



ALTIMO
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The Value of the World's Mobile Industry, 2008 -2013

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World Mobile Industry Evaluation and Forecast

Study aims

The size, shape and relative clout of the world's global mobile markets is undergoing a major transformation. Today we present a new analysis of the major trends in the global mobile landscape, calculated upon the 'market caps,' or values, of the mobile industries in 180 countries. This sample represents more than 99% of the world's mobile industry.

In this Altimo Foundation paper, produced in partnership with academics from Cass Business School, Moscow's New Economics School and the University of Illinois, we propose a new way of estimating the capitalisation of the global mobile industry and, in so doing, outline some of the most significant trends taking place in the industry based on an analysis of GDP dynamics and penetration rate growth.

Study key findings

1. How much is the world mobile market worth?

At the end of January 2008, the total capitalisation, or value, of the global mobile industry stood at approximately \$2.4 trillion¹. To give some indication of how this stands up on a global economic scale, these \$2.4 trillion represent some 3.8% of the world's total economic 'cap' of \$60.8 trillion.

This share has increased from 2.0% in 2002 and, upon studying trends in the development of penetration rates and of GDP, we project that the capitalisation of some of the most undervalued markets will dramatically increase over the next 5 years. Furthermore, we project that total capitalisation of the global mobile industry will reach \$6.7 trillion by 2013: some 5% of the world's total economic value.

2. Clash of the titans – a new balance of power

A significant shift has taken place in the balance of power between the world's six largest mobile markets. Most notably the Indian market, with a total value of \$160 billion, now outstrips the value of Japan (\$123 billion): a region long known for the highly developed and sophisticated nature of its mobile market. Perhaps of even more significance is the fact that China's mobile market, with a 14% share of global mobile market cap, is now fast approaching the US's position at 17%.

Taken together, these six leading mobile markets, drawn from all corners of the globe – the US, China, India, Japan, Russia and the UK – now account for half of the total capitalisation of the world's mobile telecoms industry.

¹ Trillion is one million million; 10¹²

3. Emerging world prevailed over the West in 2007

Leaving the leaders aside and looking at the Mobile market globally, market 'clout' is now more heavily weighted towards the emerging markets than might at first have been imagined. "The West", including North America and Western Europe, home to international giants such as AT&T, Vodafone and Telefonica, now accounts for just 40% of the total market capitalisation of the world's mobile telecoms assets. The "Emerging World," incorporating Asia, Africa, the CIS, Latin America and Eastern Europe, now stands head and shoulders above the West in terms of value, accounting for the lion's share of market value at 60%: evening the score for the first time ever in the history of mobile communications.

4. Tomorrow's leaders in cap growth

As part of this study, we have identified those markets which we believe could have a significant impact on the value of the global mobile industry between 2009 and 2013. These are countries which share similar attributes: the largest population and under-valued mobile markets capitalisation (see Chart 1), namely:

Ethiopia
Myanmar
Democratic Republic of Congo
Bangladesh
Pakistan
Indonesia
Egypt
India
Vietnam
Nigeria
Iran
Philippines
Ukraine

These underdeveloped markets are at the same stage today as the now mature markets of Europe, Japan and North America were 15 years ago. Then, as now, capitalisation growth was driven by quantitative development of the market which correlated directly with growth in penetration rates. Looking ahead, penetration trends within emerging markets such as Southeast Asia, Africa, the Middle East, CIS and Southern Asia are likely to continue to drive the capitalisation share for the emerging market operators, at a time when ARPU and penetration in the West stagnates.

5. How much will Mobile be worth in 2013?

The mobile industry in many emerging economies is undercapitalised relative to GDP and can be expected to grow once political and macroeconomic problems are resolved. However, according to the

one-to-one relationship between the growth in a country's GDP (PPP-adjusted) and growth of its mobile industry's capitalisation, a significant growth up to 40%, could be expected in due to the faster ARPU growth vs. GDP growth in the next 7 years in Southeast Asia, Africa, and CIS.

In the following tables we forecast the market capitalisation growth for world's national and regional mobile markets, based on the calculations of GDP, population, mobile penetration and recent cap growth changes (see *Technical Description* section below):

Chart 1. Populations / National mobile market value

Country	Region	Population '000 people	Total mobile cap, \$mln	Value/ Pop, \$ per person
Ethiopia	Africa	77,127	235	3
Myanmar	Southeast Asia	53,300	310	6
Dem. Congo	Africa	62,636	564	9
Bangladesh	South Asia	158,665	8,423	53
Indonesia	Southeast Asia	231,627	17,022	73
Pakistan	South Asia	162,652	17,627	108
Vietnam	Southeast Asia	87,375	9,637	110
Nigeria	Africa	148,093	17,565	119
India	South Asia	1,129,960	15,8739	140
Egypt	Africa-ME	75,498	11,619	154
Philippines	Southeast Asia	88,706	18,066	204
Iran	Middle East	71,208	18,289	257
Ukraine	CIS	46,398	19,330	417

Chart 2. Annual mobile penetration growth rate

Average annual penetration rate growth	CAGR '00-'07
Western Europe	9.78%
Australia	10.27%
North America	11.72%
East Asia	20.15%
Average	20.81%
Eastern Europe	26.31%
Latin America	27.05%
Middle East	28.56%
Southeast Asia	39.17%
Africa-Middle East	45.53%
Africa	48.44%
CIS	72.22%
South Asia	86.77%

Chart 3. Annual GDP growth rate

Average annual GDP growth	CAGR '00-'07
Western Europe	1.83%
North America	2.36%
Average	2.93%
Latin America	3.17%
Australia	3.24%
East Asia	3.72%
Middle East	4.22%
Eastern Europe	4.38%
Africa	4.63%
Africa-Middle East	4.82%
Southeast Asia	4.89%
CIS	6.87%
South Asia	6.88%

Chart 4. World mobile industry share, 2008-2013

2008	Trillion \$ USD	%
World	60.8	100.00%
Mobile	2.4	3.78%
2013		
World	69.92	100.00%
Mobile	4.8	6.86%

Chart 5. Regional market cap growth in 2008 to 2013

Region	Capitalisation Q1 2008	Capitalisation Q1 2013	Compound 1Y Return Rate
Africa	73,666.7	211,260.1	21.1%
Africa-Middle East	38,762.7	100,183.4	19.0%
Australia	21,894.7	33,055.4	8.2%
CIS	131,042.6	248,433.7	12.8%
East Asia	503,386.6	1,038,669.3	14.5%
Eastern Europe	83,917.6	120,816.4	7.3%
Latin America	212,451.4	396,313.7	12.5%
Middle East	131,044.5	266,806.5	14.2%
North America	434,373.8	709,763.1	9.8%
South Asia	192,286.8	630,204.6	23.7%
Southeast Asia	87,756.1	183,104.1	14.7%
Western Europe	504,582.1	746,906.7	7.8%
Grand Total	2,415,165.6	4,685,517.1	13.3%

Chart 6. National market cap growth in 2013 to 2008

Country	Region	Capitalisation (Q1 2008)	Capitalisation (Q1 2013)	Compound 1Y Return Rate
		mln \$ USD (2008)	mln \$ USD (2013)	%
Country	Region	Final Capitalisation	Final Capitalisation	5Y Return
Afghanistan	South Asia	1,075	5,478	32.60%
Albania	Eastern Europe	1,114	2,157	13.20%
Algeria	Africa-Middle East	8,227	19,084	16.80%
Angola	Africa	2,116	10,906	32.80%
Argentina	Latin America	21,292	33,332	9.00%
Armenia	CIS	1,199	2,250	12.60%
Aruba	Latin America	90	130	7.40%
Australia	Australia	18,090	27,041	8.00%
Austria	Western Europe	10,811	15,610	7.30%
Azerbaijan	CIS	2,358	5,230	15.90%
Bahamas	Latin America	198	331	10.20%
Bahrain	Middle East	1,088	2,132	13.40%
Bangladesh	South Asia	8,423	28,228	24.20%
Barbados	Latin America	140	208	7.90%

Belarus	CIS	2,909	5,363	12.20%
Belgium	Western Europe	16,415	24,043	7.60%
Benin	Africa	568	1,739	22.40%
Bhutan	South Asia	144	266	12.30%
Bolivia	Latin America	1,500	3,369	16.20%
Bosnia and Herzegovina	Eastern Europe	881	1,607	12.00%
Botswana	Africa	520	915	11.30%
Brazil	Latin America	58,328	111,961	13.00%
Brunei Darussalam	Southeast Asia	292	502	10.90%
Bulgaria	Eastern Europe	3,802	5,791	8.40%
Burkina Faso	Africa	430	2,188	32.50%
Burundi	Africa	59	116	13.40%
Cambodia	Southeast Asia	2,117	9,083	29.10%
Cameroon	Africa	1,677	5,154	22.50%
Canada	North America	34,129	60,511	11.50%
Cape Verde	Africa	252	447	11.50%
Central African Republic	Africa	31	53	11.00%
Chad	Africa	610	3,129	32.70%
Chile	Latin America	9,759	16,381	10.40%
China	East Asia	324,349	767,607	17.20%
Colombia	Latin America	14,369	26,012	11.90%
Comoros	Africa	40	80	13.60%
Congo (Brazzaville)	Africa	564	1,780	23.00%
Congo (Kinshasa)	Africa	1,502	7,597	32.40%
Costa Rica	Latin America	1,754	4,651	19.50%
Côte d'Ivoire	Africa	2,197	6,129	20.50%
Croatia	Eastern Europe	3,561	5,221	7.70%
Cuba	Latin America	558	904	9.60%
Cyprus	Middle East	1,271	2,296	11.80%
Czech Republic	Eastern Europe	9,352	12,931	6.50%
Denmark	Western Europe	9,049	14,030	8.80%
Dominican Republic	Latin America	3,590	7,032	13.40%
Ecuador	Latin America	4,721	7,850	10.20%
Egypt	Africa-Middle East	11,619	32,187	20.40%
El Salvador	Latin America	2,496	5,183	14.60%
Equatorial Guinea	Africa	447	1,000	16.10%
Estonia	Eastern Europe	1,449	1,989	6.30%
Ethiopia	Africa	235	442	12.60%
Fiji	Australia	145	333	16.60%
Finland	Western Europe	6,474	9,196	7.00%
France	Western Europe	84,700	134,519	9.30%
French Guiana	Latin America	86	144	10.40%
French Polynesia	Australia	128	238	12.50%
Gabon	Africa	809	1,550	13.00%
Gambia	Africa	71	199	20.60%
Georgia	CIS	847	1,659	13.50%
Germany	Western Europe	69,837	113,748	9.80%
Ghana	Africa	3,684	10,861	21.60%
Greece	Eastern Europe	14,475	17,546	3.80%
Guadeloupe	Latin America	233	380	9.80%
Guam	East Asia	59	96	9.90%
Guatemala	Latin America	3,750	8,360	16.00%
Guinea	Africa	265	498	12.60%
Guinea-Bissau	Africa	87	385	29.80%

Guyana	Latin America	105	230	15.60%
Haiti	Latin America	395	1,319	24.10%
Honduras	Latin America	1,733	4,297	18.20%
Hong Kong	East Asia	4,347	6,125	6.90%
Hungary	Eastern Europe	7,108	10,308	7.40%
Iceland	North America	305	416	6.20%
India	South Asia	158,739	535,641	24.30%
Indonesia	Southeast Asia	17,022	39,793	17.00%
Iran	Middle East	18,289	57,137	22.80%
Iraq	Middle East	4,405	11,677	19.50%
Ireland	Western Europe	9,531	14,293	8.10%
Israel	Middle East	11,022	16,724	8.30%
Italy	Western Europe	62,096	82,757	5.70%
Jamaica	Latin America	400	415	0.80%
Japan	East Asia	123,158	186,950	8.30%
Jordan	Middle East	3,737	6,199	10.10%
Kazakhstan	CIS	5,355	10,865	14.20%
Kenya	Africa	1,807	4,888	19.90%
Korea, South	East Asia	34,831	53,381	8.50%
Kuwait	Middle East	6,831	11,651	10.70%
Kyrgyzstan	CIS	870	3,866	29.80%
Laos	Southeast Asia	513	2,421	31.00%
Latvia	Eastern Europe	1,835	2,682	7.60%
Lebanon	Middle East	864	2,888	24.10%
Lesotho	Africa	122	319	19.20%
Liberia	Africa	299	1,135	26.70%
Libya	Africa-Middle East	2,454	11,388	30.70%
Lithuania	Eastern Europe	1,789	2,258	4.70%
Luxembourg	Western Europe	963	1,315	6.20%
Macau	East Asia	316	413	5.30%
Macedonia	Eastern Europe	508	1,321	19.10%
Madagascar	Africa	458	2,123	30.70%
Malawi	Africa	245	973	27.60%
Malaysia	Southeast Asia	19,755	34,112	10.90%
Maldives	South Asia	98	160	9.80%
Mali	Africa	694	3,242	30.80%
Malta	Eastern Europe	343	531	8.70%
Martinique	Latin America	194	319	9.90%
Mauritania	Africa	294	787	19.70%
Mauritius	Africa	845	1,803	15.20%
Mayotte	Africa	26	54	14.80%
Mexico	Latin America	54,882	103,259	12.60%
Moldova	CIS	813	1,712	14.90%
Mongolia	East Asia	155	377	17.80%
Montenegro	Eastern Europe	610	853	6.70%
Morocco	Africa-Middle East	14,277	33,839	17.30%
Mozambique	Africa	324	1,456	30.00%
Myanmar	Southeast Asia	310	725	17%
Namibia	Africa	365	869	17.30%
Nepal	South Asia	1,753	4,742	19.90%
Netherlands	Western Europe	17,281	24,336	6.80%
Netherlands Antilles	Latin America	91	153	10.30%
New Caledonia	Australia	103	222	15.30%
New Zealand	Australia	3,429	5,222	8.40%

Nicaragua	Latin America	1,094	2,540	16.90%
Niger	Africa	274	924	24.30%
Nigeria	Africa	17,565	61,256	25.00%
Norway	Western Europe	10,363	14,611	6.90%
Oman	Middle East	2,811	5,044	11.70%
Pakistan	South Asia	17,627	44,441	18.50%
Palestine	Middle East	1,693	6,819	27.90%
Panama	Latin America	1,314	2,328	11.40%
Paraguay	Latin America	1,096	2,273	14.60%
Peru	Latin America	5,026	12,179	17.70%
Philippines	Southeast Asia	18,066	35,631	13.60%
Poland	Eastern Europe	19,511	28,386	7.50%
Portugal	Western Europe	12,062	16,819	6.60%
Puerto Rico	Latin America	4,874	8,504	11.10%
Qatar	Middle East	3,022	4,332	7.20%
Réunion	Africa	121	173	7.20%
Romania	Eastern Europe	8,740	13,504	8.70%
Russian Federation	CIS	94,510	175,688	12.40%
Rwanda	Africa	168	557	23.90%
Saint Lucia	Latin America	27	46	10.80%
Saint Vincent and the Grenadines	Latin America	21	31	8.10%
Saudi Arabia	Middle East	30,776	50,547	9.90%
Senegal	Africa	1,205	3,338	20.40%
Serbia	Eastern Europe	2,833	4,962	11.20%
Sierra Leone	Africa	318	1,136	25.40%
Singapore	Southeast Asia	4,896	6,834	6.70%
Slovakia	Eastern Europe	4,257	6,170	7.40%
Slovenia	Eastern Europe	1,754	2,598	7.90%
Somalia	Africa	40	75	12.20%
South Africa	Africa	24,685	39,197	9.20%
Spain	Western Europe	77,663	113,958	7.70%
Sri Lanka	South Asia	4,429	11,248	18.60%
Sudan	Africa	2,751	12,606	30.40%
Suriname	Latin America	101	181	11.60%
Swaziland	Africa	150	371	18.10%
Sweden	Western Europe	10,320	14,369	6.60%
Switzerland	Western Europe	14,346	21,061	7.70%
Syria	Middle East	4,652	14,404	22.60%
Taiwan	East Asia	16,171	23,720	7.70%
Tajikistan	CIS	346	1,570	30.20%
Tanzania	Africa	2,237	8,343	26.30%
Thailand	Southeast Asia	15,458	23,509	8.40%
Togo	Africa	210	1,006	31.40%
Trinidad and Tobago	Latin America	764	1,279	10.30%
Tunisia	Africa-Middle East	2,186	3,684	10.40%
Turkey	Middle East	28,919	48,599	10.40%
Turkmenistan	CIS	863	3,132	25.80%
Uganda	Africa	1,033	4,970	31.40%
Ukraine	CIS	19,330	40,718	14.90%
United Arab Emirates	Middle East	10,456	21,202	14.10%
United Kingdom	Western Europe	92,669	132,242	7.10%
United States of America	North America	399,940	648,836	9.70%
Uruguay	Latin America	1,341	1,641	4.00%
Uzbekistan	CIS	1,643	6,933	28.80%

Venezuela	Latin America	16,130	29,093	11.80%
Viet Nam	Southeast Asia	9,637	31,218	23.50%
Yemen	Middle East	1,209	5,156	29.00%
Zambia	Africa	633	2,358	26.30%
Zimbabwe	Africa	633	2,134	24.30%

5. Technical Description

In this paper, a new method of estimating the capitalization of the mobile industry on different levels is proposed: individual (non-traded) companies, countries, regions, and in the world. An estimation methodology extrapolates the cap of traded companies (adjusted for the financial leverage and non-mobile revenue) to non-traded companies based on the strong relationship between cap and mobile revenue. On average, growth in the company's quarterly mobile revenue by 1% raises its cap by 0.8%.

The forecast is made for 5 years, and is based on economic fundamentals. The cap forecast is based on the forecast of mobile revenue, which in turn is decomposed into 3 components:

$$\text{Mobile Revenue} = \text{ARPU} * \text{Penetration Rate} * \text{Population}$$

The population growth rates were taken from the United Nations World Population Prospects: 2006 revision. The main revenue driver is the Penetration Rate, defined as the ratio of Number of SIM Cards to Population. Since its dynamics is very nonlinear, the Penetration Rate is forecasted using nonparametric regression techniques, using as regressors the level of penetration and its past rates of growth. The forecast of ARPU is constructed on the basis of the regression of ARPU on GDP. It is assumed that ARPU will gradually converge to the level corresponding to the country's national income.

Using a cross-country analysis, the GDP (PPP-adjusted) was identified as the most important determinant of the country's mobile revenue and the capitalization of its mobile industry. A 1% difference in GDP implies approximately 1% difference in the mobile cap between two countries.

Assuming that Price/Sales ratio for mobile industry will stay at about the same level, the mobile cap forecasts in 5 years as

$$\text{Cap}_5 = \text{Cap}_0 * \text{MobileRev}_5 / \text{MobileRev}_0 * \exp(5r_F),$$

where r_F is the risk-free rate, which we took equal to 4% p.a. based on the current yields on US government bonds.