



# Hard cell

**Wireless operators that provide data services across specialist networks are having to battle against the giants of the cellular industry.**

As studies in negative campaigning go, even some politicians could possibly learn a thing or two by visiting the web site of Transcomm, a wireless network operator offering businesses and government agencies an alternative infrastructure to conventional cellular networks.

In the 'About Us' section, Transcomm carries links to articles and reports that highlight shortcomings of rival wireless approaches. There, visitors can read about all manner of problems, from mobile operators that turn off data services to free up scarce voice resources to cellular users hit by regular periods of service downtime.

Marketing consultants tend to deter clients from bad-mouthing the competition. But what Transcomm has done is subtler: it is not criticising particular companies *per se*, it is attacking the technology its rivals hawk. The company is keen to highlight what it sees as the main deficiencies in cellular networks – be they 2G, GPRS or 3G. That way, it reasons, the benefits of its own

network, based on an Ericsson-developed wireless data technology called Mobitex, gain weight.

For years, such 'alternative carriers' have battled to gather and then hold on to business customers in the face of the expanding cellular empires of companies such as Vodafone and Orange.

Some have had considerable successes. Today, data-only networks, such as Siemens DataTrack and Mobitex, offer a low-cost, out-of-the-box, proven, mature, business-tailored alternative – and one that is already used by almost one million users in the UK.

In the US, the Mobitex network standard has grown prominent largely thanks to Research In Motion's popular Blackberry wireless email devices, which initially connected only to Mobitex systems. In the UK, Transcomm's success has attracted a takeover bid from BT.

## FALLING SHORT

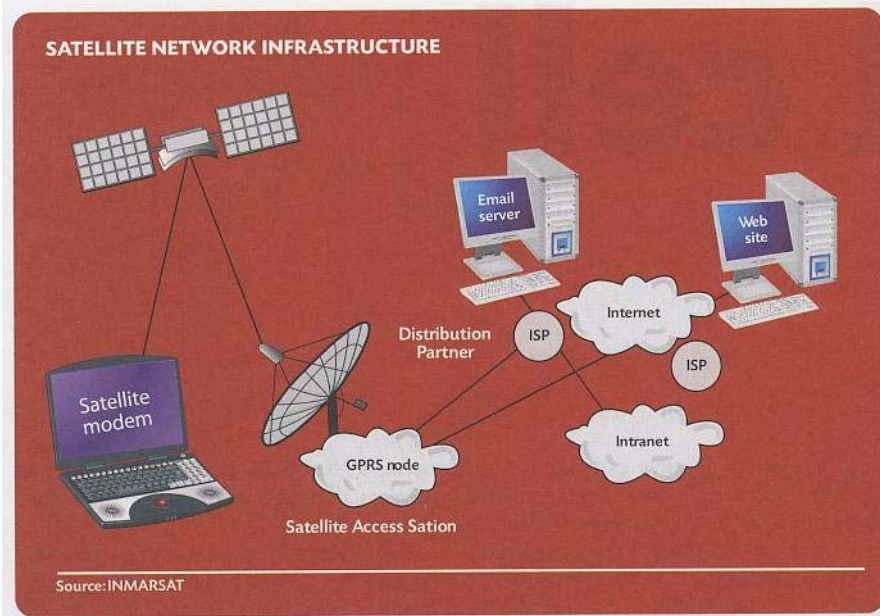
But while that paints a picture of success, the failures of alternative networks have been more spectacular – and thus harder to ignore. Early experimental wireless systems came and went: take for example Rabbit, the bizarre forerunner to Orange, that operated mobile phone points on street corners.

Attempts to create global satellite-based wireless systems also suffered embarrassing and costly failures in the late 1990s – on the launch pad as well as in the boardroom.

Iridium, in particular, (backed by Motorola) became a byword for reckless investment, burning its way through billions of dollars in an attempt to encircle the globe with low-orbit satellites. Teledesic, the satellite venture whose shareholders included Bill Gates of Microsoft and wireless industry entrepreneur Craig McCaw, did not even get that far.

In the minds of many corporate decision-





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makers, conventional cellular networks are still perceived as the ‘safe’ and cost-effective choice. Alternative, specialist wireless data network technologies, such as Tetra (terrestrial trunked radio), Mobitex and satellite, rightly or wrongly, are still often seen as a riskier and costlier option.

Such views are, at best, only half right. Today, the established alternative carriers say, with some justification, that it is wrong to class their services with the failures of the past. At a time when the notion of the ‘extended enterprise’ has become prominent, they argue, businesses could miss a real opportunity by writing off non-cellular systems.

Cellular-based data services certainly have their shortcomings. Most operators still tend to prioritise voice calls over data traffic when capacity runs low, causing unacceptable delays to data delivery.

Roaming from one cell to another also remains a significant technical obstacle, particularly when different cells have different network technologies – for instance, when a business user moves from an area with 3G coverage to one with GPRS.

At this stage, 3G coverage remains patchy – bad news for field service engineers in remote areas who might want to look up product manuals – and technical problems persist. The high cost of devices and service tariffs for 3G is another significant barrier to adoption.

Moreover, cellular operators have seemed reluctant to offer service-level agreements to enterprises for mobile applications. There are two main reasons for this, say experts: cellular networks remain too unreliable to make profitable guarantees about uptime; and operators have generally failed to re-architect their IT infrastructure in order to manage it at a business service level. Things might improve with the wider roll-out of 3G, but not for several years, say observers.

And although 3G services offer high speeds – sometimes on a par with a home broadband service – that might be overkill for most corporate uses today. “Lots of corporate applications are not particularly designed to take advantage of broadband,” says Jeremy Green, an analyst at market watcher Ovum. “In niche markets, reliability is more important [than bandwidth]. Users

need to know that the data has got through and has been received and read.”

These shortcomings, say the alternative operators, are providing them with plenty of opportunity. Take the practice of cellular operators prioritising voice calls during busy periods: some alternative networks clearly have no such constraints as they only carry data traffic. Roaming is not a problem, either, since networks are not split into ‘cells’. And the maturity of the technology means that alternative operators are much more likely to offer service guarantees.

Long-term partnerships with niche application developers are another advantage for the alternative carriers, says Ovum’s Green. “What users major on is integration capabilities, and that is where companies like these come into their own. [Alternative carriers] have partnerships with most of the leading application vendors and systems integrators within the vertical sectors they operate in.”

#### CHALLENGING TIMES

All the same, as GPRS, 3G and, to a lesser extent, WiFi march on, alternative operators face a stark choice: innovate, stick to a vertical niche, or disappear.

“We have to market our services against the huge power of cellular,” admits Richard Pullin, business development director at Dolphin Telecom, which operates a Tetra network in the UK, “so we really have to market hard.” Russell Backhouse, Transcomm’s finance director, says that alternative carriers will position themselves on the basis of reliability and quality-of-service. “The issue is not the technology,” he says, “but whether or not it works.”

Opinions on how all this will play out tend to polarise between those who think that the alternative carriers are bound to disappear, sooner or later, and those who believe there will always be room for niche operators with strong partnerships and deep domain expertise.

Finding a niche is easier said than done, of course. Some alternative carriers differentiate themselves on the grounds that they cover a wider area of the UK landmass.

Others have tailored the device and the performance of the network for a particular customer and a specific business application: a construction company with a large number of field workers on site, for example, might prefer a rugged device and a more reliable and private two-way radio system such as that provided by Dolphin, a Tetra-based operator.



## Alternative wireless networks

TECHNOLOGY	WHO OFFERS IT SPEEDS (KBIT/S)	TYPICAL DATA	ADVANTAGES	DISADVANTAGES	TYPICAL USERS
Paging	PageOne	6	'Push' technology for guaranteed message delivery	Narrowband data only	Healthcare, finance
Mobitex	Transcomm	8	Supports IP, always-on, big cells cuts down on handover problems	Slow data speeds, data only	Emergency services, transportation, field service
Terrestrial trunked radio (Tetra)	Dolphin	25	Combined voice and data, widespread industry support to short messaging	Inefficient use of the airways, data capability limited	Security, construction, engineering
Satellite	Inmarsat/Comera	144	Wide coverage area, high quality data/images	Can be expensive, not designed for permanent use	Broadcast, transportation, event management

## Conventional wireless networks

TECHNOLOGY	OPERATOR	TYPICAL DATA SPEEDS (KBIT/S)	ADVANTAGES	DISADVANTAGES
GSM (2G)	Vodafone, Orange etc	8	Cheap data fees, cheap devices, users have dedicated circuits	Slow speeds, small cells leads to regular dropped calls
GPRS (2.5G)	Vodafone, Orange etc	40	Always on	Lack of capacity can mean voice calls get priority
WCDMA (3G)	Vodafone, Orange etc	120	Fast data speeds, large capacity	Expensive (for now), immature technology, poor coverage
802.11b (Wifi)	BT, T-Mobile, Surf and Sip, etc	1,000	Fast data speeds (theoretically)	Lack of roaming, high fees, widely varying service levels

Despite its publicised problems, satellite services have undoubtedly emerged as a serious corporate option. Costs have come down, and equipment is far less cumbersome than in the past.

Inmarsat's 'regional BGAN' (broadband global area network) service, for example, is a highly rated option. The service was launched in 2002 and delivers data at up to 144kbit/s to lightweight notebook-sized terminals in Europe, North Africa, the Middle East and the Indian subcontinent.

Even pagers are still finding uses in business. They are perhaps best suited to those occasions when text messages are as important as voice calls; hospital doctors still tend to carry pagers as well as mobile phones. Unlike text messages that sometimes get delayed (or, worse, lost altogether), pager messages can be 'pushed'

out to the device the moment they are posted – and a paging service provider, such as PageOne, can guarantee that.

### SWITCH OVER

At this stage, customer movement is by no means all one-way in the direction of cellular services. Encouragingly for the alternative carriers, some businesses that used to be customers of conventional operators have found their limitations enough to warrant a switch to an alternative carrier.

A case in point is car fitter ATS Euromaster. It has spent about £1 million equipping more than 100 field workers with Fujitsu Tablet PCs that process data delivered across the Transcomm network. "Four years ago our field engineers were equipped with mobile phones, but we had major problems with coverage and we decided to look at

alternatives," says John Brand, the company's mobile unit manager.

He has been satisfied, on the whole, with the service: efficiency savings have meant the company has been able to answer the same number of enquiries with a much smaller fleet.

But Jaye Isherwood, an analyst with Cap Gemini Ernst & Young, says that the alternative carriers are being increasingly marginalised. "These other technologies, like Tetra and Mobitex, are extremely robust, but they are not a replacement for cellular," she says. "Even those police forces who use the Mobitex network for accessing data on the beat use mobile phones as well. We are coming across [alternative carriers] less and less these days, which is indicative of the fact that GPRS is good enough for most business requirements."

One operator that says it has accepted the way the market may be going is Cognito, one of the trailblazers of the alternative operator concept. In the early 1990s, when 3G was still on the drawing-board, Cognito won the first licence to operate a data-only public radio network in the UK. But by 2002 it had chosen to move over to a GPRS-based network infrastructure. "Our network was proprietary, which meant we were always fighting the trend," says managing director Steve Alderson.

And new threats to the alternative carriers keep emerging. The latest is called WiMax, a kind of souped-up WiFi that can beam data over a radius of up to 30 miles.

Still, this is no fait accompli: over the last decade, the alternative carriers have carved out niches for themselves, improbably holding off the growing challenge from cellular operators. That challenge may be growing, but, then again, so are the number of customers who want wireless solutions to their specialist business problems. ⓘ

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