

Mobile-Cellular Telephony Approaching Market Saturation

By the end of 2013 there were 6.8 billion mobile subscribers worldwide, corresponding to a global penetration of 96%, reports ITU (International Telecommunications Union). This averages 9.5 mobile phones for 10 people, or about 1 device per living person.

Our new forecast (Fig.1) shows ITU's data of actual mobile subscriptions from 1980 through 2013, represented by blue dots, and areppim's forecast till 2025, represented by the S-shaped red line. The model anticipates a global market size of 8.6 billion subscribers by 2025, corresponding to 107% of the projected world population, and close to saturation that could happen at 8.7 billion subscribers by 2036.

Time to think about tomorrow

Although our previous predictions have not been far off target, reality is unlikely to follow mathematics models that closely. First, the total world population in 2025 is expected to reach 8.01 billion people, of which 6.8 billion of age 10 to 84. It does not seem very reasonable to believe that each 10 people in this group will hold 13 subscriptions. Secondly, unforeseen technological innovations may totally upset the mobile phone paradigm, as the latter did to the fixed line telephony in the late 20th century. Thirdly, it is yet unclear what

a mobile phone really is. In the 1980s a cell phone was a genuine phone, period; today, it is a device capable of performing a vast array of functions, including but not primarily that of a phone.

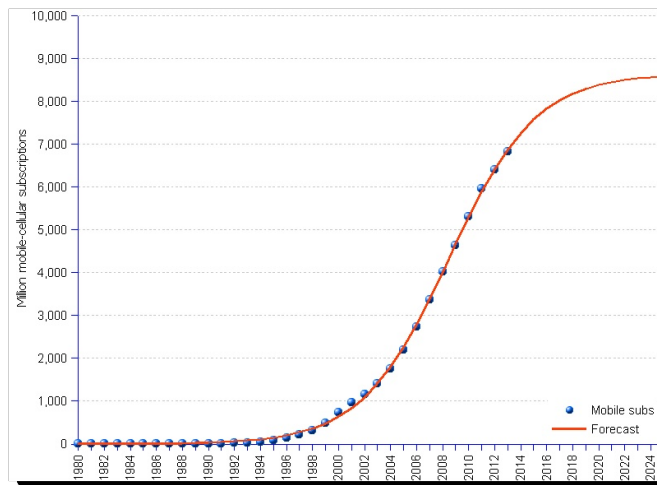


Fig. 1 : Historical data and forecast of mobile phone subscriptions.


Be it as it may, the S-curve model raises some pertinent questions. If the period of exponential growth is already over as suggested, how could vendors stimulate growth ? Should stagnation rule in less than 10 years, what are suppliers and operators going to do to survive ? And more fascinating : what new

communications technology is lurking in the dark, getting ready to take over ?

ITU's highlights

To summarize the current status of mobile cellular telephony, let us quote some highlights of ITU's "Measuring the Information Society" report, released in October 2013.

- There will be 6.8 billion mobile-cellular subscriptions by the end of 2013, almost as many as there are people on the planet.
- Close to 100 per cent of the population are covered by a mobile signal, however not everyone has a mobile phone. There are still 4.4 billion people who are not yet online. Priority attention needs to be given to the unconnected.

- While growth in mobile-cellular penetration is flattening, reaching 96 per cent by end 2013, mobile broadband continues to grow strongly, on average by around 40 per cent annually between 2010 and 2013.
- Expectations are high that mobile-broadband services will become equally as available as mobile-cellular telephony in the near future.
- Today, almost all people on Earth live somewhere within reach of a mobile-cellular signal. Not all of those networks, however, have been upgraded to 3G technology, which is necessary to qualify as mobile broadband and provide highspeed access to the Internet.
- Mobile broadband has been the fastest growing market segment over the past few years, with a 40 per cent average annual growth (CAGR) since 2007. It is growing rapidly not only in developed but also in developing countries.
- In addition to mobile-broadband services, a number of countries and operators, especially from the developing world, where fixed networks are very limited, have chosen to develop other wireless broadband services, in particular WiMAX services, providing a wireless alternative to cable and digital subscriber line.
- From 2007 to 2011, total telecommunication revenues grew by 12 per cent, climbing to USD 1.8 trillion, or 2.6 per cent of world GDP. Over the same period, the developing countries' share of total telecommunication revenues increased from 26 to 30 per cent.
- The 2008 financial crisis did indeed have an impact on telecommunication spending, particularly in developed countries, whereas developing countries were less affected. 

With about 6.8 billion subscribers by the end of 2013, 96% of the world population hold a subscription to mobile cellular telephony. The market penetration of the device grew exponentially, faster than the population, but it has likely reached the inflection point in 2008-2009, and initiated a decline

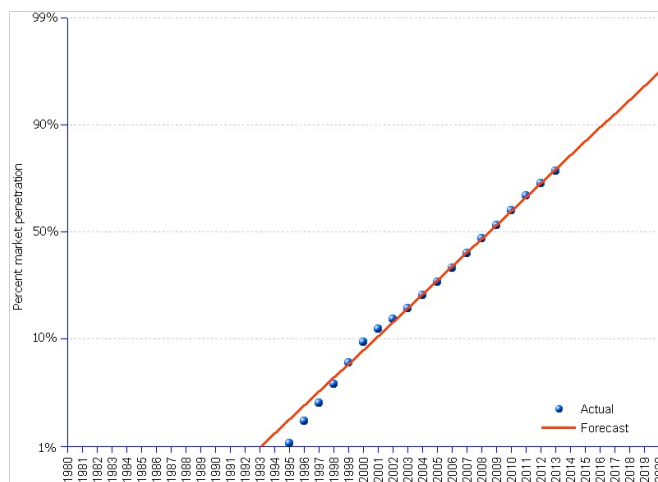



Fig.2 : Percent penetration of mobile phones.

of its growth rate, slowly approaching final saturation.

According to areppim's most recent forecast, market saturation may occur at 8.7 billion subscriptions, somewhere around 2036. Using this saturation value as a benchmark, cellular phone reached its midpoint in 2009, and

achieved almost 80% penetration currently (Fig.2), as shown by the straight red line of the graph (Fisher-Pry normalization of the logistic curve, rendering it a straight line). From now on it seems that further growth will mostly be commanded by sheer population growth or

alternatively by a technology quantum leap taking the world out of the strict cellular phone paradigm — ITU seems to consider that mobile broadband internet services can do it. 

References :

ITU Measuring the Information Society (MIS) report, 5th edition, ITU, Geneva, Switzerland, October 2013.
ICT Statistics Home Page, ITU, <http://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>

Sources :

http://stats.areppim.com/stats/stats_mobilex2013.htm
http://stats.areppim.com/stats/stats_mobilexpenetr.htm

Mobile Cellular Phone Subscribers (million)		
Year	Actual	Forecast ¹
1980	0.02	1.7
1981	0.06	2.3
1982	0.1	3.1
1983	0.15	4.2
1984	0.32	5.7
1985	0.75	7.7
1986	1.45	10.4
1987	2.55	14
1988	4.33	18.9
1989	7.35	25.4
1990	11.21	34.3
1991	16	46.2
1992	23	62.1
1993	34	83.6
1994	56	112.4
1995	91	150.9
1996	145	202.2
1997	215	270.6
1998	318	361
1999	490	479.8
2000	738	634.9
2001	961	834.9
2002	1,157	1,089.3
2003	1,417	1,407.4
2004	1,763	1,796.3
2005	2,205	2,259.1
2006	2,745	2,792.7
2007	3,368	3,385.5
2008	4,030	4,018.0
2009	4,640	4,664.0
2010	5,320	5,295.3
2011	5,962	5,886.0
2012 ²	6,411	6,416.7
2013 ²	6,835	6,876.4
2014		7,262.3
2015		7,577.5
2016		7,829.5
2017		8,027.4
2018		8,180.8
2019		8,298.3
2020		8,387.6
2021		8,455.1
2022		8,505.9
2023		8,543.9
2024		8,572.4
2025		8,593.6

¹ Logistic growth function
² ITU's estimates.

Mobile Cellular Phones Global Market Penetration 1980 - 2025						
Year	World population	Actual		Forecast ¹		
		Subscribers (million)	Percent of population	Subscribers (million)	Percent of population	Percent market penetration
1980	4451	0.02	0.00%	1.7	0.04%	0.02%
1981	4529	0.06	0.00%	2.3	0.05%	0.03%
1982	4608	0.1	0.00%	3.1	0.07%	0.04%
1983	4689	0.15	0.00%	4.2	0.09%	0.05%
1984	4771	0.32	0.01%	5.7	0.12%	0.07%
1985	4855	0.75	0.02%	7.7	0.16%	0.09%
1986	4941	1.45	0.03%	10.4	0.21%	0.12%
1987	5029	2.55	0.05%	14	0.28%	0.16%
1988	5118	4.33	0.08%	18.9	0.37%	0.22%
1989	5207	7.35	0.14%	25.4	0.49%	0.29%
1990	5295	11.21	0.21%	34.3	0.65%	0.40%
1991	5382	16	0.30%	46.2	0.86%	0.53%
1992	5467	23	0.42%	62.1	1.10%	0.72%
1993	5552	34	0.61%	83.6	1.50%	0.97%
1994	5636	56	0.99%	112.4	2.00%	1.30%
1995	5719	91	1.59%	150.9	2.60%	1.74%
1996	5802	145	2.50%	202.2	3.50%	2.34%
1997	5883	215	3.65%	270.6	4.60%	3.13%
1998	5964	318	5.33%	361	6.10%	4.17%
1999	6045	490	8.11%	479.8	7.90%	5.54%
2000	6124	738	12.05%	634.9	10.40%	7.34%
2001	6203	961	15.49%	834.9	13.50%	9.65%
2002	6281	1157	18.42%	1089.3	17.30%	12.59%
2003	6359	1417	22.28%	1407.4	22.10%	16.26%
2004	6437	1763	27.39%	1796.3	27.90%	20.75%
2005	6515	2205	33.85%	2259.1	34.70%	26.10%
2006	6593	2745	41.63%	2792.7	42.40%	32.27%
2007	6671	3368	50.48%	3385.5	50.70%	39.12%
2008	6750	4030	59.70%	4018	59.50%	46.42%
2009	6828	4640	67.95%	4664	68.30%	53.89%
2010	6907	5320	77.02%	5295.3	76.70%	61.18%
2011	6985	5962	85.36%	5886	84.30%	68.01%
2012 ²	7063	6411	90.77%	6416.7	90.80%	74.14%
2013 ²	7141	6835	95.71%	6876.4	96.30%	79.45%
2014	7218			7262.3	100.60%	83.91%
2015	7295			7577.5	103.90%	87.55%
2016	7371			7829.5	106.20%	90.46%
2017	7447			8027.4	107.80%	92.75%
2018	7521			8180.8	108.80%	94.52%
2019	7595			8298.3	109.30%	95.88%
2020	7667			8387.6	109.40%	96.91%
2021	7738			8455.1	109.30%	97.69%
2022	7808			8505.9	108.90%	98.28%
2023	7877			8543.9	108.50%	98.72%
2024	7945			8572.4	107.90%	99.05%
2025	8011			8593.6	107.30%	99.29%

¹ Logistic growth function
² ITU's estimates.