



'Earthquake Collapses China's Unicom's Two Networks

May 13, 2008

China Unicom (CHU) says that due to the earthquake, its G net and C net in Wenchuan, Sichuan Province have both broken.

*About 200 base stations of the company's G net and C net in the Aba area of Sichuan have reportedly been paralyzed. And because of busy traffic, the company's two networks in Chengdu have been congested, thus resulting in a slowdown of **SMS communications**.*

As a result of the earthquake, the communications of four counties in south Gansu Province have also been interrupted and about 500 base stations in Shaanxi Province halted.

China Unicom says it has initiated an emergency plan and sent technicians to the disaster areas to recover the communications. There is no firm timeline on when the systems will be fully operational again'.

This [news item](#) highlights two issues, one that cellular networks are not immune to natural disasters, a fact already well proven by Katrina and other relatively cataclysmic events, the second that SMS, (the short message service) one of the simplest parts of the cellular protocol stack, continues to expand its role as a fundamental enabler for emergency communications and a mechanism for getting on with life in troubled times.

We tend to focus on new technologies in these monthly topics.

This month we focus on new applications for old technologies, taking SMS as an example of how the simplest of communication protocols can deliver substantial social, political and economic value.

The social value is hinted at in the Press Release. Assuming the Chinese networks are restored quickly, SMS provides the most bandwidth efficient and link budget efficient mechanism for getting in touch with friends and family affected by the disaster.

The Chinese government has also shown a developed awareness of the political value of SMS.

The following is an extract from a recent blog

[**Earthquake: China uses text messaging to assure public**](#)

Mon, 05/12/2008 - 11:48am

The full extent of the damage caused by the 7.8 magnitude earthquake that hit China's Sichuan Province on Monday afternoon is just starting to become clear. The quake was felt in Beijing and Shanghai, and in places as far reaching as Taipei, Hanoi and Bangkok.

*In order to reassure people and to squelch false rumors, the Chinese government is using **SMS text messaging** to mobile phones as well as internet postings to inform people that the areas where they live are not in the seismic zone. **Over a million such messages were sent in nearby Guangxi Zhuang Autonomous Region and Guizhou Province.***

The government plans to use text messaging not only for emergencies, but for various situations relating to the public interest. The plan is part of the government's new openness in information regulations which it says will promote "openness as principle, being closed off as the exception" in an effort to provide timely and accurate information to the public'

As Western observers, we are conditioned to be cynical about Chinese politics and Chinese political motivation but to all intents and purposes the response by President Wen Jiabao to the crisis seems heartfelt and genuine and considerably more open than the response of the Burmese leadership to the recent [Cyclone Nargis disaster](#).

SMS broadcasting was used to a lesser extent after the [Asian Tsunami](#) in 2004 but now appears to be becoming an alternative to radio as a mechanism for disseminating government information in an emergency.

Can you get to as many people by phone in China as you can by radio?

Well no. According to the Chinese State Administration of Radio there are 1.2 billion people in China listening to long wave, medium wave and VHF radio.

According to our colleagues at [The Mobile World](#) as at March 2008 there were 557.8 million cellular subscribers in China. Radio therefore still has the advantage in terms of numeric reach but this discounts two factors, cellular subscribers in China are being added at a rate of nine million per month ([The Mobile World](#)) and cellular users in China anecdotally at least are more likely to have their phones on rather than their radios at any particular time.

In terms of a cascaded response, advice has to be followed by the first responder teams (in the case of China, a massive exercise by the army), medicine and medical assistance, food and shelter.

However at some stage, victims of natural or man made disasters also have to have access to cash.

This may be problematic if banks are closed. Even if the banking system is operational it may be unsafe to hold and move money around.

This was one of the topics discussed at the [May Day May Day Conference](#) held on

May 1st at the [Imperial War Museum](#) at Duxford organized by [Cambridge Wireless](#) in association with the curators of the [Pye Telecom Historic radio collection](#).

[Sagentia](#), a Cambridge Consultancy presented a paper on a project partly funded by the UK government to find ways to provide access to safe, fast and reliable financial facilities either in situations where traditional banking had broken down and/or to people unable to open or disallowed from opening a traditional account.

The solution, known as MPESA is disarmingly simple.

A sender wishes to send money to a friend or pay for a product or service. He/she enters the recipient's phone number, the amount and a PIN number. The SIM based software (either downloaded over the air or factory loaded) encrypts the SMS message. A centralized accounting system then transfers the funds and a confirmation message is sent.

If the recipient owns an MPESA account then this is a simple SMS receipt.

If not, then a voucher is sent which is redeemable through a network of nominated agents.

The example given was [Safaricom](#), a Vodafone associate company based in Kenya.

The disputed election at the end of 1997 in Kenya resulted in 1500 deaths and the displacement of 600,000 people. No shops or banks were open for 5 days and no air time resellers were available to top up pre pay accounts.

Safaricom continued to allow calls and texts. MPESA was the only source of airtime and the only easily available mechanism for transferring funds.

One year on there are more than two million registered MPESA users in Kenya totalling 20% of Safaricom's installed base. Another one million people have received money through the system. Over 10% of Kenyans have now used the service.

A similar service launched recently in Afghanistan and Tanzania with India and Egypt following later this year.

Remarkably globally only 1 in 7 people have a bank account whereas (as we know) almost one in two people have a mobile phone.

Put another way, three billion people own a phone, less than one billion people own a bank account.

Just on its own and/or counting partner and associate networks Vodafone reaches nearly a billion people.

The Vodabank (our name not theirs) is therefore potentially the largest bank in the world in terms of addressable customer numbers, if not by value.

This looks good for Vodafone but lets suppress the cynicism for the moment and at

least give credit (no pun intended) where credit is due.

A simple SMS based application has made it possible for a new generation of relatively low income users to pay bills or buy goods or send money securely and safely to friends and family without the need to handle cash. Employers can also pay employees and contractors through the system. Less cash means less crime (less incentive for mugging and theft and extortion).

So SMS saves lives, allows governments to communicate and allows individuals to spend and send and receive financial transfers.

Not bad for an almost accidental add in to the GSM specification and living proof that simple things just occasionally can deliver spectacular value.

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[RTT](#), the [Shosteck Group](#) and [The Mobile World](#) are presently working on a number of research and forecasting projects in the cellular, two way radio, satellite and broadcasting industry.

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