

The rise of the mobile datawave

Dr Katie Brown of BT describes the continuing revolution in data transmission technologies and explains how treasurers will be affected by the changes.

Ten years ago, fixed phone lines were used to make phone calls. Nowadays, the principle form of communication over the fixed networks of the world is data, and this trend is being echoed on the mobile phone networks. This article charts the rise of the mobile datawave, the technologies that are fuelling it and the products and services that are driving it forwards. It also attempts to indicate some of the practical implications of these developments for treasurers.

Pre-2000 – SMS, and data over GSM

Many mobile phone operators are now providing information services over their networks, with popular services being traffic information, share price alerts and sports news. Text is pushed out to the phone via the short message service (SMS) system and often includes the option to make a phone call to hear more. As the mobile datawave develops, this information is being made available over the internet in forms which make it easy to read via small mobile devices.

The most popular way to access the internet while moving is currently to connect a mobile phone to a laptop computer via the local GSM network (this is 'global system for mobile communications' – the current cellular phone standard in Europe, Asia, and now increasingly in the US). This gives users a data rate of 9.6kb/s, which is bearable, but GSM was designed with human-to-human communications in mind and is optimised for voice calls. With more and more people getting mobile phones it is vital that more efficient solutions to data transfer come into play.

Early 2000 – wireless application protocol (WAP)

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mobile internet standards, and is to a large extent the mobile equivalent of the protocols that the fixed internet uses. The WAP forum was set up by Nokia, Ericsson, Motorola and Phone.com to provide a seamless interface onto the plethora of mobile devices that are available. This allows application developers to develop products secure in the knowledge that they would work no matter what the underlying technology might be.

The first WAP devices are now available, mostly in the form of mobile phones capable of displaying data and small images. Some palm-top terminals also have WAP micro-browsers (the WAP equivalent of Netscape Communicator or Internet Explorer), and all the device manufacturers in the WAP forum have agreed to provide WAP-enabled terminals by the end of this year.

WAP users will not be able to surf the internet directly, since WAP uses a variant of the internet mark-up language known as the 'wireless mark-up language' (WML). Many of today's internet sites are so media-rich (with frames, graphics, animations, and the like) that automatic conversion to plain text and small images is not satisfactory. Most

WML content will be specifically written, or converted from standard HTML with human intervention.

Current applications available over WAP phones include email, news and personal information management (calendars, address books etc). The last few security issues on e-commerce via WAP are being resolved at the time of writing, and 'm-commerce', e-commerce via a mobile link, is expected to be one of the big opportunities for WAP. The possibility of following up a share-price alert with a link to your online share dealing service is one example of a likely service.

Location-based services are another opportunity, from 'where is the nearest five-star restaurant'-type queries through to 'where am I, and where am I going?' Sadly, the latter isn't quite possible yet, though this is only a matter of time.

Mid 2000 – GPRS, m-commerce, and the mobile internet

The next technology leap will hit the UK in the summer of 2000, as the GSM packet radio service (GPRS) networks come on line. GPRS is the solution to providing efficient data transfer over the current mobile phone networks, and will offer typical data rates of 9-56kb/s.

WAP (by now running over GPRS, not GSM) will continue to be one of the best ways to access information, but more devices will also include a standard internet browser. This will not be as sophisticated as the browsers on full-scale computers, but will be far more convenient when away from home or the office.

From the users' point of view, mobile access to data will suddenly become a lot easier. The launch of GPRS is expected to coincide with an upsurge in internet content aimed specifically at the mobile surfer. Again, this will include news, travel information and personal

information management, but will also take advantage of the captive 'audience in transit', with m-commerce services like luxury shopping and online books and videos. Online gaming is another service that is predicted for high popularity.

2002 – UMTS, seamless services

Beyond GPRS and the associated technologies comes universal mobile telecommunications service (UMTS), one of the next generation of mobile communications systems. Most of Europe is in the process of allocating UMTS spectrum to operators, and the UK government is expected to auction five licences early this year. The four current operators are expected to bid, and the fifth licence is reserved for newcomers. The first UMTS systems should be in place by 2003/4.

As well as voice services, UMTS will offer data rates up to 2Mbits/s. This is considerably faster than most people get over the fixed network, and represents a step change in how mobile data is viewed. From being the poor cousin of fixed data, mobile communications will become part of a total system, which is accessible across all networks pretty much seamlessly. Internet services, voice services, mobile services will be equally available wherever users are and however they're connecting, and the current mobile/fixed division will vanish.

The mobile treasurer

You might well be thinking how the above is likely to affect you as a treasurer. In essence, these developments will enable treasurers, and all professionals, to become as effective whilst on the move as they currently are when in one place.

The devices that will accompany the above technologies are likely to become increasingly lightweight and wearable. Before too long, and within the timescales indicated above, a combination of such lightweight wearable communicators, artificial intelligence and ever-improving voice recognition could make contacting a colleague, banker or advisor as easy as saying 'Hi Bob, are you busy right now?' A software agent within the communicator would know who you meant by Bob, and how to get in touch with him: it would either put you through, let you talk to Bob's agent or sort out a better time to talk. Bob's

A timeline for the data revolution

Data over GSM	already (9.6kb/s)
WAP over GSM	already
GPRS	summer 2000 (up to 56kb/s)
WAP over GPRS	winter 2000
UMTS	2002 (up to 2Mb/s)

agent would know where he was, what he was doing, and whom he currently wanted to talk to. Life would become increasingly difficult for those trying to peddle inappropriate financing and hedging products to treasurers!

This sounds far off but in fact is just round the corner. BT researchers already have computer-based agents capable of a great deal of complex decision-making. The next generation of SIM cards – the tiny cards inside mobile phones that store your personal details, phone numbers and so on – will have enough processing power in their own right to cope with this degree of intelligence.

Real time conversations and email are just the start. You'll be able to forget those rustling newspapers on the train or on the tube, or even those weighty Association manuals for those of you out there studying. Personalised newspapers will enable you to track on a prefiltered basis the news stories, market commentaries and stocks of particular interest to you as you make your way into work (assuming of course you haven't taken the plunge and determined that you can work from home by this time). Electronic books and maga-

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zines will enable you to browse through *The Treasurer* or bone up on the latest Association publications electronically – on a subscription-paid basis of course!

This new freedom will, however, bring with it a raft of new issues for the treasurer. An obvious one is that controls may need to be adapted to allow (or reinforced to prevent) mobile dealing or mobile authorisation of treasury activities, and effective audit trails of decisions made in such circumstances will need to be retained.

Of increasing importance will be the rate at which new risks, be they currency exposures, credit risks or a host of others, arise and will have the potential to reach material volumes very quickly. These risks will need to be proactively managed by the treasurer; he will need to adapt to use the technology to get his or her treasury message disseminated within his organisation to colleagues in the sales, marketing, purchasing and mainstream finance disciplines who are at the 'cutting edge' of creating the business relationships that give rise to these risks.

While a lot of attention is given to the business-to-business and the personal/lifestyle impacts of the new technologies, their application within the organisation, and across professional disciplines, is every much bit as important. At stake for some treasurers will be their ability to use the technology to increase their sphere of influence within the organisation in areas such as working capital management.

'M-commerce' is likely to have a significant impact on the working capital and liquidity profiles of many businesses, with a knock on impact on cash management. It is already acknowledged that e-commerce has radically changed the working capital cycle for many businesses; 'm-commerce' will add to the speed and volume of this trend, particularly (but not exclusively) in retail industries.

In summary, the sky will be the limit. Well almost – the use of mobile devices in aircraft without fear of arrest or of endangering oneself and the rest of the passengers is also almost upon us. ■

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