



## SHOW AND TELL

Post-MWC telcos need to go back to their brand strengths



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Editor  
Total Telecom

“We would have loved it if they had chosen Android,” Google CEO Eric Schmidt admitted during a keynote address at Mobile World Congress in Barcelona last month, referring to Nokia’s decision to adopt the Windows Phone 7 platform for its high-end smartphone portfolio.

The ‘Nokiasoft’ announcement, coming as it did just one day before the start of MWC 2011, could have led to the rest of the show being something of an anticlimax. Indeed, Nokia managed to dominate much of the discussion on the handsets side of things without having a meaningful presence at the show.

### Nokia is going to need all of its brand clout

However, those that invested in the mega-structure stands on the exhibition floor were determined that Nokia would not have it all its own way. New mobile devices—primarily smartphones and tablets—were unveiled thick and fast, with the likes of Samsung, Sony Ericsson, HTC and LG vying for eyeballs and column inches for their latest offerings.

A tie-up with Microsoft could be a step in the right direction for Nokia, but it has a long way to go to

regain the ground it has lost in the smartphone landgrab.

It is going to need all of its brand clout to pull itself back up. Our analysis on p.6 shows that Nokia has slipped to eleventh place in a new global ranking of telecoms brands, compiled by Brand Finance for *Total Telecom*; just three years ago it headed the list. Instrumental in Nokia’s demise, in both brand value and smartphone market terms: Apple and BlackBerry, both of which entered Brand Finance’s ranking for 2011 with a flourish.

Back at MWC, mobile operators demonstrated that they are going back to their network assets, rather than content and apps, as the best way to generate new revenue streams. Our show review on p.19 outlines how operators are adjusting to life further down the value chain. Leveraging those network assets will see operators increasingly move into new verticals, such as m2m, m-health, the automotive industry and smart energy metering. On p.16 we look at the potential for operators in the m2m space as well as business model challenges.

And while operators are looking to use their network capabilities to help companies bill for energy usage, they are also keen to improve their own efficiency. Deploying new technologies can lower energy consumption and, crucially, reduce opex, as our Technology Trends article on p.12 shows. ■

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A roundup of the major stories in telecoms in the past month, as reported in our daily news service [www.totaltele.com](http://www.totaltele.com)

## BUSINESS

### French-German partnership

France Telecom and Deutsche Telekom said they will explore potential areas of co-operation including radio access network sharing in Europe, WiFi roaming and m2m standards.

### Vodafone-China Mobile tie-up

Vodafone and China Mobile signed an agreement to continue co-operating in areas including mobile roaming, green technology, R&D and converged LTE technology. Vodafone sold its 3.2% stake in China Mobile for £4.3 billion last September.

### Data roaming shake-up

Telekom Austria announced a mobile broadband service to provide roaming across operators' networks in 53 countries at a flat rate of €0.59 per Megabyte. The service offers a choice of a SIM card priced at €19.90 or a USB dongle for €49.90.

### Zain-Etisalat deal in doubt

Zain rejected three bids, from Bahrain Telecom Co (Batelco) and two investment firms, for a 25% stake in its Saudi Arabia operations. The sale of the stake is needed for Etisalat to complete its purchase of 46% of Zain Group for US\$12 billion.

### Satellite consolidation

EchoStar agreed to buy broadband satellite company Hughes Communications for about US\$1.35 billion, while Dish Network will buy US satellite and terrestrial broadband provider DBSB for \$1 billion.

### Asia/Africa payment systems

SK Telecom, KDDI and Softbank will trial a common NFC-based mobile payment system for South Korea and Japan. And Airtel Africa, Standard Chartered Bank and MasterCard launched a virtual card payment system in Africa that operates from a wallet on a mobile phone.

### European payment ventures

French operators Orange, Bouygues and SFR set up a joint venture with Atos Origin to provide online payment services in France. And Deutsche Telekom will launch a mobile NFC payment service called Mobile Wallet later this year.

### Clearwire goes wholesale

US WiMAX operator Clearwire gave up its retail strategy to focus on being a wholesale operator.

### India merger back on

India's regulator has revived a proposal for the merger of state-run operators BSNL and MTNL.

### Nitel sale off again

Nigeria cancelled a deal to sell national operator Nitel after the bidder defaulted on a US\$750 million payment. The New Generation Telecommunications Consortium won a \$2.5 billion bid last October to purchase Nitel.

### Polkomtel sale

TeliaSonera joined nine other bidders including Telefonica, Telenor and private equity companies in the race to buy Polish operator Polkomtel. Five will be shortlisted in March.

### Verizon buys Terremark

Verizon bought cloud data storage services provider Terremark for US\$1.4 billion.

### Ukraine privatisation

Investment company Epic acquired a 93% stake in Ukraine operator Urktelecom for \$1.3 billion after companies including Deutsche Telekom and Telenor were excluded from the privatisation tender.

### Potential Twitter sale

Reports suggest companies including Facebook and Google have been holding talks about buying micro-blogging site Twitter for up to US\$10 billion (€7.4 billion).

### New smartphone OS

China Unicom announced a new Linux-based smartphone operating system, Wophone, to compete with Apple's iPhone and Google's Android. It said devices from Motorola, HTC, Samsung, Sony Ericsson and Dell will launch with the OS later this year.

## NETWORKS

### LTE network rollouts

Telstra awarded a contract to Ericsson to roll out an LTE network in Australia using its 1800-MHz spectrum by the end of the year; Alcatel-Lucent signed a deal to build Etisalat's LTE network in the UAE in the first quarter; and Nokia Siemens Networks signed a three-year contract to build LTE networks for Telefonica O2 Germany.

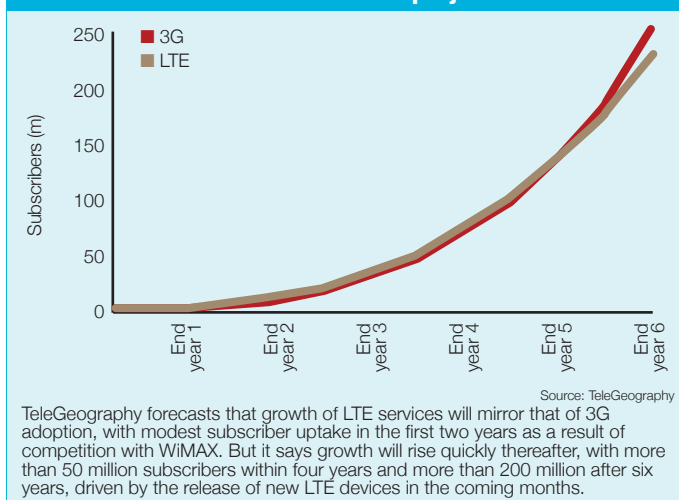
### UK spectrum trading

UK regulator Ofcom announced proposals for operators to trade spectrum in the 900-, 1800- and 2100-MHz bands. Ofcom also could auction unused wireless radio spectrum in the 2010MHz-2025MHz band, suitable for mobile broadband, next year.

### NZ next-generation fibre talks

Telecom Corp and Vodafone held talks with the New Zealand government over jointly providing fibre and 3G

### 3G historical subscribers vs. LTE projected subscribers



broadband services to rural areas. Telecom NZ will need to undergo structural separation if it is selected.

### US net neutrality battle

The US House of Representatives voted to overturn the FCC's net neutrality rules proposed in December. Once a bill is agreed by the Republican-controlled House it still needs to be agreed by Senate Democrats.

### Last IPv4 addresses allocated

The Internet Corporation for Assigned Names and Numbers (ICANN) allocated the last IPv4 Internet addresses in February.

### Aircel 3G launch

Aircel launched 3G services in 11 of the 13 circles in which it won spectrum in India. Aircel will invest US\$3 billion over the next three years to roll out 3G services. Vodafone Essar plans to launch 3G services by the end of March.

### Huawei wins big in Australia

Vodafone Hutchison Australia (VHA) will replace its entire network of 8,000 2G/3G base stations with Huawei equipment that also provides LTE coverage. Huawei also won a contract from Nextel to build WCDMA networks in Mexico and Brazil.

### Sweden spectrum auction

Sweden began an auction of spectrum in the 800-MHz band, with six licences of 2x5-MHz on offer and each bidder limited to a maximum 2x10-MHz.

### DT expands fibre in Germany

Deutsche Telekom will deploy fibre-to-the-home connections to up to 160,000 households in ten cities in 2011. The company also plans to upgrade its HSPA network to 42 Mbps by the end of the year and provide LTE services to business customers.

### European wholesale deal

Telefonica International Wholesale Services (TIWS) signed a deal to use Interoute's 100-GB capacity core fibre network in Western Europe. TIWS will become Interoute's provider for trans-Atlantic, US and Latin America routes.

### Czech 3G sharing agreement

The Czech mobile arms of Telefonica and T-Mobile signed a 3G network sharing agreement covering areas not already served.

### Yoigo expands 3G network

Spanish mobile operator Yoigo, owned by TeliaSonera, signed a deal for Ericsson to expand its 3G HSPA network.

### Regulator forces fibre access

Swedish regulator PTS issued an injunction to force TeliaSonera to provide unbundled local loop fibre access.

### Spain to sell off spectrum

Spain plans to sell 310 MHz of mobile spectrum in the second quarter, raising up to €2 billion.

### Huawei's underground bid

Huawei offered to provide for free a mobile network worth £50 million on the London Underground train system in time for the 2012 Olympics.

### Mobily LTE deal

Saudi Arabian mobile operator Mobily signed a deal for Samsung Electronics to provide LTE and mobile WiMAX equipment.

## PEOPLE

### Lombard leaves Orange

France Telecom-Orange chairman Didier Lombard stepped down four months early, at the end of February, leaving Stephane Richard as sole chairman and CEO.

### Zain executives resign

Three of Zain's top executives resigned: chief operating officer Barrak Al Sabeeh; Haitham Al Khaled, chief strategy and business development officer; and Salah Al Fawzan, advisor to the group's chief executive.

### Indian minister arrested

Former Indian telecoms minister Andimuthu Raja was arrested over ongoing allegations of irregularities in the allocation of mobile spectrum in 2008.

### TeliaSonera job cuts

TeliaSonera will cut 640 jobs in Sweden and 165 in Finland across its Mobility and Broadband Services divisions, but will also recruit 200 people this year.

### New Vodafone chairman

Philips CEO Gerard Kleisterlee will succeed John Bond as chairman of Vodafone from July.

### Cisco appoints COO

Cisco appointed Gary Moore, who ran the company's Services division, to the new position of chief operating officer.

### Nokia Siemens CFO

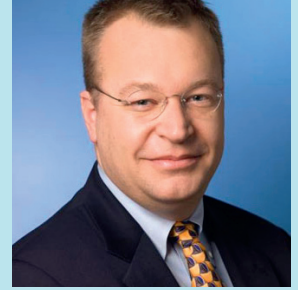
Marco Schroter will become NSN's new financial chief in March, succeeding Luca Maestri who will join Xerox Corp.

### South Africa CEO resignation

Dave Smith, the CEO of state-owned South African national fibre backbone company Broadband Infracore, resigned unexpectedly just three months after the company launched its first commercial services.

### Fastweb founder let out

Fastweb founder Silvio Scaglia, standing trial in an alleged €2 billion money-laundering and tax-fraud scheme, had his house arrest order revoked.



### CRITICAL JUNCTURE

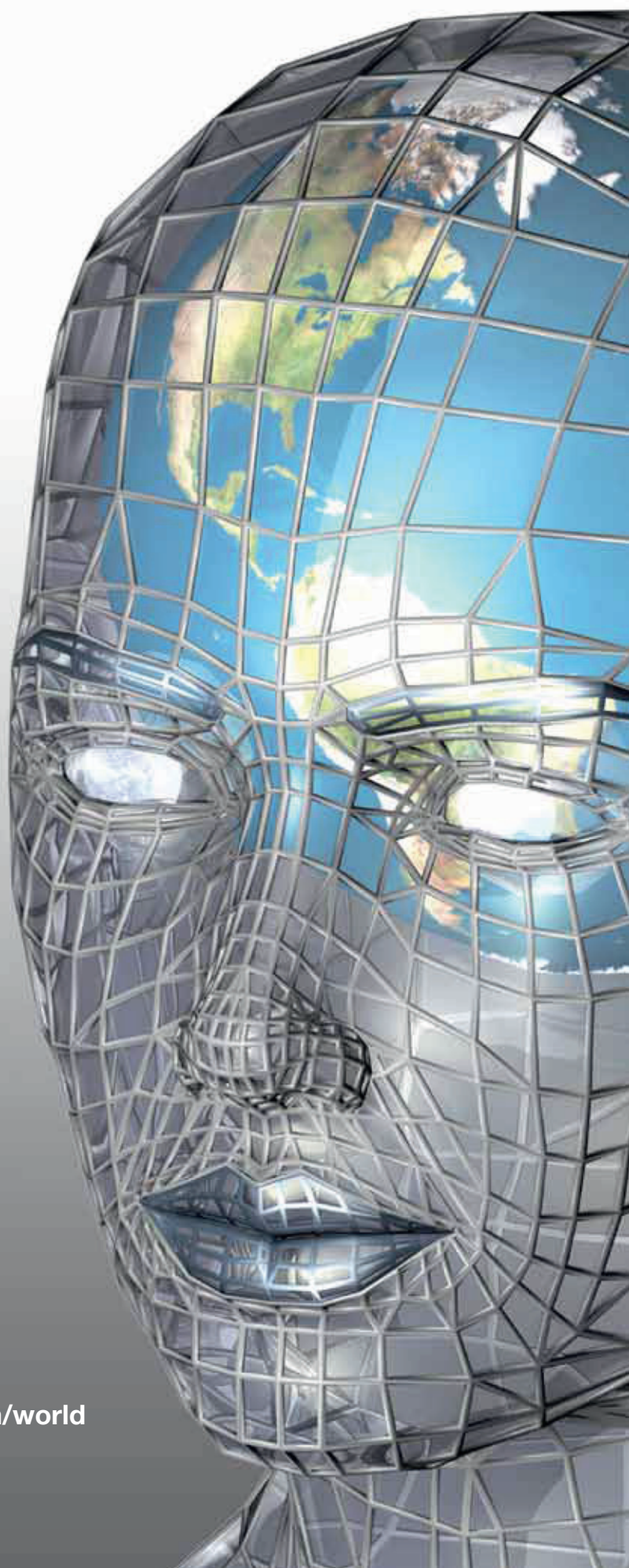
Nokia's decision in February to make Microsoft's Windows Phone its main operating system for smartphones was described by CEO Stephen Elop (pictured), a former Microsoft executive, as "a critical juncture" in the company's history. Nokia will also adopt Microsoft's Bing as its main search engine and adCenter as its mobile advertising platform, while its application store Ovi will be integrated with Microsoft's Marketplace. The Windows adoption is a blow to MeeGo, Nokia's Linux-based operating system joint venture with Intel that now becomes an open source platform; Intel subsequently said it will find other partners to develop MeeGo. And with Windows-based phones not due to be released by Nokia for almost a year, some analysts said customers have little incentive to purchase the company's MeeGo or Symbian models, potentially further eroding its declining position in the high-end handset market due to intense competition from Apple's iPhone and devices based on Google's Android (see p.20). Nokia also announced a reorganisation of the company into two main divisions—Smart Devices and Mobile Phones—with MeeGo and Mobile Solutions head Alberto Torres leaving the company. Smart Devices, headed by Jo Harlow, will develop Windows Phone 7, Symbian and MeeGo devices (Nokia expects to sell 150 million additional Symbian devices on top of the current installed base of 200 million); Mobile Phones will continue to be led by Mary McDowell and will be responsible for affordable handsets for the broader mass market.

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## TOP 500 TELECOMS BRAND RANKING

# BRAND DESIGNS

Telecoms companies invest considerable sums in their brands, with mixed fortunes. Our exclusive ranking with Brand Finance tracks the risers and fallers. **By Ian Kemp**

It pays to think of the long term before you establish a brand. When Clarence Birdseye first had the idea for fish products covered in breadcrumbs or batter he planned to call them battered cod pieces. Fifty-five years later, after workers voted down that name, fish fingers (or fish sticks in the US) are one of the best known and consumed fast food products.

Telecoms companies know the value of their brands and are prepared to spend big to maintain them. When Bharti Airtel in February announced a 43% year-on-year decline in net profits in its third quarter, it attributed the fall in large part to a 3.4 billion rupee expense related to the relaunch of its brand across markets, including its Africa operations bought from Zain last year for US\$10.7 billion.

Specialist brand valuation company Brand Finance has compiled a Top 500 ranking of global telecoms brands for *Total Telecom*. On the opposite page we list the leading 200 companies, and break out the top 100 mobile brands (excluding handset companies) on p.8; for the complete ranking visit [www.brandirectory.com](http://www.brandirectory.com).

This year the total brand value of the top 500 companies is US\$513.9 billion, up

15.5% from \$445.1 billion last year. The consultancy goes through a comprehensive set of steps to arrive at each company's valuation (see box on p.10 for a full explanation of methodology). Each brand is accorded a brand rating—a benchmarking study of the strength, risk and future potential of a brand relative to its competitors—as well as a brand value: in short, a summary measure of the historical and future financial strength of the brand.

For the third year running Vodafone is the top ranked telecoms company in the Brand Finance survey. Contributing to that success is the operator's subscriber growth in international markets—subscribers in India grew to 123.4 million in its third quarter ending 31 December 2010 up from 91.4 million a year earlier, for example—as well as strong data services uptake. Vodafone's group data revenues grew to £1.33 billion in the third quarter from £1.05 billion a year earlier; the quarter marked the first time that data revenues exceeded messaging revenues, which stood at £1.32 billion.

Apple, which did not appear in our list last year—and is therefore not in our list of ranking winners (see table below)—is a significant new entry at number 15 in this

year's ranking. In the past year it has almost doubled its worldwide sales of iPhones to end users, according to Gartner, from 24.89 million in 2009 to 46.60 million in 2010. Its share of the global handsets market rose from 2.1% to 2.9%, enabling it to leapfrog Motorola and Sony Ericsson and move into fifth position behind Blackberry maker Research In Motion (see p.20).

Those two companies have had a negative impact on another big brand, Nokia, which demonstrates how quickly a decline in fortunes can occur. Nokia has fallen from the top ranked telecoms brand in Brand Finance's 2008 survey to eleventh place this year, buffeted by Apple and RIM in the high-end smartphones market. "Meanwhile Chinese manufacturers swallowed Nokia's share of low-end handset sales, leaving the company squeezed in the middle and customers with a poor understanding of what the brand stands for as [services] like N-Gage [gaming] and Comes with Music failed to stick," says Xander Bird, a brand valuation director at Brand Finance.

Nokia in January stopped selling Ovi Music Unlimited (formerly Comes With Music) with its handsets in 27 of 33 countries in which it was available; the company's share of the total handset market fell from 36.4% in 2009 to 28.9% last year, while its share of smartphones

## 'Nokia's brand value may have fallen in recent years but brand remains one of its key assets'

### Top Ten: Ranking Winners

	Company name	Change in Brand Value (US\$ millions)
1	Movistar	5,269
2	Verizon	4,265
3	AT&T	2,299
4	Vodafone	1,679
5	NTT Docomo	1,614
6	NTT	1,536
7	T-Mobile	1,427
8	Rogers	1,299
9	Softbank	1,048
10	Centurylink	918

### Top Ten: Ranking Losers

	Company name	Change in Brand Value (US\$ millions)
10	AIS	-679
9	TDS	-771
8	Boost Mobile	-851
7	Telekom Polska	-915
6	Millicom Intl	-964
5	Telekom Austria	-1,149
4	Orascom	-1,517
3	OTE	-2,203
2	Telefonica	-6,689
1	Nokia	-9,900

Global 500 Telecoms Brand Ranking (1-200)

Rank 2011	Brand	Brand Value 2011 (US\$ m)	Brand Rating 2011	Enterprise Value (US\$ m)	Brand Value/Enterprise Value (%)
1	Vodafone	30,674	AAA+	195,989	16%
2	AT&T	28,884	AA+	235,987	12%
3	Verizon	27,293	AA	571,640	5%
4	China Mobile	19,317	AA	170,543	11%
5	Orange	18,622	AA+	111,581	17%
6	Movistar	14,935	AA	142,731	10%
7	Cisco	11,667	AA-	90,446	13%
8	T-Mobile	11,553	AA	76,498	15%
9	NTT	10,338	AA	60,334	17%
10	NTT DoCoMo	9,801	AA+	73,144	13%
11	Nokia	9,658	AA	26,908	36%
12	BT	9,061	AA+	31,987	28%
13	Telecom Italia	8,315	AA+	58,992	14%
14	China Telecom	7,261	AA-	53,470	14%
15	Apple (iPhone)	6,929	AAA	36,412	19%
16	O2	6,558	AAA-	44,407	15%
17	China Unicom	6,315	A+	44,435	14%
18	T-Home	6,085	AA-	36,974	16%
19	Softbank	5,587	AA-	62,877	9%
20	Motorola	5,585	AA	15,359	36%
21	Ericsson	5,504	AA-	23,745	23%
22	Oi	5,046	AA+	46,028	11%
23	Samsung	5,022	AA+	43,064	12%
24	MTN	4,920	AAA	34,810	14%
25	Telstra	4,741	AA-	40,226	12%
26	au	4,479	A+	27,613	16%
27	Vivo	4,286	AA-	43,964	10%
28	Swisscom	4,255	AA	30,565	14%
29	Beeline	4,189	AA+	23,250	18%
30	SFR	4,101	AA+	11,396	36%
31	Telenor	3,918	AA-	21,036	19%
32	Bell Canada	3,702	AA	31,137	12%
33	Bharti Airtel	3,686	AA-	28,861	13%
34	Nokia Siemens Networks	3,664	AA	11,148	33%
35	Rogers	3,643	AA+	30,564	12%
36	Blackberry	3,589	AAA-	13,379	27%
37	Sprint	3,535	AA	22,929	15%
38	Alcatel-Lucent	3,461	A+	8,992	38%
39	MTS	3,458	AA-	22,902	15%
40	Claro	3,447	AA-	48,698	7%
41	Comcast	3,402	AA+	25,240	13%
42	Sony Ericsson	3,165	A+	14,564	22%
43	Etisalat	3,002	AA-	19,564	15%
44	HTC	2,937	A	16,365	18%
45	Telcel	2,930	A	46,380	6%
46	T-Systems	2,916	AA-	13,833	21%
47	Virgin Media	2,901	AA-	16,249	18%
48	Qwest	2,794	AA-	22,418	12%
49	SK Telecom	2,651	AA	15,866	17%
50	Qualcomm	2,632	AA-	62,606	4%
51	Optus	2,530	AA	28,412	9%
52	STC	2,468	A+	27,985	9%
53	Centurylink	2,464	AA-	19,571	13%
54	Telus	2,451	AA	20,137	12%
55	KT	2,407	AA	16,417	15%
56	Time Warner Cable	2,372	AA+	15,051	16%
57	Telia	2,351	AAA-	15,313	15%
58	Zain	2,293	AA-	20,193	11%
59	ZTE	2,250	AA-	12,672	18%
60	TDC	2,206	AA-	10,740	21%
61	Embratel	2,140	A+	44,290	5%
62	Wind	2,079	AA-	—	—
63	Megafon	2,033	AA-	—	—
64	KPN	2,011	A+	27,312	7%
65	Chunghwa Telecom	1,983	AA	19,590	10%
66	KDDI	1,950	AA-	8,317	23%
67	Telmex	1,866	AA-	19,465	10%
68	Turkcell	1,799	AAA	14,382	13%
69	TIM	1,722	AA-	10,230	17%
70	Turk Telekom	1,552	AA+	10,623	15%
71	Foxconn	1,541	A	4,584	34%
72	Portugal Telecom	1,476	AA	12,345	12%
73	Telefonica	1,465	AA-	187,139	1%
74	Bouygues	1,453	AA	3,812	38%
75	PT Telkom Indonesia	1,439	AA	22,755	6%
76	Belgacom	1,429	AA	9,027	16%
77	Tele3	1,408	AA-	10,280	14%
78	Corning	1,360	AA	26,195	5%
79	Singtel	1,357	A+	8,647	16%
80	Harris	1,344	AA	6,423	21%
81	Mobily	1,330	A+	12,215	11%
82	Juniper Networks	1,326	A+	14,087	9%
83	Reliance Communications	1,197	AA-	14,063	9%
84	Bezeq	1,110	AA	7,955	14%
85	Proximus	1,059	AA-	6,810	16%
86	Nextel	975	AA-	4,760	20%
87	MetroPCS	954	A	6,440	15%
88	TMN	939	AA	8,114	12%
89	LG U+	906	AA	5,263	17%
90	Qtel	864	AA	4,445	19%
91	US Cellular	828	AA-	4,573	18%
92	Sitronics	827	A	4,541	18%
93	SES	824	AA	14,817	6%
94	Windstream	817	AA-	11,483	7%
95	Cable & Wireless (Worldwide)	809	A+	3,194	25%
96	Bell Aliant	800	AA-	6,835	12%
97	Idea	796	AA-	6,701	12%
98	Telekom Austria	787	A+	3,861	20%
99	Amdocs	787	A+	4,704	17%
100	Indosat	757	AA+	4,898	15%

Rank 2011	Brand	Brand Value 2011 (US\$ m)	Brand Rating 2011	Enterprise Value (US\$ m)	Brand Value/Enterprise Value (%)
101	E-Plus	748	BBB	10,041	7%
102	Tigo	744	A	11,600	6%
103	Tata Communications	729	A+	3,601	20%
104	Kcell	723	AA-	6,765	11%
105	América Móvil	720	AA	115,949	1%
106	PLDT	716	AA-	13,251	5%
107	Comcel	709	A-	11,595	6%
108	Tandberg ASA	703	AA-	6,030	12%
109	Wataniya	699	AA+	4,538	15%
110	Telekom Polska	687	A	4,136	17%
111	DiGi	652	A+	6,346	10%
112	Anixter	648	A+	2,575	25%
113	Level 3	628	A+	7,340	9%
114	TM (Telekom Malaysia)	628	AA	3,932	16%
115	Frontier	623	A+	12,890	5%
116	Fastweb	604	A	3,796	16%
117	OTE	604	AA-	3,717	16%
118	PCCW	601	AA-	4,824	12%
119	dtac	596	AA-	3,103	19%
120	Elisa	591	AA-	4,865	12%
121	CommScope	589	A	2,847	21%
122	Starhub	568	A	3,793	15%
123	Leap	557	A	3,194	17%
124	Mobilkom Austria	556	A+	3,265	17%
125	Cellcom	552	AA-	6,438	9%
126	Entel	549	A+	4,446	12%
127	Magyar Telekom	533	A+	3,907	14%
128	Mobistar	520	A	4,152	13%
129	Comstar	509	A	—	—
130	Ucell	507	AA-	4,791	11%
131	China Comservice	505	AA	2,697	19%
132	American Tower	499	A+	24,047	2%
133	Du	484	A-	3,636	13%
134	Ttnet	480	AAA-	3,571	13%
135	Telenet	479	A-	6,797	7%
136	Freenet	478	A-	2,370	20%
137	TalkTalk	477	AA-	2,801	17%
138	Starent	469	AA-	4,020	12%
139	Eutelsat	468	A+	11,672	4%
140	Maxis	460	AA-	5,975	8%
141	Telecom Egypt	453	A-	5,097	9%
142	Comstar United TeleSystems	450	A+	3,667	12%
143	ACL	450	AA	2,977	15%
144	Cable And Wireless Communications	446	A	3,417	13%
145	BCE	446	AA+	37,971	1%
146	Sistema Jscf	442	A	26,411	2%
147	Crown Castle	440	A+	18,968	2%
148	telecom (New Zealand)	435	AA-	2,269	19%
149	Cosmote	434	A	4,672	9%
150	Celcom	429	AA-	7,225	6%
151	Telkom (South Africa)	428	A+	3,201	13%
152	Shenzhen Aisi	415	A	3,146	13%
153	Indosat	402	A	6,006	7%
154	Taiwan Mobile	390	A+	6,328	6%
155	true	384	AA-	3,412	11%
156	TeliaSonera	383	AA	44,809	1%
157	Azercell	382	AA-	3,632	11%
158	Far EastTone	375	A+	4,060	9%
159	Vtech	374	A+	2,206	17%
160	Mobinil	362	AA-	—	—
161	Sonera	361	AA-	3,453	10%
162	Avea	358	AA-	4,398	8%
163	Sunrise	355	A	2,371	15%
164	Tracfone	353	A-	5,797	6%
165	T-Hrvatski Telekom	353	AA-	3,884	9%
166	Maroc Telecom	349	A	5,687	6%
167	Rostelecom	349	A-	2,635	13%
168	Hotlink	348	A	8,095	4%
169	Global Crossing	340	BBB	1,901	18%
170	3 (excl. Hong Kong)	336	A	—	—
171	Personal	336	A	2,609	13%
172	RTI Systems	332	A	1,817	18%
173	Polycom	323	A+	1,873	17%
174	BYD Electronic	321	A+	1,140	28%
175	Kudelski	321	A	—	—
176	Openreach	318	A	1,684	19%
177	Central Telecom	311	A-	1,766	18%
178	XL	310	A	6,298	5%
179	Sonatel	308	A	2,927	11%
180	tw telecom	307	A-	3,568	9%
181	Clearwire	290	A+	12,933	2%
182	3 (Hong Kong)	288	A	1,772	16%
183	Kyivstar	285	A+	2,469	12%
184	Globe	284	A	3,660	8%
185	Cincinnati Bell	277	A	3,134	9%
186	FiberHome	275	A+	2,371	12%
187	Uralsvyazinform	269	A	1,758	15%
188	JDSU	268	A+	2,487	11%
189	Carso Global	260	AA-	30,464	1%
190	UPC	258	A	3,215	8%
191	PAETEC	257	A-	1,442	18%
192	Inmarsat	254	A	5,945	4%
193	One-2-Call!	253	AA-	3,600	7%
194	VolgaTelecom	250	A	1,165	21%
195	OKI	250	A+	1,712	15%
196	Grameenphone	238	A	1,623	15%
197	Hikari Tsushin	236	A	1,300	18%
198	Safaricom	234	A-	2,484	9%
199	RFMD	231	AA-	1,750	13%
200	Hughes	230	A+	1,109	21%

Top 100 mobile brands (excluding handset makers)

Rank 2011	Brand / (domicile)	Brand Value 2011 (US\$ m)	Brand Rating 2011	Enterprise Value (US\$ m)	Brand Value/Enterprise Value (%)
1	Vodafone (UK)	26,819	AAA+	195,989	14%
2	China Mobile (Hong Kong)	19,317	AA	170,543	11%
3	AT&T Wireless (US)	16,124	AA+	92,035	18%
4	Movistar (Spain)	11,842	AA	142,731	8%
5	T-Mobile (Germany)	11,503	AA	76,498	15%
6	NTT DoCoMo (Japan)	10,838	AA-	56,399	19%
7	Orange (France)	9,260	AA+	111,581	8%
8	Verizon (US)	7,096	AA	571,640	1%
9	O2 (Spain)	6,558	AAA-	44,407	15%
10	MTN (South Africa)	4,723	AAA	34,810	14%
11	au (Japan)	4,479	A+	27,613	16%
12	SFR (France)	4,101	AA+	11,396	36%
13	MTS (Russia)	3,458	AA-	22,902	15%
14	Softbank (Japan)	3,431	AA-	62,877	5%
15	Swisscom (Switzerland)	3,085	AA	30,565	10%
16	Telcel (Mexico)	2,930	A	46,380	6%
17	Sprint (US)	2,863	AA	22,929	12%
18	Bharti Airtel (India)	2,839	AA-	28,861	10%
19	SK Telecom (South Korea)	2,601	AA	15,866	16%
20	Telenor (Norway)	2,468	AA-	21,036	12%
21	Etisalat (UAE)	2,312	AA-	19,564	12%
22	Zain (Kuwait)	2,293	AA-	20,193	11%
23	China Unicom (China)	2,260	A+	44,435	5%
24	Alcatel-Lucent (France)	2,246	A+	8,992	25%
25	Vivo (Brazil)	2,082	AA-	43,964	5%
26	Wind (Italy)	2,079	AA-	—	—
27	Megafon (Russia)	2,033	AA-	—	—
28	Telecom Italia (Italy)	2,017	AA+	58,992	3%
29	KPN (Netherlands)	2,011	A+	27,312	7%
30	Rogers (Canada)	1,979	AA+	30,564	6%
31	STC (Saudi Arabia)	1,801	A+	27,985	6%
32	Turkcell (Turkey)	1,764	AAA	14,382	12%
33	Claro (Mexico)	1,724	AA-	48,698	4%
34	Optus (Australia)	1,543	AA	28,412	5%
35	TIM (Brazil)	1,525	AA-	10,230	15%
36	Bouygues (France)	1,453	AA	3,812	38%
37	Telia (Sweden)	1,349	AAA-	15,313	9%
38	Mobily (Saudi Arabia)	1,330	A+	12,215	11%
39	Telstra (Australia)	1,280	AA-	40,226	3%
40	Telus (Canada)	1,165	AA	20,137	6%
41	Bell (Canada)	1,001	AA	31,137	3%
42	TMN (Portugal)	939	AA	8,114	12%
43	Oi (Brazil)	938	AA+	46,028	2%
44	Reliance Communications (India)	865	AA-	14,063	6%
45	Centurylink (US)	865	AA-	19,571	4%
46	US Cellular (US)	828	AA-	4,573	18%
47	Bezeq (Israel)	820	AA	7,955	10%
48	Nextel (US)	809	AA-	4,760	17%
49	Tele3 (Sweden)	808	AA-	10,280	8%
50	Idea (India)	806	AA-	6,701	12%

Rank 2011	Brand / (domicile)	Brand Value 2011 (US\$ m)	Brand Rating 2011	Enterprise Value (US\$ m)	Brand Value/Enterprise Value (%)
51	Chunghwa Telecom (Taiwan)	783	AA	19,590	4%
52	Indosat (Qatar)	757	AA+	4,898	15%
53	E-Plus (Netherlands)	748	BBB	10,041	7%
54	Kcell (Sweden)	723	AA-	6,765	11%
55	Comcel (Mexico)	709	A-	11,595	6%
56	Tigo (Luxembourg)	700	A	11,600	6%
57	Watanija (Qatar)	699	AA+	4,538	15%
58	China Telecom (China)	680	AA-	53,470	1%
59	DiGi (Malaysia)	652	A+	6,346	10%
60	LG U+ (South Korea)	620	AA	5,263	12%
61	PT Telkom (Indonesia)	586	AA	22,755	3%
62	Leap (US)	557	A	3,194	17%
63	Mobilkom Austria (Austria)	556	A+	3,265	17%
64	Ucell (Sweden)	507	AA-	4,791	11%
65	América Móvil (Mexico)	501	AA	115,949	0%
66	Mobistar (Belgium)	490	A	4,152	12%
67	PLDT (Philippines)	466	AA-	13,251	4%
68	KT (South Korea)	459	AA	16,417	3%
69	ACL (Qatar)	450	AA	2,977	15%
70	Harris (US)	449	AA	6,423	7%
71	Singtel (Singapore)	438	A+	8,647	5%
72	Cosmote (Greece)	434	A	4,672	9%
73	Celcom (Malaysia)	429	AA-	7,225	6%
74	Maxis (Malaysia)	428	AA-	5,975	7%
75	Entel (Chile)	413	A+	4,446	9%
76	Ericsson (Sweden)	407	AA-	23,745	2%
77	Taiwan Mobile (Taiwan)	390	A+	6,328	6%
78	Cellcom (Israel)	386	AA-	6,438	6%
79	Azercell (Sweden)	382	AA-	3,632	11%
80	Mobini (Egypt)	362	AA-	—	—
81	Avea (Turkey)	358	AA-	4,398	8%
82	Elisa (Finland)	357	AA-	4,865	7%
83	Freenet (Germany)	356	A-	2,370	15%
84	Tracfone (Mexico)	353	A-	5,797	6%
85	Maroc Telecom (Morocco)	349	A	5,687	6%
86	Hotlink (Malaysia)	348	A	8,095	4%
87	Qtel (Qatar)	345	AA	4,445	8%
88	3 (excl. Hong Kong)	336	A	—	—
89	Personal (Argentina)	336	A	2,609	13%
90	Embratel (Brazil)	330	A+	44,290	1%
91	Indosat (Indonesia)	307	A	6,006	5%
92	Sonatel (Senegal)	298	A	2,927	10%
93	Clearwire (US)	290	A+	12,933	2%
94	TDC (Denmark)	287	AA-	10,740	3%
95	XL (Indonesia)	286	A	6,298	5%
96	Kyivstar (Norway)	285	A+	2,469	12%
97	Virgin (US)	285	AA-	16,249	2%
98	Sonera (Sweden)	284	AA-	3,453	8%
99	Globe (Philippines)	283	A	3,660	8%
100	Starhub (Singapore)	252	A	3,793	7%

fell 6.7% percentage points says Gartner.

That decline in fortunes is more reason to invest in the brand, says Brand Finance. “Nokia’s brand value may have fallen significantly in recent years, but brand remains one of its key assets,” says Bird. “As it looks to recover its position by investing in new technology and partnering with Microsoft, the company will need to leverage consumers’ latent goodwill towards the brand, built up over many years of reliable service, in order to ride out the storm.”

Indeed, Nokia’s announcement that it is unlikely to release smartphones based on Microsoft’s Windows Phone 7 operating system—its main platform for future devices—for almost a year could further impact unit sales and profitability in the short term, placing even more emphasis on brand loyalty.

Nokia has one of the highest brand values to enterprise values (BV/EV) in the Brand Finance ranking at 36%—other

notable companies with high BV/EV include Alcatel-Lucent (38%), Motorola (36%) and SFR (36%). In simple terms, the higher the BV/EV the more important the brand is worth as an asset to the business, says Brand Finance.

Bird says it depends on where the company is in its lifecycle as to how important the BV/EV is: If it is a mature company and it has a high BV/EV the implication is that it is trading on its brand—in effect the brand is compensating for the poor performance of the company in other areas, including financially. A mature telecoms company would expect a BV/EV of around 10%-20%, but that can vary considerably depending on how effectively a company can use its brand to influence purchasing decisions and differentiate itself in the minds of consumers, he says.

“Companies in decline, but with a strong heritage, may see a fall in brand value lag behind a fall in business value, as low

profitability causes the enterprise value to fall faster than brand value,” says Bird. “In these instances the brand can become an absolutely vital asset for the company to use to pull through tough times.”

Telcos like other companies are taking a risk, therefore, if they decide to rebrand their well-known operations. Telefonica since last May has been rebranding to Movistar—the brand familiar throughout its operations in Latin America—in its home market Spain; the operator retains the O2 brand in the UK, Ireland, Germany, Czech Republic and Slovakia, and the Telefonica brand will be used in “an institutional role” and for large/multinational accounts says the company. As a result, the Telefonica brand has fallen sharply in this year’s Brand Finance ranking from 13 to 73, its brand value going down by US\$6.69 million, while Movistar has risen from 10 to 6, its brand value the biggest climber going up by US\$5.27 million (see tables p.6).



“Our valuations are based on the hypothetical royalty income stream generated by a trademark,” says Bird. “Since Movistar is replacing Telefonica, the royalty income you would expect to receive from owning the Movistar trademark has increased, and hence brand value has gone up.”

Bird says while there are potential benefits from synergies in advertising and sponsorship by extending the brand across markets, there are risks in taking the brand value from one place and moving it to another. “The jury is out as to whether the Movistar brand positioning will be able to extend to replace Telefonica with current fixed-line customers. The positioning required to appeal as a young and funky mobile operator is different to that of a tried and tested reliable fixed-line operator,” he says. “However, rebranding to Movistar is likely to make it much easier for the company to offer converged or bundled products.”

Telefonica says 89% of retail fixed

broadband accesses are bundled as part of a dual- or triple-play service in Spain, while in Latin America it is 86%. Increasingly those bundles will include fibre-to-the-home as well as mobile offerings. Services under the Movistar brand in Spain were extended in February when the company launched an upgraded fibre-network product, for business customers initially, at 100-Mbps. Movistar plans to extend its FTTH footprint in Spain from 300,000 homes currently to 1 million by the end of the year.

Extending the brand in international markets could be key to Europe’s big operators in future. Telefonica, France Telecom/Orange and Telecom Italia all cited difficult conditions in their home markets when they reported results in February, with international operations playing an increasingly important role. Telefonica was boosted by its South American operations, and in particular by Brazilian mobile subsidiary Vivo, of which

it gained full ownership last September.

Telefonica posted a net profit of €10.17 billion in the year to the end of December, up from €7.78 billion in 2009, and revenues of €60.74 billion up 7.1% annually. But in Spain revenues were down 5% year-on-year to €18.7 billion. Mobile customers across Telefonica’s Latin American operations rose by 10.8% last year to 149.3 million and globally grew 8.9% to 220.2 million; but Movistar Espana reported a decline in mobile subscribers in the fourth quarter. In total, revenues from its home market are now below 31%.

France Telecom went through the process of rebranding to Orange several years ago, but it faces further brand upheaval in the UK having completed the merger of its operations with T-Mobile as Everything Everywhere in April 2010. Last month the organisation announced it will start to rebrand some retail outlets under the new name, a step further than

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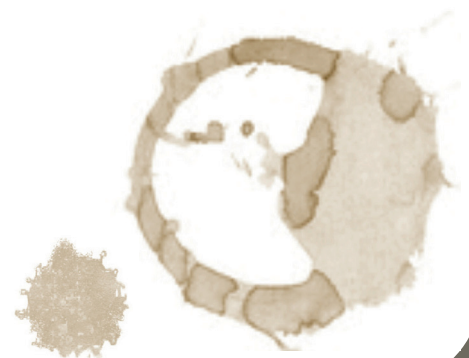
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just six months ago when the company said: “Orange and T-Mobile [will] continue to compete as separate brands on the market, each with its own stores... and service centres.”

Everything Everywhere’s revenue for the nine-month period to the end of 2010 fell by 2% year-on-year to £5.3 billion. But the company says it is now reaping the benefits of integrating the two brands in the UK. National roaming across the 2G T-Mobile and Orange networks was introduced in October, and the company says 4.3 million customers had opted in to the scheme by the end of the year.

When Orange embarked on rebranding its Equant and Wanadoo divisions as long ago as 2006, it set aside €200 million over a period of 18 months specifically for the transformation. At the time we reported that in total the company spent €7.8 billion on marketing and related activities during that year, or 15% of its revenues.

Today the Orange brand is familiar worldwide, but it has not all been plain sailing. In particular the company’s broadband operations have struggled to replicate the success of its mobile operations outside of France. Everything Everywhere says its broadband customers—assimilated from Orange—in the

competitive UK market fell to 770,000 by the end of last year from 896,000 a year earlier. The company says it will embark on a renewed sales and marketing focus on broadband starting this quarter.

Certainly, successful broadband and mobile services play a big part in driving the leading telecoms brands. Mobile operators feature heavily in the top 500, but they cannot rest on their laurels. In our article in November we showed how for many operators increased data revenues still are not offsetting the continued decline in voice and messaging income (*Total Telecom Plus November*).

In the Brand Finance ranking, European companies represent the highest total brand value by region at \$206.1 billion (up 8% from last year); North American telcos have a total brand value of \$137.1 billion (up 25%); and Asian companies \$106.2 billion (up 30%)—see tables below. This year’s data shows the Asia and Pacific regions have risen sharply in terms of brand value (up 30% and 34% respectively), while Africa has fallen (by 28%)—although Brand Finance says that is largely due to Vodacom being rebranded to the European brand Vodafone.

By country, the US has by far the most companies in the top 500 (106) as well as

the highest brand value (\$121.9 million). The two biggest US companies, AT&T and Verizon, are also two of the biggest brand value risers (AT&T was also the biggest riser in 2010). Now Verizon has its sights firmly set on its rival: In February it started selling Apple’s iPhone, ending AT&T’s exclusive agreement in the US. “Despite the well-documented problems concerning AT&T’s service and reception issues, its appealing iPhone offers have meant that the brand has held onto the number two spot,” says Bird. “However, its ranking may be threatened in 2011 as Verizon could capitalise on its own reputation as offering better reception/connectivity and attract a higher number of customers coming to the end of their annual iPhone contracts.”

Apple’s own SG&A expenses increased year-on-year by US\$608 million to \$1.9 billion in the first quarter of 2011. While that is not all down to spend on brand, the increase was due in large part “to the company’s continued expansion of its retail segment, higher spending on marketing and advertising programs, [and] increased variable costs associated with the growth of the company’s net sales”. One thing is for certain: you could buy a lot of fish fingers with that sum. ■

**Brand value by country**

Country	Number	Value (\$m)
US	106	121,918
UK	14	42,909
Japan	18	33,337
France	7	28,166
Spain	6	23,149
Hong Kong	14	21,838
Germany	10	21,491
China	32	20,615
Sweden	21	16,333
Canada	12	15,205
Russia	24	15,205
Finland	6	14,045
Brazil	4	13,195
Italy	5	11,175
South Korea	7	11,091
Mexico	11	10,888
Australia	6	7,524
India	12	7,139
Taiwan	18	6,551
South Africa	5	5,604

**Brand value by region**

Total brand value (\$m)	2011	2010	% rise
Europe	206,068	109,507	8%
North America	137,123	109,303	25%
Asia	106,156	81,357	30%
Africa	8,403	11,610	-28%
South America	14,706	14,943	-2%
Pacific	13,564	10,151	34%
Central America	11,229	11,455	-2%
Middle East	16,679	15,822	5%
<b>Total</b>	<b>\$513,928</b>	<b>\$445,148</b>	<b>5%</b>

**EXPLANATION OF METHODOLOGY**

The methodology employed in the Brand Finance Telecoms 500 uses a discounted cash flow (DCF) technique to discount estimated future royalties, at an appropriate discount rate, to arrive at a net present value (NPV) of the trademark and associated intellectual property: the brand value. The steps in this process are:

1. Obtain brand-specific financial and revenue data.
2. Model the market to identify market demand and the position of individual brands in the context of all other market competitors. Three forecast periods were used:
  - Historical financial results up to 2010. Where 2010 results are not available consensus forecasts are used.
  - A five-year forecast period (2011-2015), based on three data sources (consensus forecasts, historic growth and GDP growth).
  - Perpetuity growth, based on a combination of growth expectations (GDP and consensus forecasts).
3. Establish the royalty rate for each brand. This is done by:
  - Calculating brand strength – on a scale of 0 to 100, according to a number of attributes across three main categories: financial, risk and security, and brand equity.
  - Use brand strength to determine BrandBeta® Index score
  - Apply BrandBeta® Index score to the royalty rate range to determine the royalty rate for the brand. The royalty rate is determined by a combination of the sector of operation, historic royalties paid in that sector and profitability of the company.
4. Calculate future royalty income stream.
5. Calculate the discount rate specific to each brand, taking account of its size, geographical presence, reputation, gearing and brand rating (see below).
6. Discount future royalty stream (explicit forecast and perpetuity periods) to a net present value – ie: the brand value.

**Royalty Relief Approach**

Brand Finance uses the royalty relief methodology that determines the value of the brand in relation to the royalty rate that would be payable for its use were it owned by a third party. The royalty rate is applied to future revenue to determine an earnings stream that is attributable to the brand. The brand earnings stream is then discounted back to a net present value.

The royalty relief approach is used for three reasons: it is favoured by tax authorities and the courts because it calculates brand values by reference to documented third-party transactions; it can be done based on publicly available financial information and it is compliant to the requirement under the International Valuation Standards Committee (IVSC) to determine Fair Market Value of brands.

**Brand Ratings**

These are calculated using Brand Finance’s BrandBeta® analysis, which benchmarks the strength, risk and future potential of a brand relative to its competitors on a scale ranging from AAA to D. It is conceptually similar to a credit rating.

The data used to calculate the ratings comes from various sources including Bloomberg, annual reports and Brand Finance research.

**Valuation Date**

All brand values in the report are for the end of the year, 31 December 2010.

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GREEN NETWORK TECHNOLOGIES

# GREEN GAUGES

Europe's network operators are huge consumers of energy, but they could be part of the climate change solution as they adopt new technologies. **By Roy Rubenstein**

Service providers have set themselves ambitious targets to cut their energy consumption despite the forecast huge growth in network traffic. Their actions promise to reduce operational costs and control their carbon emissions, but improving network energy efficiency will also prove to be a business opportunity as operators help other industries become more energy efficient.

"We can reduce emissions in other sectors by five or six times what we emit in our own sector," says Keith Dickerson, chair of the working party on ICT and climate change at the ITU.

ICT generates 2% of the world's carbon emissions, says Dickerson, whose ITU working party is tasked with producing standards and best practices. "The trouble is that traffic levels are doubling every two years and the energy consumption of data centres is doubling every five years," he says. "If we don't watch out we will be seen to be part of the problem."

Indeed, some telecoms incumbents already are responsible for as much as 1% of their home countries' total electricity consumption. IDC has calculated that Europe's wider ICT industry consumes some 8% of EU energy.

Operators have long acknowledged the issue of power consumption in their networks, but the topic has become particularly pressing for them in recent years due to electricity price rises. "We are getting dedicated and allocated funds specifically for energy efficiency," says John Schinter, AT&T's director of energy. "In the past, energy didn't play anywhere near the role it does today."

KPN consumes 1% of all electricity in the Netherlands, and that has considerable financial implications for the operator. "It is becoming a significant part of our opex cost," says Marga Blom, manager of the energy management group at KPN. The operator previously had numerous electricity providers, but after changes in the energy market moved to a single supplier and was better able to quantify its monthly bill. "If what you are consuming becomes visible, you can start reducing it," she says.

Gerlinde Bedö, business development manager for optical networks at Nokia Siemens Networks, says that for incumbent operators power typically accounts for 40% of opex. Now operators are looking for ways to reduce power needs, including the development of next-generation network architectures. BT's 21CN,

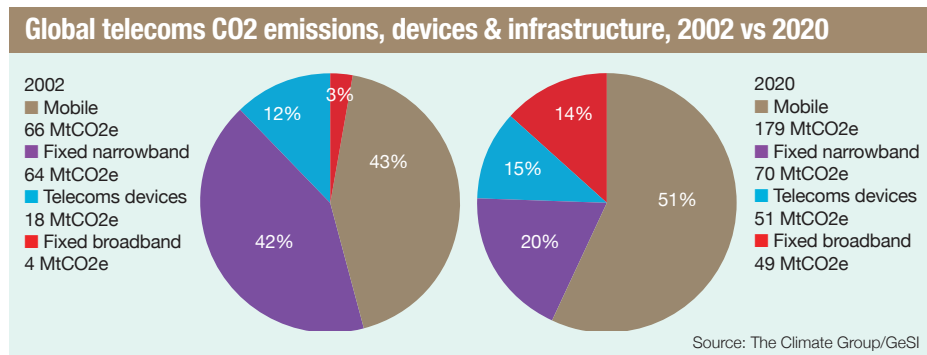
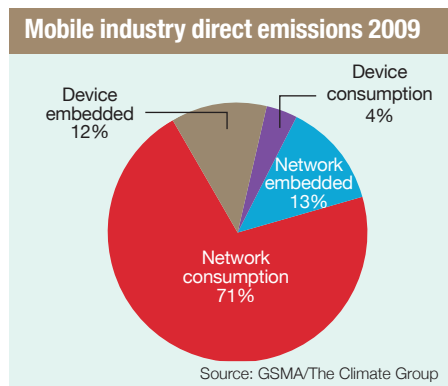
for example, is significantly reducing the number of switching centres it operates while consolidating its various networks to IP; Deutsche Telekom has a similar programme to cull switching centre numbers; and Huawei estimates that deploying a new "green" network can reduce energy consumption by 35% compared to existing networks.

According to the GSMA the mobile industry forecasts it will reduce its total global greenhouse gas emissions per connection by 40% by 2020 compared to 2009. The forecast covers all emissions from energy sources under operators' control, including radio networks, buildings and transport. The GSMA says despite mobile connections rising to 8 billion by 2020, total emissions will remain constant at 245 mega-tonnes of carbon dioxide equivalent (Mt CO<sub>2</sub>e); that is equivalent to 0.5% of total global emissions in 2020 (see chart top left).

Deploying the latest platforms can help mobile and fixed-line operators to reduce power consumption. Verizon, for example, has deployed 100-Gigabit-per-second (Gbps) technology for optical transport and for its IT systems in Europe. The 100-Gbps systems are no larger than its 10- and 40-Gbps platforms, and while the interfaces may consume more power, power-per-bit is reduced. "But demand for ever increasing bandwidth and all its knock-ons—the need for more computing and more storage—means the net effect is that there may be an increase in overall demand," says Chris Kimm, Verizon's vice president, network field operations, EMEA and Asia-Pacific.

Operators are also under competitive pressure to modernise their services and the equipment that enables them. "That means you are looking for opportunities to decommission not necessarily whole services but the inefficient elements within the network environment to make more room for the efficient ones," says Kimm.

France Telecom is consolidating its



## LightRadio: How Alcatel-Lucent aims to transform energy usage

Alcatel-Lucent in February caused a stir when it announced LightRadio, a range of products that mark a radical departure in how cellular networks can be implemented. The company claims the technology can reduce energy consumption of mobile networks by up to 50% over current radio access network equipment: its Bell Labs research arm estimates that base stations globally emit 18 million metric tons of CO<sub>2</sub> per year.

LightRadio comprises a wideband active array antenna that integrates the amplifier and antenna elements, combining 2G, 3G, and LTE technologies into a single system. Another element of the technology is a baseband system-on-chip that can move processing power to the antenna or the cloud.

The active antenna supports beam-forming and multiple-input multiple-output (MIMO) technology which boost cell capacity, says Alcatel-Lucent. Combining the amplifier antenna with the chip technology also enables compact base station and antenna designs.

LightRadio will also support cloud-like architectures. By carrying the signal over a fibre-optic link, the baseband processing of some 25 or 30 cell sites can be centralised in one facility up to 40 kilometres away. This removes the need for traditional air-conditioned huts housing the base station and amplifier.

"The system-on-chip in the cloud is going to give us the ability to do all sorts of new things," says Tod Sizer, head of Alcatel-Lucent Bell Labs' wireless research domain. The pooled base stations can be used for interference management between cells.

And the architecture can be used in new ways to benefit energy consumption. "One we are going to see in the coming years is coordination on the basis of energy usage," says Sizer, citing how, for example, all users could be moved to the 3G network with the LTE network turned off to save power based on time-of-day and subscriber requirements.

HP is working with Alcatel-Lucent to apply virtualisation techniques to integrate three generations of radio controllers onto one platform based on software running on general-purpose processor cards.

dozen data centres in France and Poland to two, filling both with more energy-efficient equipment. Such an initiative will improve the power usage effectiveness (PUE), an important data centre efficiency measure, halving the energy consumption associated with France Telecom's data centres' cooling system.

Philippe Tuzzolino, environment director for France Telecom/Orange, says energy consumption is rising in its core network and data centres due to the increasing traffic and data usage, but that it can be reduced at sites using such techniques as server virtualisation, free-air cooling, and increasing the operating temperature of equipment. "We employ natural ventilation to reduce the energy costs of cooling," says Tuzzolino.

Moreover, such developments are impacting operators' central offices. "As you look at the evolution of cloud-based services, virtualisation and applications, you are going to see a blurring of data centres and central offices as they inter-operate to provide a service," says Brian Trospier, vice president at Verizon's global real estate operations. "The PUE measure started in the data centre, but it is rele-

vant in the future central office."

Such energy efficiency developments have significant consequences for system vendors: Operators are justifying spend on new technologies and platforms based on the opex power savings. "There is a business case based on total cost of ownership for migrating to newer platforms," says Blom at KPN.

By upgrading its network to all-IP, as well as deploying more energy efficient wireline and wireless equipment, KPN says it has almost halted growth in its energy demands despite strong traffic growth, and by 2012 it expects that demand to start reducing. The operator's target by 2020 is to reduce energy consumption by 20% compared to its network demands of 2005.

France Telecom/Orange and Deutsche Telekom both have set a target of reducing CO<sub>2</sub> emissions by 20% by 2020 from 2006 levels; Belgacom has said it plans to upgrade its mobile infrastructure with 20% more energy-efficient equipment over the next two years, and is seeking a 25% network energy efficiency improvement by 2020. And BT arguably has an even more ambitious aim (see box p.14).

France Telecom forecasts that its data centre and site energy saving measures will only work until 2013, with power consumption rising again thereafter. "We also have to invest in capex for a big swap of equipment—in mobile and DSLAMs [access equipment]," says Tuzzolino.

Despite such stated aims, Don McCullough, vice president of marketing for IT and broadband at Ericsson, qualifies the impact of power efficiency on operators' equipment spend. While cost reduction is now a prominent issue with operators, it has yet to "take over" purchasing, he says: "It's a new factor, but it is not an overriding factor."

Nevertheless, equipment makers must have compelling power efficiency products with a demonstrable roadmap. "We select platforms not only on their current energy efficiencies but [also on] what the expected [efficiencies] will be in the coming years," says Blom at KPN.

In 2009 Verizon informed its suppliers of new energy requirements. "If you intend to put a new piece of gear in our environment—and it is a logical successor to a previous one—we expect it to be at least 20% more energy efficient," says Kimm.

Meanwhile, France Telecom says it is working with 19 operators that include Vodafone, Telefonica, BT, Deutsche Telekom, China Telecom and Verizon, as well as organisations such as the ITU and ETSI, to define standards for DSLAMs and base stations to aid operators in meeting their energy targets.

Networking equipment consumes more power the deeper it is within the network, but it is at the edge where unit volumes are far greater that power consumption is rising fastest. Broadband lines and digital home equipment volumes are rising fast, for example, while wireless base stations and handsets are growing exponentially. Point Topic says fixed broadband subscribers reached 508.8 million in the third quarter of last year, up from 454.5 million year-on-year; and Gartner says worldwide mobile device sales to end users totalled 1.6 billion units last year, a 31.8% increase from 2009.

Based on analysis of its operator customers' networks, Huawei estimates that

**Operator targets: how BT and Orange are tackling emissions**

BT says it has reduced the carbon emissions of its global business by 54% since 1997 and aims to reduce them by 80% by 2020 from that base year. The operator says in the UK more than 40% of the electricity it uses now comes from renewable sources. In 2009 it reduced electricity consumption by around 50 Gigawatt hours (GWh), preventing the emission of 21,600 tonnes of CO<sub>2</sub>; in all, BT says it cut CO<sub>2</sub> emissions by 59,000 tonnes or 7% in that year (see table below).

Orange aims to reduce greenhouse gas emissions by 20% by 2020. Among its energy-saving schemes in 2009 the operator says it deployed 13,037 virtual machines generating savings of 30.7 GWh of electricity—equivalent to the annual electricity consumption of 8,000-10,000 European households. It says use of 9.7 GWh of renewable energies in 2009 prevented 3,059 metric tons of CO<sub>2</sub> being emitted. And 900 solar stations deployed by the middle of 2010 led to the prevention of the emission of more than 16,000 equivalent metric tonnes of CO<sub>2</sub>.

**BT CO<sub>2</sub> equivalent emissions**

CO <sub>2</sub> e tonnes (thousands)	2010	2009	2008	Base year 1997	Change 2009-2010	Change 1997-2010
Scope 1	212	249	256	414	-15%	-49%
Scope 2 (gross)	1,419	1,448	1,407	1,156	-2%	23%
Sub Total	1,631	1,698	1,663	1,569	-4%	4%
Scope 3	51	73	79	58	-30%	-11%
<b>Total emissions (gross)</b>	<b>1,682</b>	<b>1,771</b>	<b>1,742</b>	<b>1,627</b>	<b>-5%</b>	<b>3%</b>
Less purchase of:						
Renewable electricity	572	591	516	—	-3%	—
CHP low carbon electricity	310	319	337	—	-3%	—
<b>Total emissions (net)</b>	<b>801</b>	<b>860</b>	<b>888</b>	<b>1,627</b>	<b>-7%</b>	<b>-51%</b>

Source: BT

wireless access accounts for 30% of energy consumption, followed by central offices and broadband access networks. And wireline broadband access is a contributor to rising energy costs due to growth in both data rates and subscribers. “Although the power-per-bit is coming down, overall power is rising,” says Dickerson at the ITU. Technologies such as VDSL2 and passive optical networks (PON) improve power-per-bit performance, while PON has an advantage over VDSL2 in that it is solely fibre-based.

“If you consider a certain given bandwidth, it is quite simple to show that fibre has the lowest power consumption [compared to copper and wireless],” says Klaus Grobe, senior principal engineer at ADVA Optical Networking. “That means we have to use fibre wherever we can.” But from an operator’s point of view that is costly in terms of initial opex (*Total Telecom Plus, Fibre Economics*).

The EU has introduced a code of conduct for energy consumption of broadband communication equipment that aims for energy reduction in the access network. These guidelines set targets for vendors in terms of Watts-per-megabit-

per-second for their equipment to meet.

Such targets are also leading to the use of techniques such as power-saving standby modes, says Dickerson. DSL platforms can power down line cards during periods when broadband connections are idle at night. The ITU is looking at how to apply such modes to VDSL2 equipment, and its study group on future networks is looking at how parts of the core network can be shut down when traffic levels are lower. In addition, there are proposals for a deep-sleep mode for XG-PON, the latest 10-Gbps PON standard.

Meanwhile vendors continue to enhance their platforms as they benefit from new technologies and greater integration. Nokia Siemens Networks has improved an optical transport product using denser interfaces—four 10-Gbps interfaces on a line card compared to one—and reducing the number of optical-electrical-optical conversions. The result is a 28% power saving in 2010 compared to the platform in 2007, and that will rise to 42% in 2011, says the company.

In wireless networks up to half the power with base stations can be lost in the coupling of the radio signal to the

antenna, and the platforms also require cooling. Such factors explain why power consumption of base stations can vary by a factor of five between different operators and different regions based on the age of equipment, says Dickerson.

Elaine Weidman, vice president and head of corporate social responsibility and sustainability at Ericsson, says the company sets new energy efficiency targets for each base station product generation while also continuing to work on equipment already installed. Ericsson has 2 million base stations deployed and it uses software updates to improve energy efficiency of deployed systems that switch off functions when the loading is less. Alcatel-Lucent also is making major claims for reducing the carbon footprint of wireless networks with its LightRadio products, which tackle amplifier efficiency and the issue of cooling in base stations (see box).

Systems integration in mobile networks similarly improves power efficiency. “In the past GSM and W-CDMA were separate boxes. Now by incorporating in one box GSM and W-CDMA we save power by integration,” says Jyrki Louhi, environmental affairs manager for network systems at Nokia Siemens Networks.

But despite such system vendor developments in wireline and wireless networks, challenges remain for operators. “Technology is changing so rapidly that there is always a balance between installing new, more energy efficient equipment and the effort to reduce the huge energy footprint of existing operations,” says AT&T’s Schinter.

For Verizon, one challenge is how to manage equipment substitution that delivers power savings while continuing to serve its customers. “We spend a lot of time doing good analysis about what is the highest return work we can do first,” says Kimm.

Determining equipment spend in terms of timing and scale is also not simple. “The big challenge for us is to plan the capex effort such that we achieve the return-on-investment based on anticipated energy costs,” says Tuzzolino at France Telecom. ■



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M2M COMMUNICATIONS

# MACHINE MARGINS

Telcos are eyeing the chance to derive new revenues from machine-to-machine (m2m) services, but they will need new models and scale to make margin. **By Joanne Taaffe**

Operators are finally starting to clock up volume sales of machine-to-machine (m2m) units. But they will struggle to translate that into profit margin unless they sell connections on a large scale as part of a wider managed service and dramatically reduce the cost of provisioning m2m services.

With typical ARPUs for m2m devices languishing at an average of US\$1–\$7 per month, some telcos could look to m2m services predominantly as a way to win big enterprise accounts.

AT&T currently leads the way among operators in terms of the number of connected m2m devices, according to Berg Insight, surpassing Verizon Wireless last year (see box opposite page). By February, AT&T had interconnected 11 million machines to its network, roughly split between consumer and enterprise devices, says Abhi Ingle, the company's vice president, industry and mobility application solutions.

Analysts forecast further strong m2m growth: Berg Insight says wireless m2m connections will reach 294.1 million in 2015, representing 4% of total cellular connections worldwide; some 2% of all mobile network connections were used for wireless m2m communications at the end of 2010. In terms of device units, the company says the worldwide installed base of m2m devices will reach 95.7 million in 2015, up from 81.4 million at the end of last year. Further out, Analysys Mason estimates the number of m2m connections will rise to 2.1 billion in 2020.

A mix of falling component prices and regulatory changes is helping spur growth. "Around seven years ago an m2m module cost \$60, now it's at \$10," says Erik Brenneis, head of m2m smart services at Vodafone Global Enterprise. He says EU legislation means that 80% of all electricity meters in Europe will be read remotely by 2020; and under the European Commission's e-call scheme every airbag in new cars will be connected to emergency services through

a wireless connection.

Operators in developed countries have been investing in m2m communications in recent years for another simple reason: the market for connecting consumers is saturated. But they face significant challenges both in terms of generating ARPU and developing strategies.

"They face major challenges in marketing, sales, OSS/BSS readiness and partnerships," says Steve Hilton, a principal analyst at Analysys Mason.

Orange in February announced a joint venture with Deutsche Telekom to deliver standards and improve quality of service for cross-border m2m services. The companies will work together to ensure m2m service continuity when roaming and, critically, aim to cut the cost of testing and deploying m2m devices and services.

Operators need to acquire large economies of scale in order to counter low average revenues per device, but the m2m sector does not lend itself easily to a one-size-fits-all approach. "In m2m there are hundreds or thousands of device manufacturers and they never have the resources to test [devices and applications] with the [telecoms] network," says Macario Namie, senior director of marketing at Jasper Wireless, which provides m2m service delivery platforms.

What's more, customers in different industry verticals—such as healthcare, automotive, smart grids and energy—all

need to connect different machines that run sector-specific applications. "It's a very segmented market with an enormous necessity to have specialist knowledge," says Hans-Martin Lichtenthäler, a spokesman at Deutsche Telekom. "There are different suppliers [for m2m modules] and testing every module takes three months." The partnership with Orange aims to reduce the need to test each module for different networks: "Deutsche Telekom and Orange will say if the other [operator] has tested it...so that way we don't duplicate [tests]," he says.

Namie at Jasper Wireless says it is crucial for telcos to automate device support and reduce both provisioning and customer support costs if they are to build a viable m2m business. Today operators' business models "are designed around [getting] \$50 ARPU [from customers] and if you apply the same systems and approach to [m2m] it won't work", he says.

Monthly revenues generated by an m2m device range from \$0.50 to US\$40 for certain telematic services in the transport and automotive industry, but the average is just \$5–\$7, according to Hilton at Analysys Mason. Others give a lower average of just \$1–\$3, and the biggest growth areas such as smart metering typically generate the lowest ARPUs. By comparison, Vodafone in its results to the end of December recorded total averaged ARPUs from consumer services of €15.5

## 'If you apply the usual operator models, systems and approaches to m2m services it won't work'

m2m and wireless services margin model		
Metric	m2m	Wireless Service
Average Revenue per subscriber	\$3.00	\$50.00
Customer Acquisition Cost/Additional Sub	\$0.75	\$13.00
Service delivery and Customer Mgmt Cost/Sub	\$0.15	\$10.00
Network Usage per sub	\$0.60	\$5.00
Total Costs/sub	\$1.50	\$28.00
Profit/sub*	\$1.50	\$24.00
Margin*	50%	44%

\* Depreciation removed (i.e. EBITDA profit and margin). Source: Current Analysis



in Germany, €21.7 in the UK and €31.6 in the Netherlands.

Analysts forecast strong revenue growth: Datamonitor estimates the global smart metering market for residential customers will reach US\$5.7 billion by 2015, for example. But operators cannot simply replicate the economies of scale from consumer handset markets.

One area operators need to tackle is certification—ensuring devices pass conformance tests—explains Hilton. “Relying on the certification process from the handset world isn’t economically viable,” he says. A handset can cost US\$30,000–\$50,000 to certify per model, which is justifiable for an ARPU of US\$50–\$100 per month he says. “But in the case of m2m, the ARPUs are much lower and frankly the volumes sold of a given m2m device are likely to be lower.”

Operators also need to acquire new skills for activating m2m devices. “Activation and provisioning is unlike anything else you use for handsets,” says Ingle at AT&T. “You need them to come awake for five seconds in a different country to where they were made and sold and then stay dormant until activated by the customer.”

There are other, more fundamental, obstacles: the need to improve roaming agreements is a large element of the Orange-Deutsche Telekom partnership. Operators need a rapid resolution of any problems in roaming between networks if they are to provide the QoS guarantees that enterprises demand for time-critical m2m services, such as tracking medical pacemakers or transporting refrigerated goods. However, under current GSMA roaming agreements operators have up to 12 hours in which to resolve roaming service issues, according Lichtenthäler at Deutsche Telekom.

Brenneis says Vodafone has tackled the issue by developing a global SIM recognised as an m2m module across all of its own, and partner, networks. “We deliver the parameters” to SIM manufacturers, he says. This allows Vodafone to provide QoS guarantees on its networks and offer a single price and interface. “It’s necessary to have a global SIM as we don’t

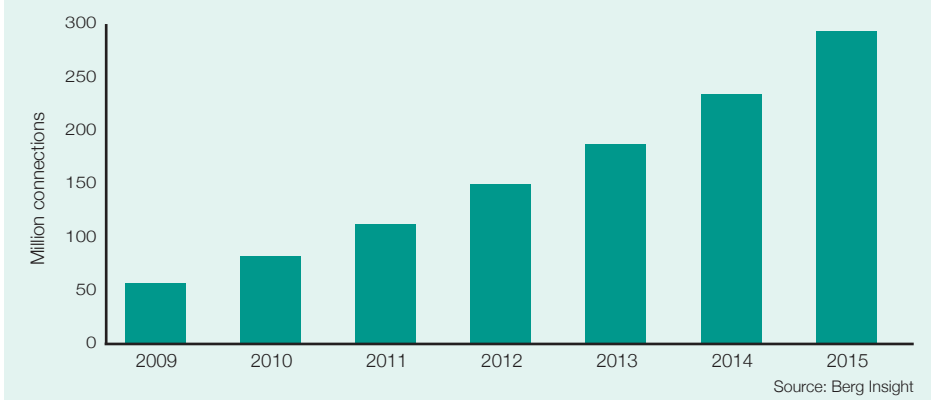
**Leading the way: operator subscriber numbers**

**REGIONAL BREAKOUT, END OF 2010**  
**Europe:** 29.5 million m2m subscribers, up 43% year-on-year.  
**North America:** 23.6 million m2m subscribers, up 51% year-on-year.  
**Asia-Pacific:** 19.6 million subscribers, up 53% year-on-year.

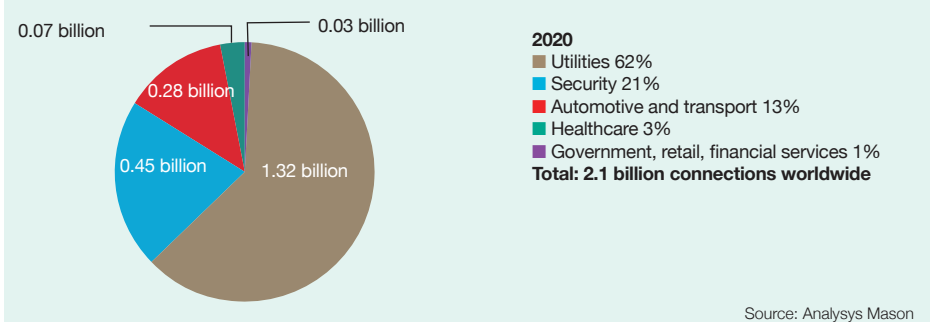
**TOP TEN OPERATORS WORLDWIDE, END OF 2010**  
**AT&T:** 9.3 million m2m subscribers, up by 4.7 million connections (machines and consumer devices) during 2010.  
**Verizon Wireless:** 8.1 million m2m subscribers, up by 1.2 million connections during 2010.  
**Vodafone:** estimated 7–8 million connections.  
**China Mobile:** estimated 6 million connections.  
**T-Mobile:** estimated 5 million connections.  
**Telefonica, Telenor, Orange, Sprint, America Movil:** 2–4 million connections each.

Source: Berg Insight

**Cellular m2m connections forecast**



**Commercial/consumer m2m device connections worldwide by sector, 2020**



know [into] which country [the cars or machines] will go,” says Brenneis.

Yet m2m services still are only likely to make economic sense when sold as part of a bigger communications package. “From the operator’s point of view, selling the embedded connectivity is just the tip of the iceberg,” says Hilton. “It’s important that the operator also sells a managed or hosted platform and integration services.”

AT&T sees m2m as “part of a larger suite of products”, says Ingle, which include its fixed network and data centre services. Such an approach keeps the cost of deploying m2m down, he says, because the operator can draw on both vertical sector and horizontal service expertise within its enterprise division to sell and support services: “We’re not selling one line of business. We’re selling a whole set

Operator m2m business models

Several recent analyst reports explore the m2m business model options for operators, setting out possible ways to raise ARPU and manage costs. Current Analysis in *Best Practices in m2m: The Operator Perspective*, says beyond data connections operators can generate m2m revenues by providing end-to-end systems integration for key applications such as smart grid deployments and asset/fleet management, from offering managed/hosted m2m services at their data centres, or from data mining.

The analyst company says ARPU could well be higher than \$3-4 per line for operators that provide value-added services or high bandwidth real-time, location-enabled or video-enhanced applications. "The possibility of offering tiered services for different device types, at different speeds, or with unique classes of service and prioritisation schemes, or for bundling multiple devices associated with a single subscription are other options to grow revenues." Current Analysis points to high-end applications such as real-time monitoring of medical devices, patient location and health status, or video surveillance for enhanced security applications that may yield significantly higher ARPU.

Capgemini in its report *The Onset of Connected Devices* looks at wholesale and retail opportunities for operators. When it comes to wholesale it says: "Telcos should...set up certification laboratories that will pre-test and pre-qualify multiple 3G data modules that independent device vendors can...include in their device. Such streamlined processes help vendors reduce their time-to-market, while helping telcos to rapidly enable connectivity over a wide range of devices." But for applications where "connectivity is critical to their core function", such as e-healthcare devices and security solutions, Capgemini advises a direct retail strategy.

Operators will also look to manage the cost of their m2m services strategy. A good service delivery platform can significantly decrease the costs associated with implementation and customer management, says Current Analysis: "Customer acquisition costs (which include marketing, distribution, and device subsidies, if applicable) make up approximately 40% of total costs; implementation and management (including device certification, account creation and rate plan implementation, provisioning, technical/billing customer support, escalation and dispute management) contribute an additional 30% of costs; and the costs associated with radio and core network usage make up an additional 30% of costs."

of new services. It lowers the incremental cost structure."

Indeed, operators could deliver a profit margin if they make full use of their existing infrastructure. "M2m-related data does not necessarily have a negative impact on the peak-hour dynamics of a mobile network, so adding small amounts of m2m traffic can yield positive cash flow for a carrier with minimal network-related costs," says Analysys Mason in its report.

Namie at Jasper Wireless says as a result "m2m can be very high margin, even if it is low ARPU".

Some telcos are looking to m2m services as a way to win big enterprise accounts. AT&T, for example, signed a deal for wide-area network (WAN) business from a utility customer thanks to an m2m service contract. "AT&T was not the incumbent provider of MPLS. [We] provided an m2m architecture and...[as a result] won a contract to become the major global WAN provider," says Ingle.

What's more, once an operator wins an m2m account it is very difficult for enterprises to change suppliers. SIMs are often

soldered into alarm systems, for example, or built into the body of a car. "There is no mechanism to switch an [m2m] SIM from one [operator] to another," says Vodafone's Brenneis. "It can't be changed over the air." As a result, enterprises worried about tying in to a single operator for several years currently must install separate SIMs from different suppliers.

"A SIM component costs €3-€4. [Customers] can solder in one from Orange and one from Vodafone and switch on only one," says Brenneis. "It hurts us because they can't switch to us. We would support...a structure" whereby enterprise customers could switch suppliers without replacing the SIM.

Competition to win accounts in sectors such as utilities promises to be tough. Another new report, from Innovation Observatory, outlines the potentially fierce competition operators will face in delivering and managing m2m services. Utilities worldwide will invest some US\$378 billion in building electricity smart grids by 2030, it says, with 80% of spend concentrated in 10 countries.

"Competition to win contracts with utilities in these leading smart grid markets will be fierce, as the sheer scale of the investment is creating a huge appetite to supply," says the report.

In order to deepen their vertical industry knowledge most operators choose to partner with specialists, but some may look to acquire expertise. Orange, for example, acquired Data and Mobiles in 2009 for its m2m transport applications. "In general operators have stayed away from acquiring best-of-breed applications for m2m. I expect that will change as m2m solutions become more productised," says Hilton at Analysys Mason.

But Namie at Jasper Wireless cautions against such an approach. "Orange has a long history of offering...fleet management and commercial tracking...[but in so doing]...it is competing with fleet management [providers] and that is not a good position," he says.

The market to deliver consumer m2m devices—such as electronic readers (e-readers), personal navigation devices (PNDs), netbooks, tablets and handheld games consoles—is also growing: already they account for approximately half of AT&T's m2m connections. Berg Insight expects 271 million connected consumer electronics devices to ship in 2015.

But again operators will have to adapt to new business models. "There's going to be a small category of devices where [they] will be an additional line on the phone bill. However, I don't see that being the standard case," says Namie. Instead operators will have to get used to big-brand car manufacturers or gaming and e-reader service providers being the customer point of contact.

Last month, for example, Vodafone signed a telematics agreement with Hyundai in Europe, but the billing relationship has yet to be agreed, says Brenneis. He also points to BMW's ConnectedDrive telematics service, which is branded and billed by the car company.

But such services in turn could open up new opportunities for operators. "Providing OSS/BSS [services] is an enormous value add and much more valuable than transport," says Namie. ■

## MOBILE WORLD CONGRESS REVIEW

## END-TO-END GAMES

This year's Mobile World Congress saw operators going back to their network strengths to find a place in the new value chain among over-the-top providers. **By Nick Wood**

Operators attending Mobile World Congress 2011 may have talked with enthusiasm about the growth potential of new industry verticals and the opportunity to enable new and exciting services, but was the upbeat delivery of numerous keynote presentations and press conferences simply putting a positive spin on adjusting to life further down the value chain?

"One of the enduring issues for operators is addressing the gap between revenue and the costs related to the network," said Capgemini's global sector leader of telecoms, media and entertainment division, Greg Jacobsen, who spoke with *Total Telecom* on the sidelines of MWC. This year operators are "looking into any service that generates additional data traffic" to fill that gap.

"Two years ago the solution seemed to be content...Last year it was going to be apps," he continued. "Content was not the silver bullet and now operators are realising that apps won't be either."

Indeed, at MWC 2011 operators seemed to acknowledge that no single area is going to be the answer to all their prayers. Instead they are spreading the risk by evangelising the potential revenues from connecting different industries to their networks, and participating as much as possible in the raft of existing and upcoming over-the-top (OTT) services.

"I've seen plenty of talk around m2m, m-health, automotive, industrial and smart energy services," added Jacobsen.

To embody their need to embrace different sectors and services, operators fell back heavily on the word "openness" and all that the term encompasses. During Tuesday's first keynote, the chief executives of some of the world's biggest mobile operators—including China Mobile, Vodafone, AT&T and Telecom Italia—talked of the need for open systems rather than so-called walled gardens.

"Customers are going to do what they want," suggested AT&T CEO Randall

Stephenson, who called on operators to facilitate "open environments".

Walled gardens "were not successful", added Franco Bernabe, CEO of Telecom Italia. "An open system is what is needed."

Even people with short-term memories will remember that fewer than five years ago it was operators that came in for criticism for insisting on these walled gardens. But now that OTT players like Google and Apple are hogging the limelight—and in the case of content and application stores much of the revenue to be generated—they are falling back on their strengths. "The intelligence residing in the network needs to be leveraged," said Ryuji Yamada, CEO of Japan's NTT DoCoMo.

A prime example of this drive towards greater openness was the Wholesale Applications Community (WAC), which as well as unveiling its new WAC 2.0 app standard shared its plans for WAC 3.0, which among other things will make use of operators' network APIs to enable in-app billing.

DoCoMo's Yamada warned that "operators are susceptible more than ever to being reduced to a dumb pipe by the

Unlike their OTT rivals, operators are capable of managing their network end-to-end, ensuring guaranteed quality of service, Suri said, which leaves the door open for potentially lucrative partnerships with content providers.

Meanwhile handset vendors, which rely on operators for marketing their latest and greatest devices, but also drive sales by acting as a gateway to the most coveted OTT services, sat somewhere in the middle at the show. RIM co-CEO Jim Balsillie, and Nokia chief executive Stephen Elop, in particular were keen to distance themselves from Android and Apple, and talked up "constructive alignment" with operators. "You get the sense with these over-the-top players like [Apple's] iOS and Android that the profits and the points of control are going away from operators," said Elop. Nokia hopes to tap into some of those profits by aligning itself with Microsoft and its Windows Phone 7 operating system (see p.4)

Yankee Group vice president Declan Lonergan says it is a case of operators choosing how to align themselves with over-the-top services in a way that offers

## 'Content was not the silver bullet and now operators are realising apps won't be either'

global emergence of smartphones and over-the-top services", but on the positive side added that "operators are in the best position to know what the network is capable of." His conclusion: "It is a race between these two different camps."

According to one European vendor, that race is already over. "Competing head-to-head [with Google] is a fool's errand," said Rajeev Suri, CEO of Nokia Siemens Networks, during a press briefing. "No-one is going to out-Google Google." He advised operators to re-engage with their customers by making greater use of their stored information and tailoring their offerings.

the most benefit. In his post-Barcelona report he insists that MNOs still maintain a vital role in the mobile ecosystem, but that they need to "identify which OTT content and providers are complementary to their own services and which ones will benefit from integration with the MNOs' network or app stores". This will open up new opportunities for operators to add further value to the user experience, he says.

However, he concludes with a word of warning. Lonergan says at MWC 2011 there was "plenty of evidence of how other players in the mobile ecosystem can take a piece of the MNOs' action". ■

Global handset sales continued to show strong growth in 2010

Analyst companies in February released their numbers for total handsets sold worldwide in 2010 as well as in the fourth quarter. Gartner says worldwide mobile device sales to end users totalled 1.6 billion units last year, a 31.8% increase from 2009. Strong smartphone sales pushed Research In Motion (BlackBerry) and Apple up the rankings to fourth and fifth place respectively, displacing Sony Ericsson and Motorola. Nokia's market share fell from 36.4% in 2009 to 28.9% last year, and its share of smartphones fell 6.7% says Gartner. IDC gave lower figures for its shipments research, calculating that vendors shipped a total of 1.39 billion units worldwide in 2010. But it says 4Q10 was a quarterly high, with 401.4 million units shipped compared to 340.5 million units in

4Q09, and Apple and ZTE recording strong growth of 86.2% and 76.8% respectively year-on-year. Gartner's ranking of handset vendors tallies with another analyst firm Strategy Analytics, but they both differ from IDC which shows ZTE in fourth place with 51.8 million units shipped in 2010. When it comes to smartphones, IDC said quarterly shipments worldwide exceeded 100 million for the first time in Q4 (100.9 million), and for the full year reached 302.6 million, up from 173.5 million in 2009. That compares with Strategy Analytics' figures of 94 million smartphones in Q4 and 293 million for the full year, and Gartner's 296.6 million for the year. Google's Android made strong inroads in the smartphone operating system market in 2010, taking 22.7% market share worldwide, up from just 3.9% in 2009 says Gartner. Meanwhile Analys says shipments of devices running Android (33.3 million) exceeded Symbian device shipments (31.0 million) for the first time in Q4.

Worldwide Mobile Device Sales to End Users in 2010 (Thousands of Units)

Company	2010		2009	
	Units	Market Share (%)	Units	Market Share (%)
Nokia	461,318.2	28.9	440,881.6	36.4
Samsung	281,065.8	17.6	235,772.0	19.5
LG Electronics	114,154.6	7.1	121,972.1	10.1
Research In Motion	47,451.6	3.0	34,346.6	2.8
Apple	46,598.3	2.9	24,889.7	2.1
Sony Ericsson	41,819.2	2.6	54,956.6	4.5
Motorola	38,553.7	2.4	58,475.2	4.8
ZTE	28,768.7	1.8	16,026.1	1.3
HTC	24,688.4	1.5	10,811.9	0.9
Huawei	23,814.7	1.5	13,490.6	1.1
Others	488,569.3	30.6	199,617.2	16.5
<b>Total</b>	<b>1,596,802.4</b>	<b>100.0</b>	<b>1,211,239.6</b>	<b>100.0</b>

Worldwide Smartphone Sales to End Users by Operating System in 2010 (Thousands of Units)

Company	2010		2009	
	Units	Market Share (%)	Units	Market Share (%)
Symbian	111,576.7	37.6	80,878.3	46.9
Android	67,224.5	22.7	6,798.4	3.9
Research In Motion	47,451.6	16.0	34,346.6	19.9
iOS	46,598.3	15.7	24,889.7	14.4
Microsoft	12,378.2	4.2	15,031.0	8.7
Other OS	11,417.4	3.8	10,432.1	6.1
<b>Total</b>	<b>296,646.6</b>	<b>100.0</b>	<b>172,376.1</b>	<b>100.0</b>

Source: Gartner

\$15.1 billion

LTE capex will peak at this level in 2012. (forecasts In-Stat)

Mobile revenues landmark

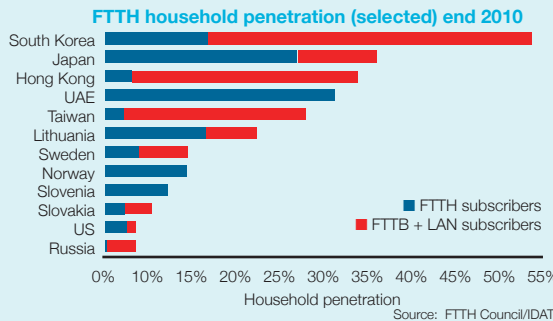
Informa Telecoms and Media says mobile network operator revenues for the first time will exceed one trillion dollars globally this year. In 2010 the more than 900 mobile operators worldwide generated \$965 billion in service revenues, says Informa, and that will grow to \$1.14 trillion by the end of 2015. Non-voice revenues, including SMS, will reach \$453 billion by that time, up from \$253 billion in 2010. Operators invested more than US\$175 billion in capex during 2010 and in excess of US\$1 trillion in the past decade, it says.

\$5.5 billion

Revenues from music on mobile handsets in 2015, up from 2.4 billion in 2010. (Juniper Research)

Fibre penetration growth

The Fibre To The Home Council says there were 8.1 million fibre-to-the-home/building FTTH/B subscribers in Europe at the end of last year, some 4.2 million of those in Russia, representing an increase of 18% in just six months. In terms of household penetration Lithuania retained the top spot, followed by Sweden, Norway, Slovenia and Slovakia (although Europe still lags other areas of the world—see table). The Council says Turkey joined the FTTH ranking in the second half of 2010 and was one of the most dynamic markets, with SuperOnline, a subsidiary of Turkcell, signing up some 200,000 subscribers. The number of FTTH subscribers in Latvia nearly tripled, it says, and Portugal is also showing strong growth.



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