

A CRITIQUE OF GOVERNMENT GRANT BASED APPROACHES TO ADDRESSING DIGITAL DIVIDE ISSUES IN AN AUSTRALIAN INDIGENOUS COMMUNITY

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ABSTRACT:

'Digital Divide' issues have emerged as one of the key aspects of Social Informatics. Within developed, post-colonial nations such as Australia, the impact of the 'Digital Divide' is strongest for Indigenous communities. This paper reports on a case study of approaches to address these issues in the town of Roebourne, in the Pilbara region of Western Australia. The majority of the members of the Roebourne community are Indigenous Australians. This study examines how the community is trying to use government grants to access resources to develop a Telecentre and associated infrastructure. The paper critiques this approach to addressing 'Digital Divide' issues in this type of community, in terms of its efficiency, effectiveness and equity.

1. INTRODUCTION

Over recent years there has been growing recognition of 'Digital Divide' (DD) issues around the world (Benton Foundation, 1996; Birkerts, 1998; Dutton, 1999; Kling; 1996; 1999; NTIA, 1999)¹. This may be considered as an important part of the larger research field of 'Social Informatics' (Kling et al., 2000).

There is a growing need to address DD issues so as to foster development, especially in disadvantaged communities. Research from around the globe suggests that information and communication technologies (ICTs) play a vital role in both economic and social development. For instance, the recommendations of the European Commission Directorate General V (Employment, Industrial Relations and Social Affairs) in its 1996 Green Paper include:

“Public policy should...

“2. Improve democracy and social justice by ensuring that the potential of Information and Communication Technologies (ICTs) to provide relevant, up-to-date, information on matters of common

¹ There are also a number of WWW sites, including: <http://www.bridges.org/resources/practical.html>; <http://www.col.org/telecentres/>; <http://www.itcd.net/itcd-2001/papers/papers.html>

interest and to enable citizens to participate in public decision making, are fully supported by governments, with the involvement of non-governmental organisations.

4. *Overcome the disadvantages faced by disadvantaged social groups, and ensure that those who currently lack opportunities in society have the possibility to master ICTs and to thereby improve their relative position, rather than become further disadvantaged.*
5. *Support people with special needs, many of whom can be helped to improve their quality of life and address their own needs, as well as to further enhance their contributions to society as a whole, with the help of ICT. “*

Courchene (1994, p. 233) notes, from an economic development viewpoint, that:

“...in an era where knowledge is at the cutting edge of competitiveness, social policy as it relates to human capital and skills formation becomes indistinguishable from economic policy... Sophisticated services will benefit from having civic nets carry the burden of introducing the public to the world of global electronic communication and services. People who have a strong need for such services will turn to commercial vendors for superior service and improved access. Supporting civic nets is the cheapest way business can support the development of a market for more sophisticated services.”

Within developed, post-colonial countries (such as the USA and Australia), the impact of DD issues is perhaps greatest in Indigenous communities². The issue is also of significance for developing countries which include disadvantaged Indigenous groups (Harris et al, 2000).

Riley et al (1999) carried out a very detailed examination of the impact of DD issues on Native Americans. They consulted widely with Indigenous and non-Indigenous stakeholders and developed a set of recommendations about policies and processes of remediation. In their Executive Summary (p. v/vi), the authors state that: *"By just about any measure used, individuals living in Native communities or villages typically have less income, receive less education, and suffer from higher unemployment and poverty than individuals in non-Native communities. Native communities also lag far behind non-Native communities in "basic" infrastructure such as roads, utilities, and housing. The gap between Native and non-Native communities is even greater in "advanced" technology infrastructure such as Internet access, cellular telephone service, and cable TV"*.

Riley et al (1999, p. vii) identified the most important barriers to development of technology infrastructure in Native communities as:

- *"The generally weak economic base of these Native communities that prevents them from investing in either physical infrastructure or worker training necessary to support technology infrastructure;*
- *Geographical remoteness that raises the cost of providing technology infrastructure;*

² See: <http://www.indiantech.org/>

- *Distrust on the part of some Native Americans of specific new technologies and of federal assistance;*
- *Lack of an integrated, interagency Native American investment strategy;*
- *Federal policy that fails to reflect the severity of the technology gaps faced by Native Americans;*
- *Insufficient information dissemination regarding federal programs available to the tribes; and*
- *Insufficient planning in Native communities."*

The situation for Indigenous Australians is very similar. Governments at the State and Federal levels are starting to provide programs aimed specifically at DD remediation in Indigenous communities, e.g. funding under the Networking the Nation program. Indigenous organisations such as the Outback Digital Network³ are also taking a lead in developing infrastructure and services in a culturally-appropriate manner (Hodge, 2002).

As well as the strong impact of DD issues arising from the socio-economic status of Indigenous communities, there are complex matters relating to the nature of digital knowledge and decision systems. For example, for Indigenous communities there may well be fundamental cultural issues relating to the ontology and epistemology of digital systems (Turk and Trees, 2000; Watson-Verran and Turnbull, 1995).

2. ADDRESSING DIGITAL DIVIDE ISSUES IN AUSTRALIA

The DD issues common in developed nations apply in Australia. Some of these impact more strongly because of the relative concentration of population in about a dozen coastal cities and the very large distances between small rural centres of population. There are also significant issues regarding Indigenous Australians, who suffer from much higher levels of unemployment, lower educational levels and incomes, and poorer health than non-Indigenous members of the community.

Over recent years the impact of DD issues for Australians living in rural and remote communities has increased due to the withdrawal from many small communities of the physical presence of key service providers from the business sector (e.g. banking) and Federal and State Government Departments with responsibilities for such matters as health, housing, training and employment programs, and welfare payments for aged, disability and other pension schemes. Increasingly business and government is wanting to provide information and services on-line. The working assumption is that everyone has access to the Internet and can use it. Even when arrangements are made for on-line access (e.g. through agencies, such as in the case of Centrelink), there is seldom funding for staff to assist clients to use the computer systems. Many clients who are obliged to "help themselves" to online information or forms will do so in ineffective ways (requiring repetition) or give up because of the lack of skills, fear of the technology or 'shame' at being incompetent. This is having a significant impact on the delivery of welfare services in rural and remote communities.

³ See: http://www.newconnections.gov.au/Article/0,,0_2-1_1-2_5-3_130-4_25776.00.html;
http://www.geocities.com/the_odyssey_group/odn02.html;
<http://www.balkanu.com.au/projects/telecommunications/digital.htm>

Federal and State Government agencies started addressing these issues in the late 1980s, often with assistance from academic institutions. Through the 1990s Telecentre programs were developed and were quite successful in rural areas where there is a predominately non-Indigenous population (Bibby, 1999; Reeve, 1998). However, a key determinant of success has been the availability of administrative and technical skills within the local community.

During the period when governments in Australia have become aware of DD issues and started developing programs to address them, there has been a general political movement towards "smaller government". This has been strongly pushed by political parties of a 'right-wing' or 'conservative' flavour (which particularly value 'individualism' and 'business models'), and even by traditionally more socially-minded political parties. The result has been the imposition of an ideological framework for government policies that has emphasised reduced delivery of services by government departments and an increasing push for alternative commercial arrangements, facilitated by specific government grants, with a high level of 'managerialism' and an emphasis on 'governance'. This has had a very significant effect on the nature of programs to address DD issues, the way community groups interact with them, and the outcomes for individual citizens.

There is a confusing array of constantly changing government programs at Federal, State, Regional and Local levels to address DD issues. There is no lack of government awareness of the issues, but less co-ordination of approaches, and stability of programs, than is desirable. Almost exclusively these government initiatives are handled as grants programs, where organisations are expected to apply for funding for specific types of programs within particular timeframes. A few examples of relevant government grants programs are:

- ***Telecentre Program (Western Australian State Government):***

This is an ongoing system of government support for the development of Telecentres in rural and remote communities in WA. Grants are available to incorporated bodies in suitable communities, who apply in an appropriate manner, supplying required information and demonstrating support from community organisations, businesses and Local Government. The organisation needs to also provide considerable information concerning how the telecentre will be run and a detailed business plan. Currently the grant provides for \$30,000 (in the first year) to purchase equipment and \$20,000 in each of three years as contribution towards the salary of a Co-ordinator to run the telecentre. The telecentre is expected to raise other funds for operating costs through sale of services (Internet access, video conferencing, training, secretarial services, etc) and to be self-funding from the fourth year of operations. This program is run by a Support Unit which administers the grants scheme, coordinates interaction with other government agencies (e.g. education providers), provides advice and practical support to Telecentres and maintains the network of telecentres⁴. This has been a crucial factor leading to the success of most WA telecentres (Oliver and Short, 1996; Short, 2001). Local Governments (Shires and Councils) are supposed to support the

⁴ See: <http://www.telecentres.wa.gov.au/>

Telecentres by providing buildings to house them and to integrate their activities with other regional and local programs. There are currently about 95 Telecentres which have been established over the last few years, mostly in small rural townships in the agricultural areas of the South-West of the state. Only in the last couple of years has there been a concerted push for development of telecentres in predominately Indigenous communities in the North and East of WA.

- ***First Click Computer Literacy Program (Western Australian State Government):*** This is a relatively new program aimed at addressing digital divide issues by encouraging the development of computer skills and familiarity with the Internet among particular types of people: low income households; people in regional areas; the unemployed; and women aged between 40 and 54 years who are unemployed. Within each of these groups, special consideration is given to the needs of particular sub-groups including seniors, people with disabilities, Indigenous people and people for whom English is not their first language. The focus is not on delivery of training through normal educational organisations (such as TAFE colleges). Rather, it concentrates on encouraging community organisations to facilitate development of computer literacy via very well targeted short-term 'active learning' projects which utilise community-based expertise and personnel. Such programs should be directed at activities likely to be of interest to target populations within that community. Funds are granted to not-for-profit community groups to employ part-time staff but can also be used for hire of rooms, advertising, transportation of senior or disabled students, etc. Most of the funding is directed at small programs costing less than \$20,000, with a few larger grants up to \$130,000. Applications are assessed in terms of appropriateness of strategies or programs to meet the computer literacy learning needs of the identified groups; demonstrated experience and skills of the staff/organisation working on the project; and anticipated program benefits and outcomes.
- ***Rural Transaction Centre Program (Federal Government):*** This program has been developing over the past few years as a means to address problems arising from the withdrawal of business and government services from rural and remote areas and to make use of technologies such as the Internet and electronic funds transfer (EFT). The program provides grants (usually up to \$250,000) for the establishment of Rural Transaction Centres (RTCs), covering the cost of building renovations and other infrastructure. The objective is that funds for staffing and operating costs will come from provision of services to clients and that the 'business' should be totally self-funding from the fourth year. This program is meant to complement other related government programs at the Federal (e.g. Networking the Nation and the Regional Solutions scheme) and State (e.g. WA Telecentre scheme) levels. However, many of the services proposed for RTCs are those expected to raise funds for related businesses, such as Telecentres. It is expected that applicants will have already obtained funding from other government grants schemes or charities and have arranged in-kind support from local community organisations and businesses. Applicants are assessed in terms of the demonstrated level of community needs and the ability of the organisation to

provide effective service delivery, maintain appropriate records and be financially viable. There are stringent requirements for community consultation, market surveys of needs and detailed program delivery and financial planning. The program has been mainly focussed on non-Indigenous communities, although, in recent times, field officers have been appointed to concentrate on developing applications with Indigenous stakeholders.

There are numerous other government programs relevant to DD, however, those mentioned above will serve as appropriate examples, as they are the major schemes relevant to the case study discussed in this paper.

3. ROEBOURNE CASE STUDY

3.1 Description of the Community

The author has been working together with his co-research (Dr. Kathryn Trees) for many years with the Indigenous community at Roebourne in the Pilbara Region of Western Australia (Trees and Turk, 1998, Turk and Trees, 1998, 1999, 2000). In recent years much of this work has related to DD issues and has included assistance to the community in preparation of numerous government grant applications.

The Pilbara is a remote and vast region of about 500,000 sq km with only a handful of major towns and about a dozen small communities, and a total population of approximately 40,000. Indigenous people (Aboriginal and Torres Strait Islanders) make up about 11.6% of the population and 25.6% of the total population is under 15 years of age. The main economic activity in the Pilbara is mining iron ore and other base metals, and the production of oil, gas and salt. Tourism, pastoral and aquaculture activities are also carried out and there is some secondary processing, small manufacturing industries and service industries to the major economic enterprises.

Roebourne was the first colonial town in the Pilbara area, but since the 1970s it has been overshadowed by new towns constructed for workers in the mining industry. The population of Roebourne and surrounding small communities is about 1,300, of which 95% are Indigenous. The unemployment rate in Roebourne is 25% with a further 20% of community members participating in Community Development Employment Program (CDEP) activities (i.e. "work-for-the-dole"). Literacy and numeracy levels are low, hindering access to the limited employment opportunities available in the nearby larger towns. Most employment is concerned with local services such as the TAFE college, schools, hospital, prison, shops, etc. There is a high proportion of people on some form of government benefit payments, a large number of elderly people and also many young children.

Commissioner Johnson in the 1992 Royal Commission into Aboriginal Deaths in Custody report stated that the Roebourne community suffered severe social and economic deprivation, which contributed to the high number of indigenous people incarcerated. He recommended that the Indigenous people of Roebourne be empowered to develop their own social cultural infrastructure, with particular attention to education, community cohesion and sustainable economic development.

In 2002 people in Roebourne experience:

- limited employment opportunities, especially for youth and indigenous people;
- limited access to suitable education and training;
- low levels of literacy and numeracy;
- poor health, with significantly lower life expectancy ages than non-Indigenous communities;
- inequitable access to government services and programs, including lack of focus on outcomes;
- inflexibility of programs and their inability to address local and cultural considerations;
- limited resources for economic development, including lack of infrastructure;
- costs and difficulties imposed by geographic and climatic conditions, and remoteness from major centres.

Historically, the people of Roebourne have been socially and economically disadvantaged by the development of the pastoral and mining industry. However, Roebourne is a strong, resilient, community-focused town. In the 1990s there were a number of important developments including improvements in local educational possibilities at primary, secondary and TAFE (vocational training) levels. Each of these developments was designed to raise the standard of living, improve opportunities for young people, increase the number of commercial enterprises and to highlight the strong cultural identity of the community. Reconciliation is a strong community focus in Roebourne. Indigenous and non-Indigenous people are working together to provide improved facilities, which will be shared by them all.

3.2 Addressing Digital Divide Issues in Roebourne

The community at Roebourne has been working to address DD issues in a manner which is integrated with related community processes and designed to suit local needs. This is being achieved through a series of co-ordinated projects, focussing on the development of the Roebourne Communication and Collaboration Centre (RCCC). The principle objectives of the proposed centre are to enhance service delivery, encourage community development and to facilitate networking and collaboration between community, business, educational and government organisations. Delivery of some State and Federal Government services will be collocated with communications, education and networking facilities. The aim is to improve community wellbeing and to generate employment and business opportunities. There will be a strong focus on youth, education, cultural development and training.

This proposal has been generated from within the Roebourne community as one of the ways to drive community development from within. Since the vast majority of community members are Indigenous, (mostly from the Ngaluma, Injibarndi and Banjima peoples), the centre will be developed in a culturally-appropriate manner. It will facilitate greater interaction between community elders and youth in the context of cultural development, especially through the production of material in local languages.

The proposal for the RCCC has been developed during a series of community meetings and Steering Committee meetings over the last three years. The idea was to start with a Telecentre and a Rural Transaction Centre, initially located in an existing building, then to move to a new building where community radio, local language materials production and other facilities would be added. This concept was developed through extensive and thorough community consultation during 2000. Well-advertised meetings held to discuss this proposal were attended by people representing a wide cross-section of the Roebourne community. The concept had very strong support so a public meeting was held, which endorsed the proposals and it was decided to form a Steering Committee.

The Steering Committee conducted an extensive public survey to investigate interest in the proposal. Of 152 survey forms returned by individuals, 150 were supportive. Local businesses were also very supportive. Twenty six letters of support were provided by prominent individuals, businesses and community organisations, including the Shire of Roebourne, which contributed a member to the Steering Committee. The Steering Committee was formed from a wide cross-section of the community and held meetings open to anyone interested. These meetings were also attended by representative of several government agencies, including the Telecentre Support Unit and The Pilbara Development Commission.

The RCCC will be a multi-purpose community facility comprised of a set of four co-located components (business units), as follows:

- Roebourne Rural Transaction Centre (RRTC);
- Roebourne Telecentre (RT);
- Roebourne Culture and Language Group (RCLG);
- Roebourne Radio and Recording Group (RRRG).

The first two components are the facets of the RCCC which relate most directly to DD issues and will be the focus of discussion in this paper. The Roebourne Rural Transaction Centre (RRTC) is the subject of a current grant application to the Federal Government. The Roebourne Telecentre (RT) has already received WA State Government funding and is expected to start operating late in 2002. It will commence operations in its own premises, and will be joined by the RRTC, probably early in 2003. These two facilities will move to join with the other components, when the RCCC building is constructed, probably in mid 2004. The development of the RCCC was designated in 2001 as a pilot project for coordinated funding under the Federal Government's Regional Solutions program.

The proposed activities of the RRTC and RT components of the RCCC are as follows:

Roebourne Rural Transaction Centre (RRTC):

- provide delivery of selected Commonwealth (e.g. Centrelink) and State Government services (e.g. agent for births/deaths/marriages), in collaboration with the Telecentre;
- rent offices to visiting professionals (e.g. medical) and government or business people;
- provide secretarial / administration services (e.g. grant applications; minutes; reports);
- provide photocopying and printing services;

- provide secure storage of documents for: individuals; organisations; government departments; businesses; visiting professionals;
- provide a citizen's database, storing information on request by individuals;
- provide short courses and training relating to its activities (e.g. administration skills);
- hire meeting rooms (with the option of minute secretary service);
- facilitate networking between community, business and government organisations;
- provide a directory of community organisations and commercial services;
- publish a community newsletter - including advertising.

Roebourne Telecentre (RT):

- provide Internet access (to tourists and locals), telecommunication, video-conferencing and information services as part of the WA Telecentre Network;
- provide short courses and training relating to telecentre activities;
- operate a café.

The mode of operation of the RCCC will be culturally appropriate to its clients/customers, the vast majority of whom will be Indigenous people. The key objective will be to provide efficient, effective and equitable service delivery via utilisation of ICT and the use of skilled and sympathetic staff to act as intermediaries between the clients/customers and relevant government agencies. Priority will be given to hiring staff from within the community. Service delivery will also be greatly assisted through the use of local community members under the CDEP arrangements.

The establishment of the Telecentre in Roebourne has been the most straightforward of the grant-based procedures, with an effective set of support structures provided by the WA Government Telecentre Support Unit. However, there has been difficulty with the role of local government and it has taken three years of community effort to get the facility up and running. The Rural Transaction Centre program has had a set of changing requirements and has only had effective support structures (including field officers based in regions) for the past year. Recent interactions with the agency have been much more effective and the Roebourne community is expecting funding under this scheme to be confirmed shortly. The Regional Solutions Program included a bold effort to coordinate activities of more than a dozen Federal agencies but seems to have had major problems. The Roebourne community learned in mid 2002 that its application (from 2000) had been 'lost', despite the RCCC having been designated as a pilot project to trial the development of improved procedures. The community application under the "First Click" computer literacy scheme was unsuccessful despite meeting all the criteria. Apparently this was because the incorporation process for the Roebourne Telecentre was not yet completed. It is hoped that funding will be forthcoming in the next round of grants. In summary, it has taken over three years of community meetings, negotiations with government agencies and grant applications to start to see significant action to address the DD problems in Roebourne. It will probably take another year or two before an effective infrastructure is in place.

Throughout these developments the project has been impeded by a number of systemic difficulties, including:

- Working within the grant-based, business-model funding arrangements of government agencies;
- Interacting with Federal, State, Regional and Local levels of government, across a range of administrative function areas;
- Carrying out extensive community consultation and collaboration in the face of some competition for resources and community politics;
- Having enough people with the necessary skills to conduct community surveys, prepare business plans and detailed program proposals and to prepare grant applications.

The experience of the researchers in working with the Roebourne community has led to the development of a set of conclusions regarding the appropriateness of current government policies addressing DD issues. These are summarised in the next section.

4. CRITIQUE OF GOVERNMENT GRANT-BASED APPROACHES

A number of problems flow from the adoption in Australia (at both Federal and State Government levels) of a competitive, business-oriented, grants-based model of addressing DD issues. This critique is based on an analysis of the approach in terms of its efficiency, effectiveness and equity, in the context of how well DD problems are addressed for Indigenous communities, such as Roebourne:

- Efficiency:
The approach is inefficient in various ways, including:
 - there is considerable cost in time and money to become aware of the various grant schemes, deadlines, application requirements, etc., especially for members of communities suffering the effects of DD;
 - much time and energy is consumed in meetings to organise the community alliances and to obtain the detailed information required for grant applications;
 - grants only provide for specific aspects of community needs and are administered by different departments at Federal and State levels, so it is often necessary to submit many grants from the same set of community groups;
 - there is also very great wastage in government management of overlapping grant schemes - advertising availability of grants; advising potential applicants; assessing applications; monitoring performance; revising program conditions; etc.;
 - the timing of specific granting schemes, and the long lead-time between application and funding, means that there is great difficulty in arranging for timely and coordinated delivery of services;
 - the short-term and uncertain nature of grant funding makes the employment of suitable staff very difficult, especially in rural and remote areas;
 - because grants are competitive and available funding is much less than is needed, many grants are unsuccessful, meaning that much scarce community resource (time, money and enthusiasm) is wasted;

- operating on a competitive business model reduces the capacity for collaboration and means that many organisations must "reinvent the wheel" in terms of procedures, accounting practices, etc, etc, rather than these matters being dealt with centrally and/or by staff with adequate training;
 - the approach consumes scarce community resources which could be better utilised in activities of a true business nature (rather than government service delivery) which would generate greater employment and income for the local community.
- Effectiveness:

The effectiveness of the approach has at least the following limitations:

 - co-ordination of granting schemes is a nightmare, with, for instance, more than a dozen Federal agencies involved, which means that programs overlap (or leave gaps) and do not address complex social issues in a holistic or coherent manner;
 - considerable numbers of government personnel are necessary to administer the grant schemes, however they are not responsible for service delivery, divorcing them from the motivation and accountability which would encourage greater efficiency;
 - because there are a myriad of government agencies and grant recipient groups involved, training is very ineffective and the opportunity for 'organisational learning' is minimised;
 - grant schemes arise within particular government agencies in a fairly ad-hoc way and are designed to meet specific (often political) objectives, meaning that they often do not match the real community needs, so that applicants must distort their programs to suit the grant scheme guidelines;
 - grants tend to go to those groups with the greatest ability to prepare effective applications, rather than to those with the greatest need;
 - grants usually need to go to community groups operating as 'businesses', which brings with it a whole raft of complex issues relating to taxation, insurance and financial governance, etc., which community organisations are not equipped to deal with, leading to failure of service delivery and 'churning', as new organisations need to be created to replace those unsuccessful in earlier projects;
 - in Australia, most small business fail within the first couple of years so that basing management of grants on a 'business model' almost guarantees that most projects will fail to achieve self-sufficiency;
 - many clients of services provided under these sorts of programs are used to dealing with government agencies and are often distrustful of 'business' modes of service delivery, meaning that they are less likely to utilise the services effectively;
 - the way funding is provided leaves the community processes very vulnerable to local politics, where competitors for funding may be less cooperative than is desired and local (and personal) issues irrelevant to the program may interfere with service delivery.
 - Equity:

The approach does not produce equitable outcomes (for Indigenous communities), in at least the following ways:

- those members of society who are in greatest need of such programs are the least likely to be successful at "playing the grants game", specifically because of DD issues, i.e. the mechanism being used to address the problem is not taking proper account of the nature of the problem, leading to inequities;
- Indigenous communities are among those with the greatest needs and are also those with the least availability of skills necessary to apply for grants and to successfully administer the 'businesses' that they demand;
- there is a tendency to blame those who are unsuccessful in the 'grants game', meaning that they are considered to be undeserving of future assistance;
- the inefficiencies and ineffectiveness of the approach (as discussed above) mean that a high proportion of the funding goes to support intermediaries (usually of reasonably high socio-economic status) rather than to those who need the services, who are often under-educated, sometimes disabled and usually unemployed and living in relative poverty.

It is important to note that there are also advantages in the grants-based approach adopted by governments, especially in terms of increasing community 'ownership' of service delivery. However, in the opinion of this author, these are greatly outweighed by the numerous disadvantages discussed above. In addition, community involvement need not only be in terms of the grant-based, business-model approach. It is perfectly possible to engage effectively with community processes, and adapt government programs to local needs, in the context of a framework of greater government responsibility for service delivery. It needs more creativity, staff training and leadership, rather than adopting the easy option of managerialism and passing of governance responsibilities to those least able to cope with them. Inter and intra-community organisations can play a key role in developing sustainable solutions⁵.

5. A MORE APPROPRIATE APPROACH TO DIGITAL DIVIDE REMEDIATION

A more appropriate approach by governments to DD problems is to develop a contingency-based method of DD remediation, to be carried out by government agencies in close collaboration with community organisations. Such an approach would have relevant government agencies taking greater responsibility for managing the process and would not rely upon community groups applying for grants. Relevant government agencies would need to co-ordinate their activities much more effectively and decide which level of government (probably State) and particular department/ministry would be the prime manager of the process of DD remediation. Fragmentation and duplication of effort is one of the major problems with the current system. Government expertise and resources need to be pooled, with some levels of

⁵ For example, see:
<http://www.sustainability.dpc.wa.gov.au/CaseStudies/communityinternethour/communityinternethour.htm>

government being involved in providing resources, while others are responsible for managing the process and/or carrying out remediation activities.

Once a 'lead agency' was designated for a particular geographic area (say a State or region) a more structured approach could be applied. A possible method of implementing an improved approach to addressing DD issues would involve the development of a (contingent) Digital Divide Remediation Model (DDRM) and incorporate the following stages:

- A. Establish a contingent model of DD remediation:
 - Establish strong relationships with groups representing people impacted by DD, other government and non-government agencies working in related fields and academic researchers and develop procedures for sharing information and co-ordinating approaches;
 - Develop a detailed understanding of DD problems and factors (and measures) indicating incidence of particular difficulties in any specific community;
 - Develop a detailed understanding of DD remediation processes and factors⁶ (and measures) indicating whether they are likely to be successful in any particular community;
 - Develop a contingency model for determining an appropriate DD remediation plan for any particular community, based on prevailing community factors relating to both difficulties and appropriate solutions;
 - Establish a set of procedures to apply the model, in close collaboration with community members.

- B. Assess DD remediation needs and opportunities for communities:
 - Use statistical data (e.g. Census) and local knowledge to identify and prioritise a set of communities likely to need DD remediation;
 - Establish Co-ordination Committees in each community, in collaboration with Local Government and community organisations;
 - Collect information to establish: baseline data; information re DD incidence and remediation contingency factors; details of existing community resources and processes;
 - In collaboration with the community Co-ordination Committee develop a detailed DD remediation plan for each community, by applying the data to the contingency model;
 - Establish a timeline and a clear understanding of proposed activities, resource requirements and responsibilities of government agencies and community groups;
 - Establish clear procedures for monitoring and auditing of processes and outcomes.

- C. Provide support to particular communities:
 - Carry out the DD remediation plan in each community (in accordance with priority ranking; resource availability and community readiness) in association with the local Co-ordination Committee;

⁶ For example: Riley et al (1999) and Roman et al (2001).

See also: http://www.childrepartnership.org/pub/low_income/executivesummary.html

- Monitor progress and revise plan as necessary, in collaboration with the local Co-ordination Committee.
 - Assess outcomes, with respect to previously collected baseline data.
- D. Audit processes and outcomes and revise remediation model:
- Collected data regarding the conduct of DD remediation processes in each community and use this to revise the model and its factors and measures;
 - Routinely discuss the efficiency, effectiveness and equity of the current approach with groups representing people impacted by DD, other government and non-government agencies working in related fields and academic researchers;
 - Publish reports detailing procedures, the contingency-based model and the results of audits of procedures and outcomes.

In this approach the service delivery would still be the prime responsibility of the local community, however, the process of establishing the DD remediation plan (including responsibilities and resource allocations) would be much more efficient. Appropriate support by government agencies would be provided in an effective manner. The DDRM (and the set of procedures for applying it) would become increasingly more efficient, effective and equitable as feedback from experience in dealing with communities was used to enrich and revise the process.

If such an approach had been applied in the Roebourne community, rather than a grants-based one, effective DD remediation would have been in place years earlier and with much less waste of effort by community members and government agencies. Government needs to play a more directed role, in collaboration with community organisations, to provide effective DD remediation for Indigenous communities in developed countries (Riley et al, 1999). This approach is also likely to be effective in developing countries (Pradhan and Metcalfe, 2001).

6. CONCLUSIONS

The importance of DD issues, especially for Indigenous peoples needs to be further investigated and discussed. Governments need to be well informed about the problems and to work with local communities, groups representing disadvantaged citizens, academic researchers and others to develop efficient, effective and equitable programs to address DD issues. In countries like Australia, this needs to be done in a coordinated manner between the various levels of government.

This paper, through discussion of a case study in an Indigenous community, has sought to highlight some of the problems of having assistance schemes based on competitive grants to 'business-like' community organisations. Especially in Indigenous communities, this makes impossible demands on participants and lessens the likelihood of successful outcomes. It serves, perhaps, short-term political objectives but does not resolve long-term difficulties. An approach based more on government service delivery is needed. This is not to say that it should not involve considerable consultation and participation by local community members - quite the reverse. The challenge is for government agencies to reject ideological biases and to creatively develop innovative, timely programs, which suit community needs and

skills, have appropriate levels of governance and work effectively to reduce the impact of DD. This paper has proposed a DDRM-based process which should lead to more appropriate outcomes.

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