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Tsunami alert: the difference a phone makes

by Amanda H A Watson

Queensland University of Technology

amanda.watson@student.qut.edu.au or ahawatson@hotmail.com

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Abstract

As a new communication technology expands in a disadvantaged, rural area of a developing country, this process of change can radically affect the quality and volume of available information. Substantial growth has occurred in the telecommunication sector in Papua New Guinea (PNG) in the last three years. Mobile telephony is rapidly rolling out to rural and remote localities, following decades of inadequate service provision. The paper examines the introduction of mobile telephones into a rural village in PNG, and focuses on an example of changed information access afforded by the mobile telephone, through comparing the village's experience of two tsunami alerts: one immediately prior to the introduction of mobile phone services in the area, and the other two years after mobile phone reception became available. The research demonstrates a key application of newly introduced information and communication technologies - to benefit disadvantaged, rural communities in emergency situations.

Introduction

The paper examines the recent introduction of mobile telephones into a rural village in Papua New Guinea (PNG), and contains findings from field research conducted late in 2009 in Megiar village, Sumkar District, Madang Province. It focuses on an example of changed information access afforded by the mobile telephone, through comparing the village's experience of two tsunami alerts: one immediately prior to the introduction of mobile phone services in the area, and the other two years after mobile phone reception became available. The research shows that for people with a paucity of information access, responses to threats such as tsunamis can be inappropriate, driven by fear and panic. By contrast, when there is reliable, timely information available, measured responses can be employed. The research therefore demonstrates a key application of newly introduced information and communication technologies - to benefit disadvantaged, rural communities in emergency situations. The paper underscores discussion which followed the major disaster of the Indian Ocean tsunami in Indonesia, Sri Lanka, Thailand and other coasts in December 2004, about warning systems servicing ubiquitous communications, especially mobile telephones, which might ameliorate the danger of a reoccurrence.

This research makes an important and unique contribution to the body of knowledge about the role of communication in PNG. Recent media research in PNG has been carried out at Divine Word University by Joys Eggins (2007), Evangelia Papoutsaki (Papoutsaki & Harris, 2008; Papoutsaki & Rooney, 2006; Papoutsaki & Sharp, 2005), Dick Rooney (Rooney, Papoutsaki & Pamba, 2004), Martha Ginau (Ginau & Papoutsaki, 2007), Michael McManus (2004, 2006) and Patrick Matbob (2007). Some earlier work was undertaken by David Robie (1995, 2001). There has also been research conducted by Helen Molnar (2005), Lee Duffield (2005) and the Media for Development Initiative (2007a, 2007b). Nonetheless, this body of literature provides only a limited picture of the media and communications landscape in PNG, focusing mainly on print media, and media training. There is no academic literature addressing mobile phone technology in PNG. Therefore this research is timely and adds to the understanding of the role of mobile telephony in the communicative environment in PNG.

This paper will: introduce key concepts; provide background information; explain methods employed; introduce Megiar; outline two experiences of tsunami alerts; discuss implications in relation to relevant literature, and conclude with some final remarks and recommendations for further research.

Theoretical framework

Two key concepts in this paper are 'information' and 'knowledge'. Far from being interchangeable terms, it is asserted that information is at a lower level, along with 'data', whereas knowledge is a higher-order term moving towards 'wisdom' (Bennett, Grossberg & Morris, 2005, p. 186). The term 'information' has for centuries been understood to refer to "a record or communication of an event, fact, or subject" (Bennett et al., 2005, p. 186). Thus, a news report of an event can be thought of as information (Bennett et al., 2005, pp. 186-187). By contrast, 'knowledge' is considered to be an "intellectual activity" (Bennett et al., 2005, p. 195).

Weigel's view of these two concepts underpins this paper: "knowledge is based on information, but it is linked to a specific context, for instance to a specific local context from which it derives its value" (Weigel, 2004, p. 20). As information is generally thought of as being factual or concrete, it is not usually connected directly to an individual, whereas knowledge has associated with it a sense of "personal ownership" (Weigel, 2004, p. 20) and active engagement with the subject matter (Bennett et al., 2005, pp. 195-196). Linked with both knowledge and information, there is an understanding that there is an important role for communication (Weigel, 2004, p. 20). These three notions together can interact with, utilise or be effected by technological developments and access to relevant technologies (Weigel, 2004, pp. 20-21).

The final term which will be introduced and defined here is 'information and communication technologies' (ICTs). This term can include "the whole range of technologies designed to access, process and transmit information" (Weigel, 2004, p. 19), from devices that have been common in developed nations for many decades (like radio receivers, landline telephones and television sets) to more recently designed tools such as computers and the Internet (Weigel, 2004, p. 19). In this discussion, and indeed commonly in literature about ICTs (c.f. Unwin, 2009, pp. 26-27; van Dijk, 2005, p. 204; von Braun & Torero, 2006, p. 3), both the Internet and mobile telephones are included under the term ICTs.

Background

PNG is a developing country, situated north of Australia and east of Indonesia, which has been inhabited for at least 40,000 years (Rynkiewich, 2004, p. 17), with European contact since the 1800s (Stanley, 1982, pp. 318-319). Although culturally rich, PNG performs poorly on a wide range of development indicators, as is shown by its ranking of 148th out of 182 countries on the United Nations Human Development Index (United Nations, 2009). Over 87% of the people live in rural areas (National Statistical Office of Papua New Guinea, 2004, np), where media access, landline telephone infrastructure and postal services are limited, and computer use is rare (Watson, 2010). Many parts of PNG boast only poor infrastructure (Government of Papua New Guinea & United Nations in Papua New Guinea, 2004, p. 5) and there are "whole regions with little access to basic services such as education and health" (Papoutsaki & Sharp, 2005, p. 3).

Substantial growth has occurred in the telecommunication sector in PNG in the last three years. Mobile telephony is rapidly rolling out to rural and remote localities, following decades of inadequate service provision. Until mid-2007, the PNG government's telecommunications provider held a monopoly (Barker, 2008) but provided only limited mobile telephone service. The monopoly ceased when the Independent Consumer and Competition Commission opened up the market, granting licences to two companies: Digicel, and Indonesian-owned GreenCom (Kaiok, 2007; Marshall, 2008). From the outset, Digicel campaigned in a highly visible manner, and began to establish a new network, with increasingly wider mobile phone coverage (Barker, 2008). GreenCom has never offered mobile phone service to consumers in PNG (c.f. Kaiok, 2008a, 2008b; PNG Post Courier, 2008) and is

generally considered unlikely to do so. It reportedly became insolvent when a major shareholder pulled out, leaving local workers unpaid (Kanu, 2009, p. 3).

Methods

The paper takes an ethnographic approach, situated within an interpretative methodology. Data collection methods which were part of a larger study into mobile telephony in rural villages in PNG included semi-structured interviews, orally-administered surveys and participant observation. For this particular paper, there is a focus on the experience of tsunami alerts, which was explained in detail by one interviewee, Pancratius 'Pan' Lakot, late in 2009. The paper also draws on the researcher's observations in PNG during two tsunami alerts: one early in 2007 and the other in 2009. The analysis is undertaken through a social lens, providing an understanding of the role of mobile phones in the information-seeking strategies of people in the community being examined.

In ethnographic work, it is possible for a story, a case or an experience to arise which provides rich data worth reporting. For example, the short book chapter by van Beek (2009) profiles one traditional healer in Cameroon and his use of the mobile phone. This is a brief but very specific study of the use of the mobile phone which allows the author to relate behaviours to local beliefs about the transmission of illness. In a similar manner, it is hoped that this introduction of Megiar and the description of the experience of two tsunami alerts in this village will contribute in a thought-provoking manner to the discussion of information access in small communities in developing nations.

Megiar

Megiar is a coastal village in Sumkar District, Madang Province. It is located on the mainland, along a sealed road. Buses make regular trips to Madang town, which take about 90 minutes. Housing ranges from bush material houses, to semi-permanent houses using mixed materials¹ and permanent houses. Some homes have mains electricity connected.

It takes about an hour and a half to walk to Mugil Health Centre from Megiar (Binib, 2009). Mugil Health Centre also has an ambulance. A Catholic Mission Station is located next to Megiar, offering a range of services such as a primary school, training courses and a bore water pump. The elementary school² in Megiar has its own bush material buildings. Megiar residents obtain access to water from various sources, such as wells and springs. Some families have rainwater tanks or drums for storing water. Most people have access to toilets, which are usually pit toilets³ or seawater toilets⁴. An active marketplace operates in Megiar on a daily basis in a designated area by the road and can benefit from passing trade. There are several trade stores, at least two of which are open on a daily basis.

¹ A typical semi-permanent house is primarily made of bush materials, with a corrugated iron roof.

² Community-based elementary schools provide "the first three years of formal schooling" (Hopkins et al., 2005, p. 78) in PNG, usually in the vernacular language (Weeks, 1993), and feed into primary schools, where English language education commences (Hopkins et al., 2005, p. 77).

³ Pit toilets are bush material structures placed over deep holes in the ground. When the need arises, a new hole is dug elsewhere, the above-ground structure is moved and the first hole is covered over.

⁴ Seawater toilets are bush material structures erected over the water's edge.

Digicel coverage extended to Megiar in October 2007 due to the construction of a tower at Barikas, a mountaintop village overlooking Megiar (see Photo 1). In Megiar, there are no landline telephones, Internet connections or postal services. In a survey conducted in Megiar in 2009 with 102 respondents, it was found that very few people had a television or computer in their home (7.8% and 5.9% respectively). About one third of the survey respondents (34.3%) had a functioning radio receiver at home. The newspaper was the most regularly accessed medium, with 69.6% of respondents having read a newspaper within the last month. Half of those surveyed owned a mobile phone (50.0%).



Photo 1: The Digicel tower at Barikas (PNG 524 Didur)
Copyright: Amanda H A Watson, 2009

Tsunami alerts

There are many stories of tsunamis in the oral history of the Madang area (Mennis, 2006, p. 3), including a large tsunami about ten generations ago which “killed most of the inhabitants” (Mennis, 2006, p. 3) of Karkar Island and would have had major consequences in the Megiar area as well. Geological evidence indicates that a tsunami of substantial proportions struck the north coast of New Guinea about 500 years ago “causing a tremendous loss of life” (Mennis, 2006, p. 3). A calamitous tsunami overwhelmed the town of Aitape, around 500 kilometres along the same coast in another province, in 1998, causing over 2000 deaths (Kelly, 2005; McLaughlin, 1999) – an event in recent memory that stimulates current fears in coastal communities in PNG.

On October 8 2009, there was a tsunami warning issued for coastal areas of PNG following an earthquake near neighbouring Vanuatu. Travelling to Megiar on a public bus that morning, the researcher received a phone call on her mobile phone conveying this information. Upon arrival in Megiar, the residents were already aware of the warning, having received this information from a government car that was travelling along the coastal road spreading the news through the use of a loudhailer or loudspeaker. There was also a motorbike rider travelling up and down the north coast road with this information.

Initially, the villagers seemed calm, assuring the visitor they would keep an eye on the ocean and would have sufficient time to react and move to higher ground if they saw the water retreating. They also asserted that the birds and other creatures would

retreat if a tsunami was approaching. A short time later, conducting surveys became difficult as the researcher was being mobbed by excitable school children. Their presence, which was loud and also unnerving for respondents, was due to the tsunami warning – the school teachers had let them out of class when they received word of the threat. The children were nervous and frightened. They were carrying bags on their backs and apparently some had already retreated to the higher ground of the inland bush areas.

A little while later, a respected local leader, Felix Didol, received word that the warning had been cancelled. It sounded to the researcher as though he was listening to a radio and others were crowding around to hear the news being broadcast through the radio receiver. In fact, he was receiving notification of the cancellation from an official in town through his mobile phone, which he had set to loudspeaker and held up in the air so that others could hear. A large crowd of people, including many school children, gathered around him to hear the latest news. This experience illustrates that mobile phones can play a role in disseminating up-to-date information about important events, such as tsunami warnings. Regarding radio broadcasting, the local Madang radio station is closed down each day and broadcasts only in the evenings. Other stations are networked, usually broadcasting from Port Moresby, on the other side of the country, often with limited options for opening a local “window”. Although some general warning advice may have been accessible from these stations, many people in Megiar did not possess working radio receivers, and mobile phones seemed to get the news through first. However, other communication methods, like announcements through loudspeakers in cars, continued to play an important role in information access strategies.

In a number of cases, people in Megiar were sourcing up-to-date information about the status of the tsunami warning during the morning, through their mobile phones, from contacts based in Madang town or other urban centres who had Internet access. These experiences were evidenced in survey responses which showed that some villagers were aware that tsunami warning information could be accessed by contacts in town using the Internet. These people could then convey updated and detailed knowledge to mobile phone owners in rural areas. In one such case, Pan Lakot was able to reassure his relatives in Megiar that there was no need to flee up the hills.

I was at work when the tsunami threat came about, and we were on Internet, working in close consultation with the disaster centre and monitoring. While everybody was rushing, we were monitoring on the Internet the progress of the tsunami threat. Anyway, my brother-in-law called up. He says “brother-in-law, should I move to higher ground?”. And I said, “no, don’t move. Just stay put. We’re monitoring the situation here, on the screen through the Internet. We’ll be alright. Just stay put.” [But he replied,] “No, everyone’s carrying things, and they’re now going up the hills into the bush due to hearing this warning.” [I responded with,] “Just stay put. Don’t move yet. I’ll ring you back. If it’s not looking good, I’ll ring you back on your mobile and let you know.” So that, that was a real plus. And

anyway, I called him back and said “no, it’s over now, things are normal, you can all just stay put.” And he said “yeah OK”.⁵ (Lakot, 2009)

The events on October 8 2009 were in contrast to people’s experiences and reactions of panic as they fled to the mountains during a tsunami warning in early 2007, prior to Digicel’s launch in PNG. A large earthquake occurred in the ocean off the Solomon Islands on April 2 2007, which led to a tsunami warning being issued for Australia’s East coast, and Pacific island nations such as PNG. Beaches were evacuated in Australia, and, in Madang Province, a panic ensued. In Megiar, many people fled to the hills. In Madang town, which is situated on a low-lying peninsula, the one road out of town was crowded with people hurrying on foot or in motor vehicles to get away from the expected water. Photos 2 and 3 show the panic on the main road in Madang town as people were fleeing.



Photo 2: Madang residents fleeing town due to tsunami alert
Copyright: Jeffrey Elapa, 2007
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Photo 3: A traffic jam on Modilon road as Madang residents flee to higher ground due to tsunami alert
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As it turned out, there was no need for alarm. Thus, the introduction of mobile phone reception since the April 2007 event has enabled people to remain informed as events unfold and thus stay calm and react appropriately. In the case of Pan Lakot, he is noticeably pleased he was able to help out his relatives during the 2009

⁵ The original interview excerpt contained some phrases in Tok Pisin.

tsunami alert. For his relatives, their experience of the two tsunami threats was quite distinct, and their reactions were influenced by the amount and kind of information they had access to in each instance. In this family, mobile phones made a difference.

So that's, to me, that's, like, satisfying. And I can say what I was seeing on the screen to people in the village, so that they get something that's, like, closer to the truth than people hearsay from mouth to ear. So that was quite good. You know, good. I was able to impart something to people in the village who had no, didn't have the resource to be able to get the correct information. Because the previous one they packed up and they went, all ran into the bush. And it never struck me, but until, then the recent one, my brother-in-law rang up and I was in front of the screen. [...] So yeah, that was, really, I thought that was really great. (Lakot, 2009)

Discussion

The two experiences of tsunami alerts in the Madang area outlined above differ in one key respect: in the interim, mobile telephony had become available in rural villages, including Megiar. This case therefore provides a compelling opportunity to evaluate the relationship between the key terms introduced earlier: information, knowledge and ICTs. It is argued that mobile phone reception in rural settings, combined with Internet access at workplaces in urban centres, enables rural villagers to gather more reliable, timely information. In the case of Pan Lakot, he was able to translate the 'information' available to him on the computer screen into appropriate 'knowledge' relevant to his relatives in a particular locality. During the earlier tsunami alert, these villagers suffered from a paucity of information and responded in fear and panic. By contrast, they were able to source reliable, timely information in the second instance and therefore could employ measured responses. In this way, this example shows that "information enables enhanced control" (Bennett et al., 2005, p. 187) over one's environment and one's behaviour.

There have been other studies which have looked at the use of ICTs in emergencies in rural districts in developing nations, and "ICTs have been found to increase time-efficiency among users as they make distance barrier redundant" (Chib, Lwin & Jung, 2009, p. 216). In a place like Megiar where there is limited media access, and no landline telephones or Internet connections, the recently introduced mobile phones do provide a new, modern form of communication that is time-efficient. Previously, methods for communicating between Madang town and Megiar involved sending messages verbally with people who were travelling by bus between these places, or writing notes. Thus it often took two to three days for a reply to be received.

"Prior to the mobile era I would go down and find someone and tell them "pass this message" or write a note and give it to someone to take down and deliver and then I get feedback tomorrow, and luckily you know there's vehicles going down to the village daily so [...] it helps" (Lakot, 2009)

For relatives living in other parts of the country, communication with Megiar was even more difficult and delayed before mobile telephony was introduced, due to the lack of a full postal service: a letter-writer would "wait for the post office to deliver the letter to

the mission and then on a Sunday they would pick the letter and they get, or they will try to pass on, and that could be weeks before it reaches the destination” (Lakot, 2009). Thus the time-efficiency of communicating utilising the mobile phone is much improved, which is particularly important in emergencies such as medical emergencies or tsunami warnings.

Access to mobile telephony is not restricted to urban or privileged populations. Throughout the developing world, there has been in recent years an “unabated uptake of mobile technologies among hitherto unconnected sections of society” (Chib et al., 2009, p. 220; c.f. Donner, 2008, p. 143). The value of mobile telephone systems in emergencies can be greater in rural, poor settings where other ICTs and emergency services (such as ambulances, police etc) may be non-existent or unreliable. Although some writers focus on other technologies such as the Internet (c.f. van Dijk, 2005, p. 1), “when it comes to a direct link to poor communities and poor people, the telephone still plays a key role” (von Braun & Torero, 2006, p. 3).

In the example, “mere access to information” (Weigel, 2004, p. 20) about the 2009 tsunami alert, which originally was generated from a vehicle on the main road spreading the message using a loudspeaker or a loudhailer, was not enough for people to be able to make an informed decision as to the appropriate action to take. Pan Lakot’s relatives phoned him in search of ‘knowledge’, both in the sense of locally relevant information (Weigel, 2004, p. 20) and information holding some sense of personal attachment or value (Weigel, 2004, p. 20). As knowledge can change rapidly and can be shared or exchanged in dialogue (Weigel, 2004, p. 20), the mobile phone facilitated a conversation that continued in subsequent phone calls throughout the morning until the tsunami alert was lifted.

Weigel outlines several elements of ICTs which have impacted upon information, knowledge and communication: interactivity; speed; lower costs, and integration (2004, pp. 20-21). In the case of interactivity, Weigel argues that ICTs can “facilitate dialogue” (2004, p. 20), which is certainly true in the present example, as mobile telephony is more interactive than other mediums, such as radio or television broadcasting or newspaper publishing. Weigel also mentions speed as a key factor regarding contemporary ICTs (2004, p. 21). In particular, he refers to the speed with which information can be published on the Internet (Weigel, 2004, pp. 20-21), and as has been stated above, the introduction of mobile telephony into Megiar has also made communication between Megiar and elsewhere quicker. With respect to lower costs, Weigel argues that modern ICTs can be cheaper than traditional means of finding information such as books and newspapers (2004, p. 21). Despite this, “the cost factor is still a challenge in general” (Weigel, 2004, p. 21), particularly for poor people. In Megiar, the most frequently expressed concern in association with mobile phones is the high cost of operating mobile phones and recharging handset batteries (Watson, 2010, p. 11). Finally, Weigel argues that the integration of different types of media is a crucial element in the contemporary changes taking place (2004, p. 21). On the day of the 2009 tsunami alert, access to mobile telephony would have been of little value to people in the Madang area without some access to the Internet in urban offices.

Following an earlier tsunami alert in the Pacific region, Nadkarni suggested that a disaster warning agency based in New Zealand “could have used the cellular phone

system to mass broadcast their messages” (2006, p. 8). Two advantages of using mobile telephony for emergency messages of this kind were given: messages would be distributed almost instantaneously, and recipients would each receive an identical message (Nadkarni, 2006, p. 8), ensuring greater clarity and less confusion. For Nadkarni, mobile telephony “needs to be put at the very centre of disaster warning systems worldwide” (2006, p. 8). In PNG, the body which oversees disaster coordination has commenced investigations regarding communication with rural villagers during natural disasters but as at October 2009, they had “not yet decided on the type of communication medium to be used” (The National Disaster Centre director Martin Mose quoted in Anis, 2009, p. 5).

The Indian Ocean tsunami in 2004, and in particular the enormous death toll associated with it, generated much discussion about tsunami warning systems and associated communication processes (c.f. Gunawardene, 2005; The Independent, 2004). Since then, attempts have been made to address the delay evident during this event in disseminating warnings to rural and remote communities. For example, in Sri Lanka, a study has been undertaken involving test drills using five different mediums, one of which is a mobile phone text messaging system (LIRNEasia, nd). A journalist who covered a tsunami warning in 2007 for a text message-based news service in Indonesia has asserted that sending news through this means “seems to be a very effective means of news delivery at the initial stages of a disaster warning” (Ariyadasa, 2007, np). Nonetheless, he thought that as well as the news service, a government text bulletin would have helped by providing verified information to news reporters and the general public alike (Ariyadasa, 2007). Software developers in India have been working with a Sri Lankan organisation to develop a text message-based disaster warning system (Hattotuwa, 2005, p. 32). Concerns have been expressed about potential congestion in mobile phone systems during such situations. However, there is some evidence to suggest that congestion is minimal (Ariyadasa, 2007) or that text messages can usually reach their destinations even when lines are jammed for voice calls (Hattotuwa, 2005, p. 8).

Nonetheless, some writing on ICTs has been criticised for containing “a wave of enthusiastic statements on the alleged effects” (Weigel, 2004, p. 16) and benefits of its introduction. This paper may be criticised for having an “exaggerated focus on technology” (Weigel, 2004, p. 17), or an overly optimistic viewpoint regarding ICTs:

“It is easy to make too much of this. The newness of it all impresses, but then the newness of the railroad and the telegraph, the automobile, the radio, and the telephone in their day impressed equally. These earlier examples are instructive since each in their own way did change the way the world works [...] and the ways in which social relations between people could become converted on an ever widening scale into social relations between things. And it is clear that the relations between working and living, within the workplace, in cultural forms, are indeed changing rapidly in response to informational technology.” (Harvey, 2000, p. 62)

Certainly, it is important to avoid being overly optimistic. However, in this case, the enthusiasm for the use of mobile phones in times when speedy communication is essential came from an interview respondent and from villagers in Megiar, as well as from the researcher’s experiences and observations. The recent introduction of

mobile telephony into rural villages in PNG, coupled with increasing Internet access in urban centres and the development of websites with suitable, timely information regarding weather and disaster warnings, has changed the availability of information, knowledge and communication for many people in PNG. Mobile telephony and the Internet both have specific capacities that lend themselves to being useful in times of emergency or danger, specifically: time-efficiency; interactivity; lower costs, and the capacity for interplay between the two. While information can be sourced using older forms of communication, such as spreading messages loudly using vehicles, the information accessed using newer ICTs can be reliable and very timely, and can become knowledge, through the adoption of location-specific information and two-way dialogue.

Conclusion

This study shows how mobile telephony has enhanced the information-seeking abilities of rural villagers in PNG, particularly with respect to situations when information is needed urgently. The example given, of two tsunami alerts which occurred before and after the expansion of mobile phone reception into rural areas of the country, shows the value of this communication technology, particularly when used in conjunction with other information access devices (in this case the Internet connectivity available in urban centres). This paper focuses on the one example, and relies heavily on one interviewee's experiences. In the ethnographic tradition, such a method of presenting information is valid, as it evokes a rich understanding of specific social practices and creates an image of a particular place, culture and set of social circumstances. There are some aspects of this research which could have been expanded to provide a clearer picture of the relationship between technology and the transfer of information and knowledge about time-sensitive events such as tsunami alerts. Nonetheless, the paper conveys rich detail about the changing communicative practices of people about which little prior communications research has been undertaken.

Further research would aim to examine the assertions made here about the value of mobile telephony for rural villagers' access to information. It would look at other villages in PNG and throughout the Pacific to ascertain the place of ICTs in the experiences of emergencies or times of danger or high alert. Further research could also explore the concepts of information, knowledge and communication, and attempt to establish what these concepts mean for rural villagers with limited access to ICTs. A multi-country, longitudinal study over a number of years could generate highly valuable data about the experiences of tsunami alerts in an effort to ascertain the extent to which these experiences might be changing. With technological developments and the phenomenon of convergence possibly enabling villagers in the future to have ready access to the Internet and other services through their handheld devices, such a study would continue to generate rich and insightful data for years to come.

This paper is based on the evidence of the experience of two tsunami alerts in the Madang area of PNG. It asserts that changing levels of access to ICTs are shifting the patterns of communication, as well as the capability of sourcing timely, relevant and reliable information. Specifically, the paper suggests that the rollout of mobile telephone reception to rural villages in PNG, contemporaneous with increasing use

of the Internet in workplaces in PNG urban centres, has enabled villagers to source more easily appropriate information such as tsunami alerts. Given the paucity of literature about contemporary communication practices in rural areas of PNG, this paper makes a useful contribution to the field.

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