

Norwegian teens, mobile telephony and text messages



TECHNICAL NEWSLETTER FROM TELENOR RESEARCH & DEVELOPMENT

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Summary

- About 2/3 of all teens own or have unrestricted access to a mobile telephone.
- As many girls as boys have access to a mobile telephone.
- The majority of mobile telephone using teens have also adopted the use of text messages.
- Text messages are used in a variety of milieus including in school during class time

The users of the future

"The users of the future" are a research unit at Telenor Research and Development with broad sociological expertise. The focus of our research is the mutual interplay between sociological and technological developments. We analyse people's communications requirements on the basis of their life situation and look at the correlation's between the use of technology and the behaviour of people and their interactions. As a part of the research activities within "The users of the future", we work with the gathering of data on the users in different areas. This newsletter is part of a series which presents the results of this activity.

Introduction

This newsletter is an analysis of the consumption and use of mobile telephones among teens in Norway. In addition, it examines the use of short messages system (SMS)¹ communication, or text messages, for teens both on a general basis and within the context of school. This analysis is a continuation of the analyses of teen mobile telephone use that have been carried out by Telenor R&D since 1997. These analyses have included both qualitative and quantitative approaches and have attempted to examine the adoption of the technology among adolescents. We have been fortunate to follow along with the general adoption of this technology from an early point in its adoption cycle to the current situation wherein the preponderance of teens own and use mobile telephones. The newsletter will take the reader through a short discussion of the methods used and follow this with an analysis of the results and a discussion of the material.

Increasing adoption and ownership of the mobile telephone by teens

Turning first to ownership, the data shows that about two thirds of the teens "owned" a mobile telephone. We place the word owned in quotes since it is sometimes the case that the individual had a telephone that was previously used by their parents or had a telephone on a type of permanent loan.

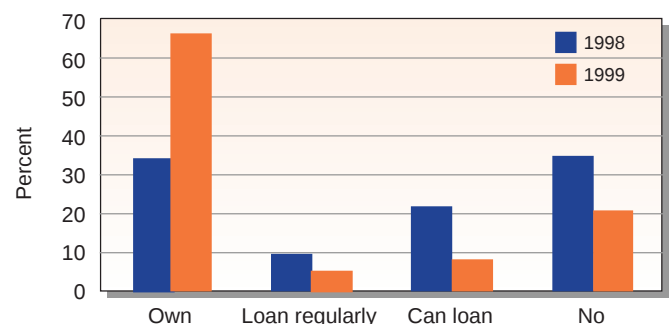


Figure 1. Access to mobile telephones by teens, n = 2020.

² As suggested by its name, SMS is a system for sending and receiving short text messages via use of a GSM telephone. The messages are limited to only 160 characters. Teens have adopted this form of communication that allows them to economize their use of the mobile telephone. At the time of the survey the messages cost about 1.5 Nkr. (or ca. 0.20 \$) to send.

In order to deal with these vagaries we asked the respondents if they owned or had the exclusive use of a mobile telephone. Further, we asked those respondents who did not own or permanently dispose of a mobile telephone if they were able to loan a mobile telephone on a regular basis or, if they were able to loan one on an occasional basis.

In Figure 1, the reader sees the results of this analysis when compared to material from 1998. The table shows that the percent of teens that own has risen dramatically from the previous year. Where about one third of the teens asked in 1998 said that they owned a mobile telephone, the 1999 data shows that about twice as many said the same.

The data also shows that the percent of teens that can loan a mobile telephone on either a regular or a semi-regular basis has tapered off. The percent of those who can regularly loan a mobile telephone has been roughly halved and the percent of those who can loan on an occasional basis has been more than halved.

Not surprisingly, there has also been a reduction in the percent of non-owners. However, those who do not have access to a mobile telephone has dropped less than for the two “loaning” categories. Thus, the increase in ownership has been, to a large degree, offset by a reduction in the loaning of the mobile telephone. The non-owners seem to be cooking down to a core of persons that do not want a mobile telephone for one or another reason.

Figure 2 is a comparison of the total number of teens with some form of access to the mobile telephone in 1998 and 1999 by the age of the respondent. Thus, for the purposes of this table we summed into one group those who own, those who can borrow on a regular basis and those who can loan a mobile telephone occasionally. The table shows that where in 1998 about 40% of 13-year-olds had access to a mobile telephone, this had risen by about 20% in 1999. In addition, where 80% of the 20-year-olds had access to a mobile telephone this had crept up amount 10% to over 90% in 1999. Above all, one is struck with the parallels between the two years. The profiles of the curves are quite similar. The major difference is that the data for 1999 has shifted up 10 - 20% in relation to the previous year. The data shows that the mobile telephone is being adopted by younger teens.

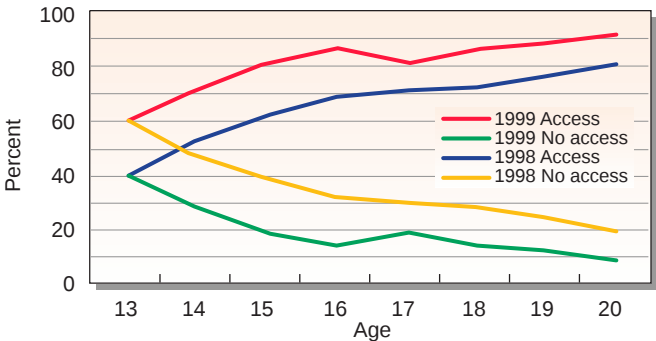


Figure 2. Percent of teens with and without access to mobile telephones by ages for 1998 and 1999, n = 2020.

Figure 3 provides a slightly more detailed picture of this situation in 1999. In this table the ownership/ borrowing responses of the respondents is seen according to their age. The figure shows that among the youngest age group that about 40% of the respondents, owned a mobile telephone and an equal number did not. These two categories diverged dramatically for the 14 - 17 year old age groups. By the time, that one arrives at the 17-year-old group the reader can see that a plateau of ownership has been reached. For those respondents over the age of 15, the adoption rate ranges roughly between 70 and 80%.

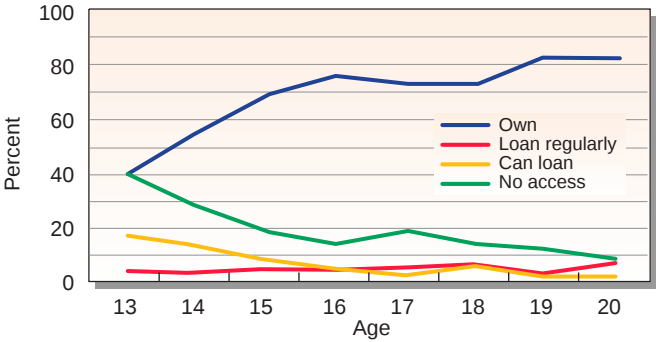


Figure 3. Percent of teens with a cell phone in Norway, Nov 1999, n = 1006.

The other part of the picture here is that the loaning behavior becomes less and less common as one moves from the youngest to the oldest interviewees. It seems that the ability to regularly loan the mobile telephone never rises much over seven percent of the individuals. The percent of individuals who can loan a mobile telephone on an occasional basis has a slightly different profile. This is highest among the youngest group but falls below the 10% level among the 15-year-olds.

Girls are on par with boys

While one of the main findings of the analysis is that ever-higher numbers of teens are adopting the mobile telephone, the other major finding is that there is no longer a difference between the genders. In previous work we have found that girls were more likely to loan then own a mobile telephone. This trend has fallen off and we can see in Figure 4 that regardless of age, one is not able to point to any major ownership differences between the genders.

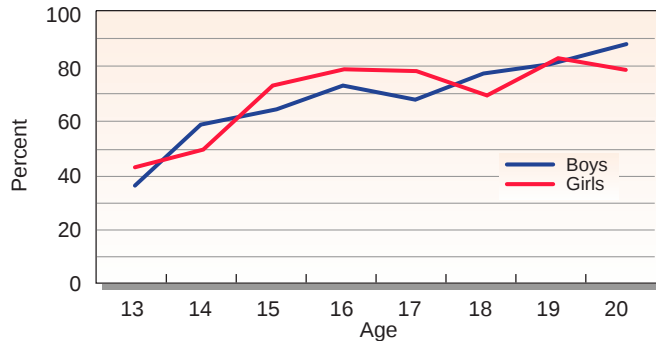


Figure 4. Ownership of mobile telephones by gender and age in Norway, 1999, n = 667.

While the absolute percentages of boys and girls who own a mobile telephone may be similar, there is reason to wonder if the meaning of the devices and the methods in which the system is being used vary by gender.

Text messages are here to stay

Another aspect of the mobile telephone phenomena among teens in Norway is the rise of text messages. Traffic statistics from Telenor show that in December 1999 there were 51 million messages or about 1,6 million messages a day.

Our data shows that the vast majority of teens with access to a mobile telephone had sent or received a text message. Almost 95% of the teens indicated that at one time or another they had used text messages.

Figure 5 shows that more than 55% of all teens, and more than 70% of the mobile telephone owning teens were active text message users. The data shows that more than 30% of all teens had sent a text message the day of the interview and another 25% had sent a message during the previous 2 - 3 days.

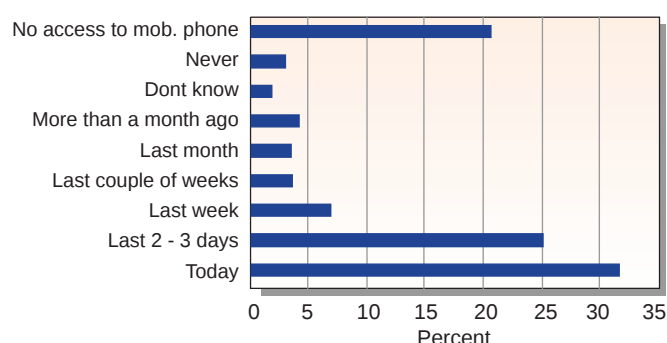


Figure 5. When the respondent had last sent an SMS message, $n = 1006$.

We were interested in determining the degree to which teens use text messages on a daily basis. To this end we asked the respondents how many text messages they had sent and received during the day previous to their being interviewed. The data indicates that those with access to a mobile telephone sent a mean of 3.82 messages per day and also received 4.11 messages. Comparing this to data gathered in 1998, one sees roughly a doubling in the use of text messages in one year. The data in shows that there was wide variation in the number of messages the informants reported sending and receiving. The highest estimates were more than 10 standard deviations over the mean.

The data shows that the 13-year-olds sent and received relatively few messages. This situation quickly changes. The 15-year-old girls reported receiving a mean of more than five messages per day and sending almost as many. The boys were not significantly different here.

While there are some small differences between the genders in the number of messages that they send and receive, none of them reach the level of being statistically significant.

Text messages are used in school

The last area that we will examine is the use of the mobile telephone in school. Discussion surrounding the use of the mobile telephone among teens has often focused on how it disturbs the class situation. While there has been much discussion on this topic there is little analysis of its actual presence.

The data here indicates that 28% of all students reported that they had either sent or received a text messages during class time between the beginning of school in the fall of 1999 and the end of November. The data also shows that 18% of all students had either made or received a voice mobile telephone call in class during the same time period.



Figure 6. Percent of all students who have either sent or received a text message in class on a typical day, $n = 1006$.

Further, the data shows that slightly more than 8% of all respondents said that they had received a text message in class during the day previous to the interview. Further, about 3% of the same group said that they had sent a text message during the same time period.

Summary

There were several interesting things that arose from the material. Among these is the continued adoption of the mobile telephone by younger and younger teens, the second is the erasing of the gender difference when considering ownership of the mobile telephone and the third is the presence of SMS in various social contexts.

Looking first at the adoption of the mobile telephone, the penetration is, in certain age groups, nearly ubiquitous. The use of mobile telephones among teens has been a part of the scene since about 1997. The attraction of the device has been aided by the growth of pre-paid subscriptions. This type of subscription is popular since the parents of the teen avoid the possibility unexpectedly large telephone bills. While material covering this was not gathered in the November 1999 survey, previous analysis shows that the pre-paid subscriptions are quite popular, particularly among the youngest users.

When considering the high penetration rates and also the drop in the loaning of the mobile telephone, one can suggest that the mobile telephone is becoming increasingly a personal rather than a communal device. The data here points to the idea that one has a mobile telephone of their own and is less likely to borrow one. Other analysis shows that the style, design and vintage of the mobile telephone is increasingly important among the teens. This further underscores this finding in that the device is personalized and the teens place importance on being able to distinguish between their mobile telephones and those of their parents.

Looking, for a moment at the non-owners, this group is becoming smaller. It may well be that there is a core of teens who have an ideological resistance to the adoption of the mobile telephone. One is also prompted to ask if there is a logical, lower limit, to the adoption age for mobile telephones. The recent history in Norway shows that the penetration rates for the youngest teens has risen. Indeed, in data gathered by Statistics Norway one sees that about 11% of 9-10 year olds and 26% of 11-12 year olds indicate that they own a mobile telephone.

Looking at the gender of the users, the data here shows for the first time that females have had the same adoption rate as males. Previous to this, they have always lagged slightly behind. Analyses done in previous years has indicated that boys were perhaps more fascinated with the technology than girls. The boys were quick to adopt the mobile telephone and there are some indications that they continue to be consuming the mobile telephone (read: the terminal device) in a more intense fashion.² Thus, it may be possible to assert that the focus on the technology has been maintained among the boys. Never the less, girls have caught up with the boys in terms of the total percent who own a mobile telephone. Previous research has shown that girls report speaking longer on the mobile telephone than boys.

There are slight, but not significant gender based differences between the number of text messages that are being sent and received. This is, however, simply the number of messages being sent and received. Another theme that is beyond the scope of this material is the content of the messages. If the communication is similar to that which one finds in telephone traffic then one would be lead to assert that the messages of boys are shorter and more concerned with coordination and organization. By contrast, the communications of girls are more nuanced in their use of language and more focused on interpersonal relationships. Again, the data here is not able to expand on this point. There is, however some qualitative material pointing to this difference.

Finally, there is the issue of the use of text messages in schools. It is clear from the data that it is being used in this milieu, a behavior that is not within the traditional definition of the activities there. Our data does not, however, examine the content of the traffic in this context. Indeed, given the illicit nature of this activity, it is doubtful that it is possible for a survey instrument to gather this type of information. Non-the-less, the types of messages can range between simple social interaction to exchanging answers to exam questions. The material here shows that this phenomenon exists. It is clear that it exists generally outside the purview of the authorities in the school. Its use and legitimacy are only now being established. It remains to be seen how widespread and how problematic the use of text messages will be in schools.

Method for the analysis

The approach used to gather the information was the simple polling of respondents over the telephone. A short questionnaire was developed for use in this analysis. The questionnaire contained several questions that had been used in earlier studies. In this way we were assured comparability with previous work and hence the ability to examine the development of trends in the data. During the last week of November 1999 slightly more than 1000 Norwegian teens (13 to 20 years of age) were polled regarding their use of mobile telephony and the SMS. It is the data from this survey that forms the basis of this analysis. The completed database was cleaned and examined using standard statistical analyses.

² In a separate set of focus groups, of nine boys participating in one group five had two mobile telephones.



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