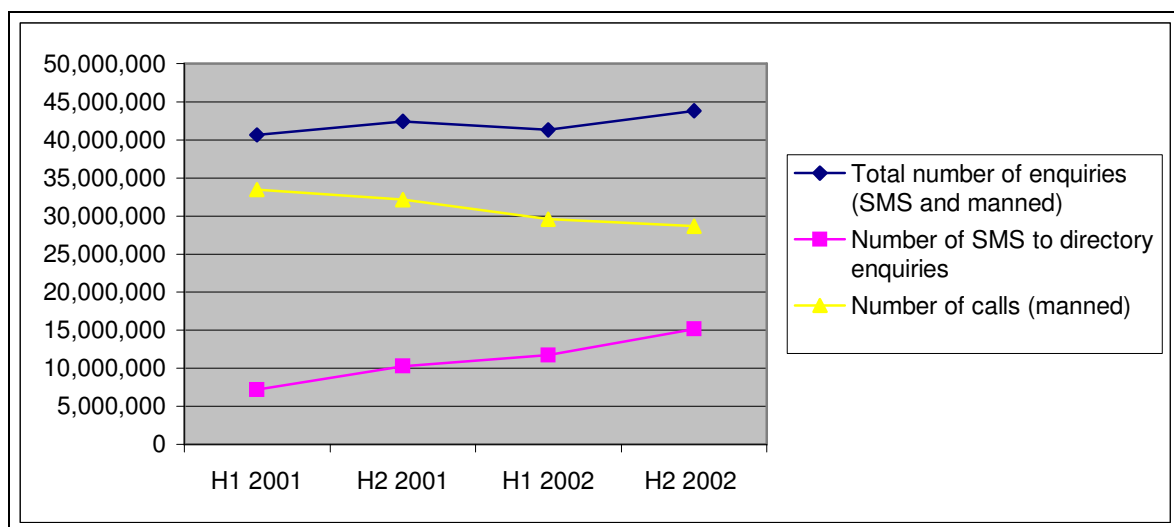


Figure 25: Development in electronic directory enquiries

NPT has found that customers pay between NOK 3 and NOK 5 for directory enquiries via SMS. Based on this, the total market for SMS-based directory enquiries had an estimated turnover of NOK 80 to 135 million in 2002 (incl. VAT). This estimate includes the mobile operators' share for the conveyance of directory enquiries by SMS.

With electronic services the cost picture for the user is somewhat different. The Internet service from Findexa is free. If you use Opplysningen 1881's Internet service, the cost for each search is around NOK 3.

5 Assessment of competition in the overall market today

5.1 Manned directory enquiries

5.1.1 Market shares

In the first year of competition in the directory enquiries market 1881 has lost around 30 per cent of the market. The situation developed rapidly, but now appears to have stabilised. Today there are three players of significant size, 1880, 1881 and 1890. The first year was characterised by very aggressive marketing by the three largest players, and awareness among consumers appears to be concentrated around these three players.

5.1.2 Market concentration and degree of competition

The market shares above give some indication of the competition situation, but market concentration and degree of competition are also factors which may be of importance in an assessment of the competition situation in a market.

Market concentration says something about how concentrated the competition is between the largest players. In economic theory this is called the CR_x index, where x is the number of players included in the calculation. The *degree of competition* is usually measured using the Herfindahl-Hirschman concentration index (HHI)³³.

12 months since the market was opened up to competition the new players have captured almost 30 per cent of the market, which seen in isolation means that development has been faster than in other areas in the telecommunications market. If you look more closely at the market shares, the three largest players (CR₃) have 98.9 per cent of the market, which indicates that competition is highly concentrated and that the market is largely dominated by these three players.

The degree of competition (HHI) for the market is 0.55. According to economic theory there is "perfect" competition in a market when the HHI equals 0.18, but this must, of course, also be seen in the light of how long the market has been open to competition. 0.55 after 12 months' competition can be said to be relatively good. By comparison the HHI for fixed line telephony is 0.74 (CR₃ for fixed-line telephony is 95.1 per cent), and the HHI for mobile telephony is

³³ HHI is defined as the sum of the squares of the market shares of the suppliers in a market. The index is a measure of competition in the market. If there are many suppliers with the same market share the index is low, with few suppliers the index is high. HHI is higher when there is one supplier or a few suppliers who have large market shares than when all have roughly the same market share.

0.47 (CR3 for mobile telephony is 94 per cent). There has been competition in the markets for fixed-line and mobile telephony for 5 years and 10 years respectively.

Competition in the market for directory enquiries is therefore more concentrated than in the markets for fixed-line and mobile telephony. Based on the HHI index this may suggest that there is more effective competition in directory enquiries than in fixed-line telephony. These markets are not directly comparable, but a comparison does nonetheless give an indication that developments in the market for directory enquiries have been relatively quick. NPT has no corresponding information from other countries which might form a basis for comparison.

5.1.3 Price

As explained in sub-section 3.2.3, it is the providers of public telephone services, principally Telenor, Telenor Mobil and NetCom, that set the charges to end-users based on the charges set by the providers of the directory enquiries services and the VAS providers for the service and the content.

In the previous evaluation several directory enquiries service providers argued that it is relatively difficult for the directory enquiries service providers to influence the charge to end-users. The above-mentioned explanation of the cost elements (cf. sub-section 3.2.3) shows, however, that if a provider of directory enquiries services reduces the charge for content, this can be expected to result in a reduction in the charge to end-users (note that the charge that EasyConnect makes for its services deviates from those of the other players). It is also worth remembering that by far the largest share (around 89%) of the per-minute charge paid by the end-user (excluding VAT) goes to the directory enquiries undertaking. It therefore has the greatest influence over the charge to end-users.

A choice of different sub-contractors also allows price competition at the various stages in the value chain. It is also quite possible for a directory enquiries service provider to establish itself in a network other than Telenor's. An extension of the carrier preselection obligation (see sub-section 5.1.5) could also gradually lead to greater competition at the end-user level.

In the evaluation of the market for directory enquiries which has been carried out, several of the providers of directory enquiries services pointed to Telenor's requirement of a three month notice period for changes in prices and have argued that this can have the effect of restricting competition. The condition, which applies to the relationship between Telenor Networks, the VAS provider and the directory enquiries service provider, is as follows: "Price changes must be notified to Telenor at least three whole calendar months before the change comes into effect." This applies regardless of whether the price is to be increased or reduced. It is assumed that the reason for the requirement is Section 3-5 of the Norwegian Public Networks Regulation, which sets requirements with regard to the network operator's notification obligation: "Information on new services shall be published as soon as possible, and no later than two months before the service comes into effect. Changes in existing services must be notified to the end-users and providers affected and published no later than two months before the change is implemented."

A price reduction will always be beneficial to end-users. However, it can be said that, in general, a price reduction for factor inputs will also affect competitive conditions in the market through, among other things, a change in margins for the parties involved. A price

reduction will not necessarily benefit all parties. In general it may also be said that it is natural to allow players reasonable time to react to changes in prices or conditions.

5.1.4 Efficiency

Sub-sections 3.3.4 and 3.6 above give an account of market shares based on the number of calls answered and the number of minutes spent responding to queries. There is still some difference between the players with regard to efficiency measured according to such parameters. The new players take somewhat longer to serve the public, which in turn affects the price the end-user pays for the information. However, there is a clear trend towards increased efficiency among the new players.

It is obvious that years of experience of operating directory enquiries services and a far superior database – also developed over many years – would give a competitive advantage to the former monopoly provider when liberalisation is introduced. There is reason to assume that the work carried out by the new players on their own databases will reduce this advantage at the same time as they also gain experience. The vital element here is the importance of good quality basic data and that there is no discrimination against any of the players in this regard (see sub-section 5.2.1 below).

5.1.5 Carrier preselection and directory enquiries services

At present carrier preselection does not apply to calls to directory enquiries services. A practical consequence of this is that it is largely the providers of public telephone services who also provide subscriptions, such as Telenor, Telenor Mobil, NetCom, Sense and UPC, who convey calls to directory enquiries services. However, NPT has put forward a proposal that the numbers reserved for directory enquiries should also be covered by carrier preselection. The proposal is in the hands of the Norwegian Ministry of Transport and Communications and is expected to enter into force some time in the second half of 2003. An extension of carrier preselection to include calls to directory enquiries services could lead to more competition on price for such calls because providers other than the providers who provide subscriptions will be able to set the charge to the end-user (e.g. Tele2 etc.).

5.1.6 Time of the players' entry into the market

Numbers for directory enquiries activities were allocated in December 2001 and the players were able to start using their new numbers from 15 February 2002. The 1880, 1881 and 1890 services were all in operation on that date. 1860 began operating on 4 March 2002. 1888 started operating on 30 April 2002, i.e. two and a half months after the other three large services, but in time to be included on the answering service on the old 180 number. 1888 still has a significantly lower market share than the other three players, and it appears that their late entry into the market may be one of the reasons for this, as well as the fact that the company has chosen a significantly lower marketing profile than the others. The other two new players had already established themselves and taken market share from the old monopoly service when 1888 entered the market. Many of the end-users who wanted to use alternative providers had already chosen their new provider, and this may have been a significant reason why 1888 has found it difficult to establish itself and to secure an adequate customer base.

5.1.7 Significance of the answering service on the old 180 number

It is not possible to say how competition in the market would have been without the automatic answering service on 180 which gave information about all the new numbers for directory enquiries. In the light of the fact that awareness of numbers is decisive in the users' choice of directory enquiries service today, however, there is reason to believe that the answering service played a significant role, at least in the early stages. The new players have in turn had their number mentioned first on the automatic answering service, which is something there are good grounds to believe led to calls to their number. At the same time, 1888 has had significantly less traffic than the other two newcomers (1880 and 1890). This indicates that the answering service alone was not enough to generate traffic, but combined with marketing (see sub-section 5.1.8) it has presumably been of considerable significance. The traffic figures for the old 180 number in the course of this year with competition also show that there was a large number of calls to the old directory enquiries number immediately after the introduction of competition. If 1881 had been able to channel all these calls to itself, it is probable that the new players' market shares would have been much lower or that they would have had to spend much larger sums on marketing than they have done. Today there are relatively few calls to 180 and the answering service will be shut down on 30 April 2003 after having been operating for a year. The fact that the number of calls to 180 is now relatively modest could be seen to indicate that most people now know one or more of the new numbers for directory enquiries.

5.1.8 Marketing

The market survey carried out for this evaluation shows that awareness of numbers is of crucial importance in the choice of service. As many as 66% of those asked said that their choice of directory enquiries service was made because it was the easiest number to remember or it was the last number they had seen advertised. This shows that marketing has been of great significance. Marketing also provided an important counterweight to all the opinion polls which were conducted immediately after the new legislation was introduced. These polls focussed strongly on the quality of the new services, and with all their teething problems the new players did not fare very well. The massive marketing effort seen in this area (especially on TV2) has helped both to move attention away from the negative polls and to increase awareness of the three most used of the new numbers for directory enquiries.

Without having figures for how much the various players have spent on the marketing of their service, it is NPT's clear impression that 1880, 1881 and 1890 have been significantly more visible than the other players. This is also reflected in the market shares for the various players, and together with information from the market survey this gives reason to believe that marketing of services has been a decisive factor.

5.2 Manned and electronic directory enquiries

5.2.1 Data quality

Probably the most important factor input in directory enquiries activities is basic data. It is this information, together with any value-adding supplementary information, which forms the basis for the service. What data the players are entitled to be provided with by the telephone service providers follows directly from the Number Allocation Regulation. According to the Number Allocation Regulation, combined with the Act relating to the processing of personal

data (personopplysningsloven), the data made available for directory enquiries shall be of a quality suitable for use in the activity. However, this means nothing more than that the data shall be fit for purpose. Adding value to the data comes on top.

Because it recognises that access to basic data of the correct quality is decisive for directory enquiries undertakings, NPT has worked actively and continuously on issues relating to data quality since the amendment of Section 12 of the Number Allocation Regulation entered into force on 15 February 2002. Through this work NPT has found that some of the players may possibly have had somewhat high expectations with regard to the kind of data they are entitled to be provided with under the Number Allocation Regulation. A considerable amount of work on quality control and adding value went into the information which end-users were used to obtaining when they called Directory Enquiries on 180. Some of the new players may possibly not have anticipated what resources are required to achieve data of such quality, and this could clearly have had an affect on their ability to compete in the market. Obviously, if customers find that they are given incorrect or imprecise data, they will soon choose an alternative provider of directory enquiries services.

According to Section 12 of the Number Allocation Regulation, one of the pieces of information which the directory enquiries undertaking is entitled to receive from the telephone service providers is a unique identification number. This could be the organisation number, date of birth or personal identification number (all 11 digits) or an ID number defined by the telephone service provider itself. It is clear that the use of organisation numbers and either dates of birth or personal identification numbers makes quality control and adding value to the data easier because these forms of ID are found in other systems and can therefore be used as connecting keys for the addition of new information to the directory enquiries system. As the largest supplier of basic data for directory enquiries purposes, Telenor has chosen to provide data identified using its own ID numbers. The players in the directory enquiries market say that this led to considerable difficulties when they started up their activities because they had to use a lot of resources to adapt to this ID system. If the data had been provided together with an ID number which is also used in other records, it would most probably have been easier and less resource-demanding to add data, and it would have been easier for the new players to compete with the established service on quality. The other suppliers of basic data have chosen somewhat different systems, but this has not created such big problems because they do not account for such large amounts of subscriber data.

The new players in the market have frequently reported irregularities in the data they receive from Telenor Plus, which provides basic data on fixed-line subscribers to the directory enquiries undertakings. In following up these complaints NPT has become aware that Telenor Plus has discriminated between the players in the supply of data. Findexa AS, which, among other things, produces telephone directories for Telenor, has always received basic data which includes organisation numbers. This is in spite of the fact that Section 12 of the Number Allocation Regulation makes it clear that basic data must be provided on terms which are non-discriminatory, i.e. that all the players should receive the same data if they want it. Through meetings, correspondence and clarifications of the meaning of the legislation, NPT has actively sought information about what data is supplied to the various players and whether there are differences in the data the players receive. In spite of continuous activity in this area, it was not until the end of January 2003 that NPT found out for certain about the discrimination which has taken place.

NPT does not discount the possibility that this discrimination may have led to considerable inconvenience for the new players, and put them in an unnecessarily difficult competitive position. Telenor's breach of the Number Allocation Regulation may thereby have had an adverse effect on competition in the market. In addition, Telenor's behaviour is a breach of the legislation, which is something NPT takes very seriously. For this reason at the end of March 2003 NPT demanded that the situation be rectified and brought in line with current legislation as soon as possible, and by 18 May 2003 at the latest. A warning was given that if the situation is not rectified by this deadline, NPT may impose coercive fines until the situation has been rectified. In a letter dated 22 April 2003 Telenor said that the company would comply with the interpretation of the law that NPT had expressed in its letter of 26 March 2003 and provide organisation numbers on non-discriminatory terms. This is in spite of the fact that Telenor says that it does not share NPT's interpretation of the legislation on this point. NPT is currently following up Telenor's response in the case, especially in relation to the pricing of the information it provides.

NPT has found that most of the large providers of public telephone services provide basic data to the directory enquiries undertakings. However, according to what has emerged through surveys among the players in the directory enquiries market, there is some variation in which providers the various directory enquiries services collect data from. There is no evidence to say that this was a matter of deliberate discrimination by the telephone service providers. This is because the survey does not say anything about why a directory enquiries undertaking does not collect data from one or more particular telephone service providers. This may be based on a conscious choice (see next sub-section).

There have also been problems with basic data on mobile telephony subscribers. NPT is aware that recorded information is not always of the same quality and that there are some providers who do not regard themselves as obliged by the Number Allocation Regulation to provide data. However, this must be regarded as a relatively small problem in terms of size. Some undertakings have also chosen not to pursue this question against small providers of public telephone services and resellers of subscriptions on the grounds that it would cost them less to leave these data out of their database than to make sure they were collected.

The survey carried out in connection with the evaluation shows that as a general rule there are no differences in the prices directory enquiries undertakings pay for basic data from one and the same telephone service provider. Moreover, the prices appear to be at a level which is consistent with the Regulation's rule that access to basic data shall be granted at a cost-oriented price. This is good and is assumed to be important for competition. During the work on the legislation it was important for NPT that all players should have access to basic data at a reasonable price. If the most important factor input in the activities was priced at a very high level, this could represent a barrier to establishment and thus have had an adverse impact on competition. There is therefore reason to assume that cost-oriented prices for basic data have been of great importance for the entry and establishment of new players in the market.

5.2.2 Quality of service

As far as the quality of the directory enquiries services is concerned, it is difficult to make direct comparisons between the services of the various players. However, there will probably be some difference in service content because the players themselves are free to add value to the data and thus add different value to the basic data. The survey carried out by Norsk Gallup in connection with the evaluation of the competition situation shows little difference in

satisfaction among the customers of the various players. Nor does quality appear to be of any great importance in the choice of provider. Only 1.6% of those asked said that the quality of the reply they received was decisive in their choice of service. Thus service quality does not appear to be of particularly great importance when users choose a directory enquiries service, and service quality has therefore probably had no significant effect on competition.

There is no reason to believe that the quality of SMS services differs greatly from the quality of the manned services. This is because the data is the same – the same databases are used for SMS services as for manned services. However, a factor which is of significance for the quality of the reply to a search is that all inaccuracies in the database will be reflected in the reply received by the user. Imprecise searches will give imprecise answers, or answers with many alternative entries. However, this can hardly be regarded as a problem relating solely to the quality of the database, and is probably just as much a problem relating to the way users define the searches. Meanwhile, it does not appear that users regard this as such a great inconvenience that it affects their use of the service.

One of the reasons why SMS services have become so popular may be that it is very practical to enter the number you are looking for directly into the mobile phone so you can then call it immediately or store it in the telephone's phone book for later use. The user does not have to remember or write down the number, and this makes the service very user-friendly.

Electronic phone book services are offered by Findexa and Telenor Teleservice (Opplysningen 1881). These are both players who have been in the directory enquiries market for a long time and who have databases with a lot of value-added information and probably also of high quality as a result of the refining of the data over a long period of time. However, the data is the same for these two players' manned services and SMS-based services as for the electronic phone book services, and therefore the quality should also be the same. One reason why a user may choose to use the electronic phone book may be, however, that he can more easily search for the entry he wants himself without excessively high costs. This type of service is therefore very suitable when the user is unsure how to define his search and is going to take some time to look for the correct entry.

5.3 Conclusions

Has the introduction of the new legislation achieved its objective?

There were two objectives in introducing new legislation of the market for directory enquiries. One objective was to implement current EU directives in order to bring Norwegian legislation into line with them, and the other was to improve the conditions for competition in this market.

NPT believes that the evaluation shows that we have largely succeeded with a real implementation of current EU directives. This is also shown by the fact that measures have been taken to secure access to basic data, which is the most important "raw material" in this market, for new players in the market. Access has also been secured at cost-oriented price, as required by the directives. One area where there has not been complete success so far is the requirement for access to basic data on non-discriminatory terms, because since liberalisation Telenor has discriminated against new players in favour of Findexa in the supply of basic data. This is a matter which NPT is following up.

Several indicators used in the evaluation show that there has been an improvement in conditions for competition in this market. In the course of one year with competition the former monopoly player has lost around 30% of its market share. Three new players have started up and appear to be able to maintain their presence. Of these, the two largest have been there since the new legislation entered into force. There now appears to be a trend towards 1881 (Telenor Teleservice) recapturing some of its market share. This, together with the trend towards increased use of electronic directory enquiries, gives NPT the impression that the new players are becoming creative in developing new services which can give them a competitive advantage. NPT will continue to follow the development in market shares.

Are there findings in the evaluation which give grounds for action by NPT?

As a result of the importance of good data quality and Telenor's discrimination between the various players, NPT finds there are grounds to carry out an evaluation of legislation in this area after this market evaluation. One of the steps which NPT will consider further in this regard is whether or not the regulation should include an obligation to provide organisation numbers as the unique ID which must accompany basic data. Other steps will also be considered in the wake of this report.

With regard to the players' assertions that it is not possible to compete more on price as a result of the network operators' margins and notice periods included in relation to this, NPT does not find at the present time that there are grounds for intervention. It cannot be regarded as proven that difficulties in competing on charges to end-users are due to fixed cost elements or distortions in the price structure. If it is, nonetheless, difficult to compete on price, this must be due to factors which cannot be remedied by legislation.

What trends does the evaluation show?

The analysis of the developments in market share confirm trends which are also evident in the European market for directory enquiries, that there is a shift in usage patterns and preferences from manned directory enquiries towards electronic directory enquiries. It appears that most players have taken this into account in that they choose to offer directory enquiries services via SMS in addition to manned directory enquiries.

Another effect of the trend towards more extensive use of electronic directory enquiries is that the players are becoming more creative in developing new and different services in combination with the directory enquiries service, especially in connection with electronic directory enquiries. With such a trend there could possibly be a change in competitive conditions which is not related solely to financial strength and experience. Creativity and innovation may perhaps contribute as a stronger influence in relation to competition in the market.

Summary

NPT believes that it is a good sign of competition that the former (de facto) monopoly provider of directory enquiries services has lost around 30% of its market share in the course of a year with competition. It is worth remembering that competition on price is practically non-existent. Against this background, NPT is following with great interest the innovation in services which competition in the market for directory enquiries has helped promote.