Electronic Group Communication for Cultural Support: 
Maori Electronic Networking in New Zealand

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Abstract

Electronic group communication systems are of potential use in supporting group communication in contexts where cultural norms and traditions have defined clear protocols for face to face communication. The characteristics of electronic group communication and requirements for success are discussed. Group communication protocols of the Maori people in New Zealand are introduced briefly, and a project using Lotus Notes is described which will support electronic group communication within and among Maori groups.

1. Introduction

Electronic communication, particularly electronic mail, has become an important supportive communication medium for many organisations. The use of computer technology to enable and support electronic group communication is an area where there is growing experience [5], but there is much still to be understood in the sociology and motivations of the medium, particularly in different cultural contexts. This paper gives an introduction to electronic group communication, and describes a project where it is being used to support communication among Maori groups in New Zealand.

2. Electronic communication as an additional communication channel

Is it desirable to terminate all face-to-face human contact, and revert solely to computer screens as the medium to carry out communication with friends, family and business colleagues? Not many would agree with that as a desirable path forward. However, the new electronic communication tools, like electronic mail and electronic group communication, do present the opportunity to develop supplementary and supportive communication channels in addition to the normal face to face and telephone media, which can be used when the messages to be exchanged best fit that channel.

For example, suppose you have received a request for some information which you possess. Should you write the information on a piece of paper and send it by post or fax? Or should you telephone the requestor, and give it to them by voice? Your choice of medium to transmit the information would consider the complexity (a few words or 10 pages of diagrams), and whether you perceive the requestor needs it urgently, or is in fact even there to receive it. For one to one communications, we all make communication medium choices very frequently. In certain situations and for certain kinds of information exchange, electronic mail is a growing choice of communication channel which complements face-to-face two person meetings, telephone, post and fax for one-to-one communications.

Group communication is quite a different matter. Most group communication is still done through the medium of a face-to-face meeting, usually numbering 3-8 participants, all sitting
around a conference room table. For this size of meeting, there is usually a high degree of participation and interaction among participants, with unstated rules helping to enable fairness of turn sharing. As groups get larger, the participation rates drop, and a few dominant members take over a large share of the air time [4]. For one way dissemination of information, large face-to-face group meetings can be quite effective; however, for effective group interaction and opinion gathering, there may be severe problems with large meetings.

Is there a better way, or at least a method of group communication that can be used as an alternate and complementary channel of group communication to the traditional face-to-face meeting? Electronic group communication systems may be an answer. Before discussing this further, it will be helpful to understand a bit about electronic mail, and how it is used for one person to one person communications.

3. What is electronic mail?

Electronic mail, or email, will be a familiar term to many readers of this paper. It has many similarities with its postal metaphor, notably asynchronous (different times) sending and receipt of messages which allows discretionary reading by the recipient. Ease of use, low cost and message delivery in minutes rather than days are factors that may be claimed as advantages in some circumstances, while disadvantages would include being unable to reach all parties desired through one medium.

In its early days, electronic mail was usually an application provided to users of large, multi-port mini- and mainframe computers, which effectively restricted the reachable population for outgoing messages to other users of that one machine. Software protocols were eventually developed to permit message exchange between users on different machines, such as the simple mail transfer protocol (SMTP), and the CCITT X.400 set of standards, which have been adopted by a number of electronic mail developers [7].

The infrastructure which supports electronic mail applications has gradually changed from single organisation, multi-port mainframe mail systems to network connected machines with inter-organisational message exchange facilities. Electronic mail uses a network connected computer to create and send a message file to another person/computer on that same network, and read similar files sent to you by others. It is asynchronous (like a letter sent through the post) - the sender and receiver don't have to be connected at the same time. Messages are usually one person to one person, like a letter, but can be one to many, like a letter with copies. Compared to the post, electronic mail is reasonably fast - a message is typically delivered within a few minutes of being sent, even if the destination is halfway around the world.

There has been a growth in recent years in participation in electronic mail lists. A listserver is a special id on a network connected computer that accepts incoming electronic mail messages, and then sends out copies of that message to the email addresses of the people on its “list”. With the many millions of people now reachable by email on the Internet, listservers play an important role in binding together members of special interest groups. On a given list, there might be 10 or more “threads” of discussions going on simultaneously, with messages on each thread topic interspersed. Depending on the number of members and the activity levels, a member of a list might receive as few as one or two email messages a week, or as many as a hundred or more each day from each list. However, the messages from each list come in in random order, and if one is a member of several lists, the messages from those lists are likely
to be intermixed in your inbasket, as well as the messages from each “thread” in each discussion on each list. The lack of context, and the overload of dealing with many randomly arriving email messages each day make email list participation a challenging activity for group communication.

The strength of electronic mail remains as a primarily one person to one person form of communication, which in certain situations may provide benefits and complement other channels of one-to-one communication, such as a letter, telephone call or a fax.

4. Electronic group communication

To a casual observer, it would seem electronic mail and electronic group communication are very similar. Both use primarily text messages, created through a computer keyboard, as the means of information exchange. Both use some kind of network connection to transfer and display the messages so that they can be seen by others. The difference lies in how the messages are organised and presented to the participant in the context of a group discussion.

One metaphor for an electronic group communication, or conferencing system is a long hallway of doors, where there is a meeting in progress behind each door. In each meeting, there is an agenda of topics, to any of which comments can be added by any participant at any time. Each meeting has a restricted set of participants, and only those authorised participants can see and take part in the discussion. As each participant "opens the door" to the discussion, the meeting springs to life, and nothing of the discussion has been missed since the last time they closed the door.

Rather than facing a flood of random electronic mail messages on a variety of topics, participants can read the text of messages contributed to date in the context of a particular conference/topic and with a known group membership, and a reasonable structured and linked discussion can ensue. The metaphor is implemented through participants speaking by entering text messages through a keyboard connected to a machine that manages the database of messages, and listening by reading on the screen the messages presented in conference and topic structures. Conferencing systems can be a very effective medium for group communication and information exchange, particularly where the number of contributors and listeners is large, and where they are separated by distance and time [3, 6].
Thus, a conferencing system can act as both a medium of asynchronous discussion on a specific or general subject, facilitating a flow of the latest information and opinion among group members, and as a reference archive containing the contextually organised collection of messages which were contributed to the discussion. This latter concept of an archive of semi-structured information has not been exploited to its fullest in many systems. With appropriate skimming and searching tools and intelligent agents to monitor and scan many discussions, the valuable information in a conferencing system's archive could be more effectively used.

There are some downsides to electronic group communication systems. There is usually a much lower rate of interaction - in a face to face meeting, a few "turns" at contributing and responding to others may take several minutes; in electronic group communication, the same number of turns might take several days. If there is a crucial issue that must be decided by tomorrow, then a face-to-face would be best, if there is time to arrange one. An electronic group discussion could take several weeks before everyone had a chance to respond, and respond on responses, and so on. However, if there is a need to gather preliminary position statements and opinions from a variety of people before a face-to-face meeting, or provide a forum for tying up the loose ends after a major decision has been taken, then the lower rate of interaction of electronic group communication may be acceptable.

Another downside to electronic group communication is that there are higher barriers to participate. Everyone has the experience and skills to listen and speak at a face to face meeting; for electronic group communication, you need to have access to a computer, connect it to a network, and type rather than talk. This "front-end" effort to sit down at the computer, turn it on, and make any telecom connection required may take several minutes, and in the end, may not be rewarded by access to worthwhile new messages.

Electronic group communication is quite a different method of communicating to others than the familiar face-to-face group meeting. While electronic mail can be seen to have many similarities with other one-to-one communication, like letters, telephone calls and faxes, electronic group communication is very much in contrast to face-to-face group meetings, particularly in the lack of social presence and feedback that flows from listeners to speakers which often helps to regulate the discussion.

5. Successful use of electronic group communication techniques

If electronic group communication systems are to be an effective medium for group interaction, then there are a number of needs, from the perspective of the potential users of the system, that carry over from the experience of face to face meetings.

**Ease of Listening:** A electronic group communication system must support "listening" as a primary objective, as this is where the majority of users will spend the majority of their time with the system. Therefore, electronic group communication system users may expect both simple and comprehensive tools to perform this important listening function. However, because of the likely asynchronous nature of listening to the contributions, more time (under less pressure) may be available to better understand the speaker from an "active listener's" perspective.

**Ease of Contributing:** However, without contributions, there would be nothing to listen to, so the tools to support contributions must encourage and assist participants in becoming
contributors. All the participants who would likely be contributors in a face to face meeting must be empowered with the facilities to encourage their contribution in a electronic group communication supported meeting. In addition, those who might not be likely contributors at a face to face meeting (public speaking shyness), should be specifically targeted as a potential electronic group communication contributor class. Designers should be cautious in providing too rich a tool set for contributors, with the result that contributors skilled in the electronic group communication toolset for contributions will pull away from the less skilled, recreating the hierarchies of face to face meetings of skilled public speakers making it daunting for a contributor of modest skills to make their presence felt.

**Moderators and chairpersons:** The user interface for moderators and chairpersons of electronic group communication supported meetings must be both simple for the first time user, to encourage many unskilled potential chairmen setting up cross boundary informal discussions, as well as sophisticated for the skilled chairman, to allow important issues to be discussed formally, contributions controlled and summarized, and decisions made.

However, electronic group communication has some inherent differences to face-to-face meetings that are not likely to be influenced by future technological changes.

**Interactivity:** Face-to-face meetings have a much higher transaction count per unit of time (300 per hour typical) than current electronic group communication systems (perhaps 30 per week!). Tasks requiring heavy interaction or evaluation of reaction are unlikely to find electronic group communication systems effective.

**Scheduling:** electronic group communication frees users from the "one time, one place" restriction of a face-to-face meeting, permitting contribution to, and review of discussions at a convenient, unscheduled time.

**Thinking time:** Instead of the instant reaction required in a face-to-face meeting, electronic group communication allows participants to delay reaction or comment, while consequences are pondered and perhaps additional information acquired.

**Editing:** electronic group communication allows one's own contributions to be reviewed, modified, or even withdrawn before they are made available to other group members, permitting better control over tone, content, and image.

**Archive, retrieval:** An automatic by-product of electronic group communication systems is a word by word record of what was said, which can be stored, searched and indexed for short or long term access. Face-to-face meetings have only a set of minutes, (when recorded), to assist participants in recall.

6. **Motivations and success factors**

The wave of enthusiasm for conferencing systems experienced by many new users may often be quickly dampened by two common occurrences. If the volume of usage is high among other group members, and the number of interesting groups a participant can plug into make it worthwhile to sign on regularly, then the thrill of electronic group communication may soon be offset by the distaste of information overload as more and more time is required to read and contribute messages. In other words, the seeds of declining interest may be sown by its very success in attracting many contributions, of which all may not be particularly useful to every
participant. On the other hand, a conferencing system based discussion that fails to attract a critical mass of either a majority of the target population, or the key people who should be involved, will very quickly deteriorate to unproductive exchanges among a minority of the players.

What are the motivations for individuals and groups wanting to use electronic group communication systems? The social structures that can effect usage of electronic group communication systems have been examined by some researchers [2]. Common interests and a willingness to share information are important characteristics for the participants if an electronic group communication system is to be successful. For example, electronic group communication might be perceived as a good way for Te Kura Kaupapa teachers to maintain regular discussions with other teachers who share the same tasks and challenges, but who may be a significant distance away, and always busy during the same term times. For a Maori language teacher in a high school, it might be a way to have regular contact other high school language teachers, and also with Maori departments in universities and polytechs, so that identification and use of new words may be discussed.

On the other hand, consider two small businesses in different market segments. The owners of the business may be quite unwilling to share market or product information which could fall into the hands of competitors. And they may have little in common that is beneficial to discuss with each other, aside from complaining about working too many hours, and commenting on the effect of the latest government policy on their business.

Finally, there are two motivational issues that have been shown in past electronic group communication studies to be important. The first is critical mass. Unless the electronic group communication medium selected is an effective and primary way of communicating with a majority of the members of your group (say 60%), then the need to use supplementary means of group communication (such as a newsletter) to reach the remainder may outweigh the benefits of using the electronic group communication system in the first place. If usage never attains the critical mass, even enthusiastic initial users will eventually drift away from regular connection.

The second motivational issue is reward for effort expended to connect. Most new users of an electronic group communication system are enthusiastic about its potential benefits, and in the introductory stages will make the effort to connect and make contributions. In time, however, they will begin judging whether they are getting more benefit from participating regularly (by reading other's contributions and acquiring worthwhile information) than they are expending through making the effort to connect, type their own contributions, and read other's contributions, many of which may be of little relevance or value.

It is not an easy task to get all these things right while also managing the technology issues. Electronic group communication designers and sponsors need to be aware of these motivational and success factors when establishing systems.

7. Group Communication Protocols in the Maori Culture

The Maori people in New Zealand have a well developed set of protocols for face-to-face group meetings, usually referred to as a hui. These meetings typically last for a day (although

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3Maori language immersion school
can be shorter or longer), and permit anyone attending to contribute. However, for topics which have urgency or tight time schedules, the time constraints and cost of organising and conducting huis to gather opinion from iwi may not allow the level of consultation and discussion that would be desirable.

Maori are a tribal society with descendants dispersed nation-wide, and traditional communication patterns continue to operate with regular hui held on Marae. "Kanohi ki te kanohi" or face to face meetings are an integral part of communication and decision-making within the Maori society where the intricacies of body language at such hui can be seen.

In many tribal areas, formal ceremonial speech-making on the Marae incorporating strict cultural protocol and procedures permits only selected male representatives from their respective tribe or sub-tribe to stand and speak. However in informal situations, group communication is forthcoming from both genders and all ages depending on where the meeting will take place and the local protocol of the tribal area.

Electronic communication enables any physical barriers to be overcome without compromising the traditional values of Maori society. The passive and neutral environment of a computer screen as the physical setting for a hui enables anyone to stay or leave such meetings. Normally at a hui, protocols do not allow the freedom to leave such meetings despite how long or incorrect speakers may be. Interrupting a speaker who has the floor shows great disrespect.

Within the Waikato tribe traditional gatherings called Poukai are held annually on numerous Marae in the region. As a traditional communication process unique to this tribe, it is also used for discussing tribal issues, consulting with Iwi and making decisions. The medium of communication is in the Maori language and those of the younger generation who do not possess the same level of fluency may not understand the issues being discussed or the confidence to respond and participate in the discussion. Marae based electronic communication with the option of communication either in Maori or English gives the participant a choice and their issues and concerns can then be discussed traditionally on the Marae by the elders when the Poukai is scheduled to be held there.

Meetings called Nga Marae Toopu of the Iwi from the same Marae and others in the region are also held regularly and centrally throughout the year to discuss related or new tribal issues. Representatives chosen by their respective Marae speak on their behalf and often they are accompanied by other descendants from their Marae. With the younger generation seeking employment in urban areas away from the rural marae setting and with many situated in remote areas, electronic communication could be beneficial in obtaining a wider representation of opinion residing in urban areas.

Although it is not intended to replace face-to-face communication in Maori society, the advent of new technology and its the acceptence by the younger and future generations could modify traditional group communication protocols in the future.

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4 A Marae is the main meeting place of a tribe
8. Electronic Group Communication Case Example: The E-Hui project

A project is underway at the University of Waikato to introduce electronic group communication to a number of Maori organisations in the area. When proposing the project, we were conscious of criticism of many previous comparative research studies with Maori participants. Arohia Durie suggests that projects involving the Maori people should “be able to make a positive contribution to the participants in the area of study” [1]. The E-Hui “electronic kumara vine” project is investigating the use of a prototype computer supported group communication system in the context of the Maori cultural setting. The project has four phases:

* Specification of the computer based system's functional capabilities and user interface, with respect to the necessary cultural requirements.
* Development of a prototype conferencing application, under an existing commercial groupware product (Lotus Notes).
* Installation and field testing of the system in an environment where the functionality and acceptance of the prototype can be measured.
* Evaluation of the results of the field test, with recommendations for future developments in this area.

E-Hui is a system that allows groups of people to electronically communicate amongst themselves using microcomputers. Messages are read through software running on microcomputers located in a number of Maori organisations. Messages can be typed in by any individual at that organisation, and will eventually be distributed electronically to other readers in other locations through a "clearing house" server computer located at the University of Waikato. An illustration of a discussion message from the system is shown in the figure below.

![Figure 1 Text of message contributed to E-Hui discussion](image-url)
E-Hui is not intended to replace face-to-face communication, but rather act as a supporting communication channel, like the telephone, fax and post. People will use one or more of these channels to reach the people they wish to contact. One of the advantages of electronic communication is that people can communicate in a "group-like" way, even though they are in different locations, and connecting at different times of the day or night. It can cut down travel time, and reduce wasted time at meetings.

![Diagram](image)

**Figure 2 Within group and inter group communication**

It is hoped that up to 30 to 40 Maori organisations in the Waikato will eventually be connected, with perhaps five to ten or more users at each site participating. We hope that eventually organisations like trust boards, schools, Maori departments at polytechs and university, training institutes, maraes, health organisations, liaison contacts in government departments and others will all be connected.

The topics of discussion will be determined by the participants, but it is expected that topics such as Maori language, immersion education, employment and training, health and education will develop. Special private discussions can be created among sub-sets of the overall user base as required.

### 9. Conclusion

Electronic group communication systems are an important new technology that will have an increasing impact on the way members of groups communicate with each other. However, they are not systems that can be casually thrown at a group of potential users without a considerable amount of planning and foresight. Innovations like electronic group communication are often seen first overseas in very large organisations, which means the NZ community, with predominately small and medium sized organisations, is less likely to be exposed to these kind of innovations early in their life cycle.
Will our particular New Zealand environment lead to more rapid, or more cautious investigations and usage of electronic group communication systems technology? What are the mechanics in the stages of awareness, investigation, trialling and full scale implementation that need to happen for electronic group communication systems to be widely successful? What will we lose by being a little bit behind the overseas leaders?

Awareness of the existence, and potential of electronic group communication systems products and experience with how they might be used in particular application domains are necessary first steps in providing the answers to these questions in New Zealand.

10. Acknowledgments

This research has been supported in part by a grant from the University of Waikato research committee. Funds to purchase and install computers in some of the participant sites have been made available from the Waikato Education Foundation. The contribution of John Hunter to the initial setting up of the E-Hui software and sites, and Bev Gatenby for her input on communication process is gratefully acknowledged.

11. References


