

ICT-Related Activities in PAN: An Email Survey

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This paper reports on the results of a survey that was undertaken to: understand how information and communication technologies (ICTs) are used within PAN; and test an ICT Audit Framework that was developed by Sam Lanfranco to help understand how ICTs affect project behaviour and influence the achievement of project objectives. The paper talks about how evaluations are increasingly used by organizations to contribute to management and planning functions. It also summarizes the framework that was used to map the use of ICTs in PAN. Finally, it reports on the results from a survey of members of the PAN network that was conducted by email for this conference. The overall objective of the paper is to stimulate discussion about how ICTs can be used and to gather feedback on whether the Audit Framework is a useful way to view the contributions of ICTs to project and program activities.

As we approach the end of the decade, there has been a change in the way that many organizations use evaluation. Budgets have continued to shrink; and demands to demonstrate that parties involved in programs and projects are “getting their money’s worth” continue to grow. Our perspectives on development have become more holistic and multi-disciplinary, leading to the involvement of more partners and stakeholders in development programs and projects. Participatory approaches are gaining ground and many developing country institutions are no longer finding it acceptable to have external evaluations imposed on them. They too are beginning to recognize the direct benefits of conducting their own evaluation activity.

As a result, evaluation is shifting away from its traditional role as a control mechanism to a tool that can **empower organizations and contribute to organizational learning**. Globally,

evaluation is now seen increasingly as a tool that helps organizations to improve the quality of their work, communicate with key stakeholders, and learn lessons for future activities.

As evaluation has become more closely linked to ongoing learning and improvement, we talk about evaluation and monitoring as being linked processes for collecting, verifying, and using information to help inform management decisions. When these activities are built into the program or project from the start, they provide the “sensory system” that can be used to make ongoing improvements, better decisions and set benchmarks for the future. In summary, monitoring and evaluation have three purposes: (1) to **improve performance** by contributing to a better understanding of project performance and ultimately to more effective programs; (2) to document **lessons learned** and to integrate the learning into the planning process; and (3) to **enhance accountability** by demonstrating how resources are used and with what results.

The complexity of today's development activities makes it important to have a framework to guide data collection and analysis. A framework explains the main dimensions under study and outlines their presumed relationships. In response to the current interest in the burgeoning use of information and communications technologies in development activities, IDRC and Bellanet have developed and are testing an ICT Audit Framework. It was designed specifically to help guide assessments of how ICTs are affecting the development organizations work. The results of this work are presented below. During discussions of these findings, I hope to gain a better understanding of this framework, how it can be applied, and its usefulness and applicability to the analysis of the range of activities being undertaken by PAN members.

Current Study

I have been working with a framework designed to map or describe the role of information and communication technologies in development projects. This framework was developed by Sam Lanfranco at York University in Toronto, Canada [additional information on the framework can be obtained from Sam Lanfranco (lanfran@bellanet.org) and details about the framework are posted at <http://www.yorku.ca/research/dkproj/meta4>]. I conducted a preliminary study in March

1997 to look at how ICTs contribute to development projects and to test the applicability of this framework. Further research was undertaken in May 1997 to try to understand how ICTs have contributed to PAN and to assess the usefulness of the framework. Before describing the results of the survey, I will briefly describe this “ICT Audit Framework”.

ICT Audit Framework

This framework was designed by Sam Lanfranco to help understand the areas where ICTs influence the behaviour of projects and the achievement of project objectives. It is designed to provide a framework for thinking about ICTs in projects and about ICT projects, and it can be used to assist to design an evaluation framework.

The framework is based on the idea that ICTs produce an electronic or virtual workspace that is being used increasingly to overcome some of the constraints imposed by traditional structures and workspaces. Because ICTs can store and process digital information (numbers, text, and audio and video) and also transmit or retrieve this digital information both quickly and at increasingly low cost, new types of organizations and interactions are evolving. The key factor in these interactions is that they allow enhanced collaboration across time and space.

In the survey I undertook of PAN, I used the framework to guide the development of the questionnaire. I was most interested in the projects themselves, but the framework can be applied at several levels — for example, at the level of the project itself, at the level of its component parts; and at the level of the project in relation to the PAN network. I use “project” in this description, but the entity being evaluated can just as easily be an organization, project, task, or individual. Traditional evaluations usually focus on treating projects as discrete units. Because ICTs can have a large impact on collaboration among network members, and because evaluation should take external effects into account, part of the analysis should look at the impact of ICTs on the network as a whole.

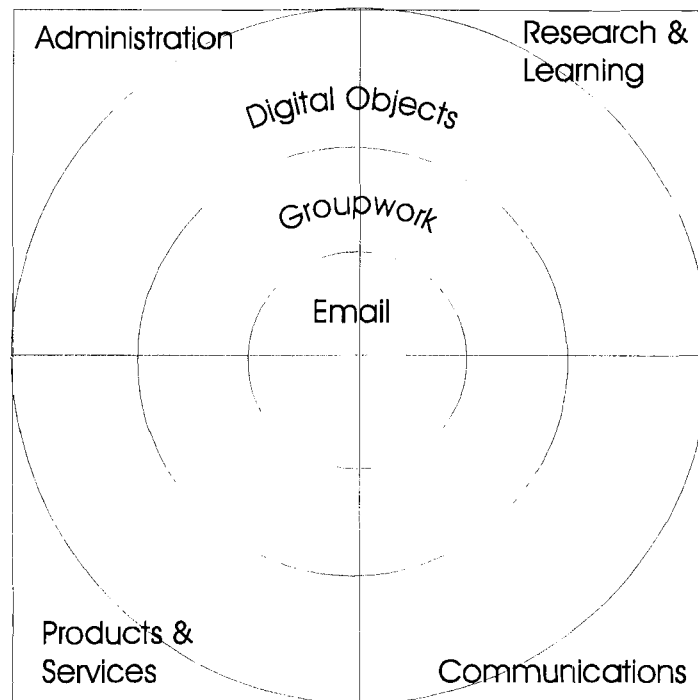


Figure 1. ICT Audit Framework.

The ICT Audit Framework assumes that ICTs operate within and between four quadrants that characterize the activities of any project: administration; research and learning (for internal capacity building); products and services; and communications (within and beyond the entity).

ICTs allow people to undertake activities in each of these four quadrants and are considered to be of three types. Each of these types of ICT activity have comparable activities in the real or “literal” world. First, ICTs facilitate communication. Email often represents the core of a project’s electronic workspace. It links the component parts of the project and provides a link to the rest of the world. Traditionally in the workplace, this activity would include conversations and letter writing. Second, ICTs allow us to collaborate across time and space, either within the project or beyond. This workspace, called groupwork, is comparable to the interactions that take place in meetings, seminars, and conferences. Third, ICTs support the creation, use, and distribution as well as access to stored digital objects (e.g., files, databases, and

audio and video objects). This is like a book on a library shelf that can be consulted as needed. The components of the ICT Audit Framework are shown in Figure 1.

In the framework, ICTs provide projects with three new capacities: (1) a virtual workspace within the entity (e.g., computers for word-processing and data analysis as well as local-area networks; (2) a communications corridor that allows projects to access remote sites; and (3) a communications corridor to allow remote sites to access products or services produced by the project. These three capacities, the local workspace, local access to remote workspaces, and remote access to local workspaces constitute the central focus of the framework.

The objective of the framework is to help organize relevant questions and to identify information and evidence. The four-quadrant approach aids evaluation because it focuses on how the entity operates within its virtual workspace, how its component parts relate to each other in that space, and how the entity relates, as a stakeholder, to other entities within a larger virtual workspace. By including ICT components in the evaluation process, the framework allows questions to be asked about the relationship between the project's activities within the electronic venue and in the real world.

Survey Results

This study of the PAN network was undertaken as part of a series of joint activities of the Evaluation Unit of IDRC and Bellanet to examine how Information and Communication Technologies (ICTs) are used within Centre-supported activities. It was a follow-up to an earlier study entitled *Use of Information and Communication Technologies in IDRC Projects: Lessons Learned*.

PAN was selected as the focus for this study following discussions with representatives of the Evaluation Unit, Bellanet, and IDRC program staff responsible for PAN. The network offered several advantages for this study. It included a number of organizations that were involved in complementary and collaborative work, the members were available by email to make an

electronic survey possible, and PAN members were going to be meeting in Mongolia to review program plans, which would provide an opportunity for follow-up interviews and the presentation of results to participants.

This study was designed with the following objectives: to understand how ICTs are currently being used within the PAN network; and to test the usefulness of an ICT Audit Framework for mapping and describing these uses. In addition, the results of the study were to be used to stimulate discussion about the role of ICTs in future PAN activities and to contribute to the discussions at the Global Knowledge 97 Conference in Toronto in June.

Questionnaire and Interview Guide

Two instruments were developed to collect data for this study. The first was a questionnaire that was designed to be administered by electronic mail. This questionnaire was used to determine how ICTs were currently used within a sample of the PAN organizations that would be present at the Mongolia meeting. ICTs in this context were considered to be computer-mediated communications activities. Respondents were asked to provide information on how ICTs helped them accomplish their project work — specifically, how they communicated with others, how they administered their project, how they helped improve project performance, and how they helped in the delivery of products and services. Respondents were also asked to rank the relative importance of three common uses of ICTs in their work — to send and receive information and documents (e.g., e-mail), to collaborate with colleagues (e.g, electronic conferences), and to retrieve and distribute information (e.g, World Wide Web). Details on amount of use and examples or types of usage were also collected.

Prior to its use, this questionnaire was pretested by email on five individuals who use ICTs in their daily work and a focus group was held to discuss both the format and content of the questions and the suitability of the questionnaire for administration by email. Following this, the revised questionnaire was tested once more before being sent to a sample of 27 individuals associated with PAN. The sample included service providers, content providers, and IDRC and

Bellanet staff associated with the PAN program. After the initial deadline for replies passed, a follow-up reminder email was sent to encourage responses.

The interview guide was designed to clarify information collected during the email survey and to help collect information about the complete communication environment in which the PAN participants worked. It was also pretested. It will be used during the PAN Mongolia conference to interview those individuals who completed the email questionnaire.

Analysis

A total of 27 questionnaires were sent by email to both PAN participants and to IDRC and Bellanet staff. Of the 20 questionnaires sent to PAN participants, 15 completed questionnaires were received (a response rate of 75%). The response rate from IDRC/Bellanet staff was 2 of 7 (28%). Those who replied to the survey were asked to indicate the roles that they played within PAN. They were asked to indicate in what capacity they were answering the questions and were encouraged to indicate more than one choice if appropriate. More than half of the replies were from content providers (10) — the other respondents were PAN project managers (6); service providers (4); IDRC staff (2); and others (2). Given the small sample size, it was not feasible to examine the data separately. The replies have been grouped for analysis.

Table 1 indicates the extent to which ICTs were felt to have helped with specific project-related tasks. Given the nature of this group of projects it is not surprising to find that as a whole they make rather broad use of ICTs. The most frequent role played by ICTs is in communication with colleagues.

The respondents who are indicated to have replied “not applicable”, did not yet have access or had just recently acquired access and could not assess the role ICTs might have. Where ICTs were not yet available (3 of 16 replies), respondents continued to rely on regular mail, telex, facsimile, cables, site visits, and direct one-on-one conversations.

Table 1. Extent to which ICTs were reported to have helped accomplish various tasks (N=15).

Communicate with others	Not at all	0
	A little	0
	A lot	14
	N/A	1
Administer project	Not at all	0
	A little	5
	A lot	8
	N/A	2
Collect, analyze, use information to improve project performance	Not at all	1
	A little	6
	A lot	7
	N/A	1
Develop and deliver products and services	Not at all	1
	A little	4
	A lot	8
	N/A	2

Changes in the Workplace

The questionnaire was designed to determine the extent to which email, group work, and access to the WWW had helped in the accomplishment of specific types of project activities. We were specifically interested in the contributions that had been made to administration, communication, research and learning, and products and services within project activities. This information was used to map the activities of the respondents to the ICT Audit Framework that had been developed by Sam Lanfranco. During our discussions in Mongolia, I hope to determine from the participants how accurate a picture the framework presents of their activities and to obtain their input into modifications that might make the framework more applicable to their situations.

Which uses are most important?

Respondents were asked to rank the importance of different uses of ICTs to their organizations. An overwhelming majority (14 of 16) ranked the ability to communicate with others as the most important use of ICTs. The ability to retrieve or distribute information was ranked second by 9 of 16, and the ability to collaborate with colleagues through such things as electronic conferences was ranked third by 9 of the 16 respondents.

The replies can be summarized by the reply given by one respondent: *e-mail and digital objects are the common benefits we receive. We are not that familiar yet with collaborating with colleagues through electronic conferences.* There is interest in greater use of conferencing, as well as an appreciation of its potential benefit, but for now it is not yet used. The plan to have an on-going electronic conference during the workshop should help to provide both examples of the benefits that can be derived as well as first-hand experience with what is required to establish and mediate such a conference. Listserves were cited as the most common way for groups to work collaboratively on activities. A summary of the replies are given in Table 2.

Electronic Mail

The responses from those who have access to ICTs reflect the changes that are taking place in the workspace. In addition to citing the ways in which they are using ICTs, respondents also indicated the benefits that they derived from these technologies. By far the greatest change in the projects was the replacement of regular mail and telephone and facsimile by electronic mail for regular communication. A sample of the comments includes:

- *I work with global networks, my work would be impossible, or too expensive, if I were to rely on phones and faxes.*
- *We use email a lot for discussing project proposals and for report writing with our partners and sponsors.*
- *Communication has improved and become much more simple and cheaper with the use of ICTs.*

Table 2. Summary of how email, digital objects, and group work have helped project activities (values expressed in percentage, N is number of respondents).*

		Email (N=13)	Groupwork (N=12)	Digital Objects (N=40)
Communicate with others	Not at all	0	25	10
	A little	0	17	30
	A lot	92	25	38
	N/A	8	33	23
Administer project	Not at all	15	33	20
	A little	23	17	35
	A lot	54	17	23
	N/A	8	33	23
Collect, analyze, use information to improve project performance	Not at all	0	42	10
	A little	54	0	25
	A lot	38	25	43
	N/A	8	33	23
Develop and deliver products and services	Not at all	8	33	13
	A little	46	17	33
	A lot	31	17	28
	N/A	15	33	28

* Number of non-respondents not shown.

Email was favored by the respondents because it provided a cost-effective, speedy, and easy way to improve their access to a global community of associates, clients, colleagues, and experts.

Some of the comments reflect the benefits that are derived:

- *The low cost of communication using email should be recognized.*

- *Email in particular allows us to communicate with our members in 9 Asian countries faster and cheaper.*
- *Email is used in more than 95% of the correspondence with fax second. Mail is not used anymore for communication.*
- *We rely heavily on Internet email to communicate with our associates and correspondents, especially where the Internet activity is widespread ... our reliance on the Internet is increasing by the day.*

ICTs are used extensively for project administration. Email, once again, is now being commonly used to help with coordination, planning, monitoring, data collection and analysis, and comparative evaluations. These uses of ICTs allow for timely administration of activities and are viewed as indispensable to those who are using them:

- *It is really not possible to imagine administering projects without the use of ICT tools.*
- *E-mail and listserves are indispensable when working with international committees on publications.*
- *We use e-mail a lot in planning our projects.*
- *Through e-mails, we can communicate with our colleagues in other projects and in other countries to collaborate and exchange information ... we can surely reach them fast and easy.*

ICTs also play an important role in helping organizations to collect, analyze, and/or use information to improve project performance. ICTs are used to facilitate decision-making, to seek information and research findings that are pertinent to on-going activities, to review planned methodologies, and to monitor changes in the external environment (e.g., price fluctuations and trade statistics). Respondents' comments included:

- *Collect information ... to monitor prices and other trade statistics.*
- *Since we have access to the Internet, we have access to various (types of) information that is available on-line and can help us in our research work.*

WWW Access

Three questions were asked to try to understand how producing or using various types of “digital objects” had aided project performance. This was done to try to separate the WWW from the use of other products such as databases, image banks, Geographic Information Services, and CD-ROMs. However, when the responses were reviewed, they indicated that the WWW was used as the means of access to the examples that were cited. For this reason, the data were combined for analysis.

This aspect of ICTs is clearly one that will be used on an increasing basis as more of the PAN partners acquire full Internet access — something that several indicated was either planned or had just happened:

- *We are only just setting up an Internet service. Hence we have not used it yet.*
- *The use of digital information has not been widespread in our institution ... only very recently have we acquired the hardware required for the use of such information.*

Those who do have access to the Internet use it both to collect information and to contribute to databases:

- *The WWW is mainly used to find information, find email addresses of institutions, people, info about institutions, about countries, etc.*
- *Browsing different web sites I can collect development information and can analyze and improve my project performance.*
- *We are contributing information to the Asian Health, Environment, and Allied Databases.*
- *We are in the process of developing our data base on coconut information using CDS/ISIS software.*

Some respondent noted the potential of WWW access but pointed out constraints that will have to be overcome by some institutions:

- *The telephone lines are not good enough and browsing WWW is very costly.*

- *We work in our 13 member countries through designated link institutions and contact ministries. Our programs and projects are, in most cases, implemented in collaboration with these institutions. A constraint that we have in using ICTs is that most of these institutions do not have access to Internet or email.*

Although construction of a Web site is something that is in the future for several institutions, some respondents have been able to improve their access to the electronic world and reported that they had established a WWW presence and were using homepages to disseminate project-related information to their main stakeholders. New products and services are being developed and delivered. ICTs are used to format documents for formal publishing and they are used to seek information and confirm sources. Web pages are also increasingly used to advertise the availability of material (e.g., publications and training programs) and to make information available to a wider audience through “web publishing”. For example:

- *(We are) using the WWW to disseminate research results — e.g., PAN web site.*
- *In addition to our printed list of publications, we use our site to deliver our publications to interested parties.*
- *We have used our homepage to display bibliographic information on all of our publications and we plan to publish (in full text) our semi-annual journal to our web site.*
- *Since (our) homepage was placed on-line two years ago, we have put a step forward in making available the project's objectives and findings ... not only locally but to the international community as well.*
- *Through our homepage, we can make available to our clients some of the developments of the projects and other vital information that would help them to administer their research and vice versa. In the future, we are planning to make available all of our research papers and project updates in our homepage.*

Group Work

Group work for the organizations that are now involved basically means the use of listserves. This is an area that has not been explored to any great extent by the respondents, partly because they lack the know-how; however, they expressed interest in exploring this form of collaboration. Some comments express their situations:

- *We subscribe to several listserves that are related to our field of interest like, energy, agriculture, water, and sanitation. This keeps us updated on these topics.*
- *We have not participated in electronic conferencing yet. However, we are interested in electronic conferencing.*
- *We don't have the capabilities yet or know-how to do or make electronic conferences.*
- *We have three branch offices in the city. Networking is the main tool for monitoring our everyday tasks.*

Conclusions

Within the PAN group of projects, ICTs are very much a part of the activities of the respondents. Although their level of access to such advanced ICT usages as the WWW is limited in some cases, all indicate that email has changed the way in which they communicate and seek and share information. Those who have Web access are using these capabilities to both gather information from remote sites and make information available to their partners as well as the broader global community. There is a desire to make greater use of these WWW capabilities as soon as full Internet access is achieved. Although not currently used to a great extent, group work was recognized as something that could contribute to planning and the successful conduct of project activities. As greater skill and training are acquired in electronic conferencing these aspects are likely to grow in importance in PAN's activities.

ICT Audit Framework

The audit framework that was developed by Sam Lanfranco was used to help formulate the questions that were asked in the questionnaire. As such, the framework guided our thinking about the aspects of the work environment that could be impacted by ICTs and also helped us think about the categories of ICTs that should be examined. This helped us ensure that we were covering a broad range of topics. As a result, we have been able to group the ICT activities according to the quadrants and domains of the framework. These are shown in Figure 1.

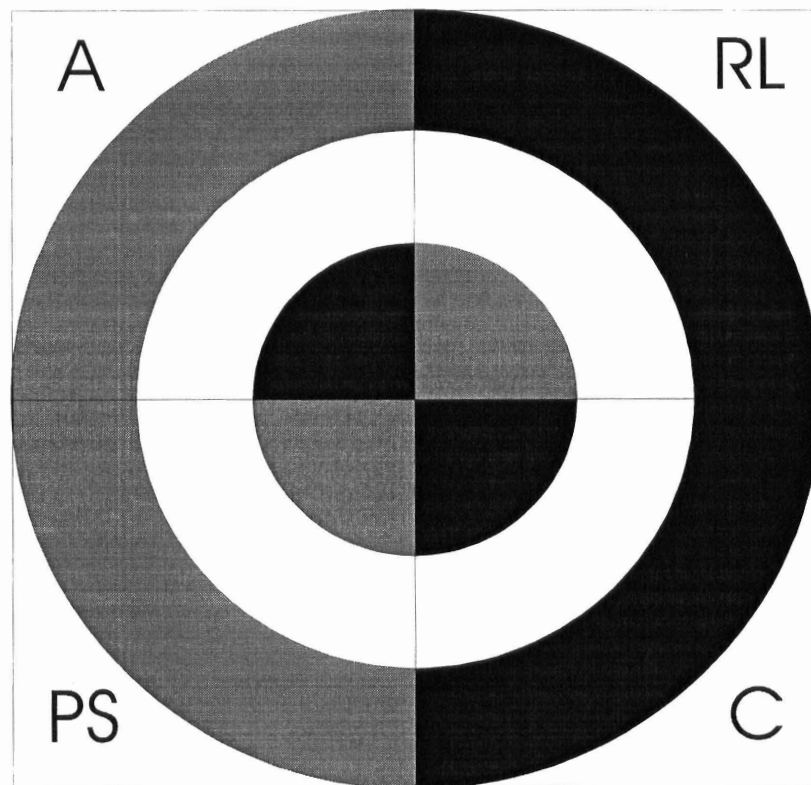


Figure 1. ICT Audit Framework.

(C = communication; PS = products and services; RL = research and learning; and A = administration. Centre circle represents email, second group work, and outside circle digital objects. White areas represent little or no usage; gray represents some usage; and black represents heavy usage.)

It is our plan during the workshop to interview the people who replied to the questionnaire to develop a more complete understanding of the non-ICT communications methods that they employ and of the interrelationships that exist between the ICT and non-ICT methods. As well, we hope to use the conference as a forum that will allow us to gather information on the types of ICTs that are being used and to seek to have the participants group these ICTs into meaningful collections (domains). We will also ask the participants to break down the tasks that they accomplish using ICTs and also to group these (quadrants). The intention is to seek how the ICT audit framework reflects the real-life experiences and thinking of the PAN participants. This information will be used to help modify the framework (if necessary) and will also be used as input into the Global Knowledge 97 Conference.