

# Convergence Trends

Convergence is something that every mobile 'computing' manufacturer is aiming for, says **Richard Kilpatrick**, as he takes a look at Nokia's E90. From cobbled-together concepts to sleek and expensive solutions, in the early 21st century combining computing power and connectivity in one unit is as important as making radio communications portable was at the beginning of the last century

It could be said that the entire 'smart phone' market is comparable to the blip in popularity that radio enjoyed in the 1970s, with CB (Citizens' Band) - until people realised there were better options.

One of the pioneers of the convergence device - indeed, the smart phone genre - was the Nokia Communicator. The first mobile phone I bought - 1997's Nokia 9000 - combined a robust Nokia GSM phone and a GEOS-based '80386-architecture' PDA in a single, phone-styled package. It was a touch larger than either a PDA or phone, and slow and underspecified for the cost (even compared to the two devices alone), but it worked. Over the next seven years or so, the concept would be refined to reach the Nokia 9500 - powerful, full colour with a dedicated Symbian (essentially, Psion's EPOC-OS evolved) OS model and attractive - yet still 'brick like' - styling. Crucially, the 9500 featured WiFi connectivity, and remained at the top of the price lists for all classes of 'consumer' device.

Since the 9500, Nokia has focused development on the E-series of business phones - which surpass the Communicator range in terms of CPU specification, memory and supported functions; but have never approached it in terms of physical usefulness, and until the 2007 release of the E90, the Communicator range looked set to languish.

The attractive new E90 Communicator brings the styling and specification into the 21st Century, but also changes the significant defining structure of the Communicator 'brand', becoming a truly converged device.

## Convergence Costs

Good Windows-compatible mobile smart phones like HTC's Tytn II (MDA Vario III, Vodafone VP1615) have significant amounts of memory and many features, and cost under £400. Windows mobiles



are also astoundingly versatile. A Windows mobile device like HTC's Athena (T-Mobile Ameo) can run applications like Pocket Artist, providing 'Photoshop' editing capability on the move. To all intents and purposes, they are small and reasonably efficient computers.

Nokia has set the price of the E90 meanwhile at £625, for which you get a Series 60 v.3 user interface: the same, essentially, as the Nokia N73, N95 and similarly 'average' Nokia phones; similar functionality; and even similar software. The E90 benefits from a secondary, 852x384 pixel screen and a full keyboard (in a better layout than the BlackBerry-baiting E61i), and additional features include A-GPS, a 3.2MP AF camera, WiFi, Bluetooth and radio, but it is possible to get all of these in a conventional handset.

Even on contract, the E90 is expensive, with few operators offering them. To get one free, you need to spend over £50 a month, even as a new customer. As an upgrade, they're an expensive

proposition. At the time of writing, only O2 and Vodafone offer the E90, both of which limit its functionality as a communicator by offering only pared-down data bundles.

Yet despite all this, I'm using my E90 and enjoying it. The bulk of the applications I got for my Ameo were interesting in an, 'I can use this!' kind of way, but didn't help me day to day. To the right user meanwhile, I'd hazard that the E90 could be worth its price tag.

## Killer Apps

Back in 1984, Apple cottoned onto something clever. You don't need spec if you can make the tasks people actually want quick and efficient. Instead of making a fully featured Swiss Army knife, it made a much better penknife (it could be argued that it's performed a similar trick with the iPhone). Psion did the same thing with the Series 3a; it didn't include the gewgaws and fripperies of Japanese devices like the Casio dateplanners, or the visionary

'experimentation' of the DataRover, instead providing a solid, workable and efficient OS.

Nokia's E90 is similar. As users will know, the Series 60 UI is one of those cases of something 'just working' in a logical fashion, and the E90 is the most powerful S60 handset yet. As a Communicator, it supports email, IM, VoIP (network allowing, but WiFi is always supported - operators may cripple the firmware though, so it's worth debranding and upgrading the E90 to the latest Nokia version which also allows the A-GPS function to work).

## PDA functionality

As a PDA, it offers useful satnav, in the form of Nokia Maps (enables stored maps and incremental charging for navigation, with prices 'below that of paper maps' to allow for guided navigation, and offering paper-map functionality for free); a reasonable media player with Bluetooth audio support; excellent calendar and contacts functions; and good SMS functions (it doesn't thread, but there is a beta app for this). Essentially, it does everything you would expect, apart from handling fax - something dropped from the Communicator line due to lack of operator support and real-world use. The E90 camera is acceptable but not stunning - it's similar in specification to the camera on the N73 (now a very cheap handset) and seems to have trouble with white balance, producing cold, blue images indoors when overcompensating for artificial light.

## QuickOffice

For office productivity, Nokia includes QuickOffice - upgrades to the package are charged for but it's fully functional - and the email client supports Exchange and various BlackBerry-esque functions. The spreadsheet and word processor in the E90 are about as useful as they need to be and indeed, given the restriction of the screen size, can be. The provided QuickOffice has some basic compatibility with Microsoft Office

## HARDWARE

2003, but a charged upgrade to QuickOffice 5 (costing around \$42) brings full Office 2007 compatibility, including PowerPoint.

### Third-party support

Third-party app support is somewhat limited. It's growing as more users adopt the new device, but a lot of the clever apps I used to find for WM are missing. This is not a substitute for a laptop. It is, however, a fantastic companion for one - Nokia's support for Apple's iSync application results in a relationship between phone and computer that is truly useful and usually only approached by Windows Mobile/Outlook/ActiveSync (or OS X and iPhone), as well as robust modem use providing a genuine 'mobile broadband' connection (at Focus this year, I was able to access WiFi by sharing my phone's 3.5G connection with JoikuSpot, or my Macbook Pro). While not E90 specific, Mac users can rely on iSync and Nokia S60 handsets to keep contacts and appointments nicely in order.

### Hanging on the Telephone

Where the E90 excels as a smart phone is in its phone function. The folding design, with two screens and two sets of buttons, has already been established by Nokia as the optimal solution - now it has made it smaller, more attractive and lighter - the E90 feels very solid, but still like a phone, rather than a pocket computer. Engineering considerations, like a metal battery cover (thinner, stronger), and tolerances so close that with a screen protector installed, the keys leave fingerprints on the display when closed, demonstrate the work that has gone into making the E90 attractive as well as functional. Naturally, all the phone features are present, but the E90's massive paradigm-shift over previous Communicator models is instantly apparent when the display is closed.

Inevitably, video calling is implemented. Unusually, the 'front' camera cannot be used to record or take pictures of yourself for MySpace - it's purely for video calling, and I have yet to succeed in using this feature due to patchy network support and interoperability. Not only is it a relatively pointless feature, it also hasn't worked correctly in the UK since first being offered in 2003 by Three, so why this feature keeps cropping up defeats me.

Previously, the Communicator

device was presented as two connected functions. The phone did what phones do. The computer did what computers do, and when the computer needed the phone, it would talk to it. As the system progressed, the level of integration under the hood appeared to change. While the 9210i still felt like it had two CPUs - two 'devices' - the 9500 felt more like two front ends to the same device, with S40 (found on Nokia's lower-end 'number' handsets like the 5500) for the phone, and S80 on the computer. While downplayed, the E90's front and rear screens are the same device. It is S60 through and through, and anything you can do on the computer can also be done - with a traditional phone keypad and smaller screen - on the phone side.

This change makes using the E90 more discreet, more comfortable, and more convenient for functions like quickly checking email, or using the Map application (or Google Maps, shown in landscape mode here - a free download). Some may lament the passing of the S80 'business' variant of the OS, but the S60 has been developed to be all things to all users - it is equally happy bashing out tunes through the E90's surprisingly loud speakers or emailing a spreadsheet to the account manager. At the same time, if needed.

With a versatile web browser that formats screens correctly, a full keyboard, enough power to run reasonable applications (on paper, the E90 specification is below many similar devices - but Symbian OS is efficient), and reassuringly solid build quality, this new Communicator makes a solid case for itself despite the high price. The addition of an inexpensive 8GB microSD card (Sandisk, with a USB reader adaptor, now available for around £30 online) brings the E90's storage in line with that of the iPhone or Ameo, and it offers distinct advantages over both of those devices (in the case of the Ameo, it is smaller and can be used as a phone; over the iPhone, it brings a hardware keyboard, 3.5G (3.6Mbps) data and the ability to act as a modem).

Overall, the E90 is a triumph of engineering, and displays everything Nokia has learned about the physical and software aspects of convergence devices. It also demonstrates nicely that there's more to a convergence device than looking like one, and that the term 'smart phone' - like the CB radio - should be laid quietly to rest. **f2**