

Mobile internet: blessing or curse?



- Mobile internet revenue growth could stabilise operators' top lines from late 2010
- To protect margins, operators need to encourage a more balanced smartphone market
- Despite huge volume growth, capex should remain under control thanks to HSPA technologies and traffic offload to fixed-line networks
- We do not buy the leader-takes-all theory and expect network sharing to accelerate

Contacts

Exane BNP Paribas

Antoine Pradayrol

antoine.pradayrol@exanebnpparibas.com

Exane BNP Paribas, London: +44 20 7039 9489

ARTHUR D. LITTLE

Didier Levy

levy.didier@adlittle.com

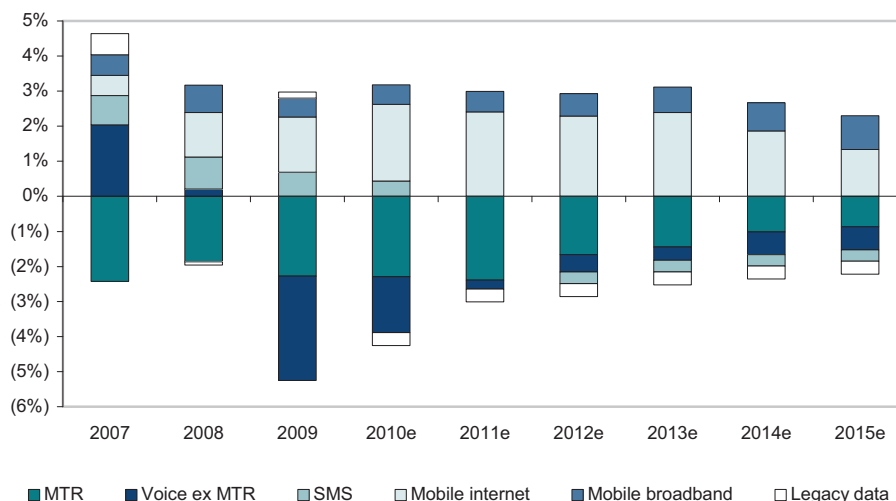
Arthur D. Little, Paris: +33 1 55 74 29 62

Executive summary

This ninth edition of the annual Exane BNP Paribas-Arthur D. Little joint report focuses on European mobile operators: Can they return to growth? If so at what cost? In preparing the report, we have conducted 87 meetings with 75 organisations in the telecoms-media-technology arena operating across 12 countries. We have drawn five main conclusions:

- 1) Mobile operators' revenues could stabilise from late 2010 thanks to the accelerated take-up of new data services, particularly mobile internet access on smartphones.
- 2) Smartphone subsidies will put pressure on EBITDA margins in 2010–2011. This "margin investment" should create value in the mid term, in particular if the smartphone market becomes more balanced. Operators need iPhone alternatives to succeed, in particular Android-based handsets: this is likely, but not yet assured.
- 3) The capex implications of the growth in mobile data traffic will vary from country to country. However, European carriers should be able to cope, with average capex/sales rising to only 12% by 2015e, from 10% today. We are confident for three reasons: we expect mobile broadband to develop mostly as a complement to fixed broadband rather than a substitute; until 2013, the best technology choice for most operators is HSPA+ rather than LTE; traffic offload through fixed access points (WiFi & femtocells) will help.
- 4) We do not believe that mobile data will revitalise operators' pricing power because differentiation will be very difficult on services and will prove elusive on networks. We therefore expect OpFCF and ROCE to decline slowly.
- 5) Alternative scenarios with stronger demand for data could see long-term value rising but would lead to a dip in OpFCF in 2010–2011. Alternative scenarios with lower data demand and/or weaker voice outlook would lead to a long term OpFCF decline.

Figure 1: Contribution of different revenue streams to service revenue growth



Source: Arthur D. Little, Exane BNP Paribas

Growth in mobile data can stabilise the sector's top-line

Voice revenues should continue to decline beyond the recession, in our view, due to regulation (mobile termination rates), competition and (over time) mobile voice over IP (VoIP). Nevertheless, we expect European mobile revenues to stabilise as of late 2010:

- The main driver will be mobile internet access on smartphones. We expect this market to accelerate in 2010 and forecast mobile internet revenues of EUR4.5/month per capita by 2015e, versus EUR1 today. This assumes a smartphone penetration rate of some 40% by 2012e and 60% by 2015e, a data bundle attachment rate of 75% and incremental ARPU of EUR8/month in 2015e.
- Mobile broadband (wireless internet access for PCs) will also grow but at a lower rate. Although this market is of roughly the same size as mobile internet access today, we estimate that its potential is 60% less (EUR1.8/month per capita in 2015e). We do not think that mobile broadband can profitably achieve wide scale substitution of mass-market fixed broadband. It must be, and will be, positioned mainly as a complement.

Smartphones: operators need competition to the iPhone

The subsidies necessary over the next three years to lift smartphone sales from 20% of handsets sold to 50% will put pressure on margins: a 10% increase in the proportion of smartphones as a percentage of handsets sold automatically shaves 130bp from EBITDA margins. Nevertheless, we think this is the best route for operators under certain conditions:

- First, they need competition to the iPhone to emerge. The end of iPhone exclusivity means more value for Apple but less for operators. Competing handsets will abound, based mainly on three operating systems: Android (notably HTC, Motorola, Samsung and Sony Ericsson), Nokia and RIM. However, the extent of their success remains to be seen; hence the uncertainty on average smartphone selling prices (ASP) and subsidies in the coming years.
- Second, like their US peers, European operators need to tie data plan subscriptions more closely to smartphone sales, to ensure that the subsidy is not wasted. They also need to push differentiated pricing to monetise customers' willingness to pay for higher usage.

To make this happen, operators need help from other players along the value chain, in particular handset makers to roll out exciting devices, and software players to develop attractive applications.

Mobile broadband: reboot to profitable mode

In our 2008 report "In the eye of the telecom-media storm", we forecasted strong growth in mobile broadband in Europe. This has already become a mass-market product with penetration above 10% in a few European countries notably Austria, Sweden, Portugal and Finland. But given the very low prices, discounts on laptops and high traffic per user the related offers risk destroying value. Operators recognise this. Fixed networks will generally remain faster and more efficient than mobile for broadband access.

We therefore expect mobile broadband to take a new direction and focus on complementary usage rather than substitution. Although this will lead to low ARPU (prepaid offers, fixed + mobile broadband bundles) and relatively limited penetration (25% by 2015e versus 5% in 2009), profitability will be better.—notably thanks to tiered pricing (different prices for different levels of usage), which should become common.

Data traffic explosion: to be monitored closely but there are solutions

Capex is a big question as mobile data traffic is expected to multiply by 32 between 2009 and 2015. This assumes traffic per user (AUPU) of 1GB/month for smartphones (versus 0.15GB today) and 5GB for mobile broadband (versus 1.1GB today). There are a few alarming signs: some operators in very competitive mobile broadband markets say that mobile broadband destroys value; O2 UK and AT&T experienced capacity issues due to the iPhone; AT&T announced a 30% increase in mobile capex in 2010.

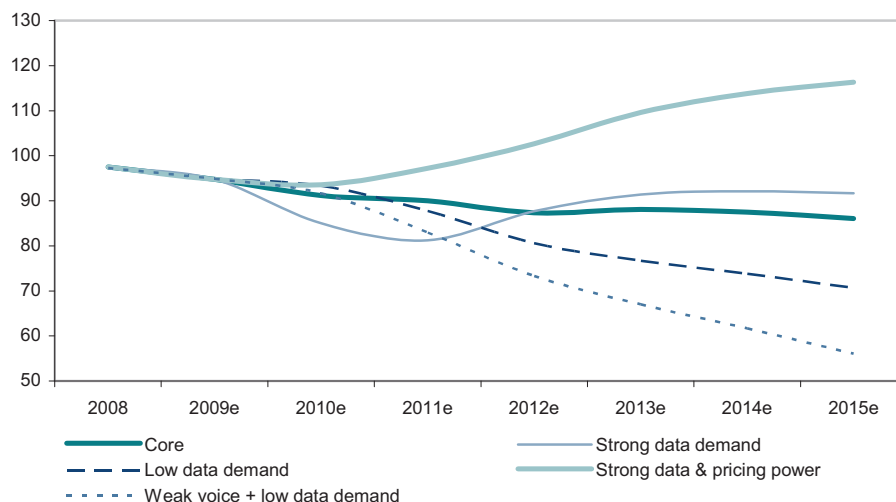
The capex implications will vary strongly by country given the large differences in traffic growth. However, in our core scenario we calculate that the capex required for capacity enhancements in large cities represent only 1–4% of operators’ revenues over 2009–2015e. This is consistent with an assumption of sector capex/sales rising from 10% to a reassuring level of 12% by 2015e, and essentially stems from two factors:

- HSPA+ technology is powerful and relatively inexpensive. Based on our detailed proprietary capacity capex model, we estimate that the cost per Gbyte will be divided by five compared to the current HSPA R6. We also conclude that most operators do not need LTE for several years (2013): the rollout of LTE in Sweden in 2010 should remain the exception. Since there is no rush for LTE, spectrum is a manageable issue.
- As we predicted in our 2008 report, operators will increasingly offload mobile data traffic onto fixed broadband networks, through WiFi and femtocells. Offloading 30% of the traffic would boost the sector’s long term OpFCF by 4%.

Scenario analysis: balancing the short term and the long term

Uncertainties abound on voice (usage, pricing, regulation, impact of VoIP) and data (penetration of smartphones and mobile broadband, ARPU, subsidies, traffic per customer). The implications for revenues, margins and capex are considerable.

Figure 2: Mobile operators’ OpFCF in different scenarios (OpFCF index)



Source: Arthur D. Little, Exane BNP Paribas

Our detailed analysis of these factors in different scenarios suggests that most operators would find it virtually impossible to achieve higher OpFCF in either the long- or the short term.

- The scenarios with more demand for data products could lead to more revenue growth and higher long term OpFCF. However, they would also lead to a significant drop in OpFCF in 2010–2011 owing to higher commercial costs and capex.
- The only type of scenario leading to both more revenue and OpFCF growth in the long term and no drop in OpFCF in the short term corresponds to a case in which operators would have strong pricing power i.e., data ARPUs would be higher than in the core scenario while usage would be lower. This is unlikely in our view.
- Finally the more negative scenarios are those with either weak demand for data (leading to lower revenues but also potentially more commercial efforts by operators to sell data products) and/or with a continued steep decline in voice.

We do not buy the leaders-take-all theory

Some observers expect the advent of mobile data to enable leading mobile operators to regain ground at the expense of challengers. We disagree, for two reasons.

- On the network side, some challengers are temporarily at a disadvantage in terms of network build-out. However, we do not think that challengers will be left behind. First, we expect a rapid rise in network sharing as this is a good way for everyone to reduce network costs; it will, however, undermine the natural advantage of leaders when it comes to networks. Second, more and more traffic will be offloaded onto WiFi and femtocells. This option is open to everyone, but integrated fixed & mobile players will have an edge over mobile-only operators.
- On the services side, we believe that operators will find it difficult to differentiate in a meaningful manner as the ‘walled garden’ model is strongly weakened.

Large national differences

There are national differences at all levels: opportunities in mobile internet and mobile broadband; risks associated with pricing pressure on voice; mobile network capex; competition. Our conclusions on each market take into account the balance of the opportunities and risks:

- In the medium term, the most attractive markets are Germany (stabilising market, limited incremental competition risks) and Spain (mobile data opportunity; limited capex risk; stable competitive environment).
- The riskiest markets are the UK (significant capex risk, very low visibility on the competitive outlook), the Netherlands (limited revenue potential, risk of mounting competition), France (revenue growth potential but risk of rising competition with the fourth licence) and, to a lesser extent, Belgium (risk of increasing competition with the arrival of fourth player, sharp MTR cuts).

Figure 3: Assessing the opportunities and risks in different countries

Country	Revenue potential*	Capex risk	Competition	Total
UK	+	--	-	-
Netherlands	=	-	-	-
France	+	=	-	=
Belgium	+	=	-	=
Portugal	++	--	-	=
Sweden	++	--	-	=
Italy	+	=	=	+
Austria	++	--	+	+
Germany	++	=	=	+
Spain	+	-	+	+

* The mostly positive scores on revenue potential do not mean that we expect revenues to grow in these markets but that we expect mobile internet and/or mobile broadband growth to lead to improving revenue trends.

Source: Arthur D. Little, Exane BNP Paribas

Acknowledgments

We want to thank everyone from outside Exane BNP Paribas and Arthur D. Little who contributed to this project. We would particularly like to thank all those that we interviewed at the companies listed below, including fixed and mobile operators, service providers, retailers, internet companies, media groups, advertising agencies, software developers, equipment manufacturers and regulators.

Telecom operators and retailers

Avenir Telecom, Belgacom, Bouygues Telecom, BT Wholesale, Cablecom, Carphone Warehouse, Deutsche Telekom, E-Plus, Easynet, Fastweb, H3G Austria, H3G Italy, Iliad, KPN, KPN Spain, Mobilkom Austria, Mobistar, Numericable Belgium, O2 Germany, O2 UK, Oni Communications, Orange Austria, Orange France, Orange Spain, Orange UK, SFR, Sonaecom/Optimus, Sunrise, Swisscom, T-Mobile Austria, T-Mobile CZ, T-Mobile Germany, T-Mobile NL, T-Mobile SK, T-Mobile UK, Tele2, Telecom Italia, Telenet, Telenor, TeliaSonera, UPC Austria, Virgin Media, Vodafone Germany, Vodafone NL, Vodafone Portugal, Vodafone Spain, Ziggo.

Media and internet

Buongiorno, Dada LLC, Disney Europe, Google, M6, Microsoft, Pages Jaunes, Royal Mail, RTBF, Skype, TF1, UPC, VRT, Walt Disney, Yell.

Systems

Alcatel-Lucent, Cisco Portugal, Ericsson, Nokia, Nokia Siemens Networks, Novabase, Qualcomm, RCS.

Regulators and other

Confidential regulator, GSMA, Holtzbrinck Venture, Ofcom, TIME Equity Partners.

Contents

Can mobile return to growth? At what cost? _____	9
Revenue decline in 2009 but significant opex and capex cuts _____	11
We expect accelerating data growth... _____	12
...to offset the voice decline due to regulation & mobile VoIP _____	16
Mobile Internet: large opportunity in access _____	22
Accelerating smartphone penetration is almost a given _____	23
ARPU uplift: more customers are now ready to pay _____	28
Smartphones pressure margins but create value – iPhone becomes a risk – Android the main opportunity _____	33
Services & apps: key for uptake, not for operators' revenues _____	39
An increasingly crowded value chain _____	44
Operators should focus on a smart-pipe approach _____	48
Mobile broadband: reboot to profitable mode _____	54
Forecasting 2015e revenues of EUR8bn _____	54
Mobile broadband has taken off in several countries _____	56
Fixed broadband substitution should remain limited _____	57
Blended ARPU below EUR10/month in the mid term _____	64
Discounts on laptops: just for a small part of the market _____	66
Data traffic: to be monitored closely but there are solutions _____	68
Huge traffic growth from a very low base _____	69
Unit revenues expected to decline strongly _____	73
What is the cost of a Gbyte? _____	75
No need for a rapid LTE rollout in most countries _____	78
Core scenario consistent with mild capex increase, but sensitivity is high to faster traffic growth _____	81
Spectrum: EUR10–15bn over 2010–2011 – manageable _____	84
Traffic offloading to fixed-line becomes very popular _____	86
We do not buy the “leaders take all” theory _____	89
Large country differences _____	92
Glossary _____	101
Arthur D. Little presentation _____	103
Exane presentation _____	103

Arthur D. Little presentation

Founded in 1886 in Boston by a pioneer chemist and MIT professor, Arthur D. Little was the world's first professional management consulting firm. Ever since its creation, it has proved able to evolve and adapt with a constant focus on answering our clients' needs and challenges and creating true partnerships with business leaders.

Arthur D Little is a global leader in management consultancy, linking strategy, innovation and technology with deep industry knowledge. We offer our clients sustainable solutions to their most complex business problems.

The firm has over 30 offices worldwide. With its partners Altran Technologies, the firm has access to a network of over 16.000 professionals. Arthur D. Little's global leadership in management consulting is also demonstrated by numerous standard-setting publications.

Arthur D. Little completes over 2000 projects every year serving the world's leading companies. This rate of activity has enabled Arthur D. Little to gain strong experience and a well established know-how which is highly valued by our clients.

The pioneer spirit of its founder is still a strong feature of Arthur D. Little today. Arthur D Little has indeed a collaborative client engagement style, exceptional people and a firm-wide commitment to quality and integrity. Arthur D. Little people bring curiosity, creativity, integrity and analytical rigor to every job, which means fast and dramatic performance improvements. Our constant objective is to create value for our clients, placing innovation at the heart of our recommendations and fostering the use of new technologies and next generation processes.

Arthur D. Little teams work both with major multinational groups and smaller growth driven companies. The firm has conducted projects with many of Fortune 100 companies. The quality of our work is rewarded by our client's loyalty: approximately 70% of our worldwide revenue is generated by projects for companies that have been our clients for over three years.

With more than 500 professionals, the TIME practice (Telecommunications, Information, Media and Electronics) has unrivalled expertise in strategic and technological assistance of leading telecom and media players. Arthur D. Little helps major telecom operators, government agencies, equipment suppliers, Pay Television operators, Free to air channels and major internet players in the completion of their most sensitive projects. The practice has gained a true and precise knowledge of the sector and of its main players.

During the last few months, Arthur D. Little has assisted several major telecom, media and internet players in the world with their strategic plan, new technologies and innovative services.

For further information consult the Arthur D. Little website at www.adl.com.

Exane presentation

Founded in 1990, Exane is an investment company specialising in three businesses:

- Cash Equities: Under the brand name Exane BNP Paribas, Exane provides institutional investors with a range of services, such as research, sale and execution on European equities;
- Equity Derivatives: Exane Derivatives has built a robust structured products franchise, based on its longstanding leadership in European convertible bonds and options;
- Asset Management: Exane Asset Management is a leading long/short equity fund manager in France. Its expertise also includes structured product management.

Since 2004, the partnership agreement between Exane and BNP Paribas revolves around three core elements:

- An operational partnership in European cash equities where BNP Paribas conferred exclusivity on secondary equity brokerage and the distribution of primary market activity to Exane under the Exane BNP Paribas brand;
- A balance sheet partnership providing financing and support for our rating;
- A capital partnership uniting the strength of BNP Paribas with the independence of Exane.

Exane works primarily with institutional clients worldwide (pension funds, fund managers for banks and insurers and hedge funds), and markets its derivatives products to a broader pool of clients comprising private asset managers and investment advisors.

Exane's 880-strong workforce operates from offices in Paris, London, Frankfurt, Geneva, Milan, New York, Singapore and Zurich.

Exane BNP Paribas equity research team covers more than 530 European companies. UK companies represent the biggest part of our coverage universe (27% of covered market cap), followed by France (20%) and Germany (12%).

Our research receives regular acclaim in leading industry surveys. Exane BNP Paribas was voted No.10 in the 2010 All Europe Research Team Institutional Investor survey and No.8 for Pan-European Equity Sector Research in the 2009 Pan-European Extel survey.

For further information, log on to our website at www.exane.com

Analyst location

As per contact details, analysts are based in the following locations: Paris, France for telephone numbers commencing +33; London, UK +44; Milan, Italy +39; Frankfurt, Germany +49; Geneva, Switzerland +41; New York, USA +1; Singapore +65; Zurich, Switzerland +41.

Rating definitions

Stock Rating (vs Sector)

Outperform: The stock is expected to outperform the industry large-cap coverage universe over a 12-month investment horizon.

Neutral: The stock is expected to perform in line with the industry large-cap coverage universe over a 12-month investment horizon.

Underperform: The stock is expected to underperform the industry large-cap coverage universe over a 12-month investment horizon.

Sector Rating (vs Market)

Outperform: The sector is expected to outperform the DJ STOXX50 over a 12-month investment horizon.

Neutral: The sector is expected to perform in line with the DJ STOXX50 over a 12-month investment horizon.

Underperform: The sector is expected to underperform the DJ STOXX50 over a 12-month investment horizon.

Key ideas

BUY: The stock is expected to deliver an absolute return in excess of 30% over the next two years. Exane BNP Paribas' Key Ideas Buy List comprises selected stocks that meet this criterion.

Distribution of Exane BNP Paribas' equity recommendations

As at 13/01/2010 Exane BNP Paribas covered 508 stocks. The stocks that, for regulatory reasons, are not accorded a rating by Exane BNP Paribas are excluded from these statistics. For regulatory reasons, our ratings of Outperform, Neutral and Underperform correspond respectively to Buy, Hold and Sell; the underlying signification is, however, different as our ratings are relative to the sector.

37% of stocks covered by Exane BNP Paribas were rated Outperform. During the last 12 months, Exane acted as distributor for BNP Paribas on the 2% of stocks with this rating for which BNP Paribas acted as manager or co-manager on a public offering. BNP Paribas provided investment banking services to 14% of the companies accorded this rating*.

38% of stocks covered by Exane BNP Paribas were rated Neutral. During the last 12 months, Exane acted as distributor for BNP Paribas on the 1% of stocks with this rating for which BNP Paribas acted as manager or co-manager on a public offering. BNP Paribas provided investment banking services to 7% of the companies accorded this rating*.

25% of stocks covered by Exane BNP Paribas were rated Underperform. During the last 12 months, Exane acted as distributor for BNP Paribas on the 1% of stocks with this rating for which BNP Paribas acted as manager or co-manager on a public offering. BNP Paribas provided investment banking services to 7% of the companies accorded this rating*.

* Exane is independent from BNP Paribas. Nevertheless, in order to maintain absolute transparency, we include in this category transactions carried out by BNP Paribas independently from Exane. For the purpose of clarity, we have excluded fixed income transactions carried out by BNP Paribas.

Commitment of transparency on potential conflicts of interest

Complete disclosures, please see www.exane.com/compliance

Exane

Pursuant to Directive 2003/125/CE and NASD Rule 2711(h)

Unless specified, Exane is unaware of significant conflicts of interest with companies mentioned in this report.

Company	Investment banking	Distributor	Liquidity provider	Corporate links	Analyst's personal interest	Equity stake US Law	Equity stake French Law	Amended after disclosure to company	Additional material conflicts
Eutelsat	NO	NO	YES	NO	NO	NO	NO	NO	NO
Iliad	NO	NO	YES	NO	NO	NO	NO	NO	NO

Source: Exane

See www.exane.com/disclosureequitiesuk for details

BNP Paribas

Exane is independent of BNP Paribas (BNPP) and the agreement between the two companies is structured to guarantee the independence of Exane's research, published under the brand name "Exane BNP Paribas". Nevertheless, to respect a principle of transparency, we separately identify potential conflicts of interest with BNPP regarding the company/(ies) covered by this research document.

Potential conflicts of interest:

Bouygues: As of 26/02/2010 BNPP owns 1.47% of BOUYGUES SA

Cable & Wireless: BNP acted as joint bookrunner for the convertible bonds issue (11/2009)

Source: BNP Paribas

Arthur D. Little

« This report is authored by Exane and draws upon research and analysis of both Exane and Arthur D. Little. The conclusions are the results of the aggregation of public materials and information provided in the course of recent interviews with a sample of industry players. At no point in the development of this report was access given to the research team to client confidential information held by Arthur D. Little as a result of our recent and ongoing consulting work in this area. Use of this report by any third party for whatever purpose should not, and does not, absolve such third party from using due diligence in verifying the report's contents.

Any use which a third party makes of this document, or any reliance on it, or decisions to be made based on it, are the responsibility of such third party. Arthur D. Little, its affiliates and representatives accept no duty of care or liability of any kind whatsoever to any such third party, and no responsibility for damages, if any, suffered by any third party as a result of decisions made, or not made, or actions taken, or not taken, based on this document.

Arthur D. Little does not make investment recommendations, in this report or otherwise, and nothing in this report should be interpreted as an opinion by Arthur D. Little either on market forecasts or on the prospects of specific companies.

Exane research is also available on the website (www.exanebnpparibas-equities.com) as well as on Bloomberg (EXAA), First Call and Reuters.

Important notice: Please refer to our complete disclosure notice available on www.exane.com/compliance

This research is produced by EXANE SA and / or EXANE LTD ("EXANE") on behalf of themselves. EXANE SA is regulated by the "Autorité des Marchés Financiers" (AMF) and EXANE LTD is regulated by the "Financial Services Authority" (FSA). In accordance with the requirements of FSA COB 7.16.7R and associated guidances "Exane's policy for managing conflicts of interest in relation to investment research" is published on Exane's web site (www.exane.com). Exane also follows the guidelines described in the code of conduct of the AFEI (Association Francaise des Entreprises d'Investissement) on "managing conflicts of interest in the field of investment research". This code of conduct is available on Exane's web site (www.exane.com).

This research is solely for the private information of the recipients. All information contained in this research report has been compiled from sources believed to be reliable. However, no representation or warranty, express or implied, is made with respect to the completeness or accuracy of its contents, and it is not to be relied upon as such. Opinions contained in this research report represent Exane's current opinions on the date of the report only. Exane is not soliciting an action based upon it, and under no circumstances is it to be used or considered as an offer to sell, or a solicitation of any offer to buy.

While Exane endeavours to update its research reports from time to time, there may be legal and/or other reasons why Exane cannot do so and, accordingly, Exane disclaims any obligation to do so.

This report is provided solely for the information of professional investors who are expected to make their own investment decisions without undue reliance on this report and Exane accepts no liability whatsoever for any direct or consequential loss arising from any use of this report or its contents.

This report may not be reproduced, distributed or published by any recipient for any purpose. Any United States person wishing to obtain further information or to effect a transaction in any security discussed in this report should do so only through Exane Inc., which has distributed this report in the United States and, subject to the above, accepts responsibility for its contents.

BNP PARIBAS has acquired an interest in VERNER INVESTISSEMENTS the parent company of EXANE. VERNER INVESTISSEMENTS is controlled by the management of EXANE. BNP PARIBAS's voting rights as a shareholder of VERNER INVESTISSEMENTS will be limited to 40% of overall voting rights of VERNER INVESTISSEMENTS.

Arthur D. Little France

51, rue François 1er
75008 Paris
France
Tel: (+33) 1 55 74 29 00
Fax: (+33) 1 55 74 28 03

Arthur D. Little Austria

Schottengasse 1
AT-1010 Wien
Austria
Tel: (+43) 1 515 41 0
Fax: (+43) 1 515 41 23

Arthur D. Little Belgium

Avenue de Tervurenlaan, 270
1150 Brussels
Belgium
Tel: (+32) 2 761 72 00
Fax: (+32) 2 762 07 58

Arthur D. Little Czech Republic

Danube House
Karolinska 650/1
186 00 Praha 8
Czech Republic
Tel: (+420) 224 941 303
Fax: (+420) 224 941 302

Arthur D. Little Germany

Bernhard-Wicki-Str. 3
D-80636 Munich
Germany
Tel: (+49) 89 38088 700
Fax: (+49) 89 38088 750

Arthur D. Little Italy

Via Sardegna, 40
00187 Rome
Italy
Tel: (+39) 06 68 88 2 1
Fax: (+39) 06 68 88 23 22

Arthur D. Little Netherlands

Strawinskylaan 10
1077 XZ Amsterdam
The Netherlands
Tel: (+31) 1 02 01 88 11
Fax: (+31) 1 02 33 16 13

Arthur D. Little Portugal

Edifício MiraLisboa
Av. Fontes Pereira de Melo, nº 21 - 8º
1050-116 Lisboa
Portugal
Tel: (+351) 210 091 500
Fax: (+351) 210 091 599

Arthur D. Little Spain

Calle Velázquez, 50 - 1ª Planta
28001 Madrid
Spain
Tel: (+34) 91 702 7400
Fax: (+34) 91 702 7499

Arthur D. Little Sweden

Kungsgatan 12-14
S-107 25 Stockholm
Sweden
Tel: (+46) 8 50 30 65 00
Fax: (+46) 8 50 30 65 02

Arthur D. Little Switzerland

Seestrasse 513
8038 Zurich
Switzerland
Tel: (+41) 44 722 89 89
Fax: (+41) 44 722 89 99

Arthur D. Little UK

Byron House
7-9 St James's Street
London SW1A 1EE
United Kingdom
Tel: (+44) 207 766 0200
Fax: (+44) 207 766 0201

Arthur D. Little USA

125 High Street
High Street Tower 28th Floor
Boston, MA 02110
USA
Tel: (+1) 617 532 9550
Fax: (+1) 617 261 6630

Arthur D. Little China

Suite 1601, Tower 1, Grand Gateway Plaza
No. 1 Hong Qiao Road
Shanghai, 200030
People's Republic of China
Tel: (+86) 21 6477 8866
Fax: (+86) 21 6447 0506

Arthur D. Little India

A - 1, First Floor, Sector - 10
Noida, UP 201301
India
Tel: (+91) 120 4357 061
Fax: (+91) 120 4357 064

Arthur D. Little Japan

Toranomon 37 Mori Building
3-5-1 Toranomon, Minato-ku
Tokyo 105-0001
Japan
Tel: (+81) 3 3436 2196
Fax: (+81) 3 3436 2197

Arthur D. Little Korea

9th Floor Leema Building,
146-1 Susong-dong, Chongro-ku,
Seoul, Korea 110-755
Tel: (+82) 2 720 2040
Fax: (+82) 2 720 2100

Arthur D. Little Malaysia

Office Suite, 19-13-2
Level 13, UOA Centre
19 Jalan Pinang
50450 Kuala Lumpur
Malaysia
Tel: (+60) 3 2164 6063
Fax: (+60) 3 2164 6067

Arthur D. Little Middle East

Office 606, 6th floor, Arjaan Tower
Al Sufouh Complex, Al Sufouh Road
Dubai Media City
PO Box 112687
Dubai, United Arab Emirates
Tel: (+971) 4 433 5401
Fax: (+971) 4 429 0679

www.adlittle.com

PARIS

Exane S.A.
16 Avenue Matignon
75008 Paris
France
Tel: (+33) 1 44 95 40 00
Fax: (+33) 1 44 95 40 01

FRANKFURT

Branch of Exane S.A.
Bockenheimer Landstrasse 23
60325 Frankfurt am Main
Germany
Tel: (+49) 69 42 72 97 300
Fax: (+49) 69 42 72 97 301

GENEVA

Branch of Exane S.A.
Rue du Rhône 80
1204 Geneva
Switzerland
Tel: (+41) 22 718 65 65
Fax: (+41) 22 718 65 00

LONDON

Exane Ltd
20 St. James's Street
London SW1A 1ES
UK
Tel: (+44) 207 039 9400
Fax: (+44) 207 039 9432 / 9433

MILAN

Branch of Exane S.A.
Via dei Bossi 4
20121 Milan
Italy
Tel: (+39) 02 89 63 17 13
Fax: (+39) 02 89 63 17 01

NEW YORK

Exane Inc.
640 Fifth Avenue
15th Floor
New York, NY 10019
USA
Tel: (+1) 212 634 4990
Fax: (+1) 212 634 5171

SINGAPORE

Branch of Exane Ltd
6 Battery Road #39-09
Singapore 049909
Tel: (+65) 6212 9055
Fax: (+65) 6212 9082

ZURICH

Representative office of Exane S.A.
Lintheschergasse 12
8001 Zurich
Switzerland
Tel: (+41) 1 228 66 00
Fax: (+41) 1 228 66 40

Front cover image copyright: D-BASE
Supplied by Getty Images