

# ANTENNAE TREND REPORT NOVEMBER 2008

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## MOBILE LIFESTYLES

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The Antennae Trends team at New Edge + The Brewery carries out research in new design trends, ideas and creative thinking - from global product innovation through to changing consumer lifestyles.

Humans are a predictable species and many of us follow the same patterns almost everyday. The conventions of human mobility have changed little with evolution, but occasionally new technologies revolutionise the way we travel, and what we do whilst travelling.

This issue explores all aspects of our increasingly mobile lifestyles.

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# Software wars of the future

How the mobile phone industry is gearing up for a new battleground - software



Nokia sells 18 phones a second every hour of every day. That's 1.5 million phones a day. A considerable amount of all mobile phone sales. Although Nokia has over a 100 handset models and sources over 329 million parts, the company is becoming less focused on the product, the physical aspect, of their business.

Instead, Nokia is slowly evolving into something more converged. Phones are becoming less about phone calls but more about being a portal to our digital lives.

To this end, Nokia has invested enormous funds into new technology research, with R&D centres in over 10 countries. In fact, 27% of Nokia's workforce is research focused, developing product, technology and software. And it is this area, software, that has become a new battleground for rival mobile and computing brands to compete in. Earlier this year Nokia bought Symbian, a British company that develops software to run on mobiles. More interestingly, however, Nokia has turned Symbian into a non-profit organisation.

Although this strategy appears bizarre at first, there is a strong, long-term vision that underpins it. Allowing the Symbian software developments to be used for

free by any developer or mobile phone manufacturer, will encourage the use of the Symbian platform. The open-source aspect of the software makes it hugely appealing to independent developers who want to make applications without the fees. Nokia hopes that in the long term, the availability of the Symbian platform will lead to increasing amount of developers using it, resulting in a snowball effect where Symbian dominates the mobile market, and could even bleed into other industries, such as personal computing.

If this were to happen, the control Nokia has over Symbian would mean it would be in a strong position, facilitating rapid development of new phones thereby further increasing market share. What Nokia does not want to happen, is for it to have to rely on operator systems supplied by its rivals. These rivals are currently doing their best to tease developers away from the Symbian platform.

Google's new operating system, Android, is also open-source, and the hope is that developers will want to develop new applications for Google products. Google is leveraging its brand towards a more youthful, 'trendy' consumer base and is hoping that software developers will produce applications that tap into popular culture effectively, such as applications

Above  
The Nokia E71 is one phone whose users will benefit from the Symbian platform

allowing the most popular social networking sites on your phone. The winner of Google's first Android developers' Challenge was AndroidScan. Using your phone camera to scan a barcode, the software will then locate product reviews and even tell you if the same product is cheaper in stores nearby.

An already successful example of software development being key to a product's success is the Apple iPhone. The App Store has opened up an entirely new market in the software market and is making well over a million dollars a day in sales. It also allows the user to modify and adapt their handset to their tastes, making the iPhone a blank canvas on which users can change to suit their lifestyle.

Although Apple only takes a 30% cut of all App Store sales, the constant innovation of the software for the iPhone is done by independent developers – this saves money in development costs for Apple, whilst it keeps their product fresh and at the front line of popular culture.

Further competition comes in the form of Windows, with its Windows Mobile platform, which is used by HTC among others. Blackberry runs software developed by RIM, its owner, and another open-source project, LiMo, is being backed by Motorola,

Panasonic and Samsung among others. It is almost certain that more platforms will be developed. Some will be successful but most will not.

In the next few years we will start to see which software platforms have the most popularity, coupled with product design that fully utilises these innovations. But is this a sign that mobile companies will rely more on a reduced product portfolio, that has been well designed and thought out, and that relies on software updates and innovations to prolong its product life-span?

Below  
The new G1 phone from Google uses an open-source platform - Android

Bottom  
HTC carries the flag for the Windows Mobile platform, with such innovative products like the Diamond



# Cords and cables

Are batteries about to be consigned to history?



Is the future of electronics about to be revolutionised?

Current developments in wireless power systems point towards a future where all products will be wireless with power delivered over distance through walls, ceilings, and surfaces.

Powercast, a leading innovator of wireless power, and Philips are set to launch their first device powered by electricity broadcast through the air. Powercast's system consists of two parts – a wall-plug transmitter and a 'dime-sized' receiver, whereby the energy is transmitted within a short distance of the transmitter.

At this year's IDF, Intel demonstrated its wireless power system. The demo consisted of two metal arrays that resonated to establish a link of energy between them over two feet. With players like this joining the race ubiquitous power becomes a real prospect.

Firstly, the technology will be suitable for small devices that require low-level power, ie any device that currently runs off batteries, such as mobile phones and portable music players. Will we soon be purchasing wireless power through our mobile phone tariffs?

As devices, such as computers, become more efficient

and wireless power becomes more advanced the possibilities could be endless. Further in the future it is hoped that wireless power can be used for electronic vehicles and in particular public transportation.

Cords and cables have been a reality for consumer devices since the beginning. The ability to remove cords and connectors from the process of recharging batteries improves reliability and convenience, paving the way for a plethora of opportunities for manufacturers and energy suppliers.

Above  
Mobile phones may never run out of power. Inductive and transmissive power will make power ubiquitous

Below  
Intel demonstrating their wireless power system at IDF



# Rise of the Netbook?

With accessibility to the internet and mobility key, are Netbooks king?

Referred to as sub-notebooks a few years back, the Netbook, as it is now known, has had an incredible impact on the computing market. Netbooks are expected to hit sales of 5.2 million this year, rising to 8 million next year. Generally, the Netbook market consists of low-cost products and many argue that it is this factor that has made this section of the laptop market so attractive to consumers during the financial downturn.

However, are there deeper reasons as to why the big notebook vendors are quickly responding to the demand and releasing their own Netbooks? And is the rise of the Netbook an indication of a wider trend, with the emerging MID/UMPC class products starting to take noticeable market share away from notebooks?

The Netbook provides the user with an unparalleled combination of functionality within a small package. Although it can be argued that many of the basic functions of the Netbooks can be found on smartphones, such as the Blackberry Storm and the iPhone, neither of these products has a full QWERTY keyboard, with a good key pitch and travel. And in consumer eyes that, as well as a larger screen, can make all the difference when spending £200 on an Apple iPhone or £300 on an Asus EEPC.

With the new Intel Atom chipset, Netbooks are getting thinner and lighter, whilst still retaining, and in some cases increasing, their functionality. In addition, prices for Netbooks are falling further. Overall, Netbooks make great companions in terms of travel and 'on the go' usage.

Asus and Acer lead the way in the Netbook market with the EEPC and Aspire ranges respectively. However, other big name brands are entering the Netbook market such as Dell and HP. Their reasons for entering the Netbook market are more complex than just gaining a product presence. Many of the big computing brands, such as Dell, have been hit hard by the recent financial downturn and see a diversification of their portfolio as a way of spreading the risk, as well as reducing the gains brands such as Acer and Asus have made into their consumer base. However, Netbooks may soon be under pressure from the emerging MID (Mobile Internet Device) class products.



Top  
The Acer Aspire One

Bottom  
The Asus EEPC

MID devices are slightly larger than smartphones, with 4.5" - 6" screens and are considerably more expensive than Netbooks. This is mostly due to the level of technology that is squeezed into such a small space. As yet, there have been few product releases that have created a large consumer base for MID's. LG Xnote is an early indication of the capabilities of a mid device, with a 4.8" touch-screen and QWERTY keypad. The mixture of brands within the MID market shows how complex the battle for consumers will be – well known mobile phone brands such as LG and HTC are competing with established PC brands, such as Asus and Fujitsu.

With the rise in cloud computing, and a consumer demand for portable, internet ready devices, many established computing and mobile phone brands are considering, or are already, entering the MID market. Will we see a Sony Ericsson 6", or Motorola 4.5" MID product in 2009? Undoubtedly this is a key emerging market, where good product and mechanical design could revolutionise the industry and galvanise a

consumer base for such devices. And where would this leave the Netbook?

Due to its low cost, the Netbook is already looking to be a big player in developing economies. This market is largely untapped, and established Netbook brands like Asus and Acer are looking to gain considerable footholds in these economies. Its role in the Western economies is less certain.

Undoubtedly the Netbook has a considerable role in the computing market over the next year or two, with many brands expanding their product portfolios into this area. And yet, the MID genre already poses the greatest threat, and most likely successor for the high mobility, internet-ready conscious consumer.

Will the rate of the Netbook decline be slowed or even reversed, by innovations in design and manufacture? Or will the lure of a pocketable device prove too big an argument?

Below

Many MID concepts include a QWERTY keyboard and touchscreen, as well as Skype functions and webcam



# Broken but not forgotten

Rehabilitation could begin the instant an injury occurs



Tiny battery-powered skin patches are being used to keep muscles healthy in people unable to exercise because of broken limbs or other injuries. Muscle wastage is a common result of placing a limb in plaster, as it goes unused for a number of weeks.

The tissue of the muscle shrinks due to lack of use, and results in loss of mobility or power. A basic cast in place for six weeks, can result in muscle circumference shrinkage of more than 20mm (for a calf muscle). Research shows that patients who used the patches had less muscle wasting, improved mobility and less pain after their cast was removed.

After the cast comes off patients often require physiotherapy, and weight-lifting programmes. Sometimes injuries can result in permanent loss of muscle strength leading to long-term reductions in mobility.

The patches from StimuHeal Inc. named Myospare, are designed to fit under plastercasts or bandages to stimulate muscles and prevent loss of strength.

The technology works by passing a small electrical current into the muscles and triggering contractions similar to those that would occur during physical exercise. It may also improve blood flow around the muscle and assist healing.

Further applications include aiding those who are immobilised by other injuries, as well as muscle wasting as a result of aging.

Many physical fitness enthusiasts have suffered fractures related to their sport. A large amount of money is spent on gym memberships, and on sporting activities. A device that aids them to get back to their beloved activity faster is of great assistance, and as such could demand a premium price. What price would premiership football clubs pay to have their stars back to full fitness faster?

What other simple solutions are there that could help us continue with our daily activities?

Above  
Myospare patches  
([www.stimuheal.com/myospare](http://www.stimuheal.com/myospare))

# A balancing act

iShoe is a new device that could help prevent falls



In the UK one in three people aged over 65, and one in two of those over 80, suffer a serious fall at least once a year. One quarter of senior citizens in the US chronically fall down, leading to over 300,000 broken hips a year. Falls often lead to serious injuries, which cost £1.8bn a year in terms of treatment and care. One person dies every five hours as a result of a fall.

One reason why the elderly are so at risk is that the nerves most distant from the brain tend to decline in activity as part of the ageing process. These nerves normally relay signals to the brain about which part of the foot is bearing the most weight – the brain is making constant adjustments to resist falling over.

Developed by NASA to facilitate astronaut balance after returning from zero gravity environments, the iShoe is an insole that rehabilitates the wearer's ability to balance, reduces falls, and automatically notifies caregivers by phone should a fall take place.

Worn in any shoe, the iShoe enables early diagnosis and rehabilitation of deteriorating balance. It provides a diagnostic readout to a wearer or clinician through any computer. If balance is compromised, the insole uses tactile stimulation to prevent falls to aid rehabilitation.

The device is affordable, predicted to cost about \$100, and could offer freedom to an increasingly aging population. Researchers are working on advanced vibrating shoes to help stroke victims get back on their feet by prompting relevant nerves in the legs.

Hopefully we will see many more innovations that aid the elderly or disabled to live their lives to the full. It is an issue that will effect the majority of us, and it is a highly lucrative business. The spending power of disabled adults, who constitute 15% of the UK population, stood at £80bn in 2006, whilst the over-50s have an estimated spending power of about £175bn.

Above  
The iShoe could give the elderly more confidence

Below  
Erez Lieberman, CEO,  
with the iShoe  
([www.ishoeinsole.com](http://www.ishoeinsole.com))



# Taking the weight off

In the future will we be assisted when we walk?



Honda have designed a device to support bodyweight, reducing stress on the knees, and helping people get up stairs. The wearable-assisted walking device should help the user feel less tired, and is designed to be as easy to ride as a bicycle.

Above and below  
HAL from Cyberdyne  
([www.cyberdyne.jp/english/index.html](http://www.cyberdyne.jp/english/index.html))

The system has a computer, motor, gears, battery, and sensors embedded, so that it can respond to a person's movements.

The need for such mechanical assistance is only going to grow with an increasingly aging population. This is more acute in Japan, which has one of the most rapidly aging societies in the world, so it is unsurprising that Honda are effortising to bring such a device to market.

Other companies are also developing solutions for this new market. Japanese robotics company Cyberdyne has begun renting out the HAL, short for 'Hybrid Assistive Limb' (at a cost of £1,260 per month) – a belted device with mechanical leg braces that strap to the legs and reads cerebral messages to help people move about.





HAL reads the brain signals through bio-electrical sensors that are attached to the skin. The computer immediately analyses how much power the wearer intends to generate and power units 'power assist' the limbs adequately.

Having already assisted a paralyzed individual to climb a mountain, HAL, Honda's device, and others have far-reaching benefits that could mean the end to limitations to the elderly or disabled. Such innovations can extend the abilities of the elderly and keep them out of care for longer. Will these devices condemn walking sticks and wheelchairs to the past?

For those that do require wheelchairs, Porsche have designed a chair that can be adjusted into an upright position which would have the user accomplish everyday tasks. Gyroscopic sensors, similar to those in the Segway, allow the driver to manoeuvre and stay balanced in a vertical position, whilst seeing face to face with those standing. This provides a glimpse of stylish alternatives for the future, but the iBot is a similar solution that is already on the market. The iBot has a balance function raising the user to reach high shelves and eye level, a stair function, and a 4-wheel function to travel over uneven terrain.

With increased mobility will the elderly and disabled be able to integrate more readily into society? How will 'medical' products change in order to react to changing tastes and desires?



Top  
Honda Walk Assist

Middle  
Pegasus by Porsche Design

Bottom  
iBot ([www.ibotnow.com](http://www.ibotnow.com))

# Getting product from A to B

Innovative, money saving and green transportation solutions



Above  
MS Beluga  
([www.skysails.info/english](http://www.skysails.info/english))

With both climate change and the predicted long-term rise in oil prices, corporations are looking for different ways to reduce their distribution costs. The financial and environmental impact of current methods has driven some to seek alternative energy while others have taken advantage and innovated around the opportunity.

While most innovation around sustainable mobility seen by the public is related to personal or public transportation, there is another side just as innovative and important. The way things get from A to B is rarely thought about by consumers, but the reality is that distribution plays a large part in the cost associated with putting products on the shelves (approximately 10%).

The transportation of goods over great distances hasn't incorporated the use of sails since the industrial revolution but there is a new, or rather old, option for the transport of goods in the 21st century. Wind power is becoming a second form of propulsion for commercial cargo ships as well as large private yachts with the use of sails in the form of kites.

The MS Beluga is experimenting with wind assisted power to sail across the Atlantic Ocean using a 60

square meter sail developed by SkySails. The sails, or kites, fly at heights in excess of 500 meters and can be up to 5,000 square meters. These kites are an innovative way to reduce energy consumption by up to 35% in a much more economical way. If this proves a successful innovation it will open the door to an all new avenue for energy reduction and the transportation of goods.

Commercial transportation is starting to see the shift from high consumption, fossil-fuel driven transport to more energy efficient, alternative sources. There are now more hybrid options in the commercial sector than in the consumer sector. These vehicles vary from garbage collection trucks to passenger buses to delivery vans.

Companies such as Tesco have taken it one step further with the introduction of electric vehicles into their fleets. Electric trucks with a two-ton capacity offer a more distinct alternative to fossil fuels and major long term cost savings in transportation.

What other developments will we see that can save money whilst increasing green brand credentials between businesses, the government, and the public?

# Sensing is the new seeing

Bat-like sensing could help the visually impaired see



Many of us have become accustomed to driving with the aid of sensors – they help us park in awkward spaces. Now these sensors are helping those with visual impairment find their way around.

Technology could replace the cane or the guide dog through a variety of beeping, talking, and vibrating devices that help avoid obstacles, find objects and destinations.

Devices fitted with ultrasonic emitters detect obstacles straight ahead and give an advanced warning. Like with a car's rear parking sensors the closer the beeps are together the closer an obstacle is. They can also vibrate when an obstacle is detected – the faster the vibrations the closer the obstacle.

These devices are usually handheld but can be attached to things such as wheelchairs. The Sonic Pathfinder is worn on the head and the output is fed to one of the two ear pieces depending on the direction of the object, providing even more accurate feedback.

These systems mimic the way bats navigate, and as such can give the visually impaired a certain amount of

'sight'. Such innovations result in more freedom, and give users a greater sense of safety and confidence.

What other innovations will emerge to help those born with, or develop, disabilities can live a normal life? Will blindness be confounded to the past?

Above  
What is the future for guide dogs and the cane?

Below  
The Sonic Pathfinder  
([www.sonicpathfinder.org](http://www.sonicpathfinder.org))



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