

The encounter of new ICT tools and local traditions in rural Samoa

Margaret Sao, margarets@youritglobal.com

Antonio Díaz Andrade, antonio.diaz@aut.ac.nz

Auckland University of Technology, New Zealand

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ABSTRACT

Telecentres were implemented in the rural villages of Samoa in 2005 as part of the national information and communication technology (ICT) strategy for development. The aim for the telecentres is to ensure the people of Samoa can be connected locally and globally. The telecentres provide access to ICT tools in villages where many have never seen a computer before. The newly provided ICT tools also bring about some concerns, especially having access to the internet. Local villagers are now exposed to a vast amount of information whereby access is practically unlimited. While we cannot discount the fact that the internet makes available useful information, the question of how and to what extent this computer-mediated information may affect their traditions deserve some attention. Will local villagers use it to build up their society or will it compromise their cultural values? Seventeen semi-structured interviews were conducted among residents from three villages. Data was also collected by observing the context of each village lived by the villagers. Together these methods collected rich data that was later analysed in an inductive fashion. The findings provide an insight into the encounter between the global environment and the local values, customs and beliefs of Samoans. This led to the identification of five categories of impact: expanding skills and capabilities, efficient tool for document production, panopticon-surveillance, virtual connection and community networks. A theme that addresses the research question emerged: the moulding of ICT by local culture.

Keywords: ICT for Development, telecentre, Samoa, cultural identity, ICT

INTRODUCTION

The digital divide commonly refers to the gap between those who do and those who do not have access to Information and Communication Technology (ICT). To some extent this concept has been recognised to widen the perceived inequality gap not only between countries but also within countries. Telecentres have been seen as a way to achieve this, particularly for those living in rural communities (World Bank, 1998). The Samoan government has followed suit and, from 2005, implemented 12 telecentres, locally known as *feso'otai* centres, located in the rural villages of the country. They were implemented to fulfil the *National ICT Strategy*, which was designed to give Samoan people the opportunity to keep in touch with family and friends over the internet and local businesses the chance to gain access to worldwide information. This research goes beyond an assessment whether or not the government's objectives were met. Rather, its focus is on how Samoan cultural traditions, known for the endurance of their customary ways and where families are the main organisational system, shape the way local people make sense of and use computer-mediated information.

Since Bell's (1973) precursor observation that the growth of communication and computer technology would bring about social consequences, in what he called the "post-industrial society", ICT tools became pervasive. They are enabling faster communication and virtually unlimited access to information; Webster (2006) observes that "we exist in a media-saturated environment" (p. 20). Previous research suggests that ICT tools are bringing about a cultural change (Richards, 2004). New modalities of cultural transmission are transforming socially created meanings (Leaning, 2005). Rural Samoa may be subject to this ICT-induced cultural transformation through the new communication technologies available at the recently established *feso'otai* centres. Macpherson & Macpherson (2009) warn that tools like the internet, with their embedded Western ideas, may change the collective sense in Samoa from a communitarian society to a more individualistic one – now, computer-mediated information can give access to "ideas that directly challenge values at the heart of Samoan worldview and lifestyle" (p. 183). Among other traditions, the interference that the relatively new access to computer-mediated information creates, may erode the conventional decision-making power village leaders have historically exercised.

It is against this background that this study scrutinises the encounter of ICT tools and the information they carry with cultural characteristics of rural Samoa. As we elaborate further in

this paper based on our analysis, we find reasons to challenge the quasi technologically-deterministic stance that the works mentioned in the previous paragraph adopt. In particular, we are interested in understanding how cultural traditions shape the way computer-mediated information is interpreted and used. Thus, the research question this study addresses is:

How do local traditions in rural Samoa mould computer-mediated information produced elsewhere?

This paper is organised as follows. The next section provides a review of the current literature on ICT for development. The following one presents a discussion on cultural identity. Subsequently, we present a brief account of the characteristics of the Samoan society relevant to this study. The following section outlines the methodology approach adopted for this research. The subsequent section presents the analysis and discusses the findings. The last section presents the conclusions of this study.

ICT AND DEVELOPMENT

ICT is more than just a computational tool capable of manipulating, storing, retrieving, processing and transmitting data. ICT tools have representational properties and can be applied to socio-economic activities than can produce social transformations (Orlikowski, 2001). It is because of these properties that ICT has been perceived by governments, non-government organisations and international donors to be a tool that can contribute to development initiatives (Mamaghani, 2010; Steinmueller, 2001).

Development is a broad term. Until not long ago, the level of development of a country was measured by economic indicators only. This view was largely influenced by an understanding of development as living according to Western standards (Escobar, 1995). It followed that developing nations needed to leapfrog their living standards to be at the same level as developed nations in terms of economic growth and modernisation. The implicit assumption was that developing nations lacked the knowledge needed for their own advancement (Madon, 2000).

Sen (1999) takes a different view on development. Development should entail different dimensions of human progress beyond economic value only. It should also include political freedoms for giving individuals the opportunity to choose the way they want to rule their societies, social opportunities for enhancing people's health and education, transparency that

guarantees fairness in their transactions and protective security to assist them in case of extreme need (i.e., the safety social network). The integration of these dimensions of development represents the capability framework, which gives people “the opportunity to achieve outcomes that they value and have reason to value” (Sen, 1999, p. 291). This fresh notion of development makes a call for making individuals autonomous within the groups they belong to. Because of its characteristics, ICT are apt tools that can contribute to bring about the development. They do not only make possible to conduct economic activities; they can also be used of vehicles for education, for political expression, for transparent transactions and for the delivery of health services.

The growth of computerisation and the expansion of the internet saw a surge in support to advance ICT for development (ICT4D). International organisations, like the United Nations and the World Bank, saw ICT as essential tools for achieving the Millennium Development Goals introduced in 2000 (Hayes, 2011; Heeks, 2008). As a result, telecentres – facilities for shared computer access – became one of the many ICT4D strategies for improving people’s living conditions. The purpose of the telecentres was to assist in bridging the perceived digital divide. Initiatives were launched to give rural and urban communities around the world access to ICT for their own advance (Harris, Kumar & Balaji, 2003). However, several studies have demonstrated that achieving development goals requires more than providing and implementing technologies (Dysart-Gale, Pitula & Radhakrishnan, 2011; Madon, 2005; Nangit & Ranga, 2007; Obra, Camara & Melendez, 2002). People need to know how to use the technology, interpret and disseminate the information found on ICT to their community in order for any progress in development to occur.

Bringing development to a community through ICT tools is a complex undertaking that entails not only technical but also social considerations (Gamage & Halpin, 2006; Krishnapillai, 2006; Sahay & Avgerou, 2002). One of the major problems encountered with telecentres is sustainability (Harris et al., 2003; Mtega & Malekani, 2009; Walsham & Sahay, 2006). The equipment requires continual maintenance – and sometimes the funds are simply not there to make the initiative sustainable in the long term. Users need to be trained for the community to fully reap the benefits ICT may bring (Harris & Harris, 2011). Furthermore, there is the need of understanding local contexts and knowing how information is disseminated in the community (Garofalakis & Koekeris, 2010; Heeks, 2002; Harris et al., 2003; Mtega & Malekani, 2009).

We reject the assumption that information systems introduced in developing countries can help them catch up with developed countries – cf. Davison, Vogel, Harris & Jones (2000). Although ICT can be considered a transformative tool to bring about development (Akpan, 2003; Bhatnagar, 2000), our focus is not on the outcomes of ICT4D initiatives. We understand the implementation of ICTs as a social embeddedness process, which puts emphasis on the interplay between information technology and the existing institutions and social practices (Avgerou, 2008).

CULTURAL IDENTITY

Culture is the matrix that defines individuals – “a way of thinking, feeling and believing” (Geertz, 1973, p. 4). Individuals’ identity is shaped by the cultural group they belong to (Calhoun, 1994). Culture can be seen as an internal programming of the mind that differentiates one group of people from another (Hofstede, 1984). Castells’s (1997) conceptualises identity as “people’s source of meaning and experience” (p. 6). Identity is the continuity of self across time and space (Giddens, 1991). This definition makes a clear distinction between what identity is the roles people play in everyday life – e.g., a taxi driver, father, village-chief, church member and uncle at the same time. People define themselves through their culture, which is formed, transmitted and reinforced by symbols and behaviours with several forms and meanings (Kroeber & Kluckhohn, 1963).

The transference of culture is not genetic or biological but it is rather taught by involving the young people in the various local traditions, allowing them to experience the culture through participation. In order for the local culture to survive through time, the local group invest their time in passing on their knowledge and traditions to the younger generations. However, culture can change overtime (Kroeber, 1948). In contemporary times, the forces of globalisation pose a challenge to the subsistence of local traditions. In a globalised world, worldwide events shape local circumstances and vice versa (Giddens, 1991). Globalisation “disrupt[s] the temporal and spatial certainties offered by community, place, stable employment, class structures, and institutions of religion, state, and the family” (D’Mello, 2005). As a “by-product of human existence” (Ioane, 1987, p. 246) culture changes depending on the environment and people’s shifting practises.

Moreover, the virtually unlimited access to information through ICT has stimulated the expansion of globalisation. The internet is changing the way people interact; a large share of

social interaction now takes place in the virtual space (DiMaggio, Hargittai, Russell, & Robinson, 2001; Wynn & Katz, 1997). At the individual level, there is evidence that access to the internet is changing their very own identities (Turkle, 1995, 2011). At the social level, ICT allows the transferring of cultural artefacts and meanings from one society to another (Harris & Harris, 2011). The internet provides a medium where people can use websites as a depository place to publish videos, voice recordings and written materials about their culture. Indigenous cultures are now asymmetrically exposed to foreign cultures where Western-produced content has the upper hand (Castells, 1997). In a networked society, individuals exposed to other cultural expressions may shape their individual values resulting in the construction of new identities (Castells, 2000). These cultural changes are, in turn, captured and reflected in ICT tools (Westrup, Al Jaghoub, El Sayed & Wei, 2003).

However, we claim, the recipients are not passive. They can still change and manipulate – or ignore altogether – the received computer-mediated information according to their own interpretations of the world, which are largely influenced by dominant social norms.

THE *FA'A-SAMOA* AND THE *FESO'OTAI* CENTRES

Samoa is a group of four inhabited small islands located in the South Pacific with a population of 188,000 (Samoa Bureau of Statistics, 2010). Gagana Samoa is the spoken language for all, while English is the second language used predominantly in business and education. The traditions, values and principles in Samoa are influenced by the rule of the chiefly system known as *faamatai*. The *faamatai* sets the basis that links all aspects of Samoan society whereby individuals are aware of where they belong, their rights and responsibilities (Vaai, 1999). Through the *faamatai* system, the Samoan way of life – *fa'a-Samoa* – is observed. In this system, one renders service and respect to those of higher rank and seniority; the untitled men are expected to obey serve the chiefs (Linkels, 1997). This hierarchical system that characterises the Samoan society has nothing to do with economic inequalities (Meleisea & Meleisea, 1987).

The *fa'a-Samoa* is a largely oral culture and a testament to the unity of family, village and society (Fairbairn-Dunlop, 1991; Meleisea & Meleisea, 1987). Everyone shares whatever means they have. Similarly, the *faamatai* system determines the flow and exchange of information within the community (Vaai, 1999). In this hierarchical system, information about development projects is firstly given to the village council or the Women's Committee.

These local organisations are the information holders. They decide whether or not the information is worth sharing with the community. If they decide the information is worth sharing, it will be passed on through face-to-face interaction at summoned village meetings. Having access to ICT tools poses a challenge to this traditional form of communicating information. It is possible now for individuals to have access to information that may be at odds with the social norms of traditional information exchange. In the closely knit Samoan society, family and communal issues, rather than global matters, are the main subject of information exchange.

In 2002, the Samoan cabinet approved the setting up of the National ICT Steering Committee to develop the national e-strategy. In August of the same year, the government reviewed the draft and approved the *National ICT Strategy*. One of the defined objectives was to provide ICT for all “to harness ICT as an enabler of social and economic development for Samoa” (MCIT, 2010). The launching of 12 *feso’otai* centres in a similar number of villages was a step towards this objective. The first two centres were launched in December 2005, while the remainder were launched in September 2006. The government provided each centre with five computers, one fax machine, one digital camera, one data projector and screen, one printer, one scanner, one DVD player, one television, one photocopier and internet connection. Each village had to provide an air-conditioned room furnished with computer desks and chairs. A pay-per-use policy was outlined at every centre for all the services provided. The charges were set out by the Ministry of Communications and Information Technology (MCIT). In addition, MCIT officials set up a website for each village. This website was designed to give the village a profile, a place where the local people can share information about crops, handicrafts and Samoan medicine.

At the time of the fieldwork in 2011, there were only eight centres operating. Two of the *feso’otai* centres were washed away by the devastating tsunami of September 2009 and two others were closed down due to management problems. Of the eight currently operating centres, three are on broadband and the other five are on dial up or using general packet radio service for internet connection. MCIT has a Project Coordinator that keeps in contact with each *feso’otai* centre manager. The *feso’otai* centres are overseen by the Women’s Committee of each village. The Women’s Committee sets the rules and regulation on how the *feso’otai* centre is used. The *feso’otai* centre manager has strict limits on what they are allowed to do; any suggestions made by them have to be approved by the Women’s

Committee. The manager keeps records of who used the facilities, what has been used and the generated income. This information is summarised in a report that is presented to the Women's Committee and to the Project Coordinator on a regular basis. The 2010 financial reports indicate that the main use of the centres involves the photocopying of documents – mainly of family and church matters as well as primary school activities – followed by computer training.

METHODOLOGY

For this research, a qualitative interpretive approach was taken to understand the meaning of people's actions and opinions (Myers, 2010) in relation to ICT. We analysed the social actions vis-à-vis the social and cultural background of the participants (Bryman & Bell, 2007).

The data for this study was gathered by the first author who spent six weeks in Samoa between October and November 2011. Data collection was conducted in three villages: two from Upolu Island and one from Savaii Island. In order to protect our participants' anonymity, we call them villages A, B and C. Since these were amongst the first centres established, their degree of maturity justified their inclusion on this study. Our assumption is that the villagers have had time to familiarise themselves with the centre in these communities.

Data was collected from series of one-on-one in-depth interviews with 17 participants. These participants represented the following groups: six village leaders (chiefs and Women's Committee representatives), four *feso'otai* centre managers, four *feso'otai* centre users and three non-users. As regards the latter group, instead of apathetic individuals, we targeted those that may have opposed to the implementation of the *feso'otai* centre in the village. No one in this category could be found. All the participants were over 18 years old at the time of the fieldwork. A snowball approach was used to help identify participants; we started with the *feso'otai* centre managers and village leaders, who gave an indication of who the users and non-users of the centres were. Data was also sought out by observing how users of the *feso'otai* centre utilised the facilities. Additional to this data was sourced from the reporting documents held by the centre managers. The interviews, conducted in Samoan, were transcribed and then translated into English, although in some instances the Samoan

expressions were maintained in order to guarantee that the true meaning was not lost in translation. The author who conducted the fieldwork is fluent in both Samoan and English.

The collected data was examined using thematic analysis in an inductive fashion. The inductive analysis allows salient themes to emerge from the data without imposing any theoretical perspectives (Patton, 2002). The transcripts were analysed along with the produced field notes. The inductive thematic analysis entailed a coding procedure from codes, with low levels of abstraction, to categories to themes. The coding required analytical thinking in order to theorise while still being close to the data (Gibbs, 2007). Using Village A as a starting point, each participant's transcript was analysed while formulating the codes. This task proved to be time-consuming but necessary as it set the precedence for consistency in coding for the other villages to follow.

After much time spent on the coding, the task was then to group the similar codes together (Gibbs, 2007). During this procedure, some codes were merged with others and overlaps among codes became apparent (Coffey & Atkinson, 1996). In order to address this issue, we conducted an iterative process where classifying the data was continuously reviewed to assess whether the emerging categories accurately reflected the significance of the data (Patton, 2002). In some instances, codes that were initially assigned to a category had to be later removed or combined to create new categories. The last stage in the analysis involved going beyond the categories to develop a more abstract and theoretical understanding of the data. This was the development of themes which assisted in describing the fundamental meaning of the categories.

ANALYSIS

The inductive thinking procedure produced a number of preliminary codes, which were later refined. After this refinement, 18 codes were identified, which could be conceptually grouped under five emergent categories. These emergent categories are: computer skills; document production; panopticon; information dissemination and communal traditions. Table 1 presents the codes that defined each category.

Table 1: Codes and emergent categories

Category	Codes
Computer skills	Relationship with education, expectations regarding future job opportunities, <i>feso'otai</i> centre as a social venue, encouraging users, convenience
Document production	Empowering individuals, document elaboration, challenges to the use of <i>feso'otai</i> centre
Panopticon	<i>Feso'otai</i> centre supervision, monitoring of computer use
Information dissemination	Media and information dissemination, connecting with others, extensive use of mobile phone for communication, ICT connectivity
Communal traditions	Village council, operations in the villages, exposure to urban lifestyle, power of traditions, changes in the upbringing environment

The discovered categories provided an insightful understanding of how the villagers are interpreting and using (or not) the computer-mediated information obtained at the *feso'otai* centres. Figure 1 offers a view of the relationship between the categories.

Figure 1: Relationship between the categories

A look at Figure 1 shows the category communal traditions as the most salient one. This representation symbolises how the use of ICT tools and the information they carry are shaped by local culture. From these five emergent categories a higher level of abstraction was sought. As a result, a theme that addresses the research question emerged: *the moulding of ICT by local culture*.

DISCUSSION

The relationship between the emergent categories reflects the interaction between Samoan villagers and ICT tools. The Samoan saying *tele suiga ae tumau faavae* – which translates as ways of doing things may have changed but the foundation remains – summarises the nature of this interaction. New technology has been introduced, but traditional values persist. Moreover, as we explain next, local organisations are acting as a buffer between alien information transmitted through computers and Samoan villagers.

Panopticon

Originally, the panopticon design was to allow prison guards to watch the prisoners without the latter knowing whether they are being watched. The panopticon concept has been extended and now includes information systems surveillance in the workplace (Kakabadse, Kakabadse & Kouzmin, 2007; Klang, 2004; Spears & Lea, 1994). Similarly, surveillance is an essential part of the Samoan way of life. It is not about prying on or knowing every detail about other's life; it is a way of looking out for the well-being of everybody in the community.

The circular design and the lack of walls of the *fale* – the traditional Samoan house – is a manifestation of the panopticon in the Samoan society (Refiti, 2009). This notion of panopticon has been extended to and now includes the *feso'otai* centres. In comparison to the internet cafés in Apia, the capital city, activities taking place at the *feso'otai* centre are tightly monitored. The operation of equipment is closely observed and services used by the villagers recorded. As one of the managers say, “We do not leave people, especially children, to use the computers freely”. The concern for users accessing what could be considered inappropriate content over the internet has led to a watchful eye by the managers: “If we see [users] opening websites that we do not think are appropriate, they are asked to stop using the machines”. This watchful approach can be traced all the way back to the highest instances of power. The country's Prime Minister, while praising the benefits technology could bring to the Pacific nation, expressed his concerns: “The internet is OK so long as we impose the necessary controls to cut out pornography, which would be damaging for our people” (Prosser, 2004, p. 1). This stance reflects a growing fear of having traditional values and beliefs somewhat contaminated by ICT tools – cf. Albirini's (2006) study in the Arab world. In line with these concerns, the Women's Committee has set up strict rules on how the *feso'otai* centre should be managed. The centre manager must be always available whenever

users are there. If, for any reason, the manager cannot be there, someone from the Women's Committee must be present to supervise the "appropriate" use of the computers.

Computer skills

In general, villagers recognise the importance of being competent in the use of computers. Computer skills are perceived as particularly valuable for assisting young people in their career development. Some participants believe they can do more with their lives with the computer skills they have acquired. It has been reported in Village A that students have excelled in school as a result of receiving computer training at the local *feso'otai* centre. The fact that one young person got a job at an internet café after attending computer training at the *feso'otai* centre has been widely publicised in Village B. In Village C, the *feso'otai* centre manager draws attention to the fact that students have excelled in their Typing or Computer subjects at school as a result of having attended the computer training sessions at the centre. The benefits of being able to use computers go beyond enhancing academic performance or improving employability; it also increases personal satisfaction (Terry & Gomez, 2010). Ioana from Village A shared an achievement by one of the students who has been attending the computer classes at the *feso'otai* centre "One received the dux award at an information technology school and the other student came first in her typing class at high school. The teachers were amazed at how well she used the computer".

However, the benefits of acquiring computer skills have not been evenly spread throughout the community. The free computer training the *feso'otai* centre managers received has allowed them to gain some recognition in their villages and put them in a privileged position in terms of computer abilities in front of the community. At each of the *feso'otai* centres visited, it was the manager who most of the times carried out tasks such as typing a letter, photocopying documents and doing research on the internet on behalf of the villagers. Having only a reduced number of people – the managers, plus a select group of local villagers – as confident users contradicts the very reason why the centres were implemented: the *feso'otai* centres were originally established for giving local people access to ICT tools. As a consequence, there is a divide within the village between those who can and cannot use the computers. By and large, the *feso'otai* centre managers are on the positive side of this divide. As a user from Village A commented, "I am only confident to use the computers if the centre manager is there to show me what to do. But most of the time I give the manager the things I needed done like typing up a document." This was equally the case in Village B as a user

shared “I do not use the computer or photocopying machine; I give what I need done to the centre manager and she will do it for me”. This finding suggests that the introduction of information technology has reinforced existing social structures in the villages.

Document production

There is evidence of an uptake of the ICT tools the *feso'otai* centre provides for producing documents. The production of text-processed documents has been largely restricted to the ones that support local, traditional activities such as church songs, reports on a church department, family court cases and school work. Producing them now is a lot easier than in the past in the villagers' view. Moreover, producing them using a text processor gives a more professional look to the final product. However, the production of financial statements, health-related content and farming techniques, among other types of documents is rarely done. They simply do not belong to their way of life. Villagers make the most of convenience of producing text-processed documents to support the *fa'a-Samoa*.

A closer analysis is even more revealing. It indicates that regardless of the enthusiastic use of printed invitations for family, village or church events, social norms still dictate how the entire community gets involved in these activities – cf. Tamasese (2008). As Tasi, from Village C, observes: “When there is a wedding or birthday celebration in the village, every young person knows that they have to attend to help with meal preparation and serving the guests. This is regardless of receiving an invitation... we all share the work load because the village is our family”. Similarly, Ula, the chief of Village B, emphasises “When there is a funeral or wedding the untitled men and girls of the village come and help out with the family chores serving the food and cleaning up... written invitations are not necessary”. People lend a helping hand because it is what is required according to the village social norms. These instances reveal how, for certain communal activities, local traditions override the formalities embedded in ICT-produced materials.

Information dissemination

Samoans are scattered around the world and now distance is no longer a barrier for communication. Access to the internet provides a new and convenient platform to be in touch with family and friends. According to the *feso'otai* centre managers, the majority of the internet users spend their time on email and social networking websites. One participant from Village A who is a keen internet user and spends most of her computer time on Facebook and

email, says “I do not need to call my friend and see how she is doing. I can just look at her photos online”. Socialising, an activity much valued by Samoan people, has been extended beyond physical contiguity – cf. Dysart-Gale et al., (2011) discussion on how technology modifies communication patterns.

Except for the largely online research done by students at the *feso’otai* centres for completing their school assessments, traditional face-to-face channels are still predominant for accessing and communicating information at the communal level (television, newspapers and radio stations are additional sources of information for local people). Sina, from Village A, is a case in point. She recognises the value of information available on the internet in providing useful solutions to everyday problems. However, after further probing, we learned that she is not able to use computers. It is her husband who gets access to computer-mediated information on her behalf. This example illustrates how computer-mediated information travels from the digital space to the physical world through face-to-face interactions – cf. Díaz Andrade & Urquhart’s (2009) work on activators of information.

However, there is a major barrier for accessing online information. The information available on the internet is mainly in English, a language that is not mastered by many in the villages. Maria, from Village B, reflects with a tone of lament, “If you do not know how to read in English, then you might as well turn off the computer”. In this sense, language – one of the most powerful expressions of culture that allows the coordination of social activities (Wittgenstein, 1980) becomes a major barrier to accessing computer-mediated information.

Communal traditions

Foreign influence is not new in Samoa. The country has a long history of colonisation going back to the early 19th century, when the German, British and US powers controlled the nation. When Samoa gained its independence in 1962, it had already adopted westernised education, business trading and certain western beliefs (Meleisea & Meleisea, 1987; Ward & Ashcroft, 1998). The introduction of ICT tools is just the continuation of this westernised influence. In the beginning, local people took pride in the *feso’otai* centres. When they first opened, the celebration was a village affair. Initially, villagers were excited about the possibilities of using ICT tools at the *feso’otai* centre. However, the demands of family, village and church responsibilities prevented them from acquiring the necessary computer skills for using the centre. For instance, Eseta, from Village A, and Lina, from Village B,

express their eagerness to use the computer but justify that their other multiple commitments do not give them the time that they need to do so.

However, more fundamental reasons explain the largely apathetic use of computer technology. Samoan culture is centred on families and the whole village is treated as an extended family. Given the options between doing activities at the *feso'otai* centre and interacting with the extended family, local people almost invariably prefer joining the extended family. This situation is illustrated by the short-lived initiative of paid-movie nights using the data projector and screen available at the *feso'otai* centres. This initiative never really took off because it was competing with institutions deeply rooted in the *fa'a-Samoa*. It is a common practice for villagers to get together to watch television or movies on DVD players at family houses. People who have a TV set are willing to share TV or DVD-movie viewing with their neighbours. TV or DVD-movie watching is a communal activity that involves communal traditions and affections. Although we do not have evidence to affirm that if the movies screened at the *feso'otai* centres were free of charge villagers would still prefer watching them at their neighbours', the deeply rooted communal traditions indicate that the depersonalised telecentre facilities cannot compete against the warm of friends' houses.

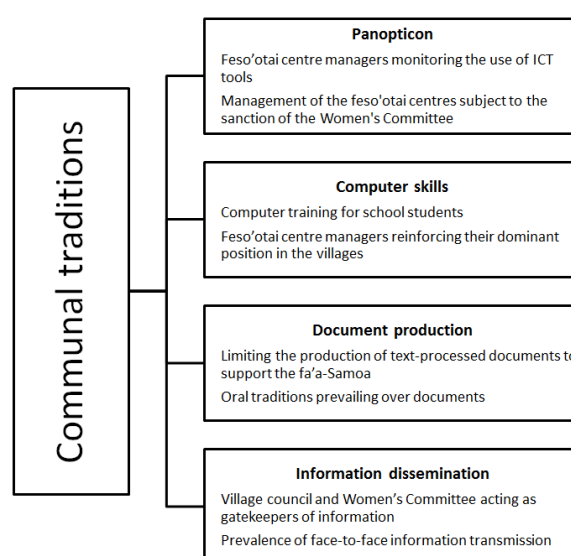
Another important observation during the fieldwork was an apparent gender disproportion in the use of the *feso'otai* centres. The Samoan traditions establish a separation of tasks between men and women. Traditionally, men and women have their set tasks in the home and in the village. When it comes to village meetings, men would hold their own council while women at theirs. There are particular settings whereby only men would gather together, and likewise with the women. It happens that the *feso'otai* centres are located at the Women's Committee meeting house. The location of the *feso'otai* centre contributes to the perception of the men of the *feso'otai* centre as a place for women.

Lastly, sharing, teaching and educating young people about the Samoan culture are at the heart of the village council and Women's Committee. By comparison, ICT receives little attention as a tool to assist with the preservation of local traditions. When the *feso'otai* centre managers were asked whether or not the programs on the computers are used to help preserve the village's history and stories, they all had similar answers that alluded to that fact that they have not explored such options.

CONCLUDING REMARKS

This study has shown that the adoption of ICT is heavily influenced by the norms of the society (DiMaggio et al., 2001). Instead of the gloom picture that anticipated ICT tools overwhelming local cultures and values, our findings suggest that local culture enfolds ICT tools. ICT is used in a way that reflects not only the needs and wants of the Samoan people but also their cultural understandings. Figure 2 summarises our findings with illustrative examples of how the use of ICT has been adapted to the *faa-Samoa*.

Figure 2: Summary of research findings



The implementation of *feso'otai* centres in rural Samoa gave rise to the concern whether the cultural values would be lost through access to ICT. However, the evidence suggests that local traditions are enduring and shape how ICT tools are used. It was found that the operation of the *feso'otai* centres is being closely monitored by the centre managers, who in turn are supervised by the local Women's Committee. Villagers view the centres as training hubs for the children that could improve their employability, but at the same time recognise that the *feso'otai* centre managers reap most of the benefits in the village social structure. The *feso'otai* centres are also seen as a place where documents that support local activities can be produced in a professional manner, even though oral traditions override documents. It was also found that the local authorities act as gatekeepers of information and whenever information is obtained from the internet, this one is passed on via face-to-face communications.

As discussed earlier, Western colonisation brought about changes to the way of life of the Samoan people (Ioane, 1987; Meleisea & Meleisea, 1987). Despite these changes the Samoan culture, as observed, is strongly adhered to in the rural villages. The concept of culture must be looked at seriously in the context of ICT. Cultural beliefs and values influence the way the computers are operated. The *feso'otai* centre as an ICT4D intervention presented an opportunity for the community to access a new learning environment with endless access to information. However, this virtually unlimited access to information was restricted by local traditions.

This study represents a pioneering endeavour since little or no research has been conducted on ICT4D in the small Pacific nations. In particular, this study analyses the encounter of western cultural artefacts transmitted through ICT tools and local cultural understandings. This research has contributed to the literature by providing findings in the unique cultural context of rural Samoa. The uniqueness of this study has addressed some of the concerns raised earlier in relation to the changes ICT can effect on traditional norms and customs. The Samoan values and customs have remained in accordance with traditional social norms, despite the numerous modern changes and the manifold western influence the country has been subject to. Despite these changes, it was evident in the study, the local people hold strongly on their identity as Samoans. They continue to hold on what defines them as a nation. They welcome the ICT intervention, in which they have moulded into their rich culture and lifestyle.

The findings of this study, presented some areas for future research on ICT4D that focuses on the context of Samoa. During the fieldwork it was observed that most of the users of the *feso'otai* centres were school-aged children, hence future research may be able to focus on examining how this group assimilates computer-mediated information in the particular context they live in. Mobile phone usage in Samoan has increased significantly over the past decade; it has become a common feature in the daily interactions between people. During the study, participants mentioned that there is a growing trend in Samoa, whereby ICT is used via mobile phones. This presents another area for possible future research, focusing on the cultural implications of ICT used through mobile phones.

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