THE ROLE OF TELECOMMUNICATIONS IN FACILITATING COMMUNITY ENGAGEMENT, SOCIAL CAPITAL AND SOCIAL INCLUSION

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This paper examines the role of telecommunications in sustainable social and economic development of urban, rural and remote communities in the Northern Territory of Australia through the theoretical lens of social capital. Whilst the essence of social capital is quality social relations, the concept intersects with telecommunications and Information Communications Technology (ICT) in a number of ways. The potential of ICT to disseminate information quickly, to reach vast numbers of people simultaneously and to include the previously excluded is immense. Meaningful access to ICT is however, embedded in a complex array of factors encompassing physical, digital, human and social resources and relationships. Consequently, this paper examines the nexus between social relations of mutual benefit, telecommunications access and social inclusion amongst diverse communities. Four communities, which included two urban, a rural and a remote Indigenous community in the Northern Territory of Australia are the focus of this research paper.

INTRODUCTION

This paper examines the role of telecommunications in sustainable development of urban, rural and remote communities in the Northern Territory (NT) of Australia through the theoretical lens of social capital. Social capital is a relatively new construct and is rapidly gaining interest among policy makers, politicians and researchers as a means to both describe and understand social and economic development. The essence of social capital is, as Stone and Hughes (2000, 40) suggest, '... quality social relations'. The Australian Bureau of Statistics (ABS) and the Organisation for Economic Development and Cooperation (OECD) define the concept as '... networks, together with shared norms, values and understandings which facilitate cooperation within or among groups' (ABS 2004, 5). This paper has also adopted the ABS definition of social capital.

The positive benefits of the quality social relations that constitute social capital are reported to have positive implications for a range of areas including education, social and economic development and social and civic stability (ABS 2002d; Cox 1995a, Cox 1995b; Fukuyuma 1999; Putnam 1995). Social capital may also help mitigate the effects of social and economic disadvantage and '... assist in supporting the development of sustainable local communities, including rural and remote areas ...(ABS 2004, 1; DCITA 2005a, 3; OECD 2001a, 5). Consequently the nexus between the two distinct, but interrelated, concepts of social capital and social inclusion is also gaining attention (McKenzie 2007; Notley & Foth 2008).

In recent years, the ubiquitous reach of the Internet has generated considerable interest in the capacity of Information Communication Technology (ICT) to disseminate information quickly, to reach vast numbers of people simultaneously and to include the previously excluded. However, meaningful access to ICT is '... embedded in a complex array of factors encompassing physical, digital, human and social resources and relationships' (Warschauer 2003, 6). Therefore,
this paper examines the nexus between social relations of mutual benefit, telecommunications access and social inclusion. A mixed methodological approach is used to test the hypothesis that No relationship exists between social capital and access to telecommunications services and facilities”. Four communities, which include two urban, a rural, and a remote Indigenous community in the Northern Territory (NT) are the focus of this research paper.

The paper commences with a brief description of the context of the NT. This is followed by a review of the literature and an explanation of the methodology employed in the study. The survey results and a case study are followed by a summary of the research results. The paper concludes with recommendations for further research.

THE NORTHERN TERRITORY CONTEXT

In comparison to other states and Territories, the Northern Territory is geographically isolated from all the major population centres in Australia. Darwin, the capital city of the NT, is closer to Kupang in West Timor, than it is to any major Australian city. The NT covers 1 346 200 square kilometres and, in relation to Australia’s seven States and Territories, occupies 17.5 per cent of the total land mass.

Despite the geographic size of the Territory, the population represents less than one per cent of the total Australian population. The total Territory population as at June 2005 was 202 793 (ABS 2006b, 4). According to the ABS (2005, 61) the population density of the Territory is approximately 0.1 persons per square kilometre, making it the most uninhabited region of the continent. The population density is also significantly lower than the national average of 2.6 persons per square kilometre (ABS 2005, 61).

The majority of the Territory population reside in the major urban areas of Darwin, Palmerston, Tennant Creek, Nhulunbuy, Katherine and Alice Springs. More than 50 per cent of the population reside in Darwin, the capital city of the NT. The remainder of the population resides in remote communities throughout the Territory. As at June 2003, approximately 25 per cent of the total Territory population resided in remote area of the NT (ABS 2006b). The population in the remote regions of the NT is distributed over a large number of small communities. According to the NT government (2003, 11) there are over 700 small communities located in the remote regions of the Territory. The communities range in size from less than 50 inhabitants to a population of more than 250 people.

The estimated resident Indigenous population in the NT at June 2001 was 56 875 which comprised around 29 per cent of the total NT population (ABS 2006a, 68). The majority of the population who resided in the remote regions of the Territory were of Indigenous descent (ABS 2005).

LITERATURE REVIEW

A review of the available literature revealed that the theoretical construct of social capital is relatively new and still evolving. Social capital has its origins in the notion of well-being and early influential writers were from a range of disciplines including sociology (Coleman 1988), politics (Putnam 1993), education (Portes 1998) and economics (Fukuyama 1995). Traditionally, the concept of well-being has been perceived as having strong links to the discipline of economics.
However, there is currently a great deal of interest in developing a set of economic statistics that give value to things previously left outside the economic system. According to the ABS:

There is ... a strong push from the general community to use social capital as a way to not only describe but also to understand community well-being. Using purely economic terms for such a task is seen as inadequate. (ABS 2002b, 1).

Contemporary social capital researchers and theorists have expanded on the concept of social capital and have generated '… [a] multitude of perspectives, definitions, theoretical propositions, and emphasis' (Lin et al 2001, iv). In recent years Woolcock (Woolcock & Narayan 2000; Woolcock 2001) has explored the link between social capital and economic development; Narayan (1999) has researched the role of networks in the alleviation of poverty and Grootaert (Grootaert 1998; Grootaert et al 2003; Grootaert & Van Bastelaer 2001) has examined the role of social capital in sustainable development. The Worldbank (Worldbank 1998, Worldbank 2001, Worldbank 2002, Worldbank 2004), the OECD (OECD 2001b, OECD 2002), Australia’s Productivity Commission (2003) and the ABS (ABS 2001, ABS 2002a, ABS 2003, ABS 2004) have also taken an active interest in the concept of social capital and its potential implication for civic engagement and sustainable social development.

Although research in the area of ICT and social capital is still in its infancy, there is a growing body of literature on the topic. Research includes the role of government in facilitating telecommunications infrastructure (Narayan 1999); the potential of ICT to build social networks across cultural and social divides (Norris 2003); and the potential of Group Forming Networks to enhance sociability (Reed 2007). There is also a substantial amount of literature on the role of ICT in facilitating social and economic development in third world economies (Dumas 1999; Fox & Gershman 2002; Gupta et al 2003).

More recently Notley and Foth (2008) have explored the role of the role of ICT in building social capital and facilitating social inclusion; Wyn et al (2005) have research the impact of ICT on the social relationships of youth; and Sinanan (2008) has examined the use of social tools in building the social capital of Indigenous communities in Victoria. To date however, there is very little research in regards to the potential of ICT in facilitating Indigenous social capital and enhancing Indigenous social inclusion. In 2005 the Department of Communications Information Technology and the Arts (DCITA, 2005b) produced a discussion paper on “The Role of ICT in Building Communities and Social Capital”, however, there is also currently no empirical evidence linking telecommunications access and the development of social capital. As DCITA commented '…research in this area remains largely undeveloped' (DCITA 2005b, 33). Consequently, this paper uses a research-based methodology to test the hypothesis that: No relationship exists between social capital and access to telecommunications services and facilities.

**METHODOLOGY**

Four NT communities participated in the data collection phase of the research project, which occurred during the latter half of 2005. The communities were selected as representative of those that existed in the Territory at the time the study occurred. The participating communities included two major urban communities – Alice Springs and Darwin; Katherine/Litchfield, a rural region;
and Milikapiti a remote Indigenous community located on the Tiwi Islands approximately 120 kilometres north of Darwin.

The data collection phase of this research project, which was consistent with economic and social research methods, involved both quantitative and qualitative data collection and analysis (Brewer & Hunter 1989; Graziano & Raulin, 1993; Wiersma 1991). The use of a range of data collection methods, including a case study, observations, interviews and a survey, enabled a mix of perspectives to be brought to the study (Burnes 2000; Easterby-Smith et al 1991). A mixed methodological approach also added a depth and dimension to the research that would not have otherwise been possible.

The communities of Darwin, Alice Springs and Katherine/Litchfield participated in a mail out survey. The Indigenous community of Milikapiti was not surveyed. In this instance a case study approach was deemed to be a more appropriate data collection method.

A sensitivity to the needs and experiences of Indigenous participants was an overriding concern throughout this study. Low levels of literacy and numeracy amongst Indigenous participants were also significant issues that were taken into consideration with regard to the data collection instruments and methods employed with this cohort of participants. Accordingly, a participant observer approach was the main methodology employed in the case study of the Milikapiti community. The data collected via observation was triangulated through information gathered in interviews and through a verbally administered questionnaire.

In the course of the data collection phase of the case study, approximately ten Indigenous Milikapiti community members were interviewed and consulted. Three interviewees (approximately 1 per cent of the Milikapiti population) were identified by the community as suitable spokespeople. These three interviewees subsequently consented to participate in a detailed semi-structured interview. These interviews explored in depth the social processes, the social capital indicators present in the community as well as community access to telecommunications services.

The interviews were structured around a questionnaire that incorporated the core concepts from a survey by Narayan and Cassidy (2001) that employed statistically validated questions for measuring social capital in developing countries. This questionnaire was administered verbally. The three participants all held a significant role in the community: they were full time employed and were recognised by the community as representative of the views of the community. All three participants were traditional owners, and all three were women.

Trust, networks, reciprocity and cross-cutting ties – or networks that encompass diverse groups – are common themes in the social capital literature. These themes correlate with social capital dimensions that were recommended by the OECD (2002), the ABS (2004) and The Australian Institute of Family (Stone 2001). Consequently, the survey that was employed in the data gathering phase of the research incorporated a range of social capital indicators including trust, norms, reciprocity and networks. The survey contained 70 ‘selected-response format’ questions of which 13 questions pertained to telecommunication use and access. The remainder of the questions pertained to the indicators of social capital.

Survey participants were chosen at random from the 2005 electoral roll. A computer generated list containing a random sample of one per cent of the voting population from Darwin, Katherine, Alice Springs and Litchfield was used to obtain the names and addresses of potential participants. The random sample methodology was used in order to eliminate any potential bias in the selection of participants (Graziano & Raulin 1993; Wiersma 1991).
In total, 525 participants were invited to participate in the study. Initially there were 320 participants identified from Darwin, 72 from Katherine and Litchfield and 133 from Alice Spring. The responses from Katherine and Litchfield areas were combined to represent a rural region. In total, 176 surveys were completed and returned. The completion rate was 33.52 per cent. Approximately 7.9 per cent of surveys were returned unopened. The returned surveys reflected the transient nature of the NT population – approximately 8.0 to 10 per cent of the NT population relocate interstate each year. Follow-up phone contact also indicated a significant number of respondents were no longer living at the address indicated on the electoral roll.

**SURVEY RESULTS – SOCIAL CAPITAL DIMENSIONS**

A demographic analysis of the survey responses indicated that all respondents were broadly representative of the community from which they were drawn. The average age, the gender ratio, the linguistic and cultural diversity and the mobility of the survey respondents were broadly consistent with that of each region.

A Principal Component analysis of the survey results revealed that the survey contained four main dimensions. The variables in each dimension were analysed in order to determine their commonality. For the purpose of this study each dimension was ascribed the following definitions:

**NETWORK PARTICIPATION**

This dimension is concerned with the civic and social participation. It examines the extent to which people are actively engaged in and with their community. It is also concerned with the nature of their involvement with the community. It includes participation in professional, social and community activities. This participation may take the form of voluntary work, donating time/money, organising community services and events or just simply attending a community event. Communities with a high instance of collaboration, mutual assistance and obligation and active citizenry can promote an atmosphere of mutual trust, vital social networks, equal political relations and a tradition of participation.

**NETWORK TRANSACTIONS**

According to the ABS (2004) networks are not static objects, but dynamic relationships for a purpose, maintained by supportive and productive interactions. A significant dimension of social capital is the transaction that occurs between people within networks and between organisations. The behaviours in this dimension include, but are not restricted to, the sharing of knowledge and information, the capacity and willingness to negotiate, the provision of support to family and friends, an involvement in civil life and a sense of community identity. These elements are actions or behaviours that contribute to the formation and maintenance of social capital, and they represent the advantages and obligations that network members or groups draw from engaging in network-mediated transactions.

**NETWORK DENSITY**

This dimension refers not only to the size of the networks people are engaged in, but also to the social connectedness of these networks. It includes the breadth, depth and extent of the networks. Whilst network size, in terms of the number of family and friends, is integral to this dimension,
the frequency and mode of communication in and between network members is also significant. Included in this dimension are the norms of inclusiveness, acceptance of diversity, social and civic participation, friendship, trust and the concept of power relations. Bonding, bridging and linking relationships are aspects of this dimension and are manifest in the number of relationships and the norms these relationships exhibit.

**NETWORK QUALITIES**

This dimension encompasses the intangible qualities such as trust, reciprocity and a sense of efficacy. These qualities are difficult to quantify, but are essential to quality of life and social health issues. Trust is the propensity of people to be dependable, to keep promises and to speak honestly. Consequently, trust in networks such as local trade, the community, friends, family and government services is a vital component of this dimension. Openness, inclusiveness, confidence and the encouragement of active social and civic participation are also included in this dimension.

**THE VARIABLE TELECOMMUNICATIONS**

Thirteen questions in the survey were related to the variable telecommunications. As telecommunications was the independent variable in the hypothesis, no relationship exists between social capital and access to telecommunications services and facilities, the questions that related to telecommunications were not included in the Principal Component Analysis and were accordingly, analysed separately.

**PEARSON 1-TAILED BIVARIATE CORRELATION**

In order to determine if a relationship exists between the independent variable telecommunications and the social capital dimensions of Network Transactions, Network Qualities, Network Density, and Network Participation, a Pearson 1-tailed bivariate correlation was performed. The analysis revealed that there was a relationship between the variable telecommunications and the dimension of Network Transactions, Network Participation and Network Density. The analysis also revealed that no significant correlation existed between telecommunications and Network Qualities. As the strength of a relationship within the Pearson correlation range of 0.50 to 1.0 is generally regarded as ‘large’ (Cohen 1988; Pallant 2001, 120), the analysis suggests that there is a strong relationship between telecommunications and Network Transactions, a medium relationship between telecommunications and Network Participation and a less significant relationship between telecommunications and Network Density.

A subsequent bivariate correlation was also conducted on the survey returns from each community. The analysis revealed that in the two urban communities there was a significant correlation between telecommunications access the social capital dimensions of Network Participation, Network Transactions and Network Density. The strongest correlation was between telecommunications access and Network Transactions. There was no correlation between telecommunications and Network Transactions. There was however, no significant correlation between telecommunications and Network Qualities.

In the rural region there was a significant correlation between the variable telecommunications and the dimensions of Network Transactions and Network Participation. There was however, no significant correlation between telecommunications and Network Qualities and, unlike the
two urban communities, there was no correlation between the variable telecommunications and Network Density.

The responses to the variables in the dimension Network Density were generally consistent across regions. However, survey respondents from the Katherine/Litchfield area had fewer close relatives and close friends than respondents from other regions. Katherine/Litchfield residents also indicated that they had slightly less trust in banks, fewer people they could call upon in a crisis; they experienced more negative attitudes due to cultural differences and felt more isolated than the respondents in either Alice Springs or Darwin.

MILIKAPITI CASE STUDY

Observation, a series of interviews, and a verbally administered questionnaire formed the basis of the data collection instruments employed in the Indigenous community of Milikapiti. Ten people were interviewed and three people consented to participate in an in-depth interview and a verbally administered questionnaire. The three participants in the in-depth interviews were traditional owners, all were female and all were acknowledged and recognised by the community as leaders and spokes-people. The interviewees were all engaged in full time employment. They were employed at the school, at the health clinic and one was a police aide. Two of the respondents had no children of their own and one interviewee had one child only. All interviewees were, however, members of a large extended family.

In order to preserve a consistency in the data presented, the information collected via interviews, the verbal questionnaire and observation was organised and interpreted around the questions that constituted the variable telecommunications and the four principal components of Network Density, Network Transactions and Network Participation and Network Qualities.

NETWORK DENSITY

Indigenous kinship and family structures are powerful and cohesive forces that bind Aboriginal people together and provide psychological and emotional support (ABS 2002c). According to the interviewees, the kinship system is, to the Tiwi people, the most significant group to which they belong. All interviewees identified their 'family', their 'tribe' and their 'skin group' as the group that was the most important to their household. The interviewees also identified their 'family' as the group that is the most homogeneous in terms of language, culture and religion and as the group with whom they interact the most frequently.

Whilst all interviewees acknowledge membership of a number of groups, such as the church group and the community women's group, these groups were predominantly found within the community and were constituted mainly by 'family' members. One interviewee, who worked as a teacher's aide at the local school, acknowledged that six of her co-workers were members of her immediate family.

All three expert witnesses were employed in roles that necessitated contact with individuals, groups and organisations beyond the confines of the community. Consequently, all interviewees were able to identify eight or more close friends, other than family members, whom they could call on for help or to talk about private matters. All interviewees were also 'definitely' able to identify people other than family members whom they could call on for financial assistance if
the need arose. However, close family members were acknowledged by all interviewees as people they would most likely call upon if they had to borrow money.

The three interviewees expressed a general sense of satisfaction and control over their lives. Whilst the interviewees were either ‘very happy’ or ‘moderately happy’ with their life, they also felt they had the power to make important decisions that could change the course of their life. However, when questioned about Local, Territory and Federal Government their responses indicated an ambivalence about placing their trust in these authorities.

**NETWORK TRANSACTIONS**

All three interviewees claimed that they frequently socialised with others over food or drink, either in private or in a public place. The socialisation, according to interviewees, was with people from different tribes, different cultures and different linguistic backgrounds. A licensed club operates at Milikapiti. The club is the focal venue for the majority of the social interaction that takes place in the community. This club is open on weekdays for four hours a day and half a day on Saturday. Both Indigenous and non-Indigenous people frequent the club. During the football season almost all community members can be found at the club on Saturday afternoons supporting their local team in the Tiwi Island Football League.

Whilst it was acknowledged that tensions existed in the community, the interviewees regarded the community as friendly. Interviewees cited the cause of the tensions in the community as disputes over landholdings, disputes between tribes, disputes between men and women and between the older and younger generation. According to all three interviewees, these disputes had occasionally led to violence. Despite the tensions in the community, interviewees felt moderately safe to very safe when home alone.

The main sources of information that were identified by all three interview participants included relatives, friends and neighbours. Two interviewees also identified newspapers, television and the Internet. One interviewee identified ‘community leaders’ as one of the main sources of information.

**NETWORK PARTICIPATION**

The number of community groups that interviewees were involved in ranged from two to ‘many’. The interviewee who worked as a teacher’s aide at the local school claimed membership of eight ‘significant’ groups. The groups included tribe, skin group, two school groups, the Aboriginal School Parents Association (ASPA), Church, Council for Aboriginal Alcohol Program Services (CAAPS) and the community Women’s Group. This interviewee, in particular, was very involved in community events and frequently volunteered her time and skills to local community groups. As she was highly literate in both English and Tiwi she was also frequently called upon to assist visitors to the community. Consequently, her networks were extensive and extended beyond the community. During the case study she was observed with an address book that contained contact detail and phone numbers of her friends, associates and the Tiwi organisation located on the islands.

All three interviewee participants had a strong sense of commitment to their community. They all worked in an area that provided a service to community members such as the school, the health clinic and law enforcement. All participants acknowledged that they would willingly
donate time to a project that would benefit the community. Two interviewees stated that they would also donate money to such a project.

All interviewees identified recent community activities that they, or their family, had been involved in. These activities were undertaken for the benefit of the community. The activities cited included a 'clean-up' after Cyclone Ingrid, a category three cyclone that swept through the community in March 2005. A re-enactment of 300 years of white contact was also given as an example of a recent event where the community came together for the benefit of others.

Whilst cooperation by community members to solve a problem that would affect the whole community was considered to be 'very likely', interviewees did not consider the community to be very proactive in organising or petitioning officials/politicians for new services. A petition for a community swimming pool was cited as an example of on of the 'few times' the community had actively sought a new service.

**NETWORK QUALITIES**

The interviewees were fairly ambivalent about the questions concerning 'trust'. As the interviewees were employed in Education, the Health Service and Police, Fire and Emergency Services and were highly regarded by the Community, there was, at the very least, a degree of trust in these services at the local level. But, in general, interviewees thought that '... you could not be too careful when dealing with people'. However, they unanimously agreed that most people in the community would willingly help you if you needed it.

All interviewees had voted in the last election and all had participated in community activities. Only two of the three interviewees reported that they had been actively involved in community issues, but all three acknowledged that they would willingly support local issues if they were perceived to be of benefit to the whole community.

**TELECOMMUNICATIONS**

At the time of the case study, telecommunications access was a point of contention in the community and the cause of considerable tension. Interviews conducted with community members revealed that whilst most non-Indigenous residents had a telephone and Internet access in their home, very few Indigenous community members had access to these services. Approximately 10 Indigenous households were identified as having a landline and home phone. However, it was also acknowledged that many of these phones were, for a variety of reasons, not always operational. Home Internet access was not a priority and, as of 2005, no Tiwi people at Milikapiti were identified as having a home computer. There was one public phone in the community and no public Internet access.

The lack of access to phones and the Internet caused both social and organizational problems for the community as a whole. Community members with access to phones, faxes and the Internet were often expected to share the facility or are asked to undertake administration tasks on behalf of others. One interviewee admitted that until recently she had a phone installed in her home. The continual pressure from family members wanting to use the phone eventually led to her having the service disconnected. Council Administration workers reported that they had frequently undertaken Internet banking on behalf of community members. However, the council staff discontinued this service when it began to interfere with the work they were employed to carry out. A sign prominently displayed in the Health centre which stated: 'Telephones in the clinic are not
for private use by the community or staff' provided an indication of social and administrative tension that surround the provision of telephone and Internet access in the community.

All three interviewees had access to a telephone and the Internet through their work location. The Police Aide did not have a dedicated phone and Internet connection but could obtain access through the Council office if necessary. All interviewees used the telephone daily for work related transactions. The Internet was used less frequently but was accessible.

In September 2005, mobile phone coverage was not available at Milikapiti. However, it was expected that a mobile phone tower would be erected before the end of 2005. The installation of a phone tower was part of a project by Telstra to provide the whole of the Tiwi Islands with Code Division Multiple Access (CDMA) phone coverage. According to DCITA, Milikapiti would receive CDMA access through the Towns Under 500 Program (DCITA 2004).

A mobile phone tower had been installed in the community of Nguiu on Bathurst Island just prior to the commencement of the case study. Phone coverage extended to the mainland and, when towers were erected at Milikapiti and the community of Pirlingimpi, coverage would include the three communities on the Tiwi islands.

In anticipation of the impending availability of mobile phone coverage, a number of Milikapiti community members had purchased a handset. The youth of the community were also very keen to have access to mobile telephony. On a recent school excursion into Darwin, mobile phones were, according to a local school teacher, purchased by most students. Secondary school students who had returned from boarding school on the mainland to attend a mourning ceremony were also observed with mobile phones. Whilst the phones were unable to transmit voice or text data they were used to take digital images of the ceremony.

**SUMMARY OF RESEARCH RESULTS**

An analysis of the survey results revealed four social capital dimensions. The dimensions included Network Participation, Network Transactions and Network Qualities and Network Density. A Pearson 1-tailed Bivariate Correlation indicated that there was a relationship between telecommunications and social capital in the three communities surveyed. However, a synthesis of the data obtained from the participating Indigenous community, and the results of the survey conducted in two urban and one rural community revealed that the relationship was not consistent across all locations and all communities. The data indicated that the relationship between social capital and telecommunications was stronger in the two urban communities than it was in the rural and remote Indigenous community.

In each of the three surveyed communities there was a positive relationship between the variable telecommunications and the social capital dimensions Network Transactions and Network Participation. In the urban communities of Darwin and Alice Springs there was also a relationship between variable telecommunications and the social capital dimension Network Density. In the three communities surveyed, no relationship was found to exist between Network Qualities and telecommunications.

As telecommunications access in the participating Indigenous community was so limited, no relationship between the social capital dimensions of Network Transactions, Network Participation, Network Qualities and Network Density was found to exist. There was, however, evidence
of considerable pent-up-demand for telephone and ICT access. There was also evidence to indicate that, when available, ICT was used for both personal and work related transactions.

CONCLUSION

This paper examined the role of telecommunications in sustainable development of urban, rural and remote communities in the NT through the theoretical lens of social capital. The study tested the research hypothesis that No relationship exists between social capital and access to telecommunications services and facilities. Four NT communities were involved in this study. The communities included two urban, a rural community and a remote Indigenous community. The communities were chosen as representative of the diverse population, communities and circumstances that constitute the Territory.

The main finding of the data analysis indicates that the null hypothesis was incorrect. A relationship between telecommunications and social capital does exist; however, the relationship is not consistent across all locations. The data indicates that geographic isolation, the density of established relationships and the capacity to access telecommunications services can have an extenuating effect on the telecommunications-social capital relationship. There is no evidence to indicate that a relationship exists between access to telecommunications and Network Qualities – the intangible elements of social capital that encompass trust, openness, reciprocity and a sense of efficacy.

The lack of statistical data precluded an analysis of the relationship between access to telecommunications and social capital in the Indigenous community that participated in this study. However, the case study and anecdotal evidence suggests that access to telecommunications services may facilitate generalised and individual trust; help create and sustain bridging and linking relationships; build and sustain Indigenous networks; as well as assist in promoting Indigenous values such as ‘… the importance of country, family, traditional law, culture, community and relationships …’ in an online world (DCITA 2005b, 41, 53, 48). The role of ICT in facilitating the social capital of Indigenous communities is, however, an area that needs further research. The impact of mobile telephony on remote Indigenous communities; Indigenous use of the Internet; telecommunications policy in regard to remote Indigenous communities and the role of telecommunications in facilitating social inclusion are some of the areas that warrant further investigation.

As discussed, high levels of social capital are reported to include positive implications in the areas of health, education, economic development and social and civic stability. Social capital may also help to mitigate the negative affects of effects of social and economic disadvantage associated with geographic and social isolation. Given the evidence that indicates that there is a positive relationship between telecommunications and social capital, access to telecommunications services has the potential to facilitate the sustainable social and economic development of urban, rural and remote communities in the Northern Territory. As DCITA (2005b, 45) acknowledged:

... through access and effective use of ICT individuals and communities have a greater opportunity for engagement with others, broadening their understanding and building bonding, bridging and linking capital. Greater participation in communities is assumed to contribute to stronger social capital with the community at the local, state, national and global levels and hence contribute to improved economic and social outcomes.
An in-depth analysis of the case study is in print and it is expected to be published in 2010 in PLAT-FORM: Journal of Media and Communication.

The three interview participants are referred to as “interviewees”.

Through out the course of the data collection phase of the study the Tiwi frequently referred to the kinship subsections of “family”, “tribe” and “skin group”. These terms, when referred to in this paper, imply the complex interrelated network of relationships that constitute the Tiwi kinship system.

ENDNOTES

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