Bridging the Local Digital Divide: The Barangay.Net Project*

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The World Bank-sponsored Barangay.Net project, spearheaded by the Central Visayas Information Sharing Network (CVISNet), endeavors to realize the vision of transforming the Philippines to an e-services hub of Asia-Pacific region. This will be accomplished through the cooperation of the government, the private sector and non-government organizations. An initial e-readiness survey of seven barangays of Cebu city was made using Heeks' IT benchmarks for the following areas: 1) data systems infrastructure; 2) legal infrastructure; 3) institutional infrastructure; 4) human infrastructure; 5) technological infrastructure; and 6) leadership and strategic thinking. The assessment discovered that the viability of the project is being stalled by financial constraints, lack of ICT awareness in the barangay and the divergence between the barangays' predicaments and ICT solution. Among the policy alternatives, the pursuance of the project is deemed as the most feasible option along with the strengthening of advocacy mechanisms in target barangays. Although the idea of the Barangay.Net may seem premature, the advantages of e-democracy, as a possible result of this ICT venture, could outweigh the drawbacks posed by the possible unequal distribution of the project's benefits.

Introduction

Much optimism has been raised in empowering people and communities using information and communications technology (ICT). Community access to the Internet presumably helps spur economic activities, linking them to the global economy for livelihood and employment opportunities. Government can provide better basic services through more efficient electronic administrative processes. Political participation can be enhanced with an informed citizenry using ICT.

However, the transformative potential of ICT in communities is constrained by existing disparities in its access and use. The digital divide not only exists between countries but within countries, as well. The Philippines is a case in point. With an average Internet penetration in the Philippines of only two percent, the disparity in the use of ICT exists between national and local government levels despite moves to effect e-governance. The divide is even more pronounced at the grassroots level.

Recognizing the potent power of ICT in grassroots empowerment, an initiative known as the Barangay.Net project was undertaken by the Central Visayas Information Sharing Network (CVISNet), a Cebu-based private foundation, for local communities to make use of information resources through the Internet. The project involves the government, the private and non-government organization (NGO) sectors with the view that ICT can help link local communities to the global economy by accessing information on economic opportunities and transform barangays formerly known as barrios, the basic political unit in the Philippines, into active participants in nation-building.

This paper seeks to examine this local ICT initiative in an attempt to address the digital divide between the government and local communities. It looks into the level of preparedness by the target beneficiaries in accepting and incorporating ICT, as well as, the factors that facilitate and impede the project. Moreover, it shall explore attendant issues in addressing the local digital divide and in implementing e-governance in the local community level.

Background

While the Internet has ushered in a new era of wealth creation and information revolution, it has also led to the emergence of new divisions between the information "haves" and "have nots". In view of the international digital divide, "information have not" countries have increasing access to and use of ICT over time but the exponential rate at which "information have" countries increase their ICT access and use makes it difficult for the former to catch up; hence the disparity widens.[1] ICT disparities also exist within countries (domestic digital divide) based on factors such as race, income, geographical location, education, age, gender, and disability.[2] E-readiness assessments are, therefore, needed "as a valuable tool with which to gain this more informed region-specific understanding and to develop an action plan."[3]

Heeks notes that lack of e-readiness and design-reality gaps account for failure of e-governance initiatives in most developing countries. In assessing e-readiness for e-governance initiatives, the following must be examined:[4]

• readiness of data systems infrastructure – management systems, records and work processes in place to provide quantity and quality of data;

• legal infrastructure – laws and regulations required to permit and support move to e-governance in place;

• institutional infrastructure – existence of institutions to coordinate, lead and drive e-governance;

• human infrastructure – attitudes, "mindset" gaps (e.g., resistance to change, lack of customer-orientation, resistance to data-sharing), knowledge and skills in place especially within the public sector to initiate, implement, and sustain e-governance initiatives;

• technological infrastructure – existence of computing and telecom infrastructure; and

• leadership and strategic thinking – vision and leadership to give direction to e-governance.

India's experience in instituting e-governance offers interesting insights. Initiatives in the area of e-governance have originated not from the federal government in New Delhi but from southern Indian states such as Adhra Pradesh and Karnataka, which have been trying to attract investment in the IT sector.[5] It is also noted that although the growth of the Internet has been exponential in India, its diffusion remains limited in social and geographical terms, with the Internet reaching less than 0.37 percent of India's citizens. Kaudisya notes that the overwhelming problems associated with sheer connectivity are bound to expose those promoting the Internet to the charge of being socially exclusivist.[6] The kinds of divide peculiar to India's political and social milieu are geographical and linguistic. This also raises the question of diffusion and use which may be constrained by the realities of illiteracy and high costs of hardware and connectivity.

Keniston offers preliminary hypotheses as observed in these grassroots ICT projects in India. The more striking of which in relation to this study are: (1) starting by consulting at the grassroots is essential; (2) the development of locally-relevant content is essential, and the nature of that content varies from region to region; (3) e-governance is one of the most promising uses of ICT; (4) a successful commercial IT sector does not necessarily "trickle

down" to ordinary Indians; and (5) apparently, "technical decisions" concerning IT regulation, bandwidth allocation, pricing mechanisms, transmission standards, etc., can have profound effects on whether or not information technologies benefit ordinary Indians.

Budhiraja suggests that government and the private sector will have to work more closely in order to resolve three key issues.[8] This is to implement delivery channels such as kiosks, interactive TV, internet and call centres so that technology can be an effective tool to provide services to the citizens. These issues are technological issues such as appropriate hardware platforms and software application packages for cost effective delivery of public services; management of change-related issues such as fundamental changes in government decision management; and funding issues.

In determining the preparedness of selected barangays in Cebu City as potential beneficiaries, a survey was done to know the access, use and prevailing notions on ICT among barangay residents and personnel. Heeks' e-readiness indicators are also adopted to aid in the assessment of factors that promote and restrain the project.

National ICT Initiatives

Recognizing the importance of ICT in the country's development, the Philippine government has undertaken steps to ensure that the country will be an active player in the field of ICT. The goal is to make the Philippines an e-services hub in the Asia Pacific region. On a national level, among the steps taken towards this direction are: (1) the inclusion of policies and directions in the use of IT in the Medium-Term Development Plan; (2) the setting up of the Information Technology and Electronic Commerce Council (ITECC), a government private sector advisory body tasked by the Philippine President to promote e-commerce in the Philippines; and (3) enactment of the E-Commerce Law (Republic Act 8792) in June 2000, which allows the private and public sectors to apply e-commerce transactions.

Some 250 government agencies are connected to the Internet and majority of them have websites which offer information and services to the general public.[9] Applications of e-commerce in national government have started in agencies such as the Garments and Textile Export Board, the Bureau of Customs, the National Statistics Office, Department of Budge

and Management, Bureau of Internal Revenue, Departments of Education, Trade and Industry, and Agriculture.[10]

As far as the local governments are concerned, there have also been moves to introduce ICT in its operations, especially since the E-Commerce Law provides for a two-year mandate for government to have the capability to transact business electronically. The city government of Cebu, for one, has started its online real property tax and business name information systems which it seeks to hook up to barangays in the city with internet connection.

All these measures emanate from the higher government levels but initiatives in the local barangay and grassroots levels are wanting.

The Barangay.Net Project

To make ICT available to the barangays, the Barangay Information Technology Access Center (BITAC), more popularly known as the Barangay.Net Project, was introduced to the public in December 2000 by the Central Visayas Information Sharing Network (CVISNet) in collaboration with the Department of Science and Technology (DOST) Region 7, Department of Trade and Industry (DTI) Cebu, Technical Education and Skills Development Authority (TESDA) Region 7, Center for Industrial Technology Enterprise (CITE), Ayala Foundation Inc., and the Association of Barangay Captains (ABC) in Cebu. The project partners later on increased to include the University of the Philippines Cebu College, Meridian Telecommunications, and the Regional Information Technology and Electronic Commerce Council (RITECC 7).

The goal of the project is to develop and implement a flexible, local approach to community development using information and communications technology (ICT) to promote connectivity, access, capacity building and content creation. Its specific objectives are: (1) to provide access to communication networks, information, data knowledge for unconnected and underserviced communities; (2) to establish a one-stop information resource center for the community using simple, tested, and state-of the-art methods of organizing, sharing and communicating information; and (3) to develop curricula, information, programs and other material for a number of sectoral sustainable human development-related applications.[8]

As a telecenter, the facility is supposed to provide barangay residents access to information through the internet on business and job sourcing, telemedicine, and environment, among others. It is envisioned to serve as training center for civil society groups, private sector, low-income groups and individuals to familiarize with IT and to use such for various development applications. Such applications may encompass long-distance education, telemedicine, electronic commerce, assistance to small businesses, new mechanisms, for popular participation, environmental management and women and youth empowerment. In addition, the project will be made a tool to transform the barangays as active participants in nation building by enabling the rural communities to benefit from lifelong learning, engaging in sustainable agriculture, fisheries, trade and commerce and connecting to health professionals. With the long-term vision of getting all barangays on-line, the project anticipates the linking of the communities to the global economy with the sites further expected to create new opportunities for growth, livelihood and jobs.[9]

The project initially chose two barangays in Cebu City for pilot testing–Basak-Pardo in the South district and Lahug in the North district. However, Barangay Lahug has not pushed through with the pilot testing. According to the barangay chairperson, the main constraint for this is funding. The Commission on Audit's rules on government spending are so restrictive that the barangay is prevented from purchasing computer equipment. Lahug is one of the progressive barangays in the city with its own fire brigade and health center. It has also embarked on its own computerization project and uses its own computerized system for issuing barangay permits and clearances. However, the barangay's computers were sourced from donations and not from funds coming from the city government. The barangay chairperson said it is difficult to rely on government for computerization funds so they are relying on their own efforts and initiative. Barangay Lahug is also developing its own website, separate from that of the Barangay.Net project.

The Barangay.Net launching in Basak-Pardo as pilot barangay was held on 26 June 2002. Applications that were exhibited are the online barangay clearance system (the first e-government application developed for the barangay level), the online business name information system, and the online real property tax information system. Later on, the applications will hopefully be expanded such as the one on real property to be hooked up with city government records.

CVISNet has applied for funding from the World Bank worth US $3 million to sustain the project. If approved, the grant can enable the 80 barangays of Cebu city to acquire needed computers and modem for free being the beneficiaries of the project proposal. DTI is also helping CVISNet find other funding sources to finance this IT project for the barangays. More recently, the newly-formed Barangay.Net Alliance Cebu, Inc. consisting of the Barangay.Net partners have signed on 31 July 2002 a Memorandum of Agreement with Globe-Islacom, the leading telecommunications company in the Philippines, to provide for the lines needed by the barangays in the project. This is a positive step in meeting the infrastructure requirements of the target barangays.

Indications of Digital Divide in the Barangay Level

Since there was a gap in information regarding acceptability and preparedness by barangays to adopt ICT, a survey[10] was done in March 2002 in seven selected barangays: Barangay Gun-ob in Lapu-Lapu City and Barangays Tisa, Day-as, Lorega-San Miguel, Guadalupe, and Cogon-Ramos in Cebu City. Table 1 shows the profile of these barangays:

Table 1: **Barangay Profile**

Barangays	Total Population	Voting Population	Total Land Area (in hectare)	No. of Sitios	No. of Internet Cafes
Gun-ob	29,542	* n.a.i.	226.92	19	29
Tisa	40,000	* n.a.i.	372	61	5
Lahug	35,000	13,800	443	* n.a.i.	12
Day-as	3,174	2,390	15	11	2
Lorega-San Miguel	10,804	6,766	31	* n.a.i.	*n.a.i.
Guadalupe	65,000	* n.a.i.	373	12	19
Cogon-Ramos	4,749	3,400	31	8	10

Source: Barangay reports
*n.a. i. - no available information

A random sampling was done in these seven barangays. The barangays were chosen based on accessibility to students who conducted the survey (some of them were residents of these barangays). In the survey, there were two sets of respondents – 246 total residents and 42 total officials and staff for all seven barangays. The gender ratio was almost equally distributed – 124 or 50.41 percent were female; and 122 or 49.59 percent were male.

Out of 246 respondents who are residents of the barangays, 57 or 23.17 percent were in the 15-20 years old age range, 43 or 17.48

percent belonged to the 21-25 years old range and 38 or 15.45 percent were in the 26-30 years old range.

Majority have not specified their occupation (69 or 28.05 percent) but the next highest number of respondents (47 or 19.11 percent) were students. Sixty-nine respondents or 28.05 percent have not specified their educational attainment but 58 or 23.58 percent were in the college level, while 50 or 20.33 percent were college graduates.

Among the barangay personnel, nine or 21.43 percent belonged to the 21-25 years and 26-30 years age bracket, respectively while eight or 19.05 percent belonged to the 41-45 range. Twenty-seven or 64.29 percent of the respondents were male. Respondents in the survey held mostly clerical positions. Seventeen or 40.48 percent are college graduates and twelve or 28.57 percent had collegiate educational background.

Separate questionnaires were given to barangay residents and barangay personnel. For the barangay residents, the questions were:

* Do you have personal computer?

* Do you have a telephone (landline)?

* Do you have a mobile phone?

* Do you have access to the internet? How?

* For what purpose do you use a personal computer or the Internet?

* Who uses the computer in your family? What are their ages?

* If the barangay office can provide computer/internet services, will you be interested to avail of them? If yes, why? For what purpose? If no, why not?

For barangay personnel, the questions were:

* Do you know how to use a computer?

- Do you use a computer in the barangay? For what purpose?

- Does your computer in the barangay have Internet connection?

- Do you think using the computer and Internet in the barangay work will be helpful? In what way?

The findings in the survey show that among the residents,

- 80.89 percent do not have personal computers;

- 52.44 percent have telephones;

- 50.81 percent have mobile phones;

- 62.60 percent do not have access to the Internet (if ever they have access, it is outside the home usually through the school or Internet café);

- 20.73 percent use the computer or the Internet mainly for research or school projects, while 15.04 percent use it to surf, email, or chat;

- 62.48 percent are interested to avail of Internet services if the barangay can provide them for research/educational purposes (15.85 percent), to save money (12.20 percent), and to become computer literate (10.57 percent).

Among the barangay personnel,

- 64.29 percent or majority know how to use the computer;

- 57.14 percent use the computer in the barangay office mainly for clearances, certification, and documentation;

- 47.62 percent do not know if their computer in the barangay have Internet connection; 28.57 percent said they do not have; and 14.29 percent said they have Internet connection in the barangay;

- 73.81 percent or majority think that using the computer and the Internet in the barangay will be helpful in terms of clerical work (saving

documents or files, earlier completion of tasks, easy dissemination and updating of information).

Evident here is the predominant opinion among barangay personnel that the computer's use is only limited to encoding and storing files. It is not seen as a tool for effective communication, data integration, and networking.

Table 2 outlines pressing problems that the barangays are confronted with.

It may be noted that none of the barangays indicate computerization as a tool to help solve these problems.

Assessment

In gauging the preparedness of the barangays in adopting this ICT initiative, one would note the inadequacy of the requisites for e-readiness (see Table 3).

Table 3: e-Readiness for Governance

PRECONDITIONS		LOCAL CONDITIONS
Data systems Infrastructure	Management systems, record and work process in place to provide quantity and quality of data	Inadequate (Lacking website content-Barangay.Net)
Legal Infrastructure	Laws and regulations required to permit and support move to e-governance	Exists mainly on national level (E-Commerce Act) Local resolutions needed
Institutional Infrastructure	Institutions to coordinate, lead and drive e-governance	Exists only in national and regional levels (ITECC, RITECC) None in local barangay levels
Human Infrastructure	Attitudes, knowledge and skills required to initiate, implement and sustain e-governance initiatives	Need to trickle down to local levels Strong resistance to change, lack of awareness and appreciation to ICT
Technological Infrastructure	Computing and telecommunications infrastructure	Non-existent in most barangays Access to existing infrastructure an issue
Leadership and Strategic thinking	Vision and leadership to give direction to e-governance	Exists on the project level; need to be developed among barangay leaders

Source: Heeks, 2001.

The information data system in the barangay level is still lacking. The barangays themselves have yet to provide the content for the Barangay.Net website, showing their officials' apparent lack of interest or motivation to do so.

Table 2: **Barangay Concerns and Problems***

Barangay	Issues and Concerns
Brgy. Gun-ob	1. Garbage, drainage and sanitation 2. Land disputes 3. Bumpy roads 4. Drug addiction 5. Gambling 6. Peace and order
Brgy. Tisa	1. Drug addiction 2. Out-of-school youth 3. Garbage and drainage system
Brgy. Lahug	1. Drug addiction 2. Garbage disposal 3. Unemployment 4. Health 5. Illegal squatting 6. Traffic 7. Smoke belching 8. Lack of disaster control 9. Gambling
Brgy. Day-as	1. Garbage disposal 2. Facilities for police assistance 3. Snatching and drug addiction 4. Illegal gambling 5. Health and sanitation
Brgy. Lorega-San Miguel	1. Congested cemetery 2. Drug addiction 3. Abattoir 4. Snatching 5. Shortage of medical supplies and facilities 6. Low income
Brgy. Guadalupe	1. Garbage disposal 2. Drug addiction 3. Quarrying 4. Unfinished roads
Brgy. Cogon-Ramos	1. Garbage disposal and drainage system 2. Open manholes 3. Narrow sidewalks 4. Overcrowded market 5. Snatching and drug addiction 6. Peace and order 7. Low income

*Based on interviews with residents and barangay officials, March 2002
of Political Science class on Philippine National & Local Administration,
2nd semester, SY 2001-2002

The legal infrastructure is in place on the national level with the enactment of the E-Commerce Law. However, this still needs to be supplemented by specific resolutions from the barangays concerning ICT adoption.

There is already an existing institutional infrastructure for e-governance with the presence of the ITECC and its regional counterparts, but direct and closer coordination with the barangays would be needed to push the ICT agenda in the grassroots level.

The human infrastructure in the barangay level needs to be developed as well. ICT knowledge and skills exist (with hundreds of ICT graduates and schools offering ICT courses in Cebu). Nonetheless, these knowledge and skills have to be made present in the barangay level especially in relation to meeting the Barangay.Net project's objectives. There exists also a strong resistance to change and lack of awareness and appreciation for ICT not only among the residents but also among barangay officials.

The computing and telecommunications infrastructure although available in the city does not reach most barangays. Telephone lines, computers, and fax machines are usually non-existent in barangay offices. Access to this infrastructure is the primary issue for the barangays as project beneficiaries.

Among the factors that facilitate the project are:

• Stakeholder participation – Various groups from Internet service providers (ISPs), academe, local government, national government agencies, civil society groups, and the private sector are involved in the project.

• Social capital – This refers to "networks of civic engagement" and "stocks of social trust, norms and networks that people can draw upon to solve common problems".[11] Social capital is reflected in the project partners' investment of time, money, and effort on the project.

• Leadership – Proactive barangay chairpersons and volunteer project proponents (e.g. representatives from CVISNet, Ayala Foundation) serve as the driving force behind the project. Their role as change agents is crucial for this ICT initiative to be implemented.

On the other hand, the factors that impede the project are:

* Lack of financing, which is related to the lack of equipment and funding for training.

* Lack of social preparation and ICT awareness in the barangay; and

* Lack of fit between barangays' problems and ICT solution.

Given limited budgetary resources in the barangay, the maintenance cost of operating the facility, including purchase of computers and internet connection fees, are primary considerations for barangay leaders before involving themselves in the project. Except for a consultative meeting conducted by CVISNet with barangay leaders, there were no other meetings or preparatory planning sessions actively involving them in the conceptualization and implementation of the project. The project reportedly started with the desire of the leader of pilot barangay Basak-Pardo to have a computerized database system for their records. The project was conceptualized by players which are not direct beneficiaries except for Basak-Pardo. This may also be partly the reason why CVISNet is having difficulty soliciting information from barangays for data content in the website it has developed. Apparently, advocacy is needed to convince the barangays of the benefits to be derived from the project.

There is also a need to address the lack of awareness among most barangay leaders and their constituents of the potent force of ICT in streamlining barangays work and in strengthening popular participation. The non-adoption of this ICT initiative in the barangay would probably benefit inept barangay officials such that it will preserve the status quo and people would be mired in the inefficiency of the current political and administrative set-up. Therefore, it is probably, not so much the lack of funding or resources that serve as the greatest pull factor. More disastrous and incipient of all is the unwillingness and resistance to change especially among the barangay leaders to try new technological tools that can promote efficiency in their work.

Other   Issues

There are implications of the local digital divide to e-governance initiatives such as the Barangay.Net project and democracy. What may

have been overlooked is the fact that such initiative may be used to facilitate active citizenship, paving the way for e-democracy. With a well-informed citizenry who can express their opinions online in a civic commons, constituents can weed out inept public officials through the information network. Yet, in the case of the barangays, this ideal is still in the long haul. Telecenters or community technology centers help bring about social capital that translates into cyberpower.[12] In the local setting, this, however, may be like opening a pandora's box. Great care is needed to deliberate and settle the issue of who will control and maintain the facility in the long run. In the case of Barangay.Net, suggestions have been made to allow a neutral third party, not the barangay to serve as the site of facility because of the fear of being used for political purposes. At the time when citizens are supposed to have access to the facility, there may be a need to turn it over to a neutral citizens group in the community that would be free from or can stand against political pressures.

At present, available applications are mainly for the use of barangay officials. Later on, applications for the use of constituents should be included since the objective is for them to access information that will directly benefit them in terms of job, health and educational opportunities. As confirmed in the survey, the youth in the barangays are interested in using the facility for learning. The youth if trained and tapped appropriately can serve as change agents as well as tutors for other constituents.

The project members represent government, private, NGO, and academic sectors, which have a stake in the local community. While the barangays are the primary beneficiaries in the project, it is evident that significant portions of the benefits would also accrue to project members such as hardware and software vendors, ICT providers, including government officials who may possibly receive contract commissions. At this point it is difficult to determine how the actual benefits are distributed since the pilot testing has just started. The partnerships entered into by the barangay and project members have not entailed any expense on the part of the barangay (i.e., Barangay Basak-Pardo). Involvement is on a volunteer-basis with project members spending for transportation and other expenses entailed in meetings and other activities. It is in the long-term when ISP providers and telecommunications companies can make financial gains when barangays pay for the operational expenses of the facility.

Options in Implementing the Project

There are different ways to ensure that the goals of the project can be met. The options for the Barangay.Net group are:

• To proceed with the ICT project despite constraints such as lack of funding and preparedness in the communities.

This is the case at present. The Barangay.Net group can continue introducing ICT in barangay governance even with meager resources. While it would sustain the momentum that has built up since the project started, the attendant effect may be slower reception in target communities because of the limited work done in preparing them for ICT. As funding and social preparation still need to be addressed, the diffusion process could be at a much slower pace.

• To postpone the project until residents clearly appreciate it as a solution to their problems in the barangay.

This may lessen resistance to the ICT initiative and bring about a higher level of effectiveness since the psychological barriers would be diminished through intensive information dissemination activities undertaken beforehand. The disadvantage in this option, however, is that it may take time. Some of the gains already made such as eliciting support and interest from funding sources and using available applications in the pilot barangay, may not be sustained if the project is shelved until the people are fully receptive to the idea.

• To use instead the amount proposed to funding institutions to address major problems identified by the residents.

While this would directly answer the barangays' concerns, acceptability on the part of funding sources may be a problem. The ICT component which is the main thrust of the Barangay.Net group may be overshadowed in this option. Another issue here is the management of funds for purposes which may already be beyond the scope, function and control of the Barangay.Net group.

The best option would be to proceed with the project while at the same working for advocacy in the target barangays. Seminars and meetings with

the barangay officials and residents can be incorporated into the workplan of the Barangay.Net team, tapping funds to be obtained from potential donors. Apparently, the best way at this point is to do advocacy and social preparation activities while the facilities are being installed. This may help prevent missed opportunities because the pilot testing has already began. Having the actual equipment, application software, and Internet connection in the barangay, and demonstrating their use to the officials and residents could create a better appreciation of ICT as a tool in dealing with the concerns of the community.

Conclusion

The Barangay.Net project is an attempt to bridge the local digital divide by connecting the barangays to the Internet and by providing applications to create efficiency in the work at the barangay level. However, this local e-governance initiative has problems and shortcomings. The need for social preparation is important since this will determine whether the technology that the project introduces is the appropriate one for the problems that the barangays in the city are trying to solve. Apparently, the selected barangays in the survey indicate illegal gambling, waste disposal, and peace and order, among others as more pressing issues. These may not need high-technology solutions but a networked information system and people knowing how to harness this tool may provide creative means in dealing with these problems. The challenge is how access to the facility would translate into poverty alleviation and concrete solution to the barangays' specific problems. Unless there are tangible, concrete benefits which the ordinary citizens see in the use of ICT in their own barangays, it would be difficult to sustain the project. Technology, then, should be used in a way that it becomes an integral part of the people's everyday life.

Since the project is in its early stage of implementation, it is difficult to determine who are the real winners and losers. The barangays stand to gain from this e-governance initiative if the projected outcomes are met. However, it cannot be ruled out that the proponents, especially the ISP providers and telecommunications companies, will stand to gain in the long-term once the barangays are capable of paying for the upkeep of the telecenter facility. Concrete and measurable impact have yet to be gauged but the project definitely takes political will and effective management for it to work and achieve its objectives.

It seems that the Barangay.Net is an idea that has not yet come of age given the conditions in the barangay level which speak of a huge digital and mindset gap existing among its populace. Moreover, what the people in the barangays deem important such as food, jobs, education, and health cannot be concretely addressed yet by ICT. Hence, the benefits promised by the project appear to be nebulous. ICT, as introduced by the project, magnifies even more the divide between the "information haves" and "have nots" in the local community. A danger of having barangay officials use the applications for taxation purposes, for instance, with them belonging to the "information haves" in the barangay, is that this can drive a wedge between them and the residents with an emergent view of ICT as an oppressive tool. If the facility will not be accessed by ordinary citizens for use, which can benefit them directly, this may even be a source of conflict in the barangay. The use and control of the facility is obviously a political issue.

Areas for Future Research

The introduction of this ICT initiative would also introduce changes in the local culture, with an emphasis to building a culture of open communication. This can pave the way for the use of the Internet to promote public discussion and better awareness of issues that would help develop and strengthen their local communities. Yet the presence of digital divide in the local communities poses as a barrier to maximizing the use of ICT to elicit active citizens' participation in local affairs. If the intention is really to inform people, there may even be a need to use the local language as a medium for future applications. Hence, areas for future study would include the impact of technology on the culture and "sensemaking" of the community, and the implications of the use of ICT to the growth of e-democracy in the Philippines starting at the barangay level. These future investigations may help ascertain the prospects for the emergence of "cyber-barangays"[13] in the Philippines. ❀

Endnotes

1 Bridges.org, 2002: 1, 2.
2 Bridges.org, 2002:10.
3 Bridges.org, 2002:2.
4 Heeks, 1999.
5 Kaudisya, 2001: 166.
6 Kaudisya, 2001.

7   Keniston, 2001.

8   CVISNet, n.d.(a).

9   Ibid.

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12 Alkalimat and Williams, 2001.

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