

INVESTMENT BULLETIN

"Consumer Electronics Show 2012 Las Vegas, USA"

10th February 2012

About the Investment Bulletin:

- It is issued as a marketing communication.
- In its preparation, we are not obliged by FSA rules to comply with legal requirements designed to promote the independence of investment research; which include a prohibition on dealing ahead of the dissemination of investment research.
- It is not intended to address the circumstances of any particular individual or entity and it does not constitute a personal recommendation.
- The opinions and suppositions contained within the Investment Bulletin are those of the author and are held at the time of issue.
- All information contained in it is believed to be correct at the time of issue but cannot be guaranteed.
- Prices quoted in this newsletter are indicative market prices only. Prices are taken at the times stated.
- The main assumptions we have used are included in the text.
- The bulletin has not been disclosed to any of the companies referred to herein
- The bulletin will be issued on a monthly basis. However, we are not obliged to provide any updates on any of the investments previously recommended. Due to market conditions any opinions and recommendations included in this document may change without notice at any time after the document is issued.

Risk Warning - Please be aware that the capital value of, and the income derived, from any market investment can go down as well as up. Investors may not get back the original amount invested. Significant losses can be made even on 'low risk' investments. Past performance is not necessarily a guide to future performance. If you are not prepared to accept these risks to your capital please do not invest in the securities referred to herein.

Conflicting Interests - Conflicts of interest may affect the objectivity, independence and impartiality of this newsletter. Hargreave Hale Limited, its officers, employees, representatives, associates and directors may have already acted on the information contained in this newsletter and may have previously bought or sold, or may have a material shareholding or other interest in any of the mentioned investments. They may have provided significant advice or investment services in relation to these companies in the last 12 months.

Please read the important information at the back of this newsletter. More information is available on our website www.hargreave-hale.co.uk. Hard copies are available on request at any of our offices, for readers who do not have internet access.

Registered and settlement office: 9-11 Neptune Court, Hallam Way, Blackpool FY4 5LZ

Telephone: +44 (0) 1253 754700, www.hargreave-hale.co.uk

Member and SETS Participant of the London Stock Exchange, Member of the PLUS Market, Member of APCIMS

Authorised and Regulated by the Financial Services Authority, no 209741

Incorporated in England and Wales, Company Number 3146580. Telephone calls may be recorded.

HARGREAVEHALE

Ordinarily in the preparation of the monthly Investment Bulletin we try to restrict access to the text so that all readers receive our recommendations at the same time. We also prevent our staff from buying into the share we recommend, in order to our clients the first opportunity to invest.

This month is slightly different. In January, one of our researchers visited the Consumer Electronics Show in Las Vegas, looking for investment opportunities. Guy Feld is primarily involved in making investment recommendations to the team who manage our institutional funds such as the unit trusts operated by Marlborough Fund Managers. Guy has already provided us with feedback from his trip. He has also written an article for Growth Company Investor magazine. However, we felt that in this instance our readers would be very interested in his thoughts and observations. Hence our staff and some of our clients may already have invested in the below mentioned stocks. This article should not be considered as a recommendation to buy, sell or hold any of the companies mentioned below.

'Everyone and everything will be connected – all of the time'. This for me was the overriding message from the 2012 Consumer Electronics Show in Las Vegas and was proudly proclaimed by Hans Vestberg, the CEO of Ericsson, the world's largest telecommunications equipment maker. Mobile devices and their interaction on global networks have changed how we live and work out of all proportion. However, the revolution is only beginning, and there is much excitement now about 'the Cloud' – referring to the internet as a storage and delivery resource for all sorts of content and services. Put simply, the vision is that the consumer will be able to store and retrieve his content (movies, photos, documents, etc) up in the Cloud via panoply of different electronic devices.

A fascinating example of this networked world of the future was offered by LG's 'smart home' products. I was shown a 'smart' fridge which can upload your shopping receipt and alert you when various foods are about to go off; and can make recipe suggestions for each household member according to profile (diabetic, obese, etc). You can be driving home and using your smartphone you can tell the 'smart' oven to start cooking your turkey so it's ready when you get in. Coming back from holiday? Tell your house to start warming up. Or maybe you forgot to turn the heating off when away? Switch it off remotely from your poolside sun bed in Marbella.

Unsurprisingly, mobile devices comprising smartphones, laptops and tablet computers were at the heartbeat of the world's largest consumer electronics show. The PC age is well and truly behind us and desktops are in decline: we live now in the age of ubiquitous and mobile computing. Vestberg and his counterpart at Qualcomm, a maker of chips for mobile phones and the inventor of several wireless standards, blasted me with some (perhaps quite frightening) statistics. Did you know that people on average look at their phones once every 6.5 minutes of each waking day? Or that 1.26m people access news on a mobile device each day, equivalent to *three times* all newspaper circulation? And what about using the smartphone *actually to make a call*? The voice call function on these devices

is only used 26% of the time; the rest of the time we surf, text, instant message, read, watch videos, play games, shop etc.

Purchases on the internet via mobile devices last Christmas were at record levels, and so-called 'm-commerce' is set to explode globally, riding the back of the tiger that is the smartphone revolution. I met with AIM listed Bango at the Show, who have a robust payments processing platform that recently won a contract with Amazon. This was by far the most important news in Bango's history, and if Amazon successfully seed the tablet market with their Kindle Fires and grow transactions through their apps and web stores, or if Bango secures deals with other app stores with leading mobile handset makers, the company could enjoy substantial growth. The expected increase in mobile commerce should also drive the nascent media subsector of mobile advertising and marketing, a theme we are exposed to in the funds we manage through AIM listed Internetq and 2ergo.

All the usual mobile handset and tablet makers were there in force (save Apple, as always): Samsung, Nokia, Motorola (now owned by Google), LG, Blackberry et al. Nokia's business and share price has been slaughtered because of its failure to produce smartphones people really want (note that Nokia is still the no.1 mobile handset maker). Nokia has therefore attempted to jump into bed with fellow smartphone bit player Microsoft (with only a c.5% share of smartphones' operating systems), producing its latest Lumia handsets running Microsoft's latest Windows Phone 7. I have to say the Lumia impressed me, especially the speed of response of the software 'apps' and it will be interesting to see if Nokia and Microsoft can fight back meaningfully with these devices in face of Apple and Android's seemingly inexorable onslaught.

Samsung has been hugely successful and is now the largest maker of smartphones globally, running mainly on Google's Android operating system. Android is the fastest growing smartphone system and Google's Chairman claimed an additional 700,000 new Android devices are activated daily. Samsung aims to continue its momentum with a preview of a new device called the *Note*. The Note is halfway between a tablet (e.g. iPad) and a smartphone, with a 5.3" screen and a stylus. It's clearly aimed at those of us who are more creative – an army of beret-wearing artists were on the stand doing portraits on these phones, displayed on the gorgeous high definition Super AMOLED screens. It will be interesting to see how well this new category of device will be – and possibly quite good fun sniggering at those talking into such big screens.

The smartphone revolution has many years ahead of it, given the forecast that by 2015 half of all of these devices will be shipped to emerging markets. This partly helps to explain the at-first-pass eye watering valuations of listed British semiconductor heroes I met in Vegas: ARM Holdings and Imagination Technologies. ARM is arguably our only truly world class technology company, being a *de facto* industry standard as the central processor units ('brains' if you like) in c95% of mobile phones. I also sat through a presentation with Imagination, whose graphics processing units are still the performance pacesetters where speed, quality and efficiency are concerned. More devices will need more and more graphics intensive chippiness for games, video and images.

There was much excitement about phones using the latest high speed cellular standard known as LTE or '4G', offering substantial improvements in download speeds to mobiles versus preceding 3G standards. The new data hungry smartphones scream for higher speeds and UK fully listed Anite is a 2012

brokers' favourite play on the build out of networks on LTE – it provides software testing solutions for handsets and networks. More speculatively, little fully listed Filtronic makes equipment for mobile networks that enables networks to migrate to 4G. while still supporting earlier GSM standards.

TVs this year were notable for the latest 'OLED' displays. Current LED displays are impressive, but the new OLED technology allows higher 'contrast ratios' with their deeper blacks and ultra thin screens. Korean giants LG and Samsung showed some stunning TVs. TVs are also going 'smart'...essentially making the biggest screen in your house fungible with the internet and pretty much all your other devices. At the Sony stand I was shown Google TV, a software platform that dovetails the TV with internet content such as Facebook, YouTube, Lovefilm and offers general web browsing. Google TV also offers sophisticated search methods for the bewildering and fast growing myriad of content now available for viewers together with a recommendation engine that learns and adjusts to one's viewing tastes. UK investors can play these key themes in two ways on AIM – each one a fallen 'shooting star' - Blinkx is a video search engine that has recently been marked down for poorly communicating its acquisition strategy and the highly speculative Phorm offers a platform for personalised delivery of web content to users based on their surfing preferences.

3D was again a notable feature at the Show, but perhaps not as prominently as last year. In TVs Samsung again leads the way and uses the conversion software of AIM-quoted DDD to achieve the effect. The market has not yet matured, but as content and delivery improves, DDD is well placed for growth not just in 3D TV, but also on PCs, laptops and mobiles.

Another interesting theme on mobile and networked living was that of '*telehealth*' – electronic and remote sensing of the body's vital signs. A multitude of gadgets offer sportsmen, the old and infirm detailed analysis of pulse, heart rate, insulin levels etc through sensors worn on the body and even through adapted mobile phones. I also met with AIM-quoted Toumaz, whose Sensium ultra low power wireless chips can save hospitals huge sums by keeping patients away from expensive intensive care units. The sensors detect anomalous vital signs and alert doctors remotely: I saw one demonstration showing how a mobile phone could even warn you of impending heart attack - that would be especially useful for smallcap investors!

Most executives speaking at the Show were 'talking their own book', especially the CEO of Intel, the largest semiconductor chipmaker on earth, who was talking *Ultrabooks*. These laptops are the industry's riposte to Apple's revolutionary Macbook Air: wafer thin, highly elegant and powerful enough for top-end multimedia in games and video. Alas at an average of around \$1,000 each, Ultrabooks are too dear now and will need to come down in price fairly quickly in my view.

One should not forget that other consumer electronic device – the humble motor car. Much floor space was devoted to cars, and there was the well known hype about electric cars, but what captured my imagination most was the fast-increasing role of electronics inside the cabin and engine. Mercedes appeared to be a pioneer here: their cars integrate functionality with the driver's mobile, hooking into social media sites like Facebook and navigation from Google, enabling remote tracking of the car, door lock operation and fault diagnostics.

According to Ericsson, 4G wireless will even allow emergency braking in one car to make the car behind brake too. Driverless cars are a 'when', not an 'if'.

Speech recognition technologies have made huge progress in recent years and at CES many devices, from TVs to mobiles to cars, offered some kind of speech functionality. The new iPhone 4S from Apple recently introduced users to a voice interface called 'Siri'. We are all becoming increasingly comfortable talking to machines, driving a cultural shift which could be of indirect benefit to Eckoh, the AIM listed provider of speech recognition solutions to enhance corporates' customer service and interaction.

To sum, CES 2012 was notably perkier than its immediate predecessor, and in fact was the most successful in its 44-year history with 153,000 attendees and 3,100 exhibitors sprawling over 1.9 million square feet. The mood of people I spoke to seemed to confirm a feeling that the US economy may have started a gradual recovery. Whether or not this follows through, one thing for me is sure: the impact of technology on our lives as consumers is only just beginning, as is the investment opportunity.

Guy Feld FCSI, co-Fund Manager of Marlborough UK Micro Cap Fund, Hargreave Hale

12th February 2012

Note: the author has personal positions in Internetq, Phorm and Eckoh.

Office Network

Registered Office: 9-11 Neptune Court,
Hallam Way,
Blackpool FY4 5LZ
Tel: 01253 754700

London: Accurist House,
44 Baker Street,
London W1U 7AL
Tel: 020 7009 4900

Blackpool: 4 Neptune Court
Hallam Way,
Blackpool FY4 5LZ
Tel: 01253 621575

Lancaster: 25 Brock Street
Lancaster LA1 1UR
Tel: 01524 541560

Bangor: 2nd Floor,
30 Dean Street, Bangor
Gwynedd LL57 1UR
Tel: 01248 353242

Worcester: Virginia House,
The Butts,
Worcester,
Worcestershire, WR1 3PL
Tel: 01905 723551

Carlisle: 10b Clifford Court
Cooper Way
Parkhouse, Carlisle
Cumbria CA3 0JG
Tel: 01228 515224

Direct Deal: Virginia House,
The Butts,
Worcester, Worcestershire,
WR1 3PL
Tel: 01905 734988

Email: bulletin@hargreave-hale.co.uk

Important Information

Hargreave Hale Limited has approved this newsletter. Hargreave Hale Limited is authorised and regulated by the Financial Services Authority and is a Member and SETS participant of the London Stock Exchange, and a Member of PLUS Market and of APCIMS. The company is incorporated in England and Wales, Company Number 3146580. The registered office is: Marsden House, 4-10 Springfield Road, Blackpool FY1 1QW. Hargreave Hale Limited is an associate company of Investec Bank (UK) Plc, which is part of the Investec financial services group. Investec Bank (UK) Limited is also authorised and regulated in the UK by the Financial Services Authority.

Jurisdiction - The information herein is intended for publication to UK residents who are clients of Hargreave Hale Limited and who have read our customer agreement. It is not intended to be published or made available to any person in the USA or any other jurisdiction that would result in contravention of any applicable laws or regulations. Therefore, if it is prohibited to make such information available to you, it is not directed at you and you should not review it. By reviewing the information contained in this newsletter, you confirm that you are satisfied that you are not in contravention of any laws and regulations and that your reading this newsletter is not prohibited.

Risk Warning - The investments or investment services referred to may not be suitable for all investors. Therefore, we recommend that you consult your independent financial adviser at Hargreave Hale Limited prior to taking any further action.

Taxation - Any reference to taxation may not be relevant to all readers as it depends on the individual circumstances of each individual and may be subject to change in the future. Please consult your tax adviser before investing in any product mentioned in this newsletter.

Information - The information contained in this newsletter has been obtained from reputable sources including trading statements, financial statements and other documents issued by companies, published broker research, trade and financial journals, government issued information, trade shows, analyst visits and presentations, other publicly available information. Every effort has been made to ensure its accuracy, although Hargreave Hale has not independently verified all the information. The accuracy of the information, the reliability of its sources, nor its completeness cannot be guaranteed, and neither Hargreave Hale Limited nor any of its directors, officers, representatives or employees accepts liability for any loss arising from the use hereof, no representation or warranty, either express or implied is made. Information, opinions and estimates contained in this newsletter reflect a judgement of individual stockbrokers acting for Hargreave Hale Limited at the original date of the opinion's publication by Hargreave Hale Limited and are subject to change, without notice. These opinions are not necessarily those of the company or other stockbrokers acting for the company, who are not obliged to follow recommendations included in this newsletter. We are not agreeing to, nor required to, update any commentary or data contained herein. Therefore, information may not reflect events occurring after the date of publication.

Risk Profiles - The profiles used to categorise investments contained herein are in accordance with Hargreave Hale Limited's customer agreement at the time the opinion is given, which may be subject to change without notice. Copies are available at any of our offices. Shares in the FTSE 100 index are considered lower risk than those in the FTSE 250 index, which in turn is considered lower risk than smaller companies.

Liability - We shall not be liable for any loss or damage arising out of the use of or reliance on the information provided including without limitation, any loss of profit or any other damage, direct or consequential. This does not however exclude or restrict any duty or liability to you that we have under the Act or under the regulatory system.

Distribution of information - The contents of this newsletter cannot be reproduced in whole or in part without consent from Hargreave Hale Limited. If permission is granted you must not distribute any information in this newsletter to any other person without attaching a copy of this 'Important Information' and obtaining the agreement of such other person to comply with the above terms.

Data Protection - We are a registered data user in accordance with the Data Protection Act, and we will treat data we have on you in accordance with that act. Telephone calls may be recorded.

External Interests - Hargreave Hale is an associate of the Investec group of companies, but for the purpose of research documents can be considered as independent from the group as the rest of the group have no influence on the timing or the content of such documents. The Investec group may have a relationship with any of the companies covered in our research which may lead to a conflict of interest. This may involve Investec acting as a market maker or liquidity provider in the company's securities, being lead manager or co-lead manager in respect of a publicly disclosed offering of the company's securities within the last 12 months, providing investment banking services to the company, or being party to an agreement with the company to issue research recommendations. © Hargreave Hale Limited 2011

