

users from certain functions. "We have seen a requirement for niche phones enabling people to do their jobs and combining the various features of different mobile devices into one multi-function unit," says Andy McBain, senior product manager at Motorola.

Also expected to grow is the market aimed at those unable to see small screens, or navigate their way around smaller keypads, especially as the population ages and the 'grey pound' becomes more attractive and powerful. However, Strategy Analytics estimates overall volumes for such phones were less than 1% of total US handset sales in 2006.

Few vendors directly target pensioners, but most operators have a range of basic, easy-to-use and low-cost phones suitable for this largely untapped sector. The intuitive iPhone man/machine interface and big screen make this an interesting device for older people without denting its appeal to youngsters.

However, while the grey pound is being chased, there are still ethical, data-security, and privacy concerns about marketing phones to children in the EU; concerns that led Disney to abort its European plans a couple of years ago. Despite the appeal of fun-shaped mobiles, their success is limited to less than 1% market share. Like those for older people, easy-to-use talk/text phones include a panic or SOS button. Many have buttons connecting directly to individuals, include GPS and phone functions may be controlled remotely.

For those needing a cheap back-up, perhaps when travelling, disposable talk and text phones are available but are thin on features and often without screens. Hop-on recently introduced a €12.50, GSM disposable phone to European and Middle Eastern markets.

Available from airport vending machines or retailers, disposables have not succeeded and are unlikely to do so in these days of environmental awareness; functional, cheap phones; falling international roaming tariffs; and widely available SIM cards. Most travellers want their own devices complete with address books and other features. Besides, says Ken Dulaney, vice-president of mobile computing at technology consultancy Gartner, throwaways make no sense since all phones are ultimately disposable and many are free with contracts. "People would rather go with contract phones giving them more features than disposables, which have no value."

Pete Nuthall, analyst at Forrester Research believes manufacturers need a diverse range and balanced portfolio to meet demand. "Niche phones will continue to be developed but won't be mass-market devices, yet there is a significant proportion of consumers who only want talk/text phones." ● EB

## CHANGING THE WORLD IN TWO STEPS

*Meet Anders Carlius, the inventor who is bringing mobile telephony to the masses*

A host of Voice-over Internet Protocol (VoIP) start-ups are hoping to use the internet to drive down the cost of telephony without sacrificing call quality: Truphone, Jajah, Rebtel and Fring have lined up to demonstrate their wares — and the services they provide are good if you have access to a fixed-line telephone connection and mobile phone network. The problem is there are around four billion individuals on the planet who don't.

Swedish engineer and entrepreneur Anders Carlius believes he has found an alternative for those people, many of whom have little disposable income, who missed out on the telecoms revolution. From Lund, near Malmö, his team has developed a peer-to-peer radio-based technology that's bringing free calls to regions without mobile network coverage, typically in developing countries in Africa, South America and Asia.

The company, TerraNet, manufactures handsets that communicate directly with each other over a 1km radius, without the need for a mobile phone base station. Calls can also hop from one handset to another in a 'daisy chain', or mesh network, enabling longer-distance conversations — as long as each handset is within range of another. National and international calling is enabled by connecting the 'daisy chain' to the rest of the world via VoIP, through a computer network. To connect a TerraNet network to a computer, it's necessary to install a gateway — a small USB dongle, similar to a memory stick — and deploy one TerraNet handset within 1km of the PC.

"For northern Europeans it's hard to imagine, but we're aiming for users who barely travel 20km from where they were born," says Carlius. "Fishermen, farmers, and people in the

countryside wanting to communicate with their relatives in the big city, will make good use of this technology." He also believes TerraNet could prove to be a life-saver in disaster recovery situations.

With the launch of the firm in 2004, Carlius' ambitions were met with extreme scepticism by the telecoms industry. "The big operators and technology providers were adamant that it wouldn't work and that we didn't have a business model," he says. "But we're proving them wrong."

The shift in attitudes has been such that in April this year TerraNet received a prestigious Red Herring award for innovation. Carlius has recruited several engineers, including one of the inventors of Bluetooth, and has worked on handset design with the same front-line boutique retained by Sony Ericsson and Chinese telecoms firm ZTE. One South American country has made an initial order for 100,000 handsets, as part of a planned, country-wide implementation to be started later this year.

So if the calls are low cost, sometimes even free, where does TerraNet's money come from? For starters, it will sell the handsets, but the idea is that local partners or distributors will sell on, or hire out, the hardware, as well as selling add-on services, including international or long-distance calling — in a setup similar to the 'telephone ladies' model employed by Grameenphone boss and Nobel winner Mohammad Yunus.

The idea came to Carlius back in 2002 when he was on safari in east Africa with his wife. "It's just too expensive for operators to install mobile base stations outside the cities. But this is where low-cost telephony can do the most good, by helping to lift people out of poverty. Mobile telephony brings a massive boost in economic terms."



■ IT'S GOOD TO TALK  
Anders Carlius is helping poorer countries enter the mobile age