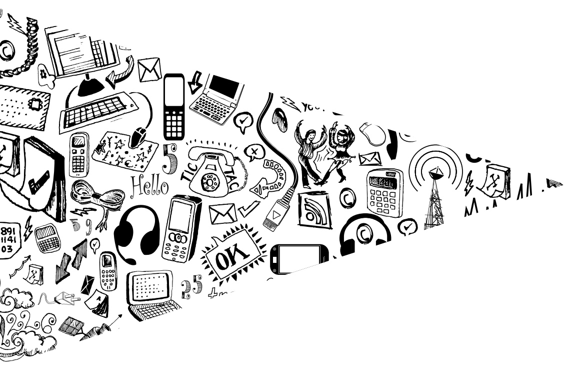
Issue 1

Inside Telecommunications

Quarterly talking points from Ernst & Young's Global Telecommunications Center



January to March 2011

Welcome to this inaugural edition of *Inside Telecommunications*, Ernst & Young's review of the most significant developments in the telecoms sector each quarter. This is a pivotal time in the industry, and it is sometimes difficult to understand the big picture of news as it happens. As the sector transforms, we expect to see more new and exciting businesses coming together. New technology is breaking down old barriers in the sector. With all this in mind, we've designed *Inside Telecommunications* to be the insider's guide to telecoms for anyone working in the sector, or following its developments.

We hope you find this useful. Please do not hesitate to share your feedback with me or any of my colleagues at Ernst & Young.

Jonathan Dharmapalan
Global Telecommunications Leader

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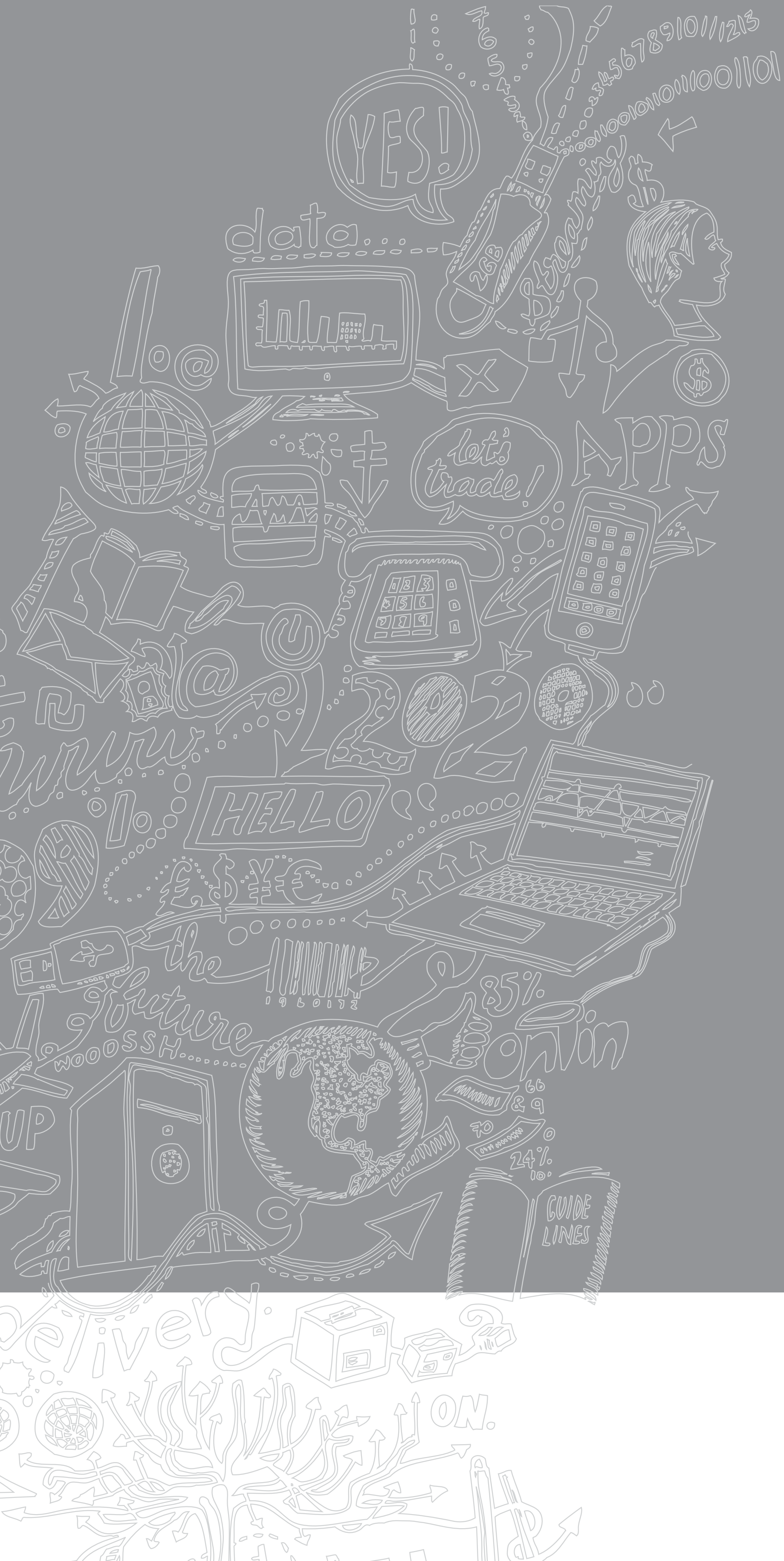

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Foreword

The first three months of the year have seen much of the news flow in the sector led by developments at the Mobile World Congress (MWC) in Barcelona, with the event itself boasting record attendance figures.

Just ahead of the February event, Nokia and Microsoft announced a landmark tie-up in smartphones, as competition increases in mobile operating systems. At the same time, device form factors are evolving and new tablets were the talk of the town. Mobile money proved another hot topic at MWC this year, with the focus shifting from money transfer in emerging markets to the prospects for near field communication (NFC) payment solutions. Plenty of partnerships were also struck, with cooperation seen as the surest route to making the most of vertical-specific opportunities in emerging areas such as, for example, machine-to-machine. While the traffic burden of mobile data is still top of mind, optimism is growing around the added value represented by video over mobile networks.

While all eyes are on Long Term Evolution (LTE) launches in mobile, the rollout of fiber-based broadband is just as transformational for telecoms. In February, Telefonica announced the launch of fiber-to-the-home (FTTH) services, with 100Mbps speeds available for US$118 per month, targeting business users at first. At the CeBIT show in Germany, Deutsche Telekom announced plans to make FTTH available to 160,000 households in 10 German cities this year, with downstream and upstream speeds of 1Gbps and 500Mbps, respectively. In Qatar, the incumbent Qtel has built a 300km fiber optic network that supersedes its legacy copper infrastructure.

Regulation remains another fast-changing area. Spectrum release is a pressing issue in all markets, whether emerging or developed, while viewpoints on net neutrality are diverging in Western regions. Meanwhile, the sheer levels of explosive growth in less mature markets call for strong regulatory oversight, with an eye on the repercussions – in terms of competition, willingness to invest and consolidation – of high levels of take-up.

Looking at deals in telecoms, there remains a steady stream of "bolt-on" acquisitions, with many telcos acquiring expertise in the cloud – witness US-based Verizon's swoop for Terremark Worldwide. The stand-out deal of the first three months is AT&T's proposed acquisition of fellow US mobile player T-Mobile: proof, if any were needed, that the sector remains scale-oriented at heart. This kind of in-market consolidation brings new challenges to governments and regulators – whether in terms of balancing industry rationalization against competition and pricing concerns or safeguarding existing spectrum management policies.

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Service innovation

Mobile money focus moves to payments in developed markets

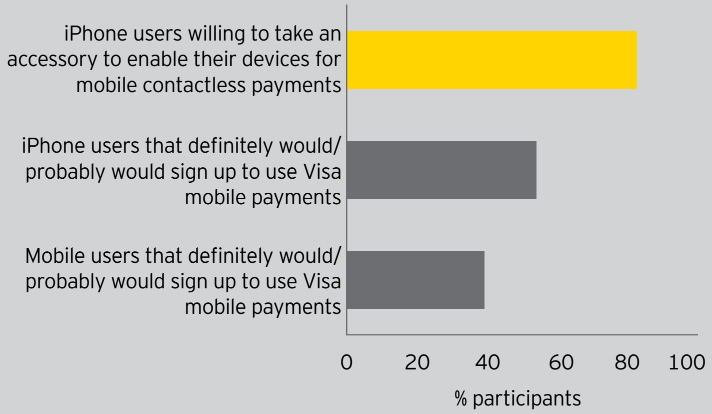
The first quarter of 2011 has been notable for a range of announcements from European mobile operators trying to make the most of opportunities in mobile money. Much of the current focus is on NFC payments as operators aim to enable a more convenient customer experience at the point of sale. Orange has announced plans to roll out NFC services to the majority of its European operations by the second half of 2011, while Deutsche Telekom plans to launch initially in Germany and Poland before extending the service to the US, the Netherlands and the Czech Republic.

Previous NFC trials were typically city-based and involved one operator cooperating with banks, device manufacturers and card issuers. Now, common platforms are recognized as the key to scalability and operators are showing a greater willingness to work together, as highlighted in the Netherlands, where the country's top three banks and operators are setting up a joint venture company to introduce and manage an NFC service. This follows the landmark Isis partnership struck between mobile operators and financial institutions in the US last year.

Yet operators are not the only ones upping their game – retailers in developed markets are also leading the charge to accept mobile swipe-and-pay. Historically, handset support has been lacking, but change is under way, with mass market device support voiced by leading handset manufacturers. In February, T-Mobile revealed it expects NFC to become a default feature on handsets by 2015. Even so, retailers are also pursuing non-NFC technology to provide proximate payments, such as 2D barcode, for example.

Operators have to recognize the pace of innovation from players in other sectors, whether device manufacturers, retailers or card issuers. Start-ups such as US-based Bling Nation have also been active in providing workarounds to operator-led NFC approaches, through contactless phone stickers, for example. Banks, meanwhile, remain keen on solutions that feature microSD cards. Even in the world of NFC, device vendors are not limiting themselves to operator-led approaches that embed the technology in the SIM card. As a result, issues of customer ownership and brand affinity remain fluid: a recent survey from Visa Europe reveals that consumers would be willing to use device- or card issuer-centric mobile payment services.

Visa Europe mobile payment survey[1]



In this light, interoperability will play an important role in the development of scalable mobile payment platforms. In February, the GSM Association announced it would take a leading role in certifying and testing standards to ensure the interoperability of NFC solutions.[2] This move explicitly backs NFC deployments that use the operator-controlled SIM as the secure element to provide authentication, security and portability.

Meanwhile, the move toward NFC has broad implications well beyond payments: related services include the exchange of information and content, paving the way for couponing and ticketing schemes. The expansion of use cases will hinge upon collaboration within and between sectors. In a survey by Sybase 365 of industry participants at the MWC held in February 2011, 30% of respondents said a lack of industry coordination is to blame for delayed NFC adoption.

New initiatives in mobile advertising

Mobile advertising continues to attract the attention of advertisers, media agencies and ambitious technology companies. A market worth US$3.5 billion worldwide in 2010 is set to grow sixfold over the next five years as a range of players aim for dominant positioning.[3] Moves from Apple and Google to build their own mobile advertising platforms are catalyzing confidence in the sector and operators are pursuing a variety of approaches in a fast changing ecosystem.

In the United States, AT&T is promoting location-based marketing services: in February, its Advertising Solutions division announced its ShopAlerts service, which provides special offers to consumers in retail stores and at events. Telefonica recently set up a global advertising solutions unit, giving agencies "one-stop shop" access to its multi-region subscriber base. Deutsche Telekom is expanding its European mobile advertising offering across different channels and formats, while its subsidiary T-Mobile USA is set to launch its first offerings this year.

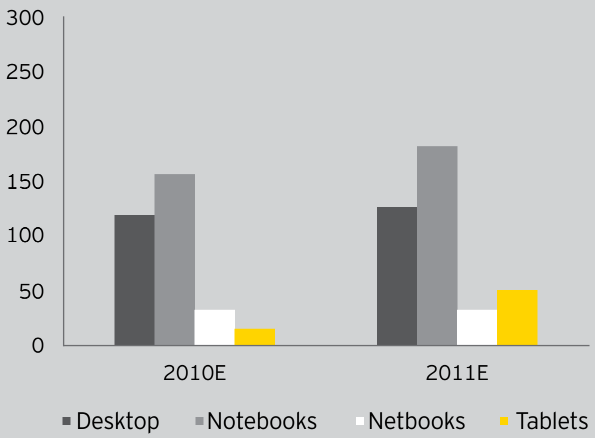
While operators have unique subscriber data that can make advertisements more relevant than other channels can, a fragmented landscape works against reach and scalability. Also, standardized ways of measuring advertising have been conspicuous by their absence. The industry is moving to rectify this: in March, the Interactive Advertising Bureau (IAB) and the Mobile Marketing Association (MMA) released standardized key metrics for measuring mobile ads.

With technology players aggressively targeting in-app advertising revenues, operators are exploring new ways of monetizing brand exposure to the user. O2 UK is allowing companies to preload apps onto its smartphones in return for a share of the transactions that are made via the application. In February, eBay was announced as a partner: its apps will be pre-installed on a range of devices that will launch in the UK later this year.

[1] *Visa Europe website,* accessed 25 January 2011. Note: survey data drawn from a sample of 4,200 people in Italy, Poland, Turkey and UK surveyed in September-October 2010.
[2] "GSMA to lead on NFC interoperability – protect operators' position," GSM Association, 21 February 2011.
[3] "Mobile Advertising (3rd Edition)," Informa Telecoms and Media, October 2010.

Technology

Tablets expected to take off



One of the big themes at this year's MWC in Barcelona was the rise of tablet devices. Samsung announced an upgrade to its Android-powered Galaxy Tab that features improved multitasking capabilities, while HTC won plaudits for its 7-inch Flyer device. Meanwhile, HP showcased its TouchPad – the 9.7-inch display puts it in direct competition with the iPad.

As video becomes a larger component of mobile data traffic, so devices are evolving to accommodate larger screens in tandem with a more intuitive user interface.

In contrast to the disruptive appearance of the iPhone, rival manufacturers are proving much quicker to respond to Apple's most recent innovations. Nevertheless, the iPad remains very much the segment's poster child: 1 million units of the iPad 2 were shipped in its debut weekend in the US, a milestone that took 28 days for its predecessor to achieve.[4] Indeed, tablets are so desirable that they are already seen prompting a slowdown in growth in adjacent product categories. More than 50 million tablets are set to be shipped in 2011, while netbook shipments worldwide are seen falling by 2% year on year.[5] The rise of this new form factor has implications well beyond the tech sector itself: mobile marketing and paid content propositions are seen benefiting from more appealing combinations of device portability and capability with larger screen sizes.

[4] "Apple iPad 2 sales seen clearing 1 million units," Reuters, 14 March 2011.
[5] DRAMeXchange, November 2010.

Femtocells are coming of age

Femtocells are rapidly emerging as a fundamental technology enabler in the deployment of next-generation (3G/4G) wireless network infrastructure. Using femtocells, a wireless operator can improve both coverage and capacity especially in an indoor area, where access would otherwise be limited or unavailable, in a highly cost-effective way. This is likely to reduce the operating costs as well as capital expenditures.

Deployments of femtocells have more than doubled in the past 12 months. By 2014, approximately 49 million femtocell access points (FAP) will be deployed and 114 million mobile users will access mobile networks through femtocells. Although residential services represent the overwhelming majority of femtocell deployments, the market has also started to see particularly strong growth in the enterprise sector.[6]

Aiming for economies of scale in LTE

LTE is gaining ground around the world, with many operators seeking a head start in 4G mobile data. Sweden witnessed the launch of LTE services in November 2010, and in March, 800MHz auctions raised €233 million, with four operators winning licenses — valid until 2035 — to expand their 4G services. Scandinavian countries are leading the 4G charge in Europe, with LTE also made available in Denmark and Finland in December 2010. In Poland, pay-TV player Cyfrowy Polsat launched an LTE trial in March.

Meanwhile, operators in Japan and Hong Kong launched Asia Pacific's first commercial LTE networks in December 2010. In March, China Mobile announced plans to test LTE in seven cities over the course of the year, ahead of commercial launch in 2012. For the time being, the US continues to lead the way in 4G worldwide, with Verizon Wireless and MetroPCS both offering LTE services. This leading position may well be boosted if the AT&T and T-Mobile USA merger goes through: following the announcement, AT&T suggested that the tie-up would speed the rollout of LTE and drive associated socioeconomic benefits.

In order to drive economies of scale in LTE, interoperability between variants of the standard is vital. One of the most significant developments at MWC 2011 was the creation of the Global TD-LTE Initiative (GTI) by China Mobile, Bharti Airtel, Softbank Mobile, Vodafone, Clearwire, E-Plus and Aero2, who together serve 1.1 billion mobile customers worldwide.

This industry group aims to accelerate the development of LTE TDD technology and promote the convergence of LTE TDD and FDD network nodes, while broadening the ecosystem to include other TDD technologies, such as Japanese eXtended Global Platform (XGP) technology. This initiative should help increase the availability and capabilities of low-cost LTE devices, particularly in emerging markets in Asia. Moreover, it sends out a strong signal to the market that LTE TDD is a real international technology.[7]

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[6] "MWC 2011: femtocells and Wi-Fi are maturing, but is it all too much?" OVUM Opinion 18 February 2011; "Femtocell deployments more than double in 12 months with strong growth beyond the home," Informa Telecoms & Media, 15 February 2011, via www.femtoforum.org.

[7] "MWC 2011: Creation of GTI to boost LTE TDD," OVUM, 21 February 2011; "Global opportunities for LTE TDD," OVUM, 22 February 2011.

Smaller European markets moving faster on fiber

The latest FTTH Council rankings of European countries ranked by fiber penetration shows the likes of smaller European markets outpacing larger European markets, while Turkey enters the ranking system (based upon markets with more than 1% fiber penetration) for the first time. This follows the launch of Superonline, a subsidiary of leading mobile operator Turkcell.

At the FTTH conference held in Milan in February, the FTTH Council Europe revealed that the second half of 2010 saw an acceleration of buildings passed compared to the first six months of the year. Ethernet remains the technology of choice, while 63% of connections are fiber-to-the-building (FTTB). By the end of the year, there were nearly 3.9 million FTTH subscribers in Europe, representing an 18% increase over six months.

Fastest-growing European fiber markets[8]

Country	Penetration growth H2 2010	European ranking	Global ranking
Latvia	+4.4%	8	14
Portugal	+2.2%	11	17
Lithuania	+2.0%	1	6
Slovenia	+1.8%	4	9
Russia	+1.6%	6	12
Norway	+1.6%	3	8
Turkey	+1.3%	18	26

In fast-growing markets, major upgrade programs and infrastructure competition are driving growth. In Latvia, the incumbent's network now covers more than one in three households, while in Portugal, three operators are adding FTTH subscribers. Nearly all European incumbents are either planning or deploying FTTH, which is very much a strategic necessity given that alternative operators and cable players account for almost three-quarters of homes passed.

However, Europe still lags other countries and regions – there are 8.8 million fiber subscribers in North America, while Asia Pacific still accounts for the lion's share of global subscriptions, with a total of 45 million at the end of 2010.

8 "Creating a brighter future," FTTH Council Europe, 9 February 2011; Ernst & Young analysis.

Regulation

Spectrum release is a careful balancing act

The repurposing of existing spectrum and release of new spectrum is becoming ever more important as demand for mobile data services grows. Auctions in 2.6GHz and 800MHz are slated for many European countries this year, yet plenty of challenges remain as policy-makers look to avoid a "spectrum crunch" in mobile data.

Many in the industry believe that auctioning new bands at the same time represents the most efficient method of releasing spectrum, yet markets such as France and the Netherlands are already diverging from this approach. Meanwhile, not all operators can efficiently share spectrum in all circumstances, so spectrum caps have an important role to play in order to provide fair allocation.

The US mobile market has been quicker than many to release spectrum for mobile data: in 2008, a 700MHz spectrum auction generated US$19.6 billion in 2008. At the same time, a long-term, holistic approach has been top of mind, with President Obama underlining the need to free up 500MHz of wireless spectrum over the next decade. Although the European Commission (EC) has announced a five-year Radio Spectrum Policy Programme (RSPP) to set deadlines for freeing up 800Mhz of spectrum, the 2013–15 deadline could prove challenging for some national regulators.

In the UK, criticism has grown that evolution toward LTE technology is at risk unless spectrum release is prioritized as it has been in the US. In March, Ofcom proposed rules for the long-awaited auction of 800MHz and 2.6GHz spectrum, with the aim of starting the auction in Q1 2012. In order to guarantee that smaller operators are not outbid, "spectrum floors" have also been suggested. Earlier this year, the UK watchdog also decided to allow spectrum refarming — the repurposing of existing 900MHz and 1,800MHz spectrum for 3G services — in a move that will help bring mobile broadband to rural areas.

For all markets, rules on spectrum trading also need to be in place going forward in order to create a more flexible environment that is better suited to meeting future demand and enables the correction of preexisting disparities in spectrum allocation.

Spectrum approaches in selected European markets		
Country	Proposed auction dates	Notes
Belgium	2011: 2.1GHz, 2.6GHz	Auction of fourth 3G license announced for May 2011, to be immediately followed by 2.6gGHz auction. Still no details on 800 MHz process.
France	1H11: 800MHz	Government targeting US$2.8 billion proceeds and wants 90% population coverage by at least two operators within 15 years.
Netherlands	Late 2011/early 2012: 800MHz	2.6GHz process completed in 2010; 800MHz plan announced with two blocks reserved for a new entrant. Operators have been asked to re-tender for existing GSM frequencies (900/1,800/2,100)MHz as part of the refarming approach.
Spain	2Q11: 800MHz, 2.6GHz	Multiple auctions of 800MHz, 2.6GHz and 900/1,800MHz refarming. Two operators are set to relinquish some of their 900MHz spectrum and agree to offer national roaming on 3G at 900MHz.
United Kingdom	1Q12: 800MHz and 2.6GHz	Proposed introduction of spectrum caps. Regulatory consultation is to be completed by May 2011, after which the Government will announce the process.

Spectrum release is also a top issue for regulators and operators in Asia. In January, Hong Kong regulator OFTA announced its spectrum release plan in order to support mobile broadband growth. Despite setting a 2012 target for digital switchover, the regulator still has to clarify which part of spectrum freed up as a result can be used for 4G/LTE services.

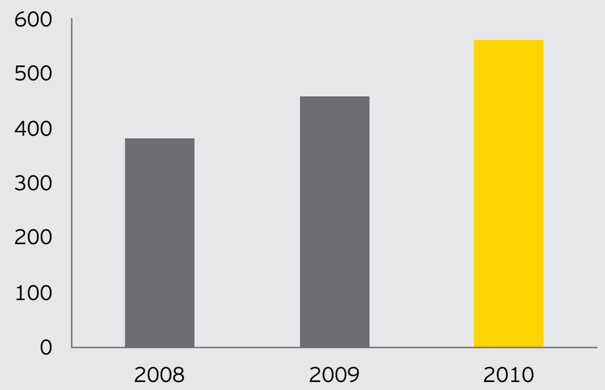
The situation in India is more contentious. Following a meeting with mobile operators in March, the country's telecom minister, Kapil Sibal, has called on the industry to drive greater consensus on spectrum allocations in the wake of revised recommendations by the Telecom Regulatory Authority of India issued in February. The Government has outlined a "100 day agenda," starting at the beginning of this year, to formulate national telecoms policy. Yet recommendations such as delinking spectrum awards from operator licenses, spectrum caps and back payments for existing spectrum holdings could yet prove divisive for operators, regulator and Government.

Regulatory certainty required in Southeast Asia

The pace of regulatory reform remains uneven across Southeast Asia. Mobile subscribers increased by 23% during 2010, but greater regulatory clarity is required to support strong growth rates in the region.

In Thailand, the need for full regulatory independence is pressing. The scrapping of last year's 3G auction due to doubts over the legitimacy of the National Telecommunications Commission means that the establishment of a new regulatory body cannot come too soon. Ongoing problems with the 3G auctioning process have led to the creation of a wholesale 3G network, yet uncertainty around the contract award for network rollout again threatens to derail progress.

Southeast Asia mobile subscriptions 2008–10[9]
Subscribers (m)



The establishment of a National Broadcasting and Telecommunications Commission (NBTC) by August 2011 is regarded as a positive route toward a stable business environment. The NBTC will have the authority to allocate new spectrum frequencies for 3G, with additional responsibility for concession payments between operators.

For some markets in the region, the high rate of service take-up creates new sector headaches. In Vietnam, 3G services are helping to maintain impressive growth rates: 47 million new connections were added overall in 2010.[10] While liberalization has certainly made Vietnam more attractive to foreign entrants, the increasing competition and declining profitability present new challenges. Although Vietnam's Ministry of Information and Communications (MIC) has drawn attention to the risks of overcrowding in the mobile market, the award of a ninth national license last year could be said to work against calls for more sustainable market structures.[11]

Perspectives on net neutrality

The net neutrality debate in the US continues to divide opinion. Proposals tabled by the Federal Communications Commission (FCC) in December last year gave service providers the flexibility to manage data on their systems to address network congestion and unwanted traffic, as long as such practices are publicly disclosed. However, Republican lawmakers have been opposed to these rules, while some US operators have challenged the FCC's rules in a federal appeals court.

In March, House of Representative lawmakers approved an amendment to a wider spending bill that stated that no funds could be used by the FCC to implement net neutrality policy. Democrats in the Senate later stressed that they would not take up the amended spending bill, but the House voted in favour of repealing the FCC rules in April.

Looking ahead, the Democrat-controlled Senate is unlikely to respond in the same way. The ongoing dispute shows that agreeing rules that encourage innovation, protect consumers and stimulate competition is proving far tougher than many had expected.

In Canada, opinions are diverging but with a greater focus on broadband pricing. The Canadian Radio-television and Telecommunications Commission (CRTC) has ruled that all ISPs must cap their packages rather than provide unlimited broadband. This move toward "usage-based billing" has drawn criticism from consumer groups and smaller service providers, and – following Government exhortation – the CRTC is reviewing the ruling.[12]

In contrast to North America, regulatory demands on net neutrality appear to be softening in Europe. In a November 2010 speech, the European Commissioner for the Digital Agenda, Neelie Kroes, outlined that a competitive internet market could deliver regulation-free net neutrality. More recently, the EU has announced that it would investigate whether ISPs are providing fair access to the internet. As such, the debate in Europe is more focused on ensuring that traffic management policies are reasonable and that operator practices are transparent to end users.

[9] The Mobile World; Ernst & Young analysis.
[10] The Mobile World.
[11] Business Monitor International.
[12] Joelle Tessler, "House Republicans seek to block Federal Communications Commission Internet rules," Associated Press Newswires, 18 February 2011, via Dow Jones Factiva; Andrew Mayeda, "Gov't won't accept CRTC's Internet billing stance; Clement says current usage-based ruling will not be implemented," *Edmonton Journal*, 4 February 2011, via Dow Jones Factiva.

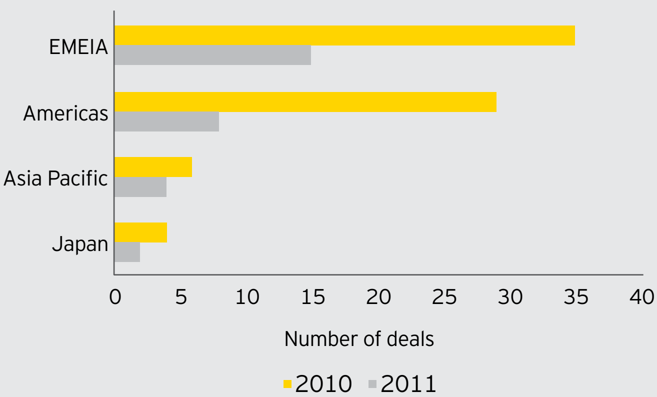
Mergers and acquisitions

Volume low but optimism high

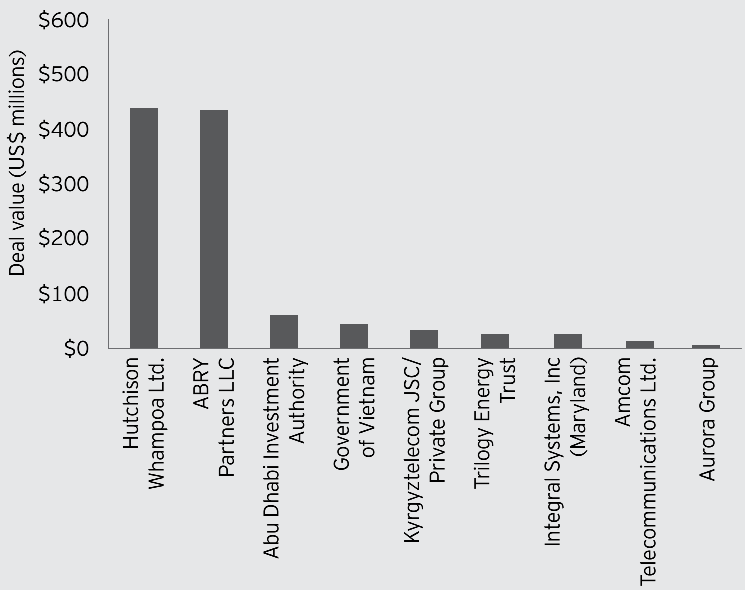
From 1 January 2011 to 8 March 2011, there were 29 global mergers and acquisitions, with a total deal value (where deal value is available) of US$2.4 billion, compared to 74 deals from 1 January 2010 to 8 March 2010, with a total deal value of US$30.7 billion. From 1 January 2011 to 8 March 2011, there were 10 cross-border deals. The US had the most deals, with six, followed by Russia with three. From 1 January 2010 to 8 March 2010, there were 19 cross-border deals. The US had the most deals, with 24, trailed by 11 in the United Kingdom and 6 in Russia. While there were nine private equity deals from 1 January 2010 to 8 March 2010, there were only six from 1 January 2011 to 8 March 2011.[13]

While deal volume and value are down year on year compared to the same period in 2010, there is still plenty of optimism in the sector. Speaking in February, Qatar's Qtel outlined opportunities for inorganic growth both in the Middle East and further afield, given that valuations are seen to be at more realistic levels.[14] India's fast-growing mobile market remains crowded and consolidation is perceived as inevitable; the leading service providers could help drive rationalization of the market.

Total number of global telecoms M&A by region



Leading M&A by deal value, 1 January 2011–8 March 2011



Asia Pacific M&A in focus

Advanced market operators in Asia are showing more optimism on video services. There has been a growing interest from operators investing in the video and broadcasting business to broaden their service portfolio. A significant cross-border investment came from Japan's Softbank in the form of a 35% stake in Chinese TV player Synacast. The Chinese platform, launched in 2004, has 200 million users and produces programming for 120 TV channels.

In-market consolidation continued to take place in other parts of Asia as some operators divest to focus on their core businesses, yet footprint growth is also apparent. The most striking example is that of Vietnam's Viettel boldly entering new markets. The military-backed player has bid for Peru's fourth mobile operator license in the 1.9GHz band. This follows a deal struck last year to acquire 70% of Haiti's state carrier, while the operator is also present in Bangladesh, Cambodia, Laos and Mozambique as it targets 40% revenue growth in 2011.

Nor are Viettel's ambitions limited to the international telecoms sector: in March, the company revealed that other sectors it will focus on include offshore investments, telecoms equipment, IT and real estate.[15]

Major transaction deals for telecoms operators in Asia, November 2010–February 2011

Date	Bidder	Target	Stake (US$)	Business nature
9 Feb 11	KT Corp (Korea)	SkyLife (Korea)	14.5% (112 million)	Satellite broadcasting
4 Feb 11	Softbank Corp (Japan)	Synacast Corp (China)	35% (244 million)	Online TV provider
31 Jan 11	Viettel (Vietnam)	Peru's fourth mobile operating license	27 million	Mobile license
1 Jan 11	M2 Telecom (Australia)	Clear Communications (Australia)	100% (25 million)	Wireless broadband provider
31 Dec 10	True Corp (Thailand)	Hutchison Wireless Multimedia Holdings (Thailand)	92.5% (208 million)	CDMA mobile assets
30 Dec 10	Vega Telecom (Philippines)	Eastern Telecom Philippines	40%	Data and internet service provider
17 Nov 10	CPCNet (Hong Kong)	China Enterprise Communications (China)	49% (24 million)	VAS and integrated IT solutions provider

13 Factset Mergstat, accessed 8 March 2011.

14 "Qtel CEO identifies acquisition opportunities in the Middle East," Total Telecom, 17 February 2011.

15 "Viettel expands to realty sector," Vietnam Business News, 5 March 2011.

Notes

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Our recent thought leadership

Mobile money 2011 — Mobility redefined

As the smartphone becomes more central to what we do day to day, mobile and electronic payments are transforming the payment landscape. How can telco operators define the areas where they can add value, whether directly to the end user or as an intermediary elsewhere in the value chain?

To receive a copy of a report or to discuss these issues with an Ernst & Young telecoms professional in your region, please contact the Global Telecommunications Center, globaltelecommunicationscenter@uk.ey.com

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