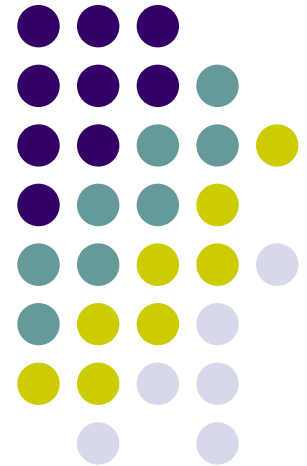


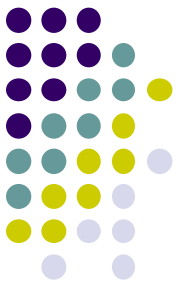
# Telecommunication Markets in the Nordic and Baltic Countries

- Per 31.12.2012 -



Communications Regulatory Authority  
of the Republic of Lithuania



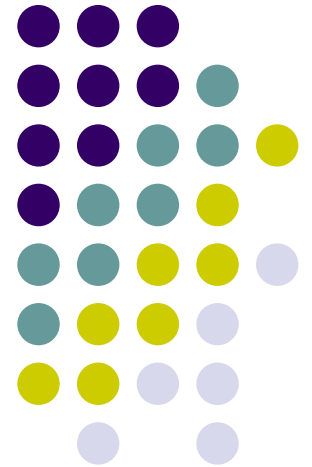


# About the database

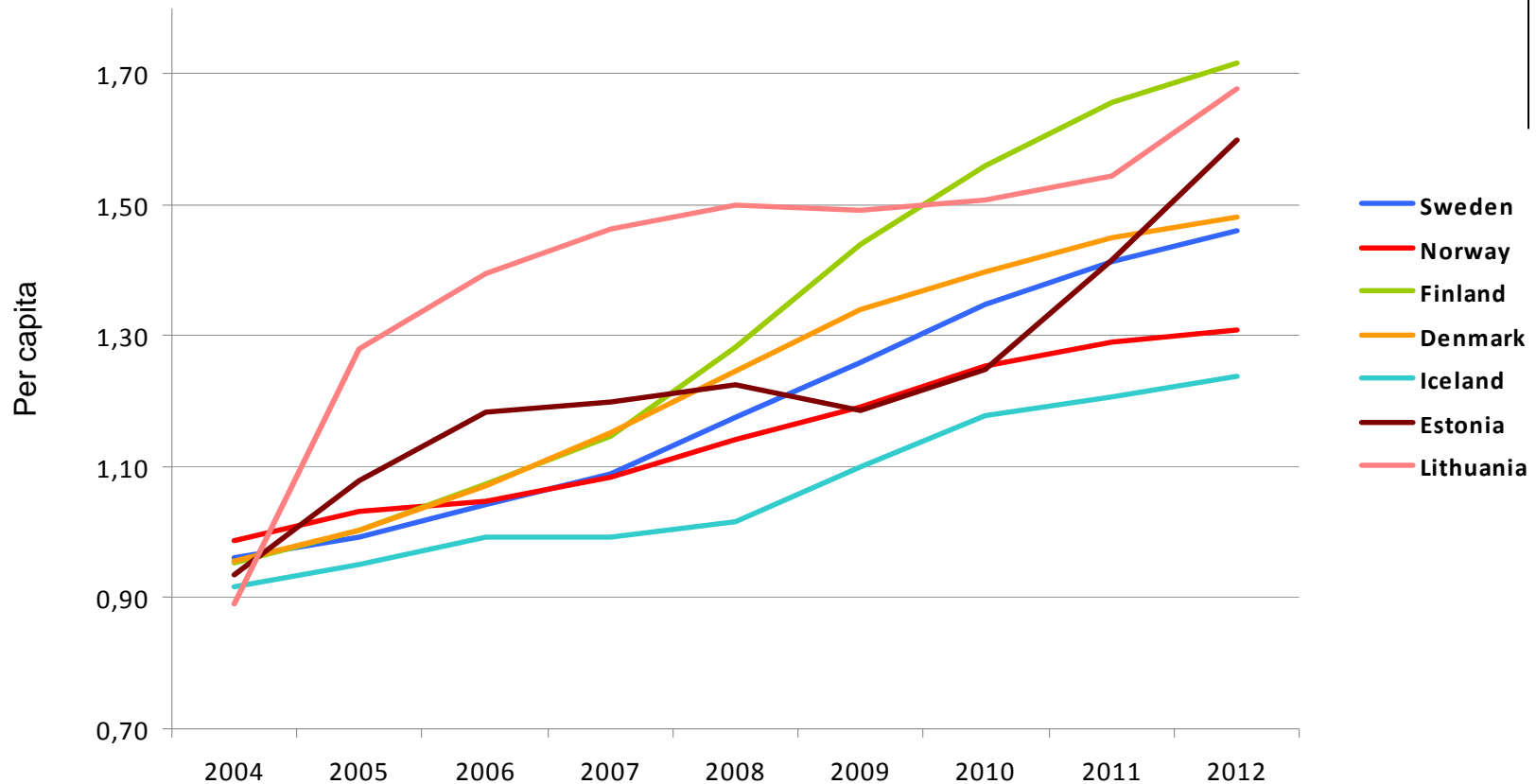
- Established 2007
  - The Baltic States included spring 2013
  - A descriptive database
  - A selected number of variables that is comparable between the Nordic and Baltic countries
  - A dynamic database that will change and grow with developments in the telecom markets
  - The figures are collected and validated by the Nordic-Baltic working group on statistics and definitions
- 
- If not stated otherwise the sources for all figures are the relevant National Regulatory Agencies and National statistical agencies of each country
  - If not stated otherwise graphs includes figures for both private and business
  - In comparing penetration rates note that the population is decreasing in Lithuania and Estonia while increasing in all other countries
  - For more detailed information see the statistical portal under 'Tables':  
<http://www.statistik.pts.se/PTSnordic/NordicCountries2012/indexNordic.html>

# Mobile Services

---



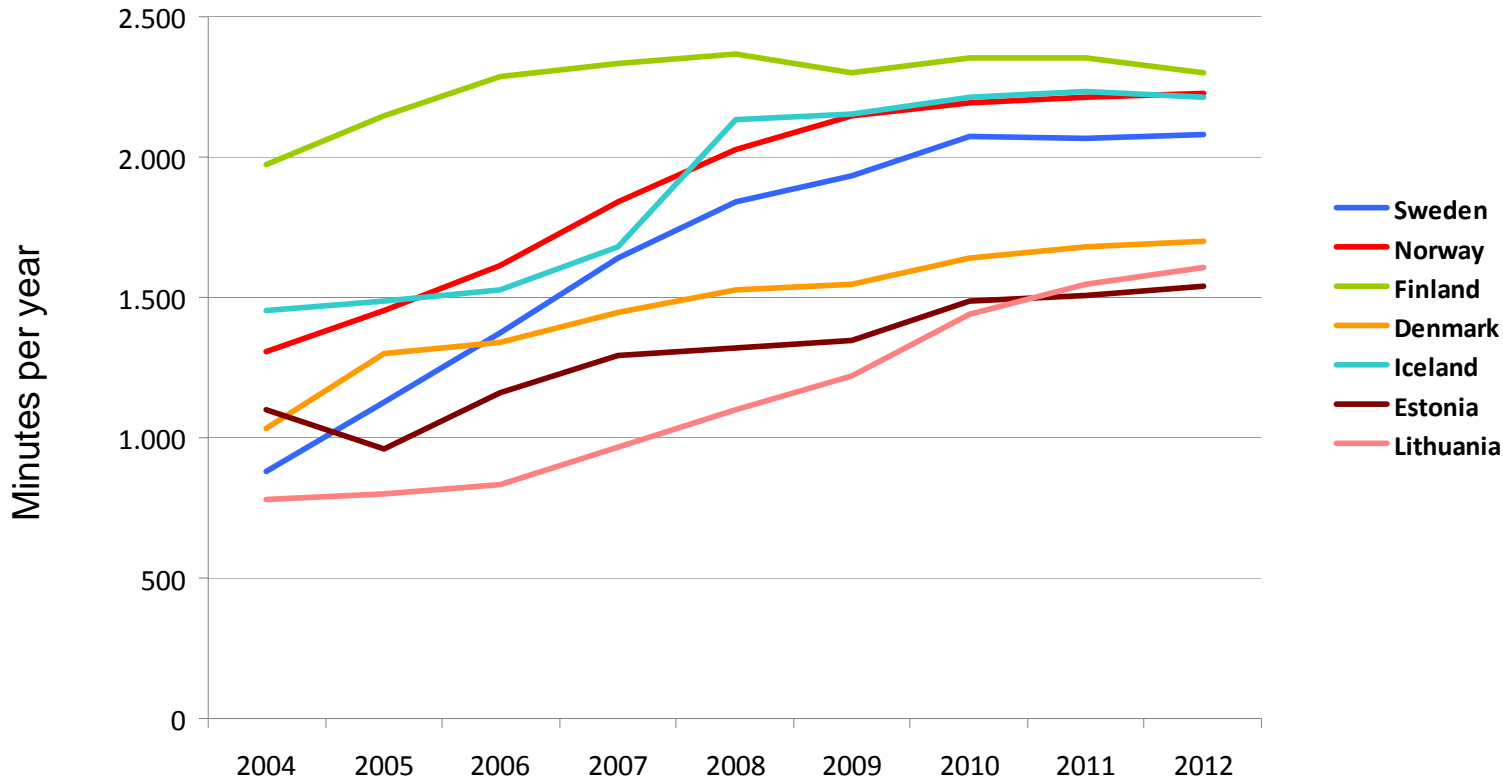
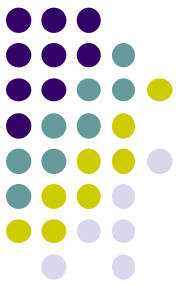
# Mobile subscriptions<sup>1</sup> per capita



The number of mobile subscriptions is still growing in all countries. Mostly due to the growth in mobile broadband. The mobile penetration rate were highest in Estonia and Lithuania until 2008/2009 where the growth stagnated. Since 2009 the growth in the Nordic countries has been declining a bit while in Lithuania and Estonia it has been gaining speed.

<sup>1</sup>Including GSM/UMTS/LTE subscriptions and mobile broadband. Excluding LTE subscriptions for Iceland. Pre-paid subscriptions are also included and should be active the last 3 months.

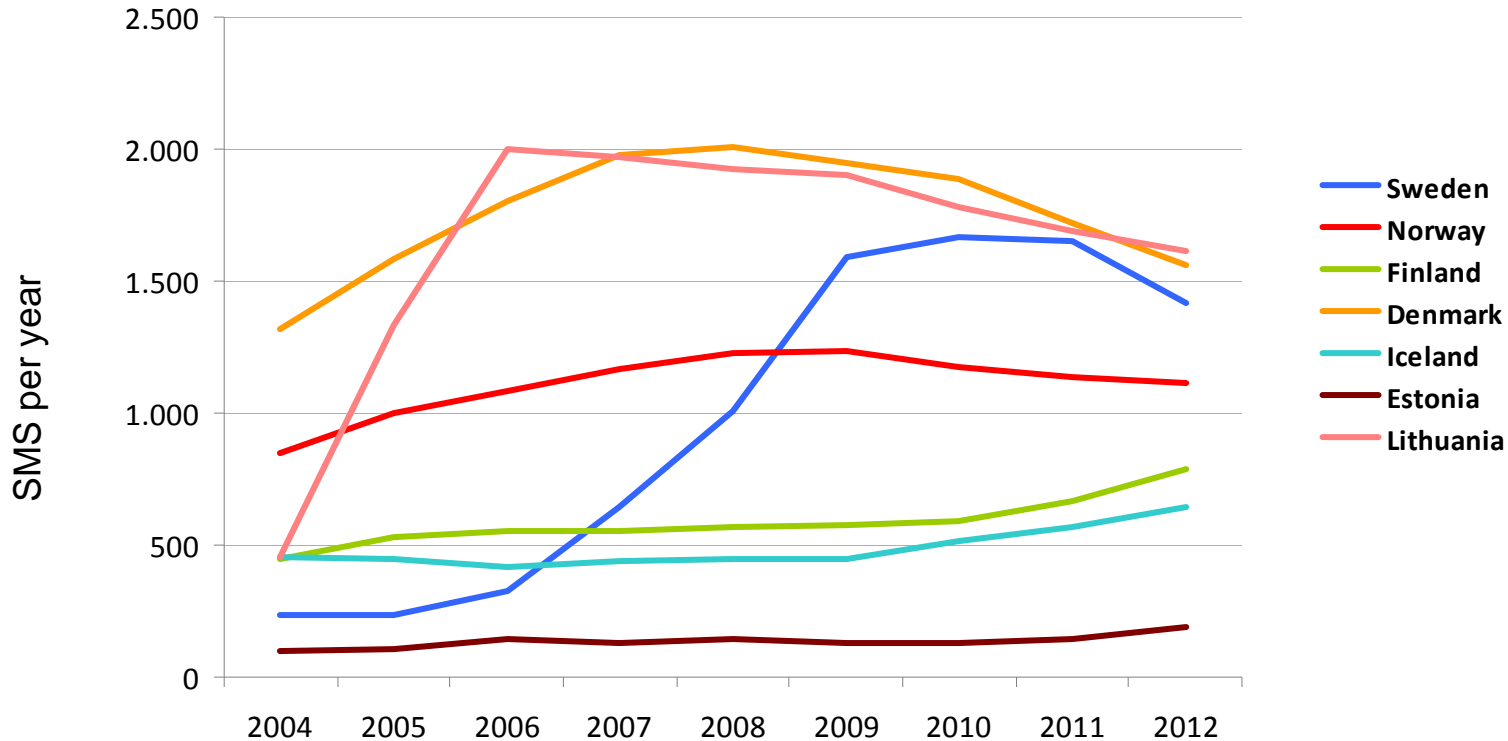
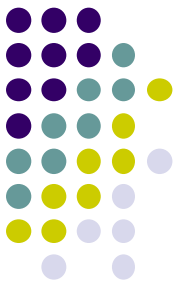
# Mobile call minutes per subscription<sup>1</sup> in a year



Finland still has the highest usage of mobile telephony for speech. At the same time Finland has the lowest penetration and usage of fixed telephony and of broadband telephony (VoIP). Estonia and Lithuania has the lowest minutes per subscription, but Lithuania has the highest use of SMS messages together with Denmark.

<sup>1</sup>Subscriptions is the average of the number of subscriptions at the beginning and end of each year except for subscriptions for Lithuania in 2004 which are from the end of the period. Exclusive mobile broadband subscriptions.

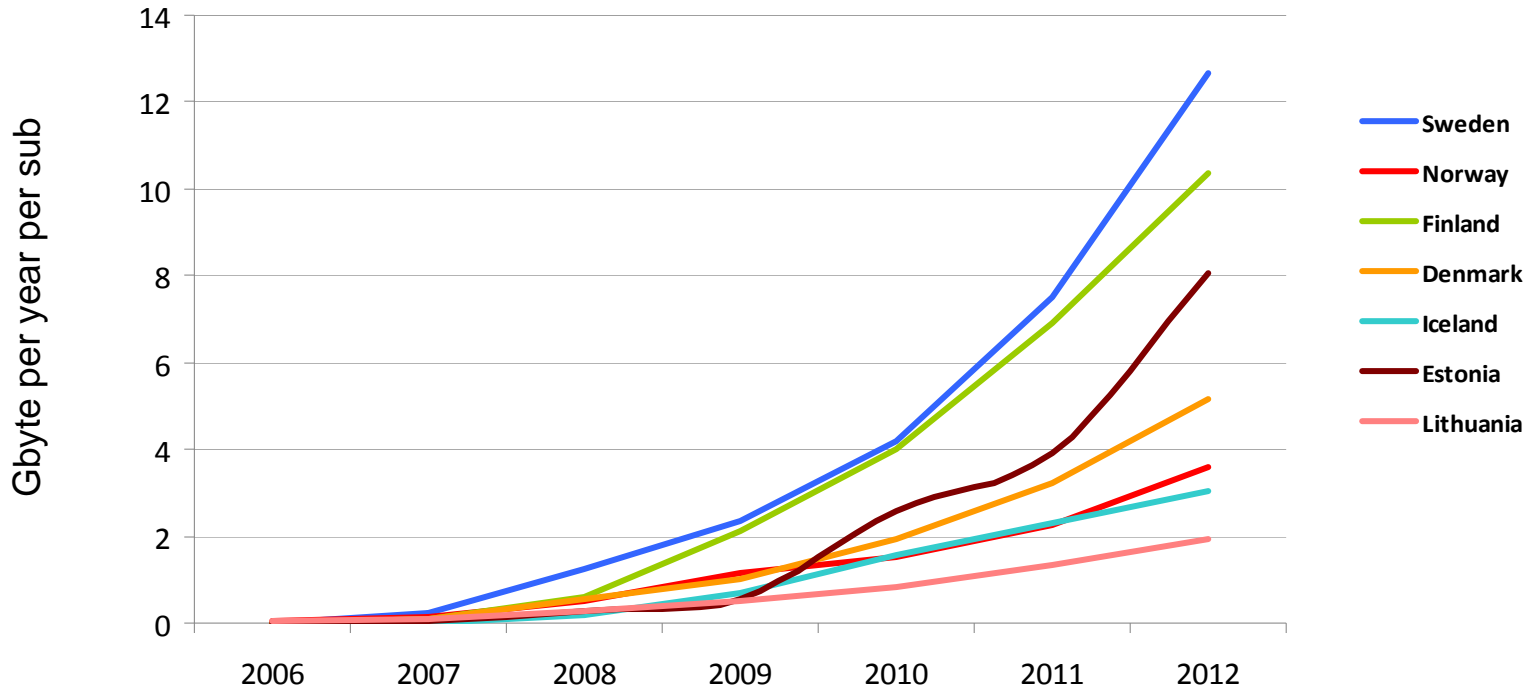
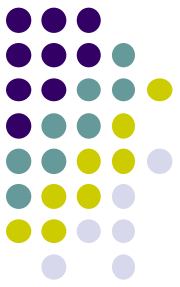
# Average number of SMS messages sent per subscription<sup>1</sup> in a year



Finland had some growth in SMS messages sent per subscription in the last two years and Estonia and Iceland both had a modest increase in approx. the same period as well. Decreasing numbers in both Lithuania, Denmark, Sweden and a bit in Norway. Lithuania and Denmark had the highest number of SMS per subscription of all countries back in 2006 and 2008. SMS messages per subscription were increasing fast in Sweden from 2006 to 2009, but in the last two years the numbers have been declining. In Estonia the use of SMS messages per subscription have been significantly lower than in the other countries.

<sup>1</sup>Subscriptions is the average of the number of subscriptions at the beginning and end of each year except for subscriptions for Lithuania in 2004 which are from the end of the period. Exclusive mobile broadband subscriptions.

# Data volume transferred over mobile networks, average Gbyte per subscription<sup>1</sup> per year

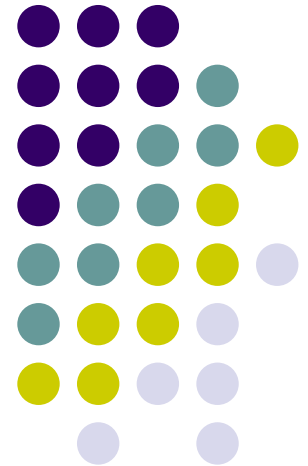


Data volumes transferred over mobile networks are still increasing fast in all countries. The growth in data traffic per subscription per year is above or equal to 50 percent yearly in all countries during 2012 except for Iceland and Lithuania where it's 32 and 45 percent. It is still the dedicated data subscriptions which generates most of the data traffic in mobile networks. Iceland and Lithuania have the lowest number of dedicated data subscriptions per capita, and Sweden the highest. This may be one of the reasons behind the relatively large difference in Gbyte per subscription.

<sup>1</sup>Includes subscriptions and data traffic for both mobile and mobile broadband.

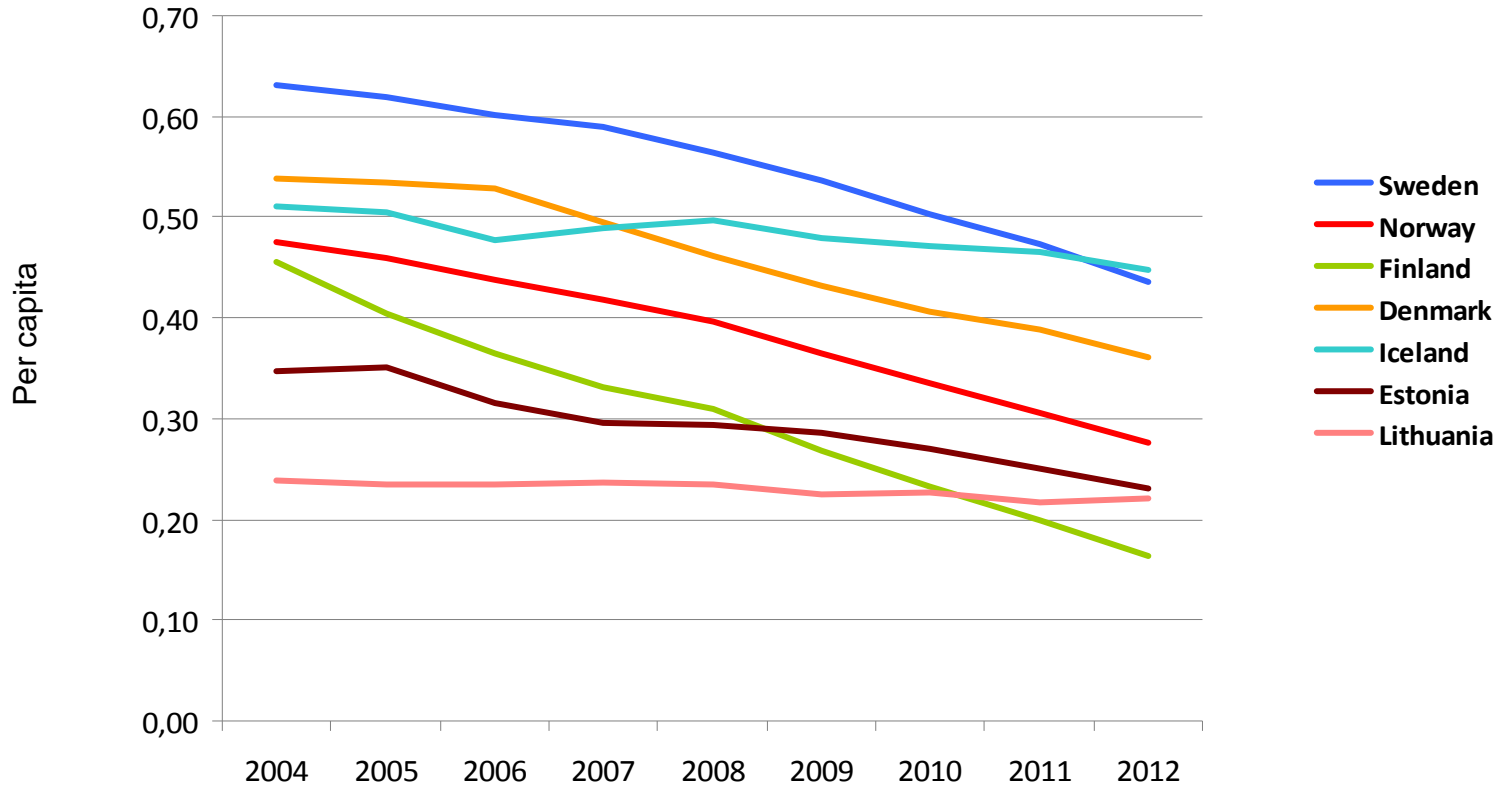
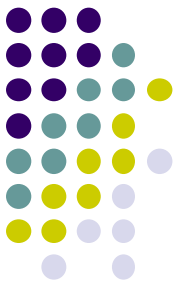
# Fixed Call Services

---





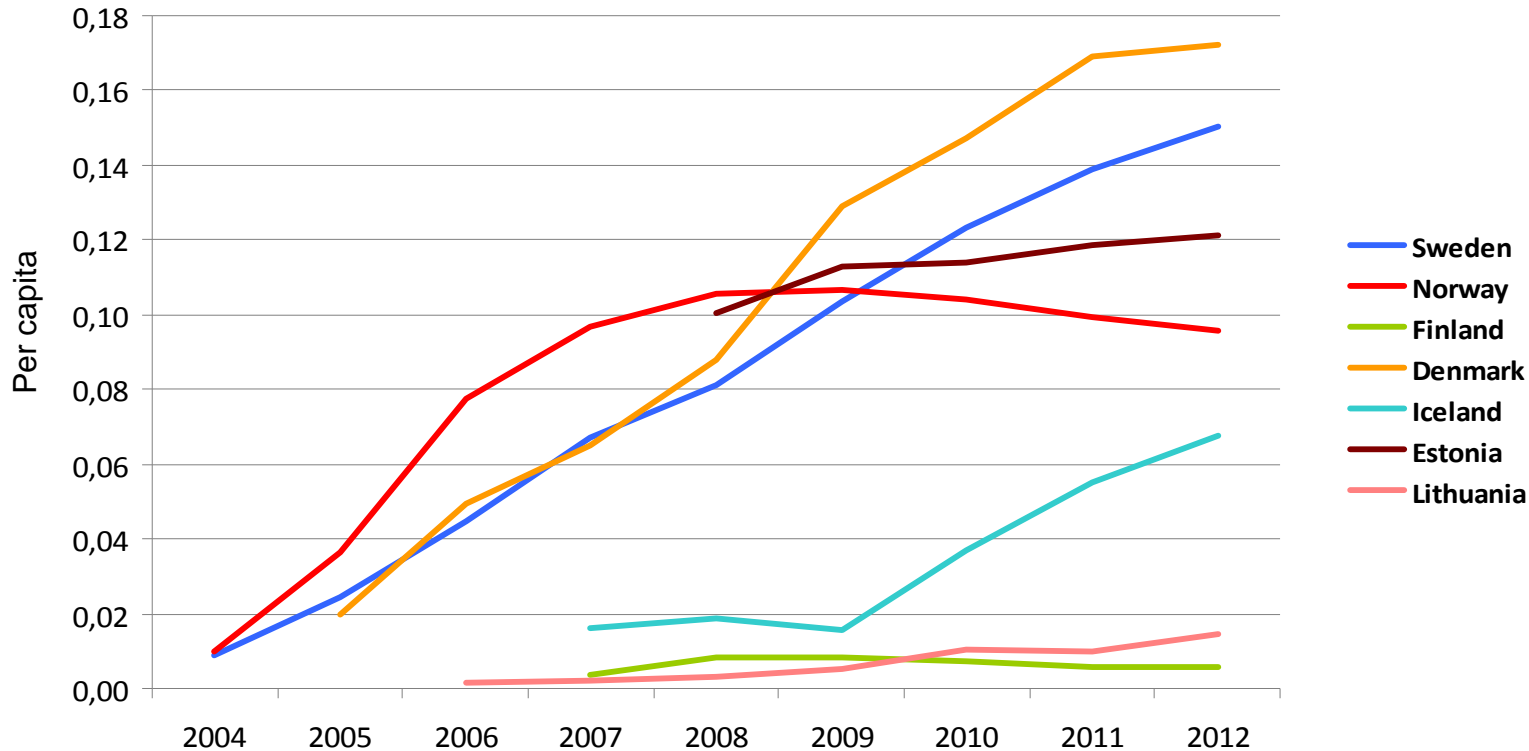
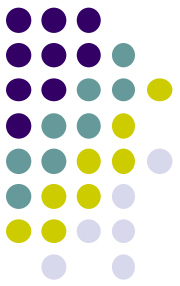
# Fixed telephony subscriptions<sup>1</sup> per capita



The number of fixed telephone subscriptions per capita is decreasing in all countries, but in Iceland at a slower pace. The slow decrease in the Lithuanian penetration is created by a decline in population in the period. The actual number of lines were decreasing by approx. 5 percent annually in 2011 and 2012.

<sup>1</sup>Includes PSTN-, ISDN- and broadband telephony subscriptions (VoIP).

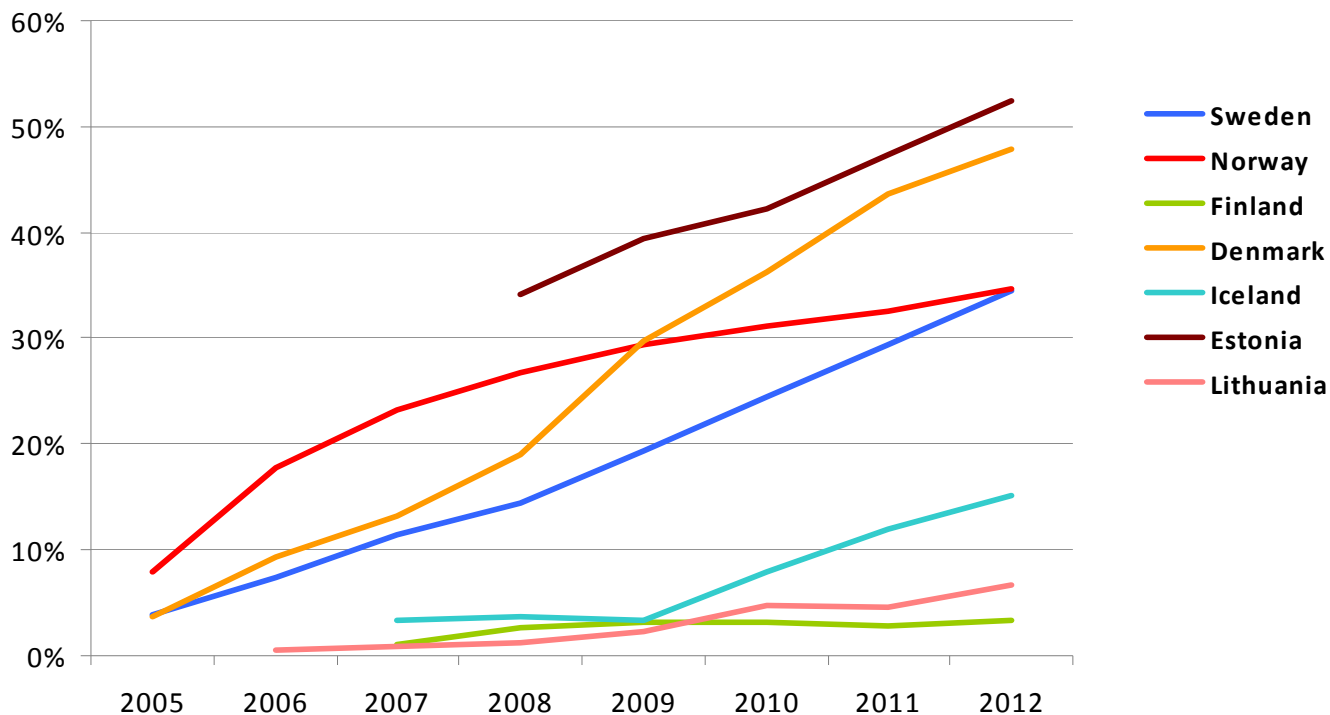
# Broadband telephony (VoIP) subscriptions<sup>1</sup> per capita



The number of VoIP subscriptions per capita has been increasing fast up to 2011 in Denmark but the development has been stagnating during 2012 though at the highest level compared to the other countries. In Sweden and Iceland the number of subscriptions is still growing although Sweden has more than twice as many VoIP subscriptions per capita than Iceland. Estonia and Norway had almost the same VoIP penetration rate in 2008 but while the Norwegian numbers have been decreasing since, the Estonian has had a modest increase which give Estonia the third highest number of VoIP subscriptions per capita. In Lithuania and Finland the number of VoIP subscriptions is low compared to the other countries.

<sup>1</sup>Only data for Estonia in 2008 to 2012, Lithuania 2006 to 2012, Denmark 2005 to 2012, Iceland 2007 to 2012 and Finland 2007 to 2012.

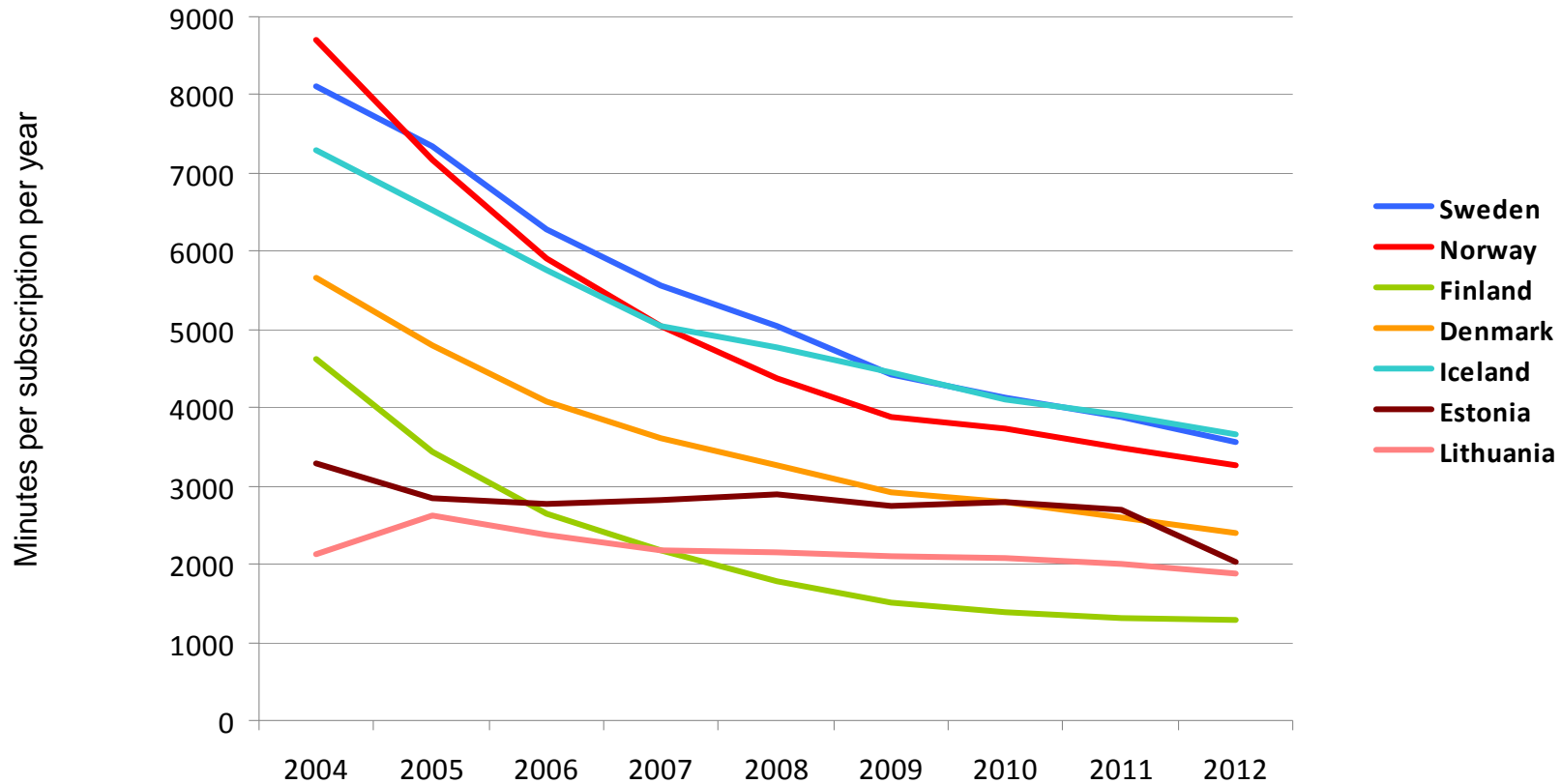
# Share of broadband telephony (VoIP) of all fixed telephony subscriptions<sup>1</sup>



The share of broadband telephony of all fixed telephony subscriptions was highest in Estonia with almost 53 percent in 2012. Denmark had the second highest share at nearly 48 percent. Sweden and Norway had both approx. a share of 35 percent. Iceland reached 15 percent after stable growth since 2009. Lithuania and Finland's share of broadband telephony of all fixed telephony subscriptions is low compared to the other countries.

<sup>1</sup>All fixed telephony subscriptions include PSTN-, ISDN- and broadband telephony subscriptions (VoIP). <sup>1</sup>Only data for Estonia in 2008 to 2012, Lithuania 2006 to 2012, Denmark 2005 to 2012, Iceland 2007 to 2012 and Finland 2007 to 2012.

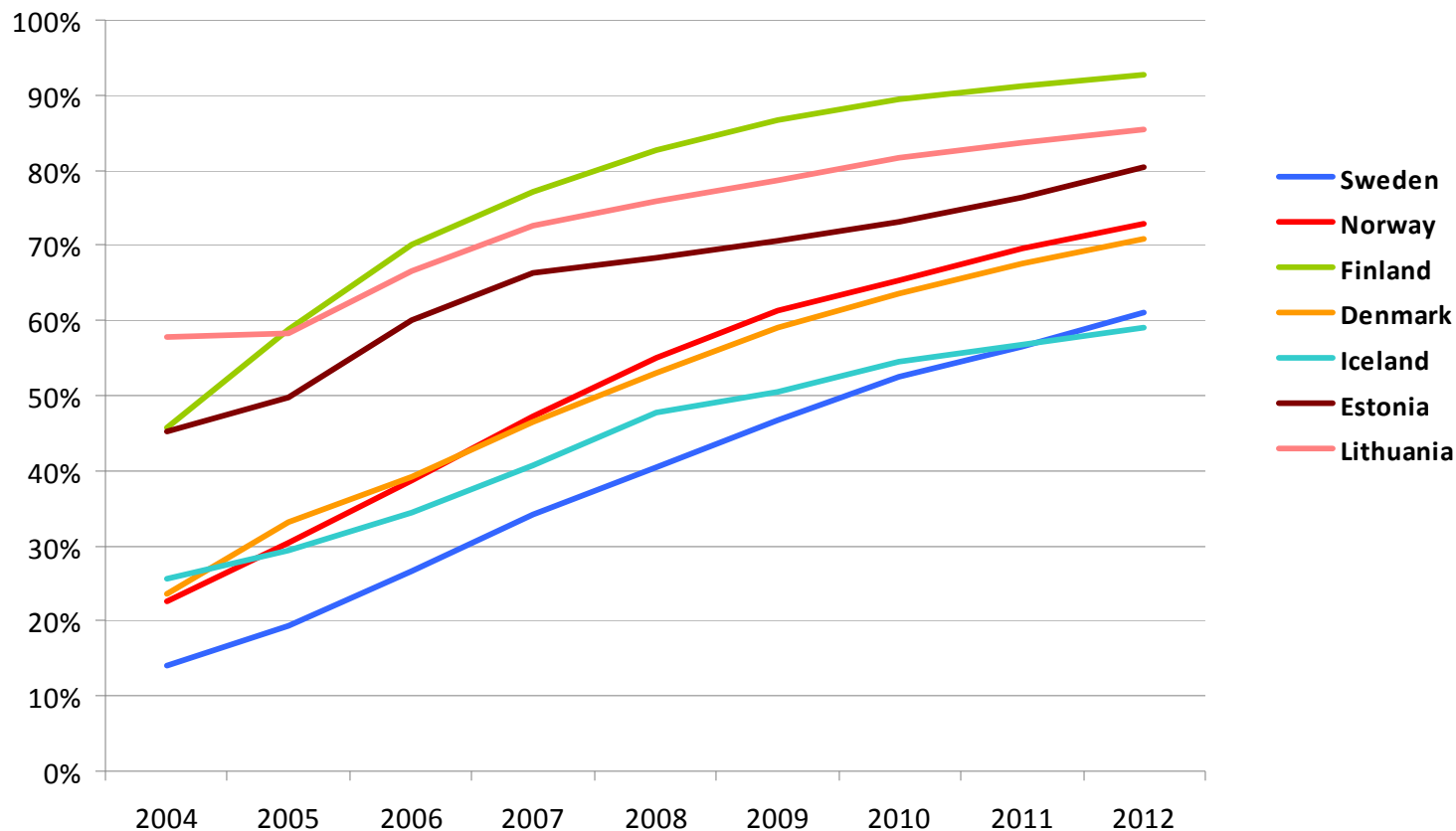
# Number of fixed call minutes per subscriptions<sup>1</sup> in a year



The usage is declining in all countries but except for Estonia the decrease seems to flatten out. Finland still has the lowest usage, but at the same time the highest usage of mobile telephony. Iceland had in 2011 and 2012 the highest amount of fixed call minutes per subscription.

<sup>1</sup> Subscriptions is the average of the number of subscriptions at the beginning and end of each year except for subscriptions for Lithuania in 2004 which are from the end of the period. VoIP is included.

# Share of mobile minutes of all originated minutes

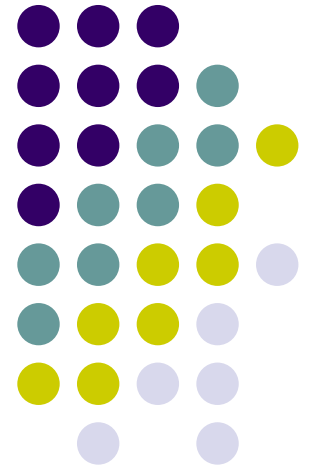


The graph shows that the usage of mobile telephony are more and more dominant also in terms of minutes. Even Iceland, Sweden and Denmark with the lowest share of mobile minutes and also the highest fixed penetration rate have a share of about 60 percent and above. Finland has the highest share of mobile minutes of all originated minutes with almost 93 percent in 2012. Lithuania and Estonia is second and third with shares of 86 and 80 percent.

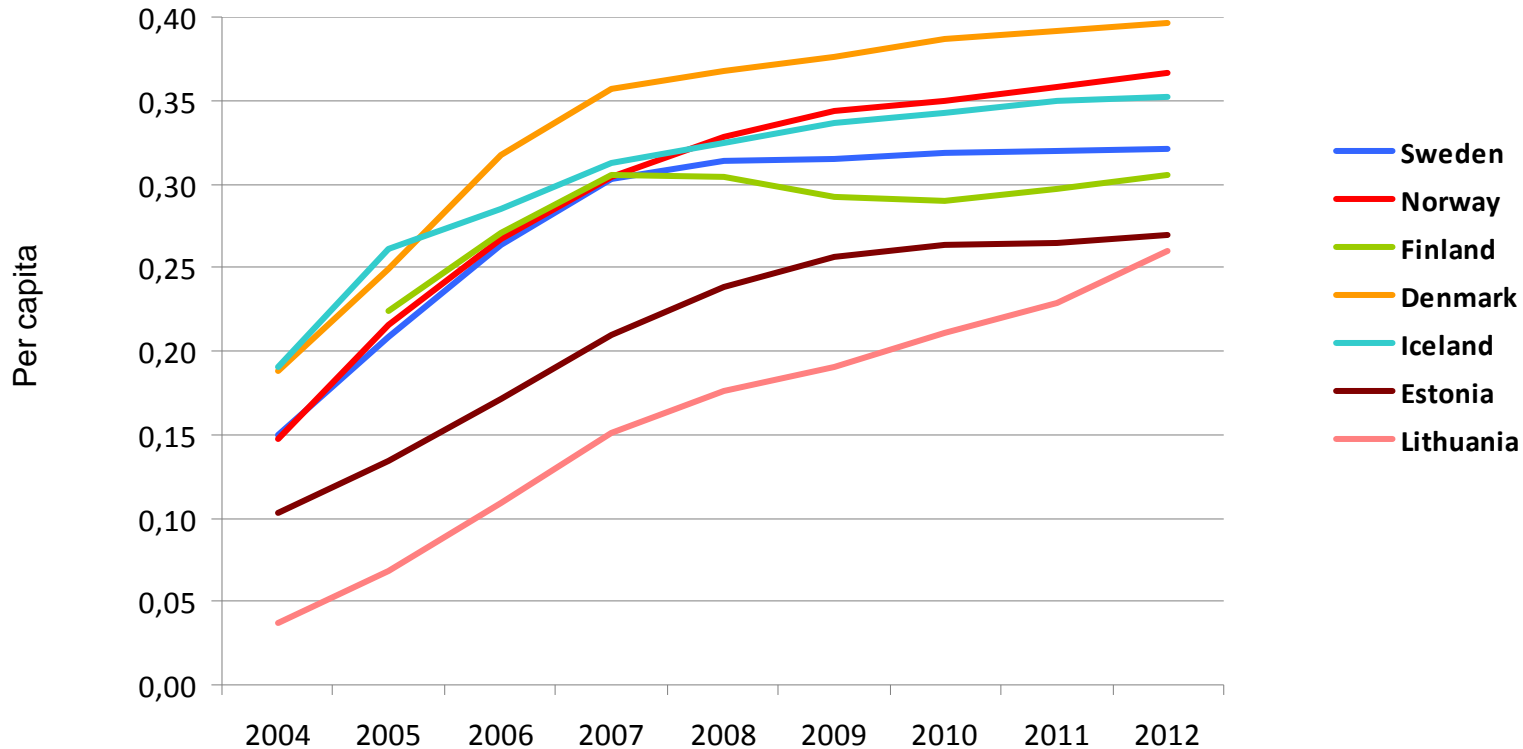
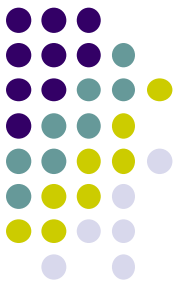
<sup>1</sup>All originated minutes are the sum of all fixed minutes and all mobile minutes.

# Broadband

---



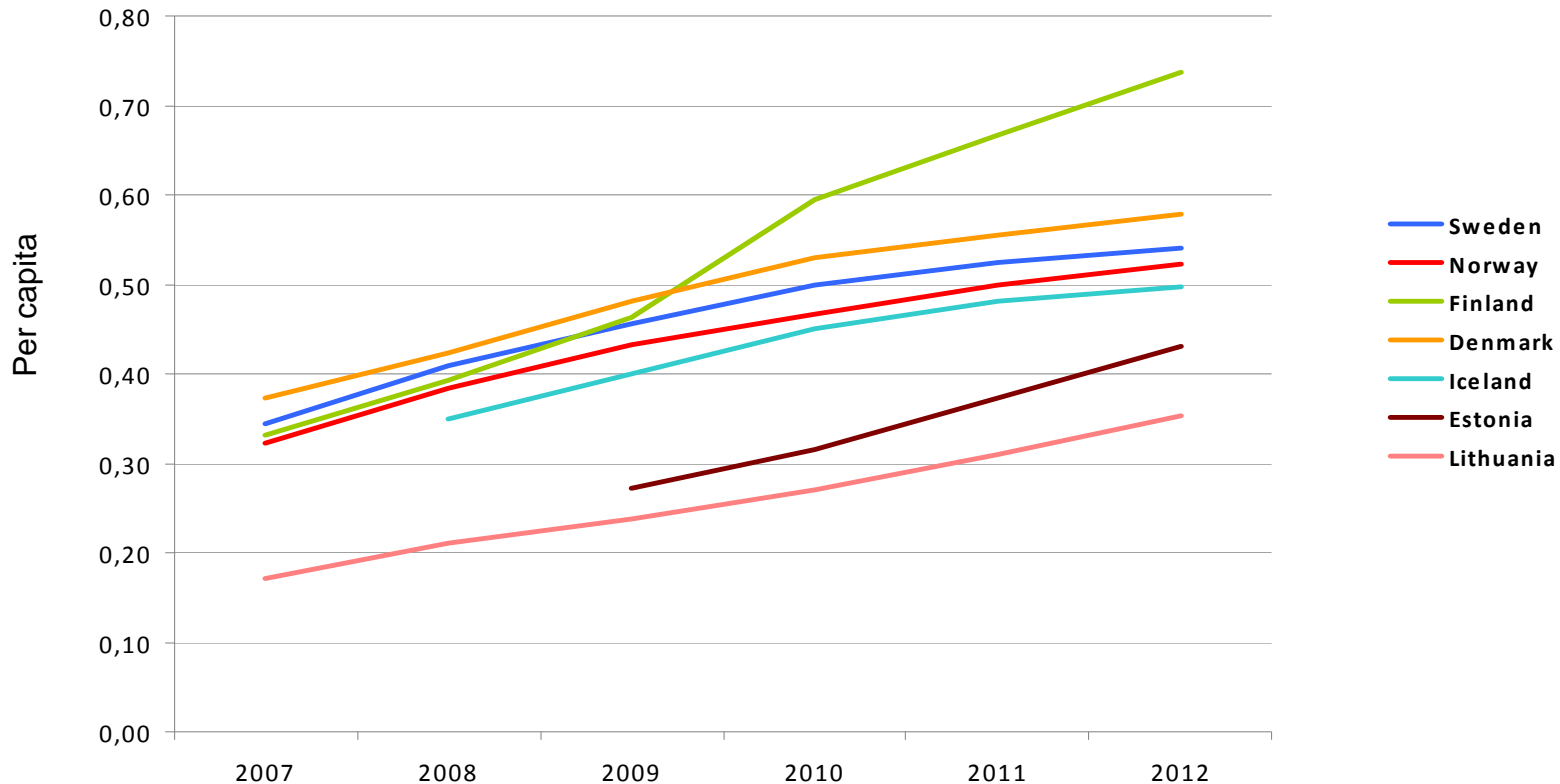
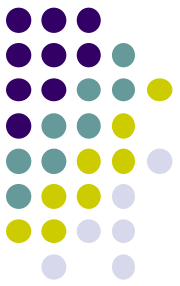
# Number of fixed broadband subscriptions<sup>1</sup> per capita



The growth has stagnated in all countries except for Lithuania. All the Nordic countries, Estonia and Lithuania are within the best half of the 27 EU countries on fixed broadband penetration. Lithuania and Estonia has fewer fixed broadband subscriptions per capita than the other countries, but the Lithuanian penetration rate grew 8 percent in 2011 and over 13 percent during 2012, while all other countries only had growth up to 2,5 percent in the same periods.

<sup>1</sup>Only data for Finland 2005 to 2012.

# Number of broadband subscriptions per capita (incl. mobile broadband<sup>1</sup>)

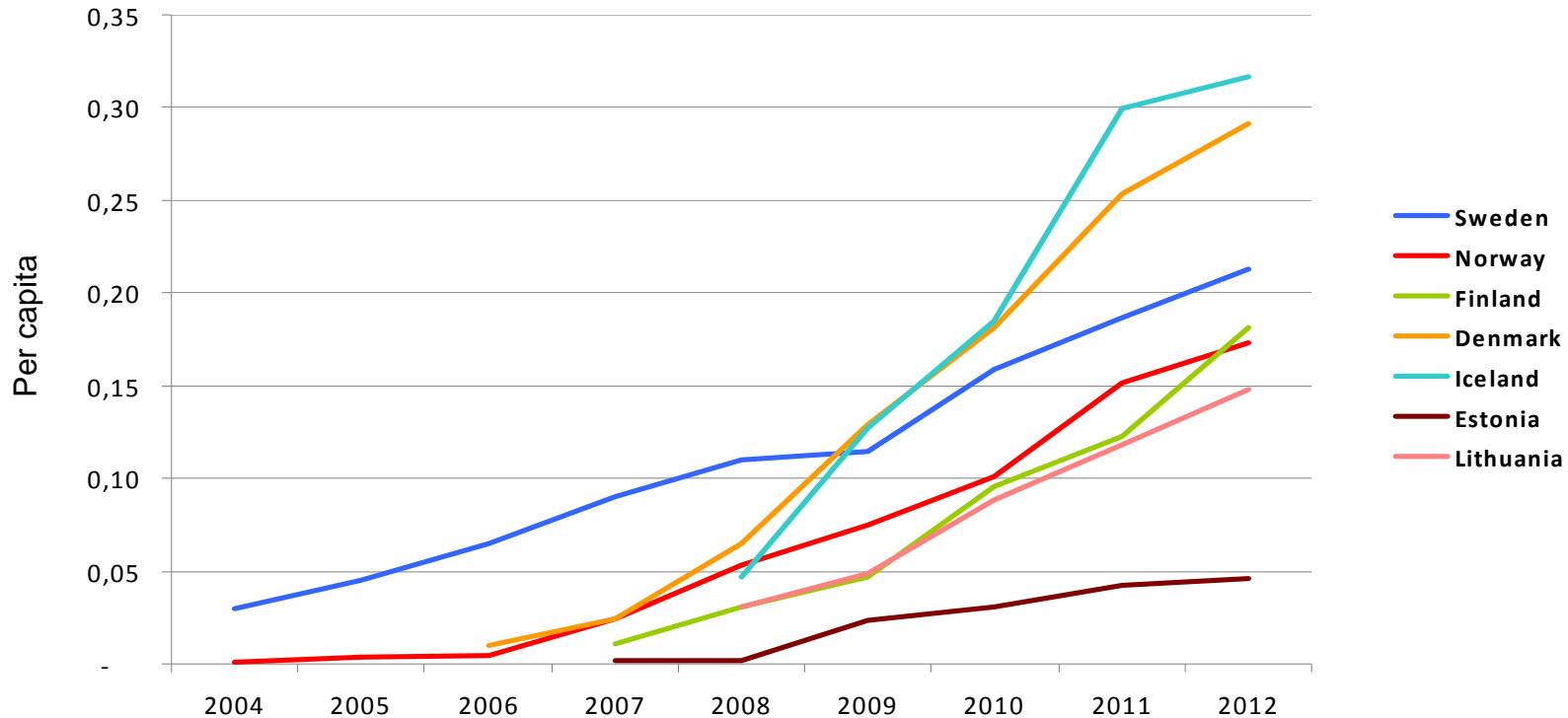
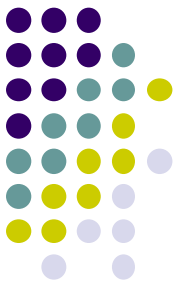


When adding the growth in mobile broadband to fixed broadband the graph shows that Finland has the highest penetration rate with a little more than 0,74 subscriptions per capita. Denmark, Sweden, Norway and Iceland lies within a spread of just 0,08 points from 0,50 to 0,58. Lithuania and Estonia has fewer subscriptions per capita than the rest of the countries (0,35 and 0,43), but at the same time both countries had growth rates above 30 percent from 2010 to 2012, which is a bit higher than Finlands and significantly higher than the remaining countries.

<sup>1</sup>Includes only dedicated data subscriptions. For Finland it includes all mobile broadband subscriptions with monthly fee and no data cap. Only data for Iceland 2008 to 2012 and Estonia 2009 to 2012.



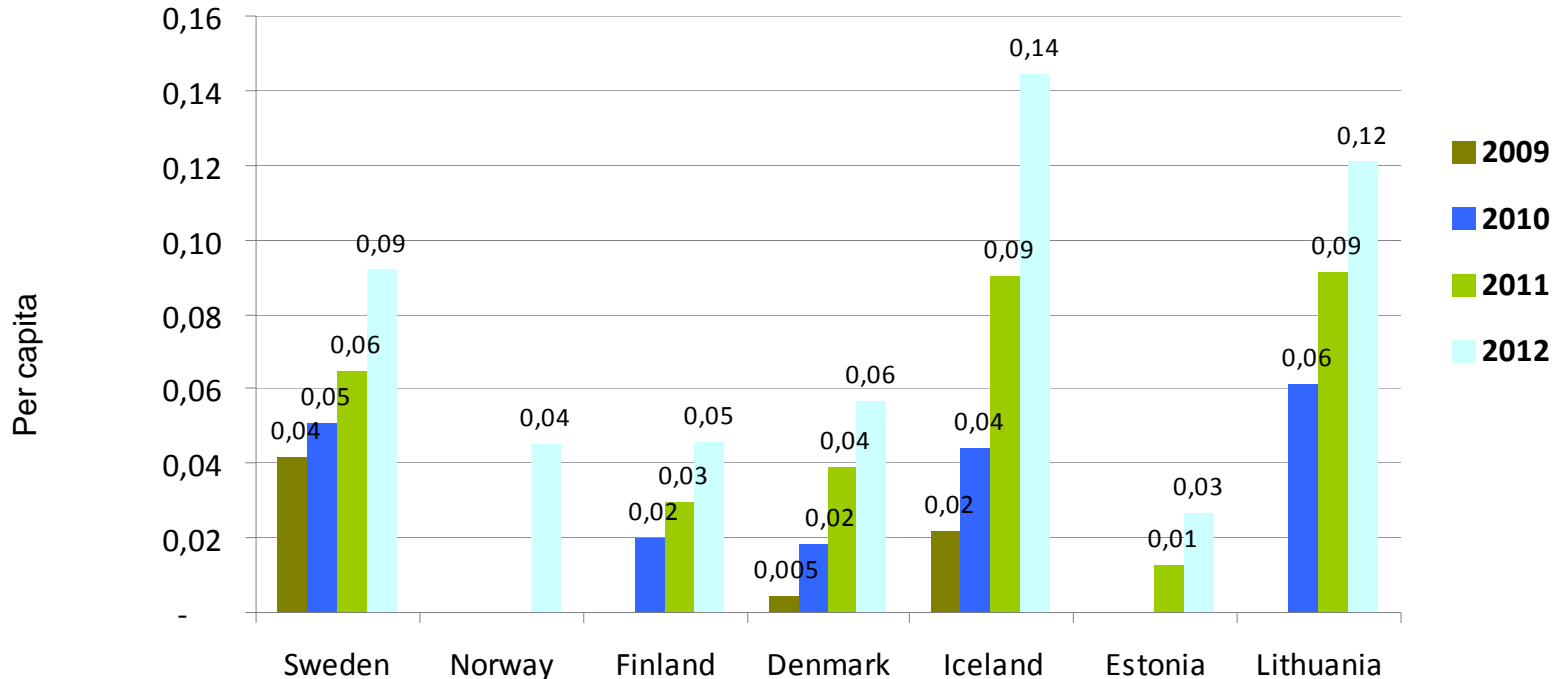
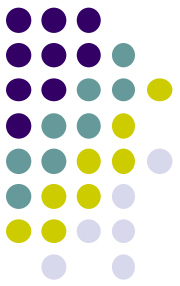
# Number of fixed broadband subscription with a marketed capacity of 10 Mbps<sup>1</sup> or more per capita



The penetration rate for subscriptions with speeds of 10 Mbps or more downstream are increasing in all countries although there are rather big differences between the countries. Iceland and Denmark are still at the top with respectively 0,32 and 0,29 subscriptions per capita. Sweden is third with 0,21 subscription per capita. Lithuania have approx. half of Iceland's penetration rate and Norway and Finland are a little above that. With 48 percent Finland also had the highest growth rate during 2012.

<sup>1</sup>Actual speed depends on factors like distance from the central exchange etc. This is the case for xDSL subscriptions in all the countries. Data from Norway: 8 Mbps or more until 2011. 10 Mbps or more in 2012. Only data for Estonia in 2007 to 2012, Lithuania 2008 to 2012, Denmark 2006 to 2012, Iceland 2008 to 2012 and Finland 2007 to 2012.

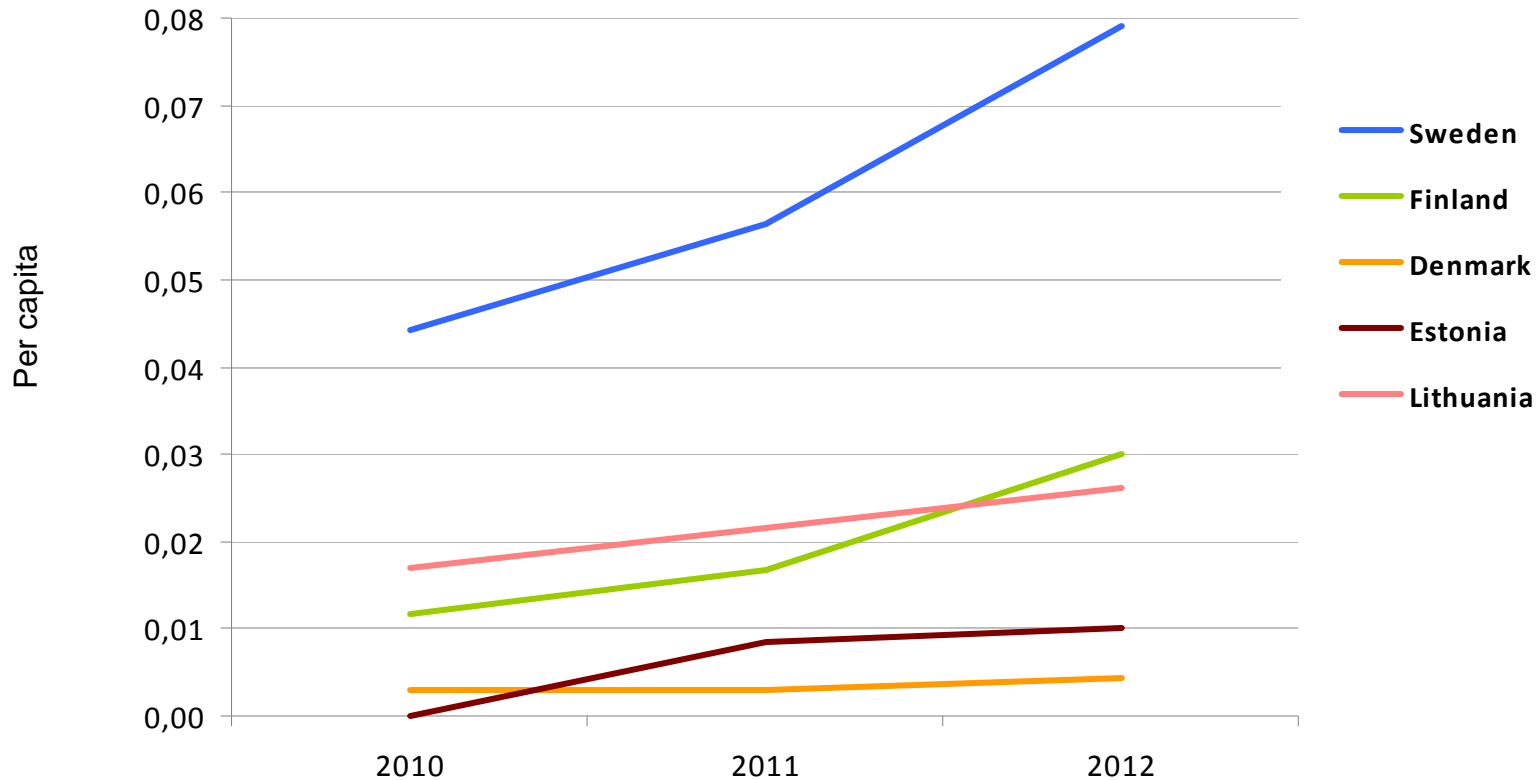
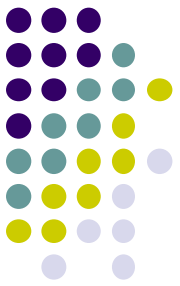
# Number of fixed broadband subscription with a marketed capacity of 30 Mbps or more per capita



Also the penetration rate for subscriptions with speeds of 30 Mbps or more downstream are increasing in every country. As with the rates for 10 Mbps downstream there are significant differences between the countries. Iceland and Lithuania have the highest penetration rate at 0,14 and 0,12 subscriptions per capita in 2012. Sweden is third with 0,09. Finland and Norway have almost the same rate at 0,05 and 0,04 and Estonia has the lowest rate at 0,03 subscriptions per capita in 2012.

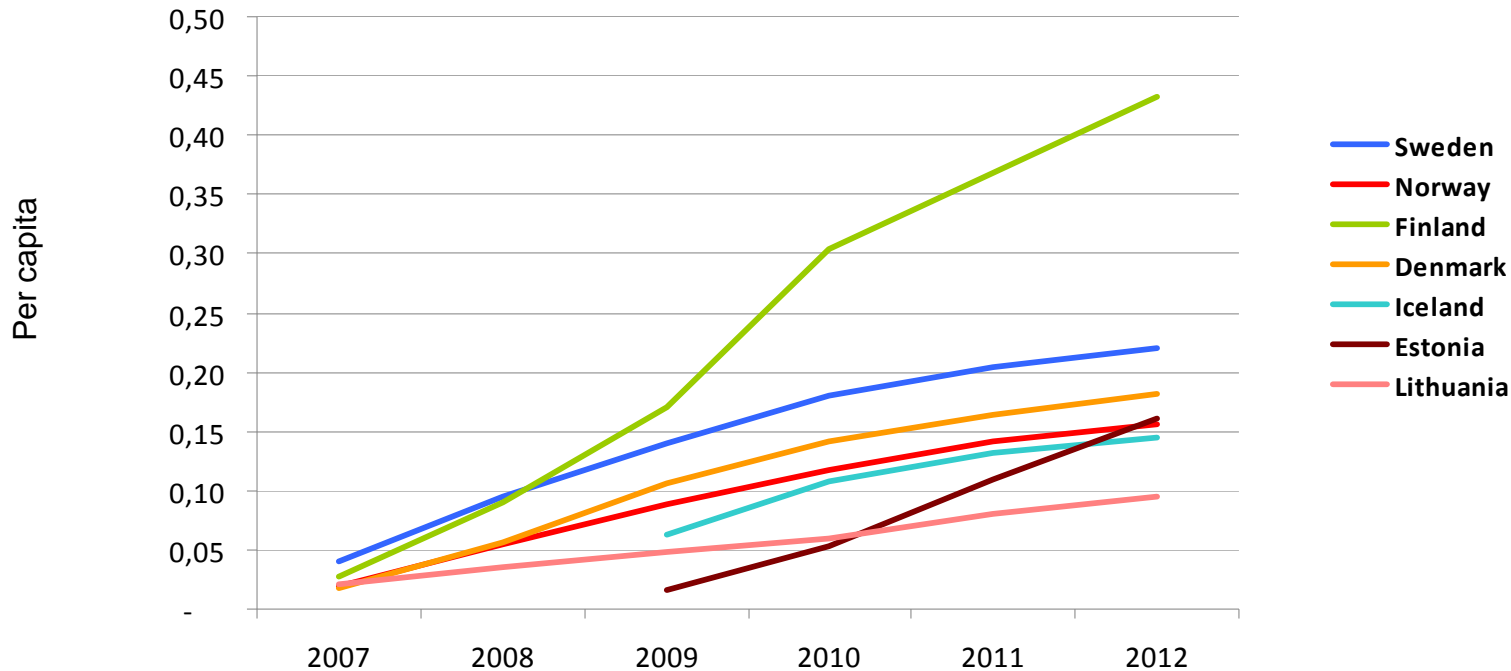
<sup>1</sup>Actual speed depends on factors like distance from the central exchange etc. This is the case for xDSL subscriptions in all countries. The Finnish figures are 25 Mbps and above. The Icelandic data is VDSL and fiber subscriptions with advertised downstream capacity up to 50 Mbit/s. Only data for Norway in 2012, Estonia in 2011 and 2012, Lithuania 2009 to 2012 and Finland 2010 to 2012.

# Number of fixed broadband subscription with a marketed capacity of 100 Mbps or more per capita



When it comes to broadband penetration for subscriptions with speeds of 100 Mbps or more downstream Sweden is well above the other countries. The Swedish penetration rate for 100 Mbps reached 0,08 subscriptions per capita in 2012. Finland is second with 0,03 which is less than half the Swedish rate. Lithuania is slightly below Finland and Denmark has the lowest rate with 0,004 subscriptions per capita in 2012.

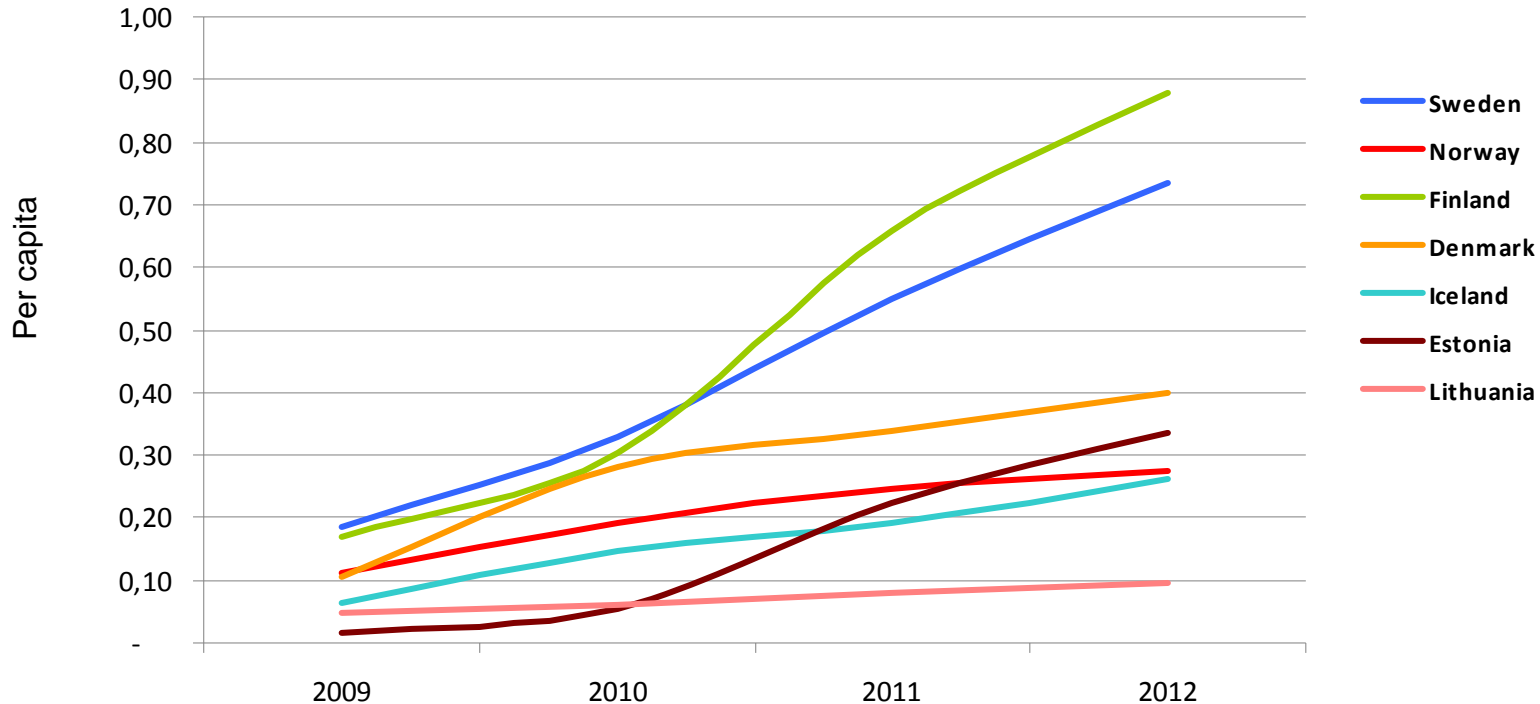
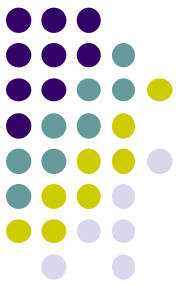
# Number of mobile broadband subscriptions<sup>1</sup> per capita



In 2012 there was 0,43 mobile broadband subscriptions per capita in Finland, which makes the Finnish mobile broadband penetration more than twice Sweden's second highest penetration rate at 0,22 subscriptions per capita in 2012. Except for Lithuania which has the lowest mobile broadband penetration rate, the rest of the countries are rather close with 0,14 to 0,18 subscriptions per capita. In all countries penetration rate increases, but except for the Estonian growth rate at 48 percent during 2012 and the Finnish at 17 percent, the rest of the countries have decreasing growth rates.

<sup>1</sup>Includes only dedicated data subscriptions. For Finland it includes all mobile broadband subscriptions with monthly fee and no data cap. Only data for Estonia in 2009 to 2012 and Iceland 2009 to 2012.

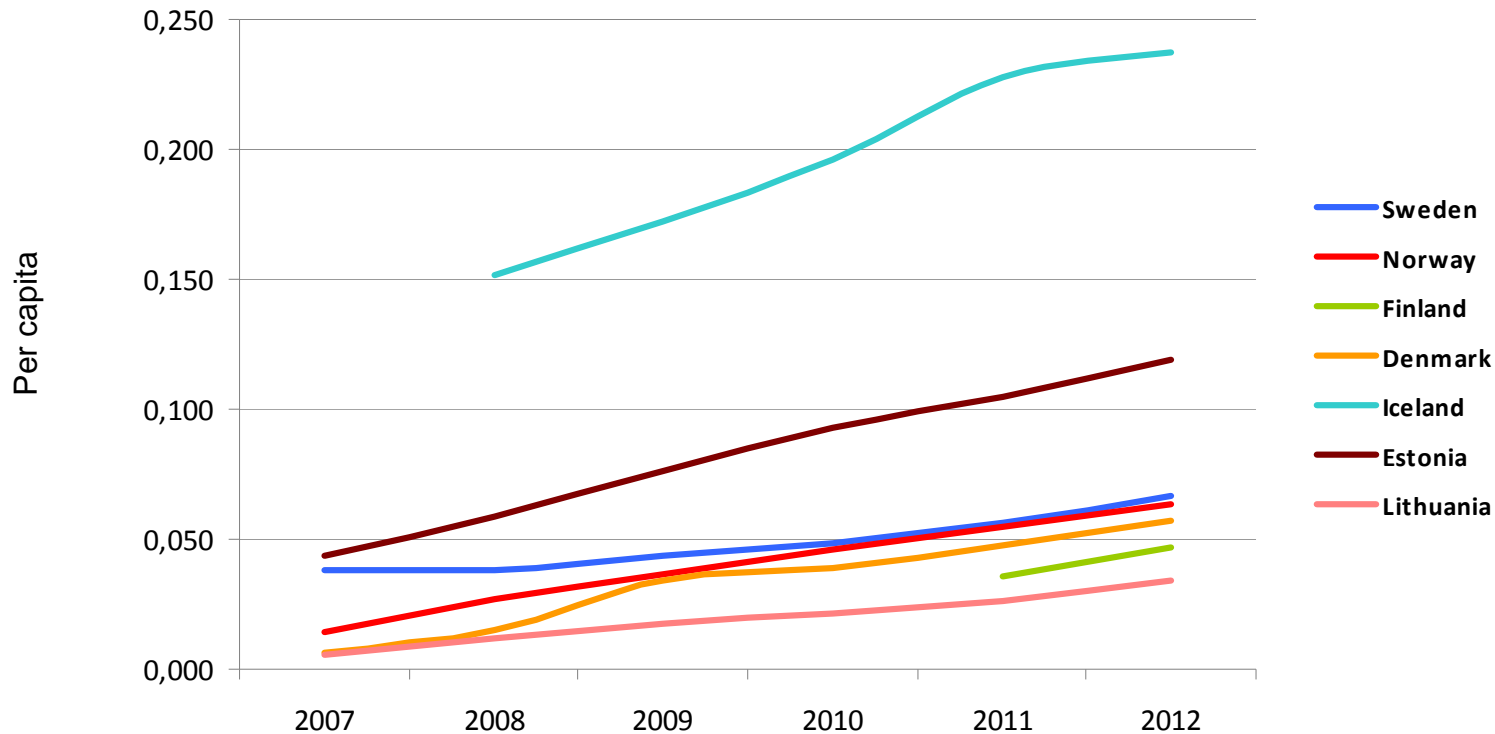
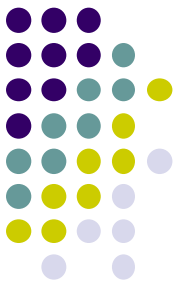
# Number of mobile broadband subscriptions<sup>1</sup> + “add-on” data packages per capita



When the “add-on” data packages is included in the mobile broadband subscriptions the Swedish penetration rate is more than trippled to 0,73 subscription per capita in 2012 but still a bit below the Finnish penetration rate at 0,88. Less than half the Finnish rate are the Danish, Estonian, Norwegian and Icelandic rates that goes from 0,26 to 0,40 subscriptions per capita. Estonia has the highest growth rate with a 50 percent increase in the penetration rate during 2012.

<sup>1</sup>Dedicated data subscriptions. Finland: Until 2010 it includes monthly paid mobile data transfer subscriptions without data cap. From 2011 and onwards the Finnish data includes all monthly paid mobile data transfer subscriptions. Lithuanian data is only dedicated data subscriptions.

# Number of IPTV subscriptions<sup>1</sup> per capita

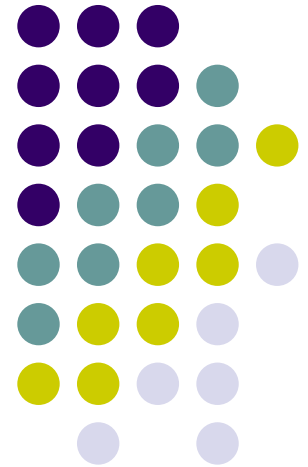


IPTV penetration is highest in Iceland where there is no cable-tv. In average 24 out of 100 Icelandic inhabitants have an IPTV subscription. Estonia is second with 12 out of a 100 inhabitants. The rest of the countries are rather close with rates from 3 to 7 subscriptions per a 100 inhabitants.

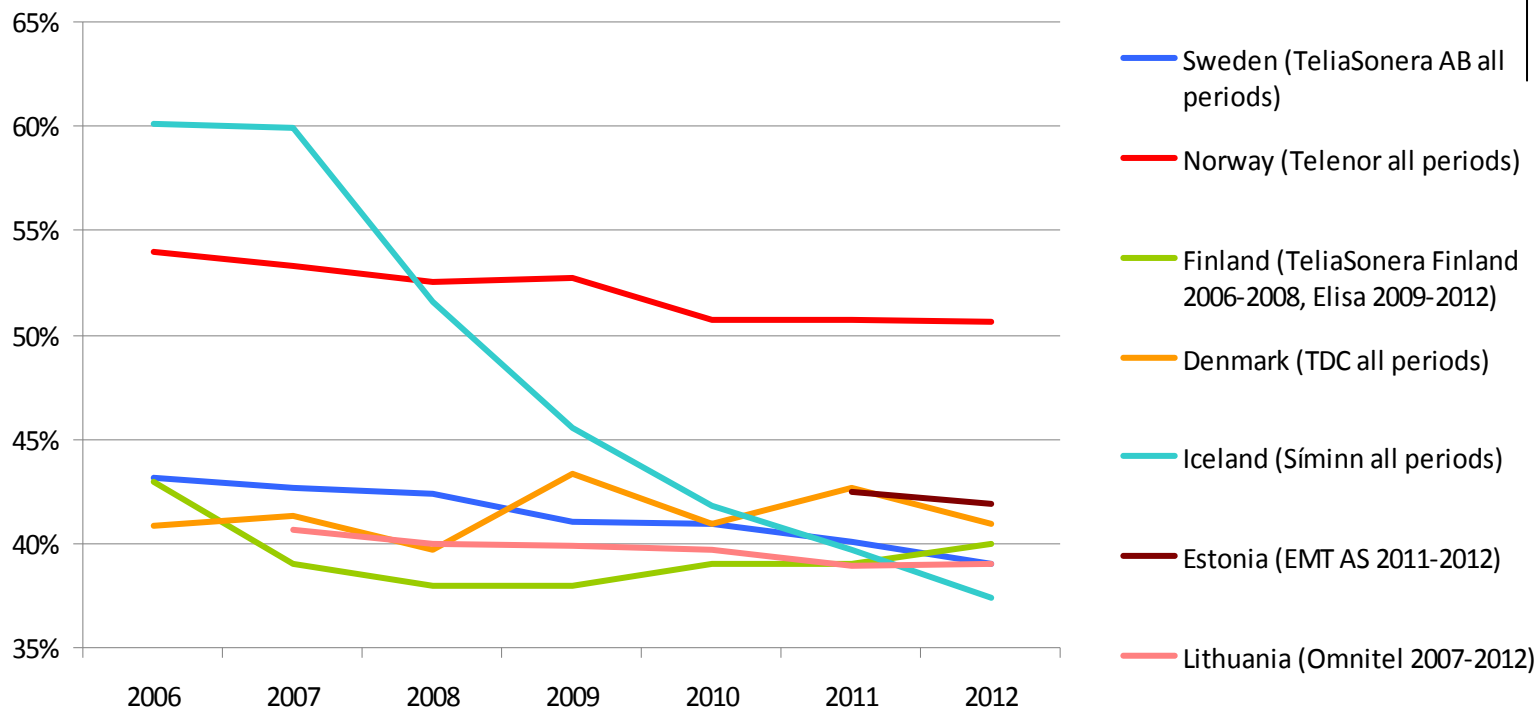
<sup>1</sup>Fixed IPTV subscriptions. Only data for Iceland in 2008 to 2012 and Finland 2011 and 2012.

# Market Shares

---



# Market share of mobile subscriptions, leading operator<sup>1</sup>

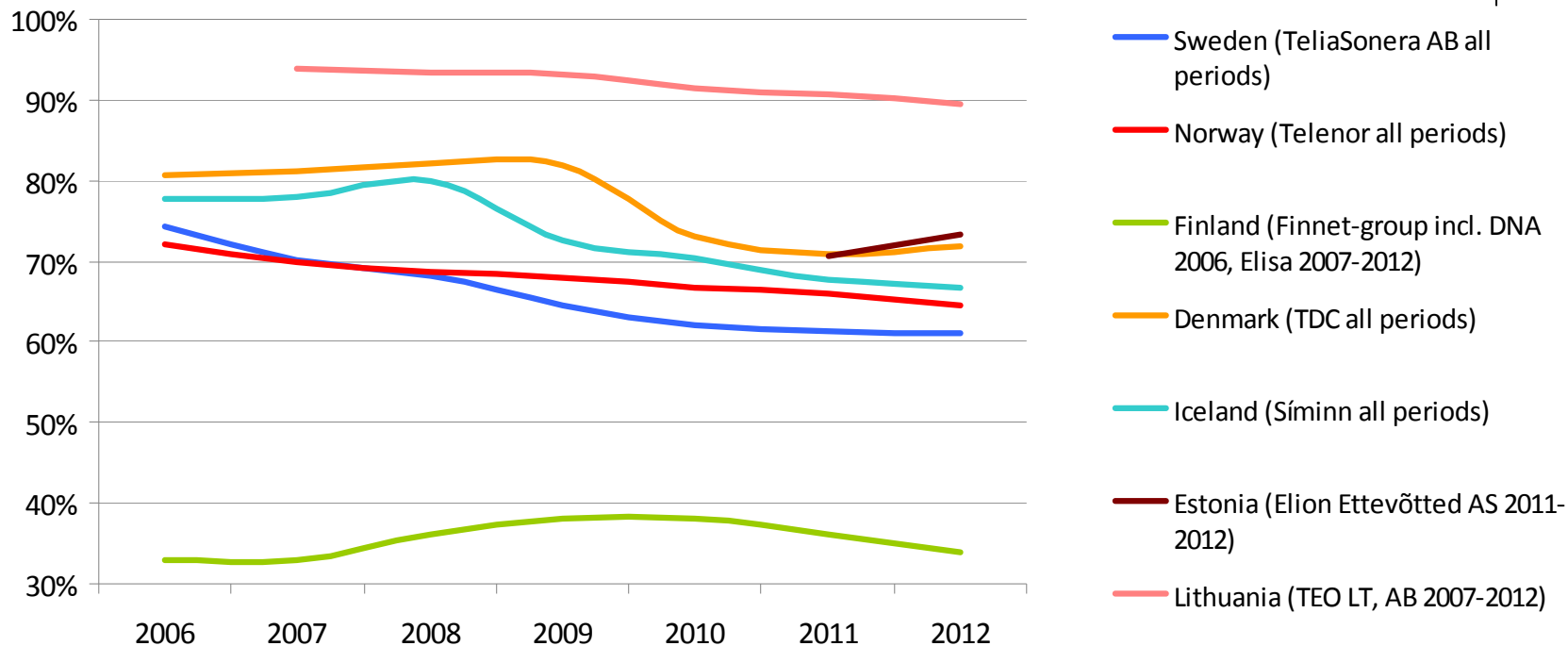


Except for Iceland the market share of the leading mobile operator is rather stable in all countries. Telenor in Norway has since 2008 been the single mobile operator with the biggest share in a national market. Iceland's Síminn had a dramatic decrease in market share from the highest level in 2006 at 60 percent to the lowest at 37 percent in 2012. In the rest of the countries the leading operator had market shares at approx. 40 percent and in average declining a bit in the period 2006 to 2012. In Finland the leading operator changed from TeliaSonera to Elisa in 2009.

<sup>1</sup>Operator with the biggest market share in the period. Market share includes subsidiaries. Mobile subscriptions includes ordinary mobile subscriptions and dedicated data subscriptions. Only data for Estonia in 2011 and 2012. Only data for Lithuania in 2007 to 2012.



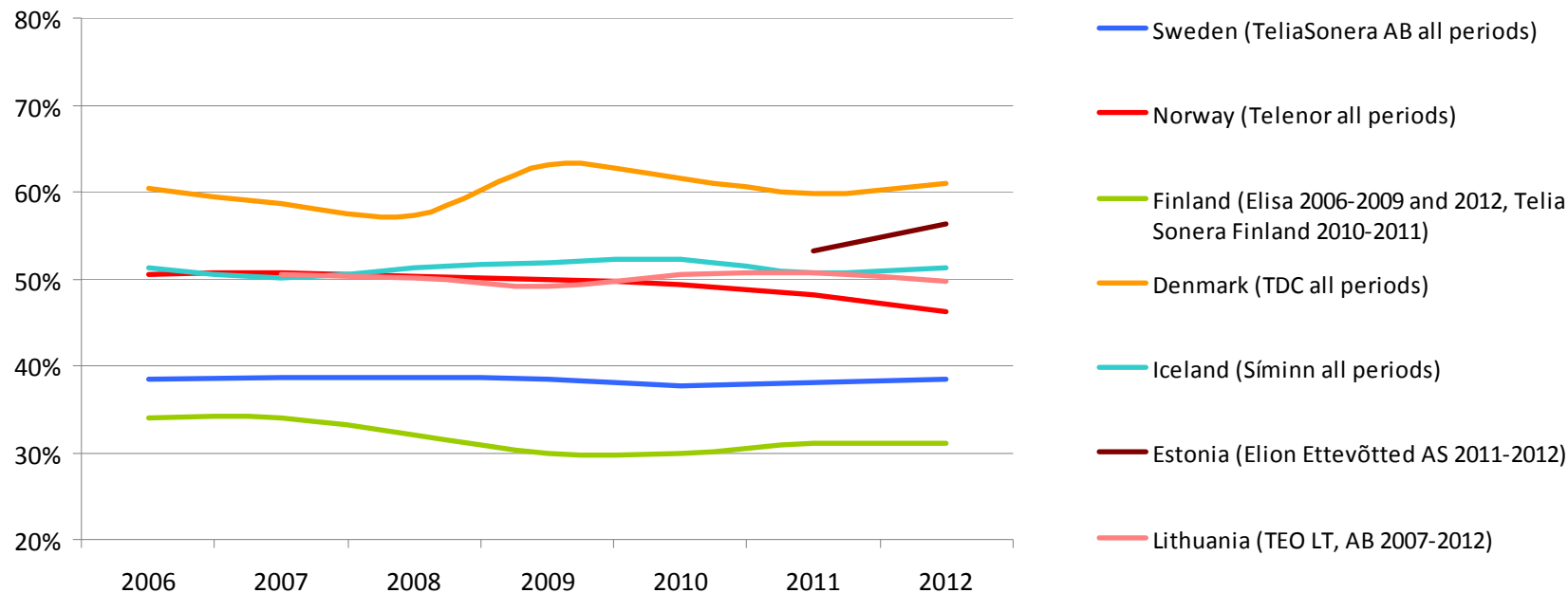
# Market share of fixed telephony subscriptions, leading operator<sup>1</sup>



Regarding the market share of fixed telephony subscriptions, Lithuanian TEO LT, AB had since 2007 the single biggest share of any of the fixed markets with 90 percent or more, while the Finnish Elisa had the smallest share in the same period remaining at approx. 34 percent in 2012. In Denmark, Sweden and Norway the leading operators market share is decreasing with approx. 8 to 10 points from 2006 to 2012. Though there is modest growth during 2012 for Estonian Elion Ettevõtted AS and TDC in Denmark.

<sup>1</sup>Operator with the biggest market share in the period. Market share includes subsidiaries. Fixed telephony subscriptions includes PSTN-, ISDN- and broadband telephony subscriptions (VoIP). Only data for Estonia in 2011 and 2012. Only data for Lithuania in 2007 to 2012.

# Market share of fixed broadband subscriptions, leading operator<sup>1</sup>



As with the mobile market the fixed broadband market also shows rather stable market shares for the leading operator. TDC in Denmark had the biggest share in a national broadband market in the entire period. Telenor in Norway and Elisa in Finland are the only operators with decreasing market shares throughout the period - going 4 and 3 points down to 46 and 31 percent of the market in 2012. TeliaSonera's share is quite stable just below 40 percent of the Swedish fixed broadband market. In Finland the market shares of Elisa and TeliaSonera are very close together, and the largest operator has changed two times since 2006.

<sup>1</sup>Operator with the biggest market share in the period. Market share includes subsidiaries. Only data for Estonia in 2011 and 2012. Only data for Lithuania in 2007 to 2012.