

## Tsunami, knowledge and wisdom

BY J. PHANG

TSUNAMI. Up to two weeks ago, most of us would have mistaken the word for a Japanese delicacy like sushi or tempura.

When it struck Asia on Dec 26, 2004, just a day after Christmas, the world learned the true meaning of the word as the tsunami wrought death and devastation throughout the coastal regions of Asia.

In amateur videos that have begun to appear on TV and the Internet, we see people on the beach watching a big wave approaching, not realising that it was a tsunami. Few were aware of the danger until it was upon them.

It swept away buildings, cars, families and communities, and the grief-stricken images of victims were beamed across the globe.

Now we understand the true meaning of the word "tsunami." CNN, BBC and our own news media have become veritable encyclopaedias on tsunamis.

### Tacit knowledge

On the fateful day, Tilly Smith – a 10-year-old girl from England – was on Maikhao beach, Phuket. Tilly's family was enjoying themselves when the sea receded and began to bubble. The adults were curious, but Tilly froze in horror.

"Mummy, we must get off the beach now," she told her mother. "I think there's going to be a tsunami."

The adults didn't understand until Tilly added the magic words: "A tidal wave." Her warning spread like wildfire. Within seconds, the beach was deserted – and it turned out to be one of the few places along the shores of Phuket where no one was killed or seriously injured.

Her mother recalled, "When the water went back, I was like most people on the beach. I wanted to walk down and look at what was going on. It was only when Tilly explained what she thought was going to happen that I had second thoughts.

“We ran off the beach as fast as we could and went to the first floor of the hotel where it would be safe. Minutes later the water surged right over the beach and demolished everything in its path. It was terrifying to watch but I’m very proud of her,” she said.

It was a coincidence that Tilly had just completed a study of earthquakes and the tsunamis that could result from them. With the knowledge still fresh in her mind, she was able to see the telltale signs of impending danger.

In knowledge management circles, we would say that Tilly’s “tacit knowledge” (the knowhow contained in people’s heads) saved many people from death on Maikhao beach. Her knowledge was articulated in words to her mother, and because her mother trusted her, she decided to tell others about it and they acted on the knowledge by running for cover.

### **Explicit knowledge**

The Tsunami Warning System (TWS) in the Pacific monitors seismological phenomena and tidal stations throughout the Pacific Basin to evaluate potentially “tsunamigenic” earthquakes, and then disseminates tsunami warning information if needed.

Located near Honolulu, Hawaii, the Pacific Tsunami Warning Centre provides this information to national authorities in the Pacific Basin.

Earthquake information is provided by seismic stations. If the location and magnitude of an earthquake meet the known criteria for the generation of a tsunami, a warning is issued. The warning includes predicted tsunami arrival times at selected coastal communities within the geographic area defined by the maximum distance the tsunami could travel in a few hours.

This international tsunami warning system among Pacific Rim countries give them three to 14 hours lead time before the arrival of destructive waves.

Nations around the Indian Ocean do not have such an alert system.

The warning system is a manifestation of *explicit knowledge*. It is like Tilly Smith’s tacit knowledge, but embodied in a system of sea-level monitoring instrumentation that will give the same warning of impending danger.

### **Knowledge dissemination**

Once a significant tsunami is detected, the warning is disseminated to local, state, national and international users, as well as the media. These users, in turn, disseminate the tsunami information to the public, generally over commercial radio and television channels.

Asian countries are now urgently talking about setting up a tsunami warning system. The dissemination system is crucial. As tsunamis hit within hours, communications must be swift and certain.

Since tsunamis rarely occur, it is possible that over time users

will become hesitant in sounding the alert, in case it turns out to be a false alarm.

Governments may need to insist that all seaside resorts are “hardwired” into the alert system.

Businesses will be cooperative today while the danger and smell of death is still in the air. But over the years, this will soon be forgotten and such alert systems will be viewed as an inconvenience over a very remote possibility.

Yet the destruction of lives and properties of this magnitude should not, and must not, occur again.

### **Knowledge management**

As aid pours into the affected countries, the lack of knowledge management is apparent. Food is not reaching the affected victims, logistics is a nightmare and coordination is needed among the nations offering aid.

A sound knowledge management system would help tremendously, but the design of such systems needs to be undertaken by an international agency – perhaps a United Nations body.

This knowledge system would be a coordination framework that could be put up immediately no matter where disaster strikes. Affected countries can immediately plug in local information – maps, population demographics, hospital locations and so on – into this coordination framework.

The resources of countries offering aid can also be plugged into the system, and the logistics mapped out by the system, aided by observation satellites that can give us visuals of altered coastlines and the extent of the damage.

It would be timely for the global community to proactively design such a knowledge system that could be used in any kind of disaster – natural or manmade. As global warming continues unchecked, there will be an increase in unprecedented natural disasters.

### **A high-tech scenario**

Many people are still missing from the Dec 26 tsunami. Some of the dead cannot be identified. Rescuers are taking DNA samples and extracting thumbprints from corpses.

In Phuket and many other locations, noticeboards of missing persons have been put up and people are combing hospitals and morgues to see if they can locate their loved ones.

Some current technology could have helped here. Here's one possible scenario:

The VeriChip is about the size of a grain of rice, virtually undetectable and practically indestructible once inserted under the skin – usually in your right hand or forehead. The chip has a special polyethylene sheath that helps skin bond to it, so that it stays in place.

Since the chip has no battery, there are no chemicals to worry about and the chip never “runs down” – its expected life is up

to 20 years.

Tourists entering a country are scanned at the immigration checkpoint. They can pay for their taxis, groceries and hotel rooms with just a swipe of the hand. As they travel throughout their holiday destination, they leave behind an electronic trail which is recorded not only in this country but also in the home credit card company.

In the event of a calamity like the recent tsunami disaster, the VeriChips can easily be extracted from corpses or the details downloaded into a scanner before a quick burial. Details are fed into a web-based data bank and instantly a victims list is made available online to the rest of the world.

With the incorporation of a transponder into the VeriChip, sensitive scanners could locate missing persons or even verify that the owner of that particular chip is no longer alive.

Sounds like science fiction, but it is not. The VeriChip is already commercially available and the only thing that prevents it from being accepted by the general public is that it can lead to the infringement of civil liberties and privacy.

### **From knowledge to wisdom**

Compared with the Sept 11, 2001 terrorist attacks in the United States, the Dec 26, 2004 tsunami disaster has invoked the opposite reaction from the global community.

When terrorists attacked and brought down the Twin Towers, they divided the Muslim and Western worlds. 9/11 brought out the worst in humanity – distrust, anger, vengeance and even more hatred. It has led to more humans dying at the hands of their fellows. By contrast, the Asian Tsunami has largely brought out the best in humanity.

Americans, Europeans and Japanese are coming into predominantly Muslim Indonesia to help victims. Compassion is overcoming cultural differences.

For the moment, everyone is united under the human race.

The weapons of mass destruction designed by man are humbled by the power of “acts of God” which are capable of sweeping through continents in an instant. Is there a message there somewhere?

We know what is tacit knowledge and what is explicit knowledge.

We embody this understanding into knowledge management systems which give us greater control over situations and people, but there is still a higher level of knowledge: Wisdom.



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