Mobiles as virtual scanners
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XEROX scientists have found a way to turn mobile camera phones into virtual scanners by sending document images to a server or a PC for optical character recognition processing. The scientists say the technology could ultimately turn phones into devices for their users to acquire, store, read, print and share documents at will.

The technology was developed at Xerox Research Centre Europe (XRCE) in Grenoble, France.

The development team was headed by Christopher Dance, senior scientist and image processing manager.

XRCE has extensive expertise in improving images of documents taken by cameras.

Dance says Xerox's imaging enhancing software can cope with poor lighting, distorted images and other problems encountered when taking pictures in hostile environments. "We saw the potential of mobile telephones as a vehicle for advanced imaging technology from the outset," Dance says.

"However, we had to wait for mobile phone technology to catch up so that the cameras integrated on them were of a high enough resolution.

"It wasn't until this year, with the advent of megapixel mobile camera phones, that we saw a potential route to market for our technology."

Xerox software processes images in the mobile phone: It corrects blurring. It converts images to black and white and eliminates shadows and reflections. It uses a G4 fax compression format that Xerox says can reduce a 250KB JPEG to a 15KB G4 fax image.

Once processed, the file can be sent by Bluetooth wireless technology, multimedia messaging or facsimile.

Optical character recognition processing (OCR) is applied when the image reaches a server or a desktop PC.

The technology may revolutionise the roles of employees working remotely at trade and industry events, presentations, conferences, client meetings or other occasions, Dance says.

"It will let them capture information from handwritten notes, documents, screens, white boards or other surfaces and transmit it immediately," he says.

Capturing an image and transmitting it on the move is just the beginning, Dance says.

"In the future we will be able to apply other Xerox document technologies such as indexing, retrieval or the making of summaries," he says.

"Ultimately we will be applying business-to-business document functions to the basic consumer snapshot technology."
"In doing so, it will have changed the way people communicate."

There has been phenomenal growth in the use of digital cameras and images, but the use of technology to categorise image content is in its infancy, Dance says.

"It is only used in applications such as face recognition in the security industry.

"However, potential applications could come through mobile phone manufacturers, vendors of other types of handheld devices, mobile carriers and application providers.

The technology is being is available through Xerox's licensing agent, IPValue Management, to makers of mobile phones and other types of handheld devices.

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