



Communication Technologies Study *REPORT*

January 31, 1995



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In Appreciation

*We wish to express our sincere appreciation to all
those who assisted us in the report,
particularly Marjorie Whalen, Ted Murray and Carole Joling.*

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INTRODUCTION

This report has been prepared by Proactive Research Consultants Limited for the International Development Research Centre.

This study was initiated because IDRC faces some unique communication *challenges* in having a work force *spread* around the world between the Ottawa headquarters and seven regional offices. There are also telecommunication *obstacles* within the host countries of some of the regional offices, staff who spend much of their year on work related *travel* and programs which *span* the divisions and disciplines defined by the organizational structure.



Extensive discussions at the APM last fall led to the conclusion that the Centre needed to carefully and systematically review the needs and views of staff on *communication issues*. This included both formal informatics-based systems as well as informal, interpersonal channels. It has become one of the tasks of the Advisory Committee on Information Management (ACIM) to study the former, that is, the use of *computer based communication technologies* in the Centre, to analyze successes and shortcomings of existing systems, and to make recommendations to SMC for new options. The ultimate goal is to ensure that the communication technologies in place at IDRC contribute to the *productivity* and *health* of the Centre and facilitate effective *collaboration* and *information exchange* across geographical and disciplinary boundaries.

This report outlines the research objectives, methodology, top line results, executive summary and our recommendations. The research was undertaken in *two* phases which included both *qualitative* and *quantitative* research. The qualitative research was undertaken in late October (26-28) at headquarters and included both focus groups and personal interviews. The quantitative research was conducted between November 17th to November 25th through the use of a self administered questionnaire.

RESEARCH OBJECTIVES

"Empowerment through Knowledge."

IDRC Mission



Communication/information technologies have the potential to be an *enabler* at a strategic level to allow IDRC to fulfil its corporate mission. In a global knowledge economy, technology will become IDRC's key enabler, allowing it to integrate knowledge and sustainable economic development. It will enhance the Centre's capacity to undertake research and to transfer knowledge. As such it will become a key component of IDRC's *distinctive competence*.

The specific objectives of this study were to:

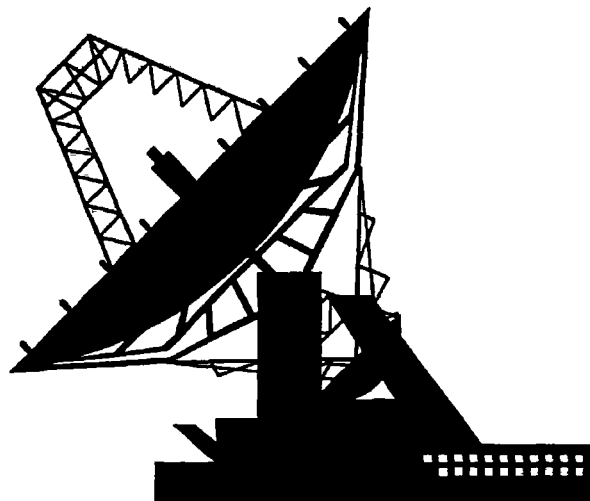
- A) Review the *use* currently being made of existing communication technologies in the Centre.
- B) Solicit the views and *needs* of the Centre staff (both at Headquarters in Ottawa and the Regional offices) regarding communication technology issues.
- C) Define additional *communication needs* in the context of *trends* within the organization, its operations and programs.
- D) Assess the *absorptive capacity* and training requirements of Centre staff with respect to new communication technologies.
- E) Make *recommendations* that will contribute to improved computer communications and the successful implementation of other new communication technologies.

TOP LINE RESULTS

"Those who survive and thrive will need a daunting array of new skills and make themselves a lot more adaptable, independent and tough minded than those of us who came along decades ago ever imagined."

Jack Patterson
Welcome To The Company
That Isn't There

In reviewing the results, it is important to bear in mind that this study measured staff *opinions* and *perceptions* rather than observable and measurable behaviours. Unlike the other sciences, social science studies are often qualitative in nature and as such are not measurable in the same manner as tangible outcomes. This study, by definition, was opinion research. It draws heavily upon qualitative methods to measure the perceptions, attitudes and opinions of the staff members at the International Development Research Centre.



The highlights of the quantitative research include findings at two levels:

At a Macro Level

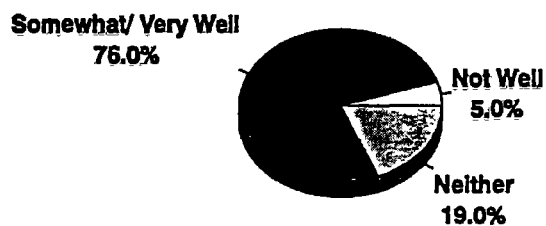
"Communication technologies have radically changed the way that IDRC works."

IDRC focus group participant

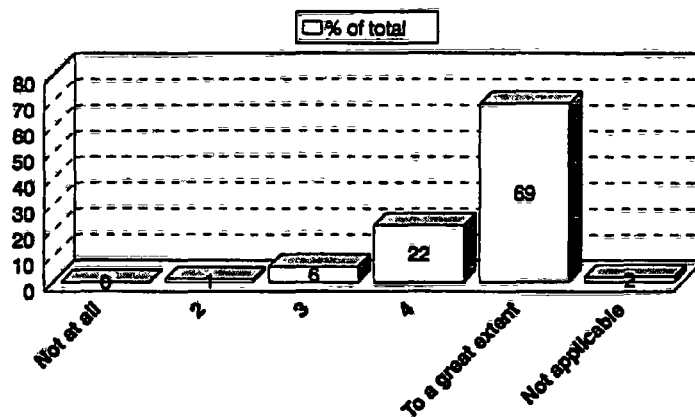
- ▶ There is a broad based *acceptance* that communication technologies have *enhanced* work efficiency/productivity at IDRC and have contributed significantly to a *corporate turnaround* in a relatively short period of time.
- ▶ There is a fundamental *belief* that the technology has resulted in *spiralling work expectations* - one in three people are working *harder* and *longer* hours because technology allows them to do so and as a result they are expected to.
- ▶ There is a common *perception* among some of the staff that the technology "*tail*" is wagging the corporate dog at IDRC. Many *feel* that communication technologies have become an "*end*" rather than the means; there is a quantity vs. quality trade off in the technology race. All of this change has had a significant impact on the corporate *culture*.
- ▶ While communication technologies have contributed to the productivity of the organization, they have *not* contributed to the *health* of the individuals in the organization. There are significant *social/human* costs that have occurred during the technology (*r*)*evolution* in the workplace that may have potentially negative consequences for IDRC if not addressed. The symptoms the respondents cited were increases in *occupational stress* caused by an *increase* in *expectations*, *role ambiguity*, and a significant *fatigue factor* - some would say the organization is at a threshold level of fatigue. There is also a "*social isolation*" factor that has accompanied the technological advances which has raised concerns about a long term *erosion* in human relationships and synergy that the Sproull and Kielzer study found to be critical in maintaining organizational culture and reducing work stress.
- ▶ The supporting infrastructure/policies/business processes required to support the technology (*r*)*evolution* has *not* kept *pace* with the technology. Training was an example cited most frequently as failing to keep abreast of the technology. This also applies to the application of new technology in the delivery of programs and services (i.e. interactive ordering/supplying of research publications using internet).

At a Micro Level

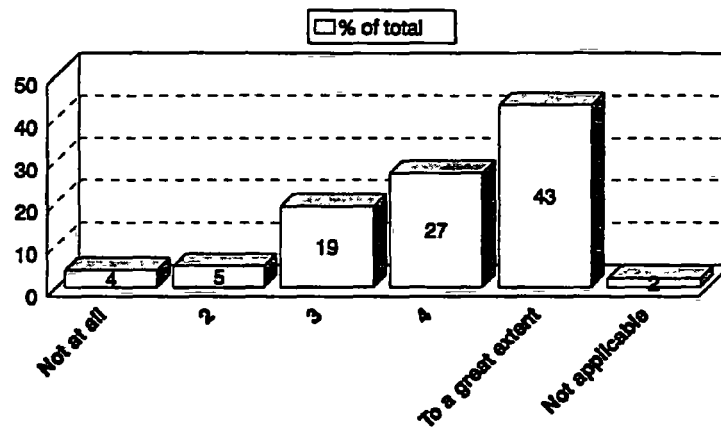
- ▶ Most of the staff (76%) feel they are *using* the communication technologies in which IDRC has invested.



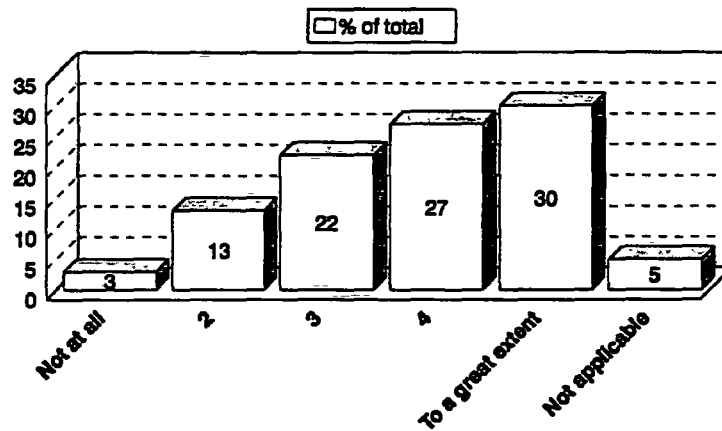
- ▶ The majority of the staff (91%) feel information technologies have *changed* the way they work.



- ▶ Most staff (70%) feel communication technologies have *changed* how they *relate* to their *colleagues*.



- ▶ Significantly fewer staff (57%) feel communication technologies have *changed* how they *relate* to their *clients* and *partners*.



- The major *benefits* of communication technologies are perceived to be:

	Agree %
■ more information exchange	79
■ increased productivity	72
■ increased colleague collaboration/Regional	71
■ increased colleague collaboration/Headquarters	69
■ enhanced contact with co-workers	67

- Generally speaking, one in two IDRC staff (56%) feel they need *more* training. Almost all staff recognize that *training* in computer technology is a *joint responsibility* between the Centre and the staff.
- As the following illustrates, many IDRC staff feel that communication technologies have *increased* the *number of hours* they work.

	Work more hours %
■ at home	37
■ at the office	30
■ while travelling	19

- The major *impact* on IDRC staff at a personal level is on their personal *productivity*, enhanced *communications* and *collaboration*. Very few feel that new technologies have improved morale or decreased job stress.
- Regional staff are much *more* likely to have felt advances in communication technologies over the last couple of years have resulted in increased productivity, collaboration, communication and quality of working life. Significantly fewer Headquarters staff feel that the new technologies have lead to lower levels of stress or increased morale.

EXECUTIVE SUMMARY

"The most important strategic characteristic of information technology is its multiplier and leveraging effects in the areas where it is applied."

ITAC Report
Using Information Technology
for Strategic Advantage



In this era of globalization and economic restructuring, information technology will play a *major role* in IDRC's future. Some observers claim that IT is becoming the single most important factor in determining the "winners" and "losers" in today's highly competitive world. This is evidenced by the above mentioned ITAC report which concluded that there is an historical flow towards higher and wider forms of technological enablement (refer to Exhibit D: The Enabling Hypothesis). The above mentioned report also noted three relevant *trends*:

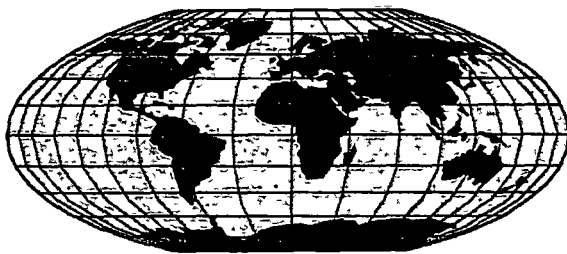
1. IT is advancing worldwide at an *accelerated* pace, leaving behind the laggards. This makes time a strategic commodity and forces competitors to increase "management velocity".
2. The intensification of world competition is creating a *global market* and strong continental blocks that are competing for IT such as Europe, Asia, and North America.
3. Canada is "*vulnerable*" - its industrial structure, government policies and the lack of synergy between its key players is a retarding factor. As a result, Canada's positioning in the global economy is becoming increasingly vulnerable.

While IDRC may not be a competitive player in the traditional corporate sense, it nevertheless is global by nature and has the mandate of *Empowerment through Knowledge*. Technology has become the key means of knowledge transfer in the global economy and since IDRC's *distinctive competence* rests not only in its research, but also in its ability to transfer or *empower* others, technology takes on a heightened role.

"Our ability, as a nation to maintain and build wealth depends in large part on the speed and effectiveness with which we invent and adopt machines that enhance productivity."

Rethinking Work
Special Report
Business Week October/1994

The issue of communication technologies at IDRC is *not* taking place in a *vacuum*. It is taking place against a backdrop of fiscal constraints, frozen budgets, rationalization, massive social changes and a global economy sluggishly shaking off a recession. The restructuring of the economy (some say it is a revolution) is bringing with it, simultaneously, new forms of work, much of which were unheard of just 10 years ago. Notwithstanding the almost overwhelming changes in the external environment over the past two years, IDRC has been suffering from the "post surgery" effects, of the Strategic Framework Exercise i.e. fatigue, low morale, role ambiguity. The effects are still evident today. The coupling of the strategy to roll out information/communication technologies throughout the organization at the same time as the Strategic Framework Exercise was an *ambitious* undertaking. While the two events have contributed to a "turnaround" this has not been achieved without some significant "social" *costs* to the organization.

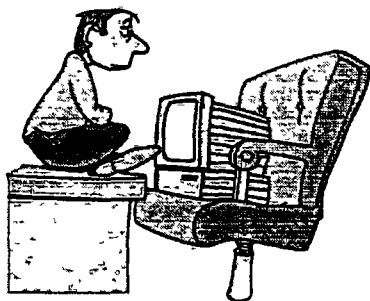


The corresponding socio-technological adjustments to staff mindsets, work skills and work design are still not fully evident at IDRC. In other words, while the workplace has been transforming to a "knowledge workplace" with the aid of technology, the mindset and skill set of many staff may still one of the industrial era production mode.

Comparatively speaking, the Centre is relatively well along the technology continuum. There have been significant *advances* in communication/information technologies in a short period of time at IDRC. As the research indicates, communication technologies have had a tremendous enabling effect on IDRC at the work efficiency level/productivity level. Although not specifically tested in the study, there is little evidence to suggest that IT has been embraced as a *strategic* tool in the innovative delivery of programs and services or as a means to enhance quality of life within the Centre and for its clients.

As mentioned previously, there is a broad based *acceptance* that technology has *enhanced* work efficiency/productivity -inputs/outputs. Some feel that technology has "*radically changed the way IDRC works*" - "*it has contributed to a turnaround in the organization*". It was also felt by some to be liberating and empowering. The general perception is that the *speed* of delivery and the span of *networking* has been *enhanced* by the technology advances.

While the advances in technology are widely recognized within IDRC for their contribution to efficiency, they are *not* perceived to have contributed to the *health* of the individuals working in the organization. Stress levels and high levels of fatigue are readily observable. Technology has not resulted in a reduction of working hours, in fact the opposite is the case for one out of three employees. There is a feeling of increased "intensity" as a result of the *increased expectations* brought about by technology. Staff feel they are *working harder, longer hours* because technology allows them to do so from home and while travelling. As a result technology has *stretched* the working day significantly for many of the professional staff.



There is an undeniable *human fatigue* and overload factor evident in everyday comments such as "*things are moving so fast here*". Many staff feel the Centre is at its *threshold*. Some feel technology has brought with it a *flood* of communications (information overload) that threaten to *overwhelm* staff. They are also overwhelmed with the requirement to "*keep up*" with the new technologies. There is a common belief that the infrastructure/policies/processes required to support the technology has not kept pace with the technological advances. People find themselves (comparatively speaking) working more in *silos* than

before - from a human interaction perspective. This is contributing to a sense of *social isolation*. Some feel there is a significant *erosion* in the human interaction/relationships/nurturing of staff and a resulting loss of synergy that comes from face to face/voice interactions. The concern was raised about the long term consequences of the erosion of human interaction at an institution like the Centre. The importance of this factor is well-documented by the research of Schein 1990 and, Sproull and Kielzer 1991 that shows interpersonal communications play an especially strong role in organizations as a method of sharing and maintaining organizational culture and in reducing work stress.

The feeling also exists with some staff that technology has become the "*end*" rather than the means at IDRC. "*We have become slaves to the technology*". "*Our language and our culture has changed as a result of the technology*". Without adequate communications and training, this has the potential of eroding the positive contribution that technology has played in the Centre. This is an issue which needs to be addressed - "*feeling that technology is dictating the way we work*". There is a perceived *quantity vs. quality* trade off - contributing to a sense of being out of control. There is a need for *focus* - a need to *prioritize* what is most important to the Centre's long term ability to deliver on its mandate.

There are *new developments* that staff feel will continue to affect how the Centre does business in the future - i.e. internet beyond E-mail, document search and transfer (gopher), transactional opportunities for publications - CD ROM for storage and, publications, desktop computer conferencing with multi media platform (video, sound), video/audio conferencing, groupware (i.e. lotus notes), greater use of S-drive and electronic filing, scanning technology, and electronic filing.

Some of the perceived *barriers* to the continued adoption of technology include: human factors (adaptability, skill transfer, stress, etc.) information overload, technology lag in some regions, incompatibility between clients/partners, and trailing support such as training. Others site filing inefficiencies from both extremes - not enough is filed/everything is converted to hard copy and filed; psychological barriers - still too much dependency on support staff for some functions beyond word processing; time constraints - "still have hard copy mentality", i.e. print and save E-mail; obvious budget constraints; and the challenges associated with managing expectations.

In *summary*, the study demonstrates the IT/communication technologies have *dramatically* affected how IDRC currently works and have contributed significantly to the organizational *turnaround*. Coming on the heels of major downsizing, the accelerated adaptation of communication technologies has not been achieved without a significant "social" cost leaving many in the organization "fatigued". It is doubtful whether the organization can *sustain* the same rate of change without some major interventions. In the longer term, there is an evident need to align communication technologies within IDRC as a strategic enabler in the delivery of research as a tool for sustainable economic development. The organization must also to develop a "vision" of what future work at IDRC might look like - establish priorities which reflect the strategic directions of the organization and provide the supporting infrastructure to allow the organization to continue the change process (i.e. training, coaching).

RECOMMENDATIONS



As a result of the study, the consultants primary recommendation is to keep the technology evolution going, but with more *balance, support* and with a *strategic focus* that reinforces the mission and strategic direction of the organization.

More specifically we are pleased to offer the following recommendations:

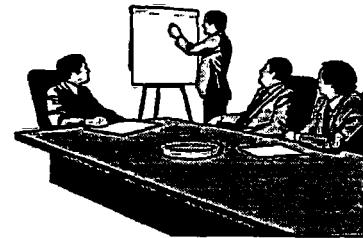
1. A *communications strategy* needs to be designed to share the results of the study with all interested staff members. The strategy needs to address what will be communicated, the best vehicles, timing etc. Implicit in asking people their opinion in a survey such as this, is a responsibility to share the results. Timing is critical in this recommendation as the results should be shared at the earliest possible opportunity. To put the study in perspective ACIM also needs to communicate what the *next steps* in the study process are.
2. Technology needs to be *positioned* within IDRC as a *strategic enabler* - beyond a productivity issue or research tool. IT needs to be understood as part of IDRC's *distinctive competence* in the transfer of knowledge in the business of sustainable economic development. In a knowledge economy, technology will be the key tool in the delivery of IDRC's corporate mission (*empowerment through knowledge*). The Centre needs to continue to *elevate* the *status* and understanding of IT/CMS throughout the Centre. It has to be seen not only as a productivity tool, but as a powerful mechanism to *enhance* quality, innovation and organizational breakthroughs (refer to Exhibit D: The Enabling Hypothesis).
3. An integrated central (Centre-wide) *training strategy/initiative* needs to be designed and adopted which supports the technology strategy and the re-engineering of the workplace. This would include a detailed training needs assessment. *Continuous learning* and a *learning culture* are inherent in the technology revolution in the workplace and in the transformation from a production shop to a knowledge network. As an employer, IDRC needs to understand that it has an obligation to provide an opportunity for self improvement while employees must assume accountability for their job performance and career path. In addition, this training initiative needs to be supported with the required technical expertise, training support, coaching, etc.

4. Beyond the training implications, IDRC needs to identify a *Human Resource Strategy* to address the *human issues, or socio-technologies* brought about by the rush of communication technologies. Specifically, the fatigue factor, the potential social isolation, role changes and the resulting impact on the corporate culture need to be directly addressed to identify ways to support the corporate strategic directions. This human factor may prove to be the *weakest link* in the technology chain if it is not adequately addressed in the near future. This process might also dictate a need to explore the leadership and management practices at the Centre along with an assessment of the emerging corporate culture and a continuous review of work redesign processes to ensure consistency with the strategic plan. In other words, the Centre needs to have an all inclusive (and integrated) change strategy.
5. IDRC needs to develop its *vision* of the *workplace* of the *future*. The concept of the "virtual office" and the long term role of technology at IDRC needs to be explored beyond enhancing work efficiencies or providing an extension of the office. This may go well beyond exploring telecommuting as an option. Predictions of the future "virtual office" in the next millennium are not that far away and IDRC may look dramatically different than the brick and mortar of the Headquarters as we now know it.
6. ACIM may need to re-examine its role as the *ongoing facilitator of change*. Perhaps a *continuation* of the Strategic Framework Exercise should be explored with a transition mandate to *align* and *integrate* the key strategic thrusts, such as technology and human resources within the overall corporate strategy. This would ensure that the transition initiative retains a strategic focus with strong footings in both "social" and "technological" arenas particularly as they relate to the changing nature of the workplace in the knowledge economy. Initiatives such as a Transition Team should be well grounded in the "best practices" of change.
7. An initiative should be entertained to provide staff with some "*positive reinforcement*" for the significant progress that has been achieved by the centre within the constraints of a short time period.

METHODOLOGY

To achieve the research objectives, the consultants utilized a five phase methodology which included the following:

- | | |
|----------|---------------------------|
| Phase 1: | Project Scoping |
| Phase 2: | Organizational Assessment |
| Phase 3: | Questionnaire |
| Phase 4: | Report Preparation |
| Phase 5: | Presentation |



Project Scoping

The consultants worked with the Client Steering Committee to review the project objectives, expected outputs, critical path, budget, etc.

Organizational Assessment

In this phase of the project, the consultants conducted a *qualitative* assessment of the impact analysis of the communication technologies on client's operations. The consultants conducted the assessment using both personal interviews (12) and focus groups (5) with a cross section of employees. (refer to Exhibit B - interviews). The interviews and focus groups were conducted at Headquarters October 26 - 27 and November 8.

Survey Design

The survey was designed by the consultants working in close cooperation with the steering committee responsible for the project. For the most part, the survey was designed using forced choice questions and a five point scale. The survey results were generated to enable the consultants to analyze the data by Regions and Headquarters or any other relevant cross tabulation (refer to Exhibit B).

Report Preparation

Upon receipt of the completed surveys, the consultants entered the data, conducted an analysis and prepared their final report. The analysis was conducted on the *overall results* as well as a *cross tabulation* of the results by *Headquarters* and the *Regions*.

Presentation

A summary of the results are to be presented to ACIM January 31, 1995 at Headquarters. The results will be videotaped and made available to anyone in the Regions or elsewhere.

Survey Distribution/Return

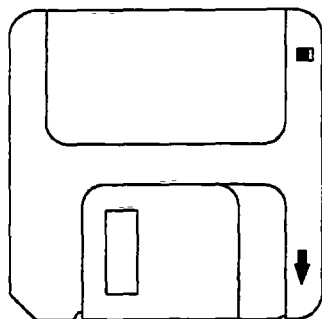
As the following illustrates, 502 surveys were distributed and 313 were returned by the specified date:

SURVEY DISTRIBUTION AND RETURN MATRIX				
	Distribution		Return	
Headquarters	#	%	#	%
CAID (Corporate Affairs)	66	100	43	65
ENR (Environment)	33	100	21	64
F&A (Finance and Administration)	122	100	71	58
PRES OFF (President's Office)	30	100	15	50
HS (Health Sciences)	20	100	8	40
ISS (Information Sciences)	36	100	22	61
SS (Social Sciences)	21	100	14	67
Unstated	N/A	N/A	8	N/A
TOTAL HEADQUARTERS	328	100%	202	62%
Regional Offices				
MERO (Cairo, Egypt)	15	100	10	67
WARO (Dakar, Senegal)	30	100	15	50
ROSA (Johannesburg, South Africa)	10	100	6	60
LARO (Montevideo, Uruguay)	32	100	20	63
ASRO (Singapore, Rep. of Singapore)	34	100	24	71
SARO (New Delhi, India)	22	100	9	41
EARO (Nairobi, Kenya)	31	100	12	39
Unstated	N/A	N/A	15	N/A
TOTAL REGIONAL	174	100%	111	64%
TOTAL HEADQUARTERS AND REGIONAL	502	100%	313	62%

Critical Path

The critical path of the project determined by the steering committee and the consultants was as follows:

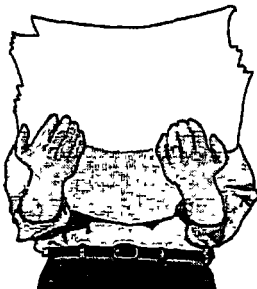
		Completion Date
Phase 1:	Project Scoping	October 13, 1994
Phase 2:	Organizational Assessment	October 28, 1994
Phase 3:	Survey	November 28, 1994
Phase 4:	Report Preparation	December 14, 1994
Phase 5:	Presentation	January 31, 1995



ANALYSIS

PART A: Overall Analysis

In this part of the report, the overall results of the study are examined in Part A of the analysis along with a cross tabulation of the results by Headquarters and the Regions in Part B.



At a Macro Level

The study indicates that there have been significant *advances* in communication/information technology in a short period of time at IDRC. However, there is *little* evidence from the study that technology is perceived and embraced as a strategic enabler (observation only - not specifically addressed in the study). For the most part, IT is seen as a means to maximize outputs/productivity/work efficiency and increase collaboration.

There is a broad based *acceptance* that technology has *enhanced* work efficiency/productivity - inputs/outputs ("*feel miles ahead*", "*Biscom is a major step in efficiency*") particularly *between* the Regions and Headquarters and has facilitated broader project collaboration - greater efficiency with fewer people. Some feel that technology has "*radically changed the way IDRC works*" - "*it has contributed to a turnaround in the organization*". Communication technologies are also felt by some to be liberating and empowering. The general perception is the *speed* of delivery and the span of *networking* has been *enhanced* by the technological advances. Response rates and the speed of response rates have also improved. There is also more collaboration on group documents.

Despite the organization's best efforts there is a feeling that the supporting infrastructure/policies have *not kept pace* with the introduction of new technologies, (i.e. training, coaching, how to manuals, best practices) "*the rate of assimilation is trailing the introduction of the technology*". Training is seen to be the "bridge" enabling employees to keep up. "*Employees, like businesses, must be continually reinvented*". It was also felt that the Centre was not embracing new and innovative mediums/training techniques to the maximum extent possible. There is a perception that training needs have not been adequately assessed and have been tackled on an ad hoc basis rather than strategically planned and executed.

While the technology is widely recognized within IDRC for its contribution to the productivity/work efficiency of the organization, it is *not* perceived to have contributed to the employee morale or reduced job related stress levels. Technology has not resulted in a reduction of working hours, in fact the opposite is frequently the case. There is a feeling of increased "intensity" as a result of the *increased expectations* brought about by technology. Many staff feel like they are *working harder, longer hours* because technology allows them to do so - from home and while travelling - technology has *stretched* the working day significantly for many of the professional staff.

There is an undeniable *human fatigue factor* that is evident in everyday comments such as "*things are moving so fast here*". Many staff feel that the Centre is at a *threshold*. This is obviously an accumulated affect starting with the downsizing and not just related to the technology. Some feel that technology has brought with it a *flood* of communications (information overload) that threaten to *overwhelm* the staff. They are also overwhelmed with the requirement to "*keep up*". The staff recognize the fiscal realities of the nineties - the requirement for the previous downsizing, have adapted and participated in the re-engineering of the way work is done, but now they are *tired* - which is contributing to an inflated stress factor. The rate of continuous technological change does not seem to have adequately taken into consideration the human or *social perspective*.

A concern was expressed that the technology raises major HR issues which ultimately needs to be addressed. It was felt that a greater *balance* will be required in the future between *human* and *technology* resources. Previous research has shown that Computer Mediated Communications Systems (CMCS) often resulted in *increased expectations* of work production which ultimately increased *occupational stress* "*there has been a major shift in expectations*". In addition to training, the technology has major HR implications regarding recruitment, job design and role clarification. There does not appear to be a clear *vision* of the future workplace and what the recruitment, and infrastructure implications are or what the HR policies will be required to facilitate the workplace of the future.

While collaborative efforts and networking (electronically) at a project level/administrative level have been enhanced as a result of communication technologies - people find themselves (comparatively speaking) working more in *silos* than before - from a human interaction perspective. This is contributing to a sense of *social isolation*. This was a major concern which emerged (unaided) from the focus groups. Many feel that there is a significant *erosion* in the human interaction/relationships/nurturing of staff and a resulting loss of synergy that comes from face to face/voice interactions. There is also a concern about the *inappropriate* use of technology - it is used indiscriminately even when face to face/verbal communications are readily available and effective. There is also a feeling by some that staff have *lost* an element of *common sense* in communicating with others - inappropriate use of computer-aided communications when interpersonal is readily available/more effective, over communicating with too many colleagues, inappropriate/over zealous conversions from E-mail to hard copy. The concern was raised about the long term consequences of the erosion of human interaction and its impact on the organizational culture at an institution like the Centre. The importance of this factor is well-documented by the research of Schein 1990 and, Sproull and Kielzer 1991 that shows interpersonal communications play an especially strong role in organizations as a method of sharing and maintaining organizational culture and in reducing work stress*.

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As a whole, the Centre is relatively *well* along the technology continuum (comparatively speaking with similar organizations). The degree to which the technology has been embraced at the individual level *varies* from being fully integrated to avoidance (across all job classifications/levels). As noted by Michael Hammer, noted high priest of re-engineering "*technology has resulted in a major polarization of work*" - those with skills and can adapt and those who can't. There is, predictably, some role ambivalence raised by the technology - what is the best use of one's time (i.e. professionals spending time formatting documents - sorting/responding to E-mail). There is an opinion by some that technology has become the great equalizer (like the gun in the old west) - it has reduced everyone to the lowest common denominator regardless of their role/education - i.e. finger typing - a humbling experience for some. Some of the professionals and more senior staff also cited the lack of screening that occurs with E-mail (formerly screened by support staff) that erodes their time and what they do best - particularly in light of the increased volume accompanying electronic communications.

The feeling also exists with some staff that technology has become the "*end*" rather than the means to an end for IDRC. "*We have become slaves to the technology*". "*Our language and our culture has changed as a result of the technology*". Without adequate communications and training, this has the potential of eroding the positive contribution that technology has to play in the Centre. This is an issue which needs to be addressed - "*feeling that technology is dictating the way we work*". There is a perceived *quantity* vs. *quality* trade off - contributing to a sense of being out of control/there is a need for *focus* - a need to *prioritize* what is most important to the Centre's long term ability to deliver on its mandate.

IDRC staff also need to be *told* how they are doing! They need some *positive reinforcement* at this stage in the process. Frequently there is implicit assumption with the technological re-engineering/downsizing/productivity improvements etc. in the workplace that staff are *under* performing. This perception needs to be explicitly addressed. The staff do not seem to know how they stand despite the fact that everyone seems to be trying very hard and making significant advances in utilizing technology. They also need to understand the long(er) term plan regarding technology.

There are *new developments* that staff feel will continue to affect how the Centre does business in the future - i.e. internet beyond E-mail, document search and transfer (gopher) transactional opportunities for publications - CD ROM for storage and, publications, desktop computer conferencing with multi media platform (video, sound), video/audio conferencing, groupware (i.e. lotus notes), greater use of S-drive and electronic filing, scanning technology, and electronic filing.

Some of the perceived *barriers* to the continued adoption of technology include: human factors (adaptability, skill transfer, stress, etc.) information overload, technology lag in some regions, incompatibility between clients/partners, and trailing support such as training. Others site filing inefficiencies from both extremes - not enough is filed/everything is converted to hard copy and filed, psychological barriers, still too much dependency on support staff for some functions beyond word processing, time constraints, "still have hard copy mentality", i.e. print and save E-mail, obvious budget constraints, and managing expectations.

There is an overall sense that we need to *keep the technology evolution going*, but with more *balance*, support, and with a strategic focus that reinforces the mission and strategic direction of the organization.

At a Micro Level

Internal Communications

As the following illustrates, *E-mail* is the communication technology *used* most frequently for internal communications, followed closely by the telephone. Voice mail is used in Headquarters, but not available in the Regions. (Refer to Table A1) Biscom and internet are not yet commonly used throughout the organization and telephone/computer conference are used by very few staff at this stage.

	%
■ E-mail (LAN, WAN)	97
■ Telephone	85
■ Voice mail	50
■ Fax machines	41
■ Internet	25
■ Biscom	20
■ Teleconferencing	2
■ Computer conferencing	2

As the following illustrates, E-mail is principally used for *reading and sending* messages (Refer to Table A3a).

	%
■ read messages	96
■ send messages	93
■ forward messages	79
■ access and download attachments	76
■ upload attachments	64
■ certify messages	47

IDRC staff rated their *filing habits* (i.e., filing and sharing of electronically produced Biscom faxes and E-mail correspondence) most strongly on sharing electronically produced messages with colleagues. Conversely, the staff rated themselves the least strongly on filing electronically. (Refer to Table A3b)

	Excellent
	%
▪ sharing electronically produced messages with colleagues	69
▪ printing and filing paper copies	65
▪ filing electronically	47

External Communications

As the following illustrates, the *telephone* and *fax* machine are the *main* communication technologies used for external communications. It is interesting to note that E-mail is used significantly less frequently with external partners, clients and suppliers compared to internal communications. (Refer to Table B1)

	%
▪ Telephone	95
▪ Fax machines	82
▪ E-mail (LAN, WAN)	56
▪ Internet	50
▪ Voice mail	44
▪ Biscom	41
▪ Teleconferencing	4
▪ Computer conferencing	3

The principal *barriers* that staff feel are limiting their ability to use communication technologies with their partners, clients, or suppliers is the infrastructure limitations within host countries (particularly Regional offices) and the lack of compatible technology. (Refer to Table B2)

	%
▪ Infrastructure limitations within host countries	29
▪ Lack of compatible technology - hardware/software	22
▪ Lack of common networks	15

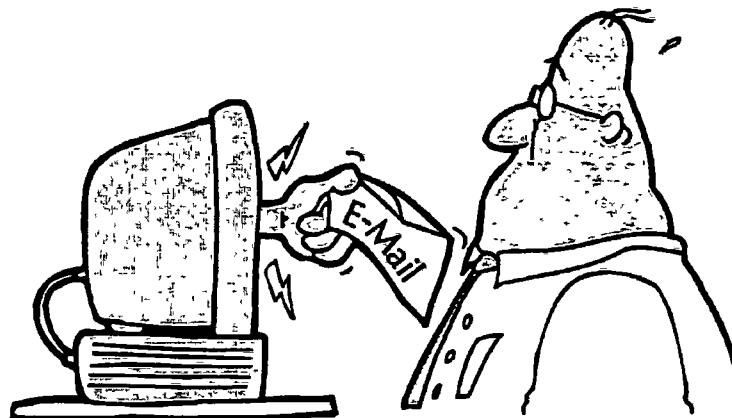
Impact

As the following illustrates (Refer to table C1), three out of four staff feel they are *using* the communication technologies well (or somewhat well). Nine in ten staff also feel information technologies have *changed* the way they do their *work*. (Refer to Table C2)

	%
■ Using communication technologies	76
■ Changed the way they work	91

Seven in ten staff feel information technologies have changed how they *relate* to their *colleagues* with IDRC. (Refer to Table C3) Fewer staff, however, feel information technologies have changed how they *relate* to *clients* and *partners*. (Refer to Table C4)

	To Some/Great Extent
	%
■ Relates to colleagues	70
■ Relates to clients/partners	57



The principal *benefits* that staff feel information/communication technologies have contributed to the Centre tends to be *information exchange*, increased *productivity* and increased *collaboration* with colleagues. Very few staff feel that communication technologies have resulted in a healthier and less stressful workplace. (Refer to Table C5)

	Agree
	%
■ more information exchange across boundaries	79
■ increased productivity	72
■ increased collaboration/networking	
◆ colleagues in the regional offices	71
◆ colleagues at headquarters	69
◆ clients	47
■ enhanced contact and communications with co-workers	67
■ more flexible work habits	60
■ new and innovative delivery of programs/services	58
■ a healthier and less stressful/workplace	21

Training

One in two IDRC staff feel that they need *more* training in communication technology. (Refer to Table D1)

	%
■ I need more training	56
■ I have received sufficient training	41
■ I am experiencing training overload	3

In terms of their personal ability to use on communication technologies, staff rated themselves highest on E-mail and fax machines and lowest on conferencing (telephone/computer) and internet. (Refer to Table D2)

	Good/Excellent
	%
■ E-mail (LAN, WAN)	88
■ Fax machines	73
■ Voice mail	55
■ Biscom	40
■ Internet	23
■ Computer conferencing	6
■ Teleconferencing	4

Most staff (92%) feel that learning to use new communication technologies is a *joint responsibility* between themselves and the Centre. (Refer to Table D3)

	Agree
	%
■ Is a joint responsibility	92
■ Is my responsibility	5
■ Is the responsibility of the centre	4

In terms of their immediate training requirement, staff feel their greatest needs are for internet, computer conferencing and teleconferencing training. (Refer to Table D4)

	High (maximum training required)
	%
■ Internet	45
■ Computer Conferencing	38
■ Teleconferencing	31
■ Biscom	22
■ E-mail	9
■ Voice mail	8
■ Fax machine	6

Personal Working Habits

As the following illustrates, most staff (70%) have access to a microcomputer at *home* and nearly four in ten have a modem. Furthermore, four in ten have a laptop for *travel* purposes. (Refer to Table E1)

At Home	
	%
■ Microcomputer	70
■ Modem	36
■ P.C. Dial In	22
■ Zoomit	10
Travel/Portable	
	%
■ Laptop	36

One in two staff members feel they work the *same* number of hours now as they did before computer-based technologies were a way of life at IDRC. It is important to point out, however, one in three staff members feel they now work *more* hours at the office and home as a result of communication technologies. One in five also work longer hours when travelling as a result of communication technologies. (Refer to Table E2a)

	Office	Home	Travel
	%	%	%
■ work more number of hours	30	37	19
■ work same hours	51	16	13
■ work less hours	7	6	2

The staff indicated that word processing was the principal use of computers at home and during travel. (Refer to Table E2B)

	Home	Travel
	%	%
■ Word processing	50	24
■ E-mail	26	17
■ Internet	15	3
■ Access data banks	8	2
■ Biscom	5	1

At a personal level, the staff feel advances in communication technologies over the last couple of years have resulted in increased productivity, collaboration, and communication with co-workers. Very few staff feel that communication technologies have lead to lower levels of stress or increased morale. (Refer to Table E3)

	To a Great/Some Extent
	%
■ increased personal productivity	72
■ enhanced contact/communications with co-workers	64
■ increased collaboration across geographic and disciplinary boundaries	63
■ improved quality of working life	53
■ enhanced time management	44
■ improved morale	25
■ decreased job stress	15

At least six in ten staff members have a favourable opinion about *telecommuting* particularly in Headquarters. (Refer to Table E4a) Most staff feel IDRC should have a formal *telecommuting policy*. (Refer to Table E4b)

	%
■ a favourable opinion of telecommuting	61
■ should have a telecommuting policy	69

DEMOGRAPHIC INFORMATION

The following is a profile of the respondents in the study. (Refer to the Demographic Tables)

- In terms of *years of service*, one half of the respondents have worked for the organization for more than five years.

%

▶ Less than 2 years	16
▶ 2 to 5 years	30
▶ 5 to 10 years	21
▶ more than 10 years	30

- The largest *employee group* participating in the study was the administrative, support staff.

%

▶ Management/Executive	15
▶ Administrative Support	42
▶ Technical and Non-Program Professional	27
▶ Program Officers	14

- The largest *division* participating in the study was the Finance and Administration and Corporate Affairs division.

%

▶ Social Sciences Division	7
▶ Health Sciences	5
▶ Environment and Natural Resources Division	11
▶ Information Sciences and Systems Division	10
▶ Corporate Affairs and Initiatives Division	18
▶ President's Office	5
▶ Finance and Administration	34

- As the following illustrates, the vast majority of those participating in the study were from Headquarters.

%

Headquarters

▶ Ottawa, Canada	65
------------------	----

Regional Office

▶ Cairo, Egypt	3
▶ Dakar, Sénégal	5
▶ Johannesburg, South Africa	2
▶ Montevideo, Uruguay	6
▶ Singapore, Republic of Singapore	8
▶ New Delhi, India	3
▶ Nairobi, Kenya	4



Part B: Regional and Headquarters

In this part of the analysis the results of the study are analyzed using a cross tabulation between Headquarters and the Regional offices.

Headquarters staff tend to be more senior in terms of years of service; more likely to be management/executive or professional and represent administrative functions (i.e. finance and administration or corporate affairs).

Internal Communications

For both the Regions and Headquarters, E-mail is the communication technology *used* most frequently for internal communications, followed closely by the telephone. Voice mail is used in Headquarters, but is not available in the Regions. (Refer to Table A1)

	% Regional	% Headquarters
■ E-mail (LAN, WAN)	93	98
■ Telephone	81	86
■ Voice mail	1	70
■ Fax machines	44	41
■ Internet	27	26
■ Biscom	5	27
■ Teleconferencing	0	4
■ Computer conferencing	1	2

It is also noteworthy that Biscom is used more frequently in Headquarters than the Regions.

E-mail is principally used for reading, sending and forwarding messages in both the Regions and Headquarters (Refer to Table A3a). As the following illustrates, the uses of E-mail varies slightly between the Regional offices and than Headquarters.

	% Regional	% Headquarters
■ read messages	98	95
■ send messages	95	92
■ forward messages	75	80
■ access and download attachments	77	75
■ upload attachments	64	64
■ certify messages	44	49

Headquarters staff rated themselves somewhat more strongly on sharing electronically produced messages with colleagues in both the Regions and Headquarters. The headquarters staff rated themselves least strongly on filing electronically particularly the Regions. Those in Regional offices rated themselves marginally more strongly on printing and filing copies. (Refer to Table A3b)

	Excellent	
	% Regional	% Headquarters
■ sharing electronically produced messages with colleagues	64	70
■ printing and filing paper copies	67	64
■ filing electronically	43	47

External Communications

As the following illustrates, the telephone and fax machine are the predominant communication technologies used in both the Regions and Headquarters for external communications. Headquarters staff are more likely to use Biscom than Regional staff (Refer to Table B1) because of its availability. (Voice mail is obviously more likely to be used by Headquarters.)

	% Regional	% Headquarters
■ Telephone	95	96
■ Fax machines	84	83
■ E-mail (LAN, WAN)	53	59
■ Internet	50	50
■ Voice mail	8	59
■ Biscom	22	50
■ Teleconferencing	2	5
■ Computer conferencing	6	2

The principal *barrier* that staff feel are limiting their ability to use communication technologies with their partners, clients, suppliers, etc. is the infrastructure limitations within host countries (particularly Regional offices). (Refer to Table B2)

	% Regional	% Headquarters
■ Infrastructure limitations within host countries	44	23
■ Lack of compatible technology - hardware/software	17	25
■ Lack of common networks	19	13

Impact

Compared to Headquarters staff, Regional staff are more likely to feel they are *using* the communication technologies well that IDRC has invested in. (Refer to Table C1)

Very Well/Well

	% Regional	% Headquarters
■ Using communication technologies	84	71

Nine in ten staff in both the Regions and Headquarters feel information technologies have *changed* the way we do our work. (Refer to Table C2)

To Some/Great Extent

	% Regional	% Headquarters
■ Change work	92	90

Regional staff are more likely to feel information technologies have changed how they *relate* to their *colleagues* (Refer to Table C3 and C4), while Headquarters are somewhat more likely to feel that information technologies have changed how they relate to their clients/partners. (Table C4)

To Some/Great Extent

	% Regional	% Headquarters
■ Relates to colleagues	78	66
■ Relates to clients/partners	52	58

As stated earlier, the principal benefits that information/communication technologies have contributed to the Centre tends to be information exchange, increased productivity and increased collaboration with colleagues. (Refer to Table C5) It is interesting to note that significantly more Regional staff feel communication technologies have enhanced contact and communications with co-workers, feel that communication technologies have resulted in new and innovative delivery of programs and services and feel productivity has been enhanced. They are also more likely to believe that communication technologies have contributed to a healthier and less stressful workplace.

Agree

	% Regional	% Headquarters
■ more information exchange across boundaries	83	77
■ increased productivity	80	70
■ increased collaboration/networking		
◆ colleagues in the regional offices	67	73
◆ colleagues at headquarters	85	62
◆ clients	47	47
■ enhanced contact and communications with co-workers	87	59
■ more flexible work habits	59	59
■ new and innovative delivery of programs/services	74	51
■ a healthier and less stressful/workplace	35	15

Training

Regional staff are somewhat more likely to feel they need more *training* in communication technologies. (Refer to Table D1)

	% Regional	% Headquarters
■ I need more training	61	53
■ I have received sufficient training	35	45
■ I am experiencing training overload	4	2

As the following illustrates, staff rated their *personal ability* highest on E-mail and fax machines and lowest on conferencing (telephone/computer) and internet. (Refer to Table D2) Headquarters staff tend to rate themselves higher on E-mail, Biscom and Voice mail (predictably) than their regional colleagues.

Good/Excellent

	% Regional	% Headquarters
■ E-mail (LAN, WAN)	76	94
■ Fax machines	76	72
■ Voice mail	17	68
■ Biscom	33	42
■ Internet	28	23
■ Computer conferencing	9	4
■ Teleconferencing	2	4

Most staff in both Headquarters and the Regions feel that learning to use new communication technologies is a *joint responsibility*. (Refer to Table D3)

Agree

	% Regional	% Headquarters
■ Is a joint responsibility	92	93
■ Is my responsibility	5	4
■ Is the responsibility of the centre	3	4

As the following illustrates, staff feel their *greatest training requirements* are for internet, computer conferencing and teleconferencing. (Refer to Table D4) Perhaps predictably, Regional office staff are more likely to view their computer/teleconferencing, voice mail and Biscom training needs higher than their Headquarters counterparts.

**High
(maximum training required)**

	% Regional	% Headquarters
■ Internet	48	44
■ Computer Conferencing	49	34
■ Teleconferencing	45	26
■ Biscom	30	19
■ E-mail	17	6
■ Voice mail	22	3
■ Fax machine	9	5

Personal Working Habits

Predictably, more Headquarters staff have access at home to a microcomputer, modem, PC Dial In. (Refer to Table E1)

At Home		
	% Regional	% Headquarters
■ Microcomputer	59	73
■ Modem	16	44
■ P.C. Dial In	7	29
■ Zoomit	9	11

Travel/Portable		
	% Regional	% Headquarters
■ Laptop	35	37

Overall, one in two staff feel they work the same number of hours now as they did before computer-based technologies were a way of life at IDRC. It is important to point out that headquarter staff are more likely to feel that they work more hours at the office and at home as a result of *communication technologies*. (Refer to Table E2a)

Office		
	% Regional	% Headquarters
■ work more number of hours	29	32
■ work same hours	44	53
■ work less hours	9	6

Home		
	% Regional	% Headquarters
■ work more hours	25	41
■ work same number of hours	13	17
■ work less hours	10	4

Travel

	% Regional	% Headquarters
■ work more hours	18	19
■ work same number of hours	6	18
■ work less hours	5	0

The staff indicated that word processing and E-mail were their principal uses of computers at home and during travel, particularly Headquarters staff. (Refer to Table E2b) Headquarters staff are also more likely than Regional staff to use Internet at home.

Home

	% Regional	% Headquarters
■ Word processing/Computers	40	53
■ E-mail	12	31
■ Internet	8	18
■ Access data banks	1	11
■ Biscom	1	6

Headquarters staff are much more likely than Regional staff to use E-mail when travelling.

Travel

	% Regional	% Headquarters
■ Word processing	20	25
■ E-mail	7	22
■ Internet	5	2
■ Access data banks	1	2
■ Biscom	3	0

As the following illustrates Regional staff are much more likely than Headquarters staff to feel that communication technologies have impacted them personally. Significantly more Regional staff feel that communications technologies have increased their personal productivity, communication with coworkers, project collaboration, etc compared to the Region staff, Headquarters staff are much less likely to feel communication technologies have improved their time management, morale or decreased their job stress.

To Some/ Great Extent

	% Regional	% Headquarters
■ increased personal productivity	84	68
■ enhanced contact/communications with co-workers	80	57
■ increased collaboration across geographic and disciplinary boundaries	75	57
■ improved quality of working life	75	42
■ enhanced time management	60	35
■ improved morale	45	16
■ decreased your job stress	25	11

It is interesting to note that significantly more Headquarters staff, compared to Regional Offices, have a favourable opinion of telecommuting and more likely to feel that IDRC should have a formal telecommuting policy. (Refer to Table E4a and E4b)

	% Regional	% Headquarters
■ favourable opinion of Telecommuting	38	71
■ agree IDRC should have Telecommuting policy	64	71

DEMOGRAPHIC INFORMATION

Based on the survey, Headquarters staff tended to be more senior in terms of years of service; more likely to be management/executive or professional and represent administrative functions (i.e. finance and administration or corporate affairs).

The following is a profile of the respondents in the study. (Refer to the Demographic Table)

Headquarters staff are more likely to have more than 10 years of service or more.

	% Regional	% Headquarters
▶ Less than 2 years	16	17
▶ 2 to 5 years	40	27
▶ 5 to 10 years	23	21
▶ more than 10 years	21	34

Regional respondents have a higher percentage of administrative staff and program officers.

%	% Regional	% Headquarters
▶ Management/Executive	12	16
▶ Administrative Support	49	40
▶ Technical and Non-Program Professional	16	33
▶ Program Officers	20	11

Headquarters house more staff in the corporate affairs and initiatives division.*

	% Regional	% Headquarters
▶ Social Sciences Division	6	7
▶ Health Sciences	6	4
▶ Environment and Natural Resources Division	14	10
▶ Information Sciences and Systems Division	11	11
▶ Corporate Affairs and Initiatives Division	12	21
▶ President's Office	0	7
▶ Finance and Administration	41	35

*NB: Some respondents failed to indicate division.



IDRC COMMUNICATION TECHNOLOGIES STUDY

December 15, 1994

Prepared by

PROACTIVE
GROUP OF COMPANIES



PART A:
PRESENT PRACTICES
INTERNAL COMMUNICATIONS



QUESTION 1

Which of the following communication technologies do you use on a regular basis for internal communications?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Telephone	81.1	77	85.6	173	84.9	265
E-mail (LAN,WAN)	92.7	89	97.5	197	96.5	301
Voice mail	1.1	1	69.8	141	49.7	155
Biscom	5.3	5	27.2	55	20.2	63
Fax machines	44.2	42	40.6	82	41.0	128
Teleconferencing	0.0	0	3.5	7	2.2	7
Computer conferencing	1.1	1	2.0	4	1.6	5
Internet	27.4	26	25.7	52	25.3	79



Other	2.1	2	3.0	6	2.6	8
TOTAL:		95		202		312



QUESTION 2

What are the principal applications you use for E-mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	64.4	58	54.8	109	57.6	175
Accessing research databases	11.1	10	8.5	17	9.2	28
Interpersonal communications	74.4	67	84.4	168	81.3	247
Problem solving/decision making	53.3	48	61.3	122	58.6	178
Document transfer	73.3	66	75.4	150	74.3	226
Information sharing	70.0	63	84.9	169	79.9	243
Electronic mail	68.9	62	76.9	153	74.7	227



Teleconferencing	1.1	1	3.0	6	2.3	7
Computer conferencing	2.2	2	4.0	8	3.3	10
TOTAL:		90		199		304

What are the principal applications you use for Voice Mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	27.3	3	3.2	5	4.9	9
Accessing research databases	18.2	2	.6	1	2.2	4
Interpersonal communications	45.5	5	91.1	143	88.5	161
Problem solving/decision making	27.3	3	49.0	77	47.8	87
Document transfer	9.1	1	1.9	3	2.7	5



Information sharing	27.3	3	54.1	85	50.0	91
Electronic mail	18.2	2	3.2	5	3.8	7
Teleconferencing	0.0	0	3.2	5	2.7	5
Computer conferencing	0.0	0	1.3	1	1.1	2
TOTAL:		11		45		182



What are the principal applications you use for Biscom?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	30.4	7	29.6	24	29.5	33
Accessing research databases	8.7	2	2.5	2	3.6	4
Interpersonal communications	43.5	10	51.9	42	49.1	54
Problem solving/decision making	26.1	6	34.6	28	32.7	36
Document transfer	39.1	9	53.1	43	49.1	54
Information sharing	26.1	6	61.7	50	54.5	60
Electronic mail	13.0	3	23.5	19	22.7	25
Teleconferencing	0.0	0	1.2	1	.9	1



Computer conferencing	4.3	1	0.0	0	1.8	2
TOTAL:		23		81		110



What are the principal applications you use for Fax Machine?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	38.5	20	23.5	28	28.3	51
Accessing research databases	9.6	5	0.0	0	2.8	5
Interpersonal communications	34.6	18	45.4	54	41.7	75
Problem solving/decision making	40.4	21	28.6	34	31.7	57
Document transfer	51.9	27	73.9	88	66.7	120
Information sharing	28.8	15	68.1	81	55.0	99
Electronic mail	23.1	12	10.9	13	14.4	26
Teleconferencing	1.9	1	.8	1	1.1	2



Computer conferencing	1.9	1	.8	1	1.1	2
TOTAL:		52		119		180



What are the principal applications you use for Internet?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	14.6	6	20.7	19	19.6	27
Accessing research databases	19.5	8	47.8	43	39.0	53
Interpersonal communications	43.9	18	52.2	47	48.5	66
Problem solving/decision making	29.3	12	35.6	32	33.1	45
Document transfer	36.6	15	46.7	42	43.4	59
Information sharing	53.7	22	56.7	51	55.1	75
Electronic mail	36.6	15	43.3	39	41.9	57
Teleconferencing	2.4	1	4.4	4	3.7	5



Computer conferencing	9.8	4	9.0	8	8.9	12
TOTAL:		41		90		135



What are the principal applications you use for Modem?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Word processing/document creation/stroage	13.0	3	22.0	9	19.4	13
Accessing research databases	39.1	9	60.0	24	50.0	33
Interpersonal communications	13.0	3	15.0	6	16.7	11
Problem solving/decision making	13.0	3	20.0	8	18.2	12
Document transfer	21.7	5	45.0	18	37.9	25
Information sharing	13.0	3	30.0	12	25.8	17
Electronic mail	26.1	6	20.0	8	24.2	16
Teleconferencing	0.0	0	2.5	1	1.5	1



Computer conferencing	4.3	1	10.3	4	7.7	5
TOTAL:		23		40		65



QUESTION 3(A)

Which of the following best describes your own use of E-mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
read messages	97.9	94	94.6	191	95.5	299
send messages	94.8	91	91.6	185	93.0	291
forward messages	75.0	72	80.2	162	79.2	248
access and download attachments	77.1	74	75.2	152	75.7	237
upload attachments	63.5	61	64.4	130	63.9	200
certify messages	43.8	42	49.0	99	47.0	147
Other	5.2	5	3.5	7	4.2	13
TOTAL:		96		202		313



QUESTION 3(B)

How would you rate your following filing habits (i.e. filing and sharing of electronically produced Biscom faxes and e-mail correspondence): filing electronically?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	8.1	7	16.8	33	13.9	41
Somewhat Poor	10.5	9	12.2	24	11.5	34
Neither Poor/Excellent	25.6	22	14.3	28	17.6	52
Somewhat Excellent	18.6	16	30.6	60	27.0	80
Excellent	24.4	21	16.8	33	19.6	58
Not applicable	12.8	11	9.2	18	10.5	31
TOTAL:	100.0	86	100.0	196	100.0	296



How would you rate your following filing habits (i.e. filing and sharing of electronically produced Biscom faxes and e-mail correspondence); printing and filing paper copies?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	4.8	4	5.0	10	4.7	14
Somewhat Poor	3.6	3	7.0	14	5.7	17
Neither Poor/Excellent	19.0	16	16.5	33	17.4	52
Somewhat Excellent	34.5	29	35.5	71	35.6	106
Excellent	32.1	27	28.5	57	29.2	87
Not applicable	6.0	5	7.5	15	7.4	22
TOTAL:	100.0	84	100.0	200	100.0	298



How would you rate your following **filing habits** (i.e. filing and sharing of electronically produced Biscom faxes and e-mail correspondence): sharing electronically produced messages with colleagues?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	0.0	0	2.0	4	1.4	4
Somewhat Poor	6.3	5	2.5	5	3.8	11
Neither Poor/Excellent	15.0	12	15.2	30	14.8	43
Somewhat Excellent	21.3	17	40.6	80	34.7	101
Excellent	42.5	34	29.4	58	34.4	100
Not applicable	15.0	12	10.2	20	11.0	32
TOTAL:	100.0	80	100.0	197	100.0	291



PART B:
PRESENT PRACTICES
EXTERNAL COMMUNICATIONS



QUESTION 1

Which of the following communication technologies do you utilize in your communications with your external partners, clients, suppliers, etc.?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Telephone	94.8	91	95.5	193	95.2	298
E-mail (LAN,WAN)	53.1	51	58.9	119	56.2	176
Voice mail	8.3	8	59.4	120	43.5	136
Fax machines	84.4	81	83.2	168	82.1	257
Biscom	21.9	21	49.5	100	40.9	128
Teleconferencing	2.1	2	5.0	10	3.8	12
Computer conferencing	6.3	6	1.5	3	3.2	10
Internet	50.0	48	50.0	101	49.5	155



Other	9.4	9	1.5	3	4.2	13
TOTAL:		96		202		313



QUESTION 2

What barriers , if any, do you feel limit your ability to use communication technologies with your partners, clients, suppliers, etc.?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
None	18.7	17	37.0	70	31.9	94
Lack of compatible technology - hardware/software	16.5	15	24.9	47	22.0	65
Infrastructure limitations within host countries	44.0	40	22.8	43	29.2	86
Lack of common networks	18.7	17	13.2	25	14.6	43
Other	2.2	2	2.1	4	2.4	7
TOTAL:	100.0	91	100.0	189	100.0	295



PART C: IMPACT



QUESTION 1

How well do you feel you are using the communication technologies that IDRC has invested in?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not well at all	0.0	0	2.0	4	1.3	4
Not well	2.1	2	4.5	9	3.5	11
Neither	13.7	13	22.4	45	19.6	61
Somewhat well	38.9	37	37.3	75	37.6	117
Very well	45.3	43	33.8	68	37.9	118
TOTAL:	100.0	95	100.0	201	100.0	311



QUESTION 2

To what extent do you feel information technologies have changed the way we do our work?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	0.0	0	.5	1	.3	1
2	1.0	1	1.5	3	1.3	4
3	6.3	6	6.5	13	6.1	19
4	17.7	17	23.9	48	21.8	68
To a great extent	74.0	71	65.7	132	68.9	215
Not applicable	1.0	1	2.0	4	1.6	5
TOTAL:	100.0	96	100.0	201	100.0	312



QUESTION 3

To what extent do you feel information technologies have changed how you relate to your colleagues?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	3.2	3	4.0	8	3.5	11
2	2.1	2	6.0	12	4.5	14
3	14.7	14	21.5	43	19.4	60
4	23.2	22	27.0	54	26.8	83
To a great extent	54.7	52	38.5	77	43.2	134
Not applicable	2.1	2	3.0	6	2.6	8
TOTAL:	100.0	95	100.0	200	100.0	310



QUESTION 4

To what extent do you feel information technologies have changed how you relate to clients and partners?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	6.3	6	1.0	2	2.9	9
2	13.7	13	13.4	27	13.2	41
3	23.2	22	21.4	43	21.5	67
4	23.2	22	27.9	56	27.0	84
To a great extent	28.4	27	29.9	60	29.6	92
Not applicable	5.3	5	6.5	13	5.8	18
TOTAL:	100.0	95	100.0	201	100.0	311



QUESTION 5

Based on your experience, to what extent do you agree that information/communication technologies have benefitted the Centre: increased productivity						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	1.1	1	1.5	3	1.6	5
Disagree	2.2	2	9.5	19	6.8	21
Neither	8.7	8	17.9	36	16.2	50
Agree	32.6	30	39.3	79	37.3	115
Strongly agree	47.8	44	30.8	62	35.1	108
Not applicable	7.6	7	1.0	2	2.9	9
TOTAL:	100.0	92	100.0	201	100.0	308



Based on your experience, to what extent do you agree that
information/communication technologies have benefitted the Centre:
more flexible work habits

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	2.2	2	1.5	3	1.6	5
Disagree	4.3	4	7.5	15	7.1	22
Neither	24.7	23	28.9	58	26.9	83
Agree	29.0	27	38.3	77	35.1	108
Strongly agree	30.1	28	20.9	42	24.4	75
Not applicable	9.7	9	3.09	6	4.9	15
TOTAL:	100.0	93	100.0	201	100.0	308



Based on your experience, to what extent do you agree that
information/communication technologies have benefitted the Centre:
a healthier and less stressful/workplace

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	8.9	8	17.4	35	14.8	45
Disagree	21.1	19	26.8	74	30.8	94
Neither	28.9	26	26.9	54	28.9	88
Agree	18.9	17	10.4	21	13.1	40
Strongly agree	15.6	14	4.5	9	7.9	24
Not applicable	6.7	6	4.0	8	4.6	14
TOTAL:	100.0	90	100.0	201	100.0	305



Based on your experience, to what extent do you agree that
information/communication technologies have benefitted the Centre:
more information exchange across geographical and disciplinary boundaries

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	1.1	1	.5	1	.6	2
Disagree	2.1	2	2.0	4	1.9	6
Neither	10.6	10	14.4	29	12.9	40
Agree	31.9	30	33.7	68	33.0	102
Strongly agree	51.1	48	43.6	88	46.0	142
Not applicable	3.2	3	5.9	12	5.5	17
TOTAL:	100.0	94	100.0	202	100.0	309



Based on your experience, to what extent do you agree that
information/communication technologies have **benefitted** the Centre:
enhanced contact and communications with co-workers

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	0.0	0	3.0	6	1.9	6
Disagree	2.2	2	12.9	26	9.1	28
Neither	9.8	9	24.3	49	20.4	63
Agree	42.4	39	34.7	79	37.2	115
Strongly agree	44.6	41	23.8	48	30.1	93
Not applicable	1.1	1	1.5	3	1.3	4
TOTAL:	100.0	92	100.0	202	100.0	309



Based on your experience, to what extent do you agree that
information/communication technologies have **benefitted** the Centre:
new and innovative delivery of programs/services

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	1.1	1	4.5	9	3.3	10
Disagree	3.4	3	7.0	14	5.6	17
Neither	17.0	15	30.0	60	26.2	79
Agree	40.9	36	35.0	70	36.9	111
Strongly agree	33.0	29	16.0	32	20.9	63
Not applicable	4.5	4	7.5	15	7.0	21
TOTAL:	100.0	88	100.0	200	100.0	301



Based on your experience, to what extent do you agree that
information/communication technologies have benefitted the Centre:
increased collaboration/networking - colleagues at headquarters

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	1.1	1	2.0	4	1.7	5
Disagree	0.0	0	7.0	14	4.6	14
Neither	12.2	11	25.1	50	21.1	64
Agree	26.7	24	41.7	83	37.6	114
Strongly agree	57.8	52	20.6	41	31.4	95
Not applicable	2.2	2	3.5	7	3.6	11
TOTAL:	100.0	90	100.0	199	100.0	303



Based on your experience, to what extent do you agree that information/communication technologies have benefitted the Centre: increased collaboration/networking - colleagues in the regional offices						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	3.3	3	2.0	4	2.3	7
Disagree	5.6	5	2.5	5	3.3	10
Neither	21.1	19	15.7	31	16.9	51
Agree	23.3	21	40.4	80	35.9	108
Strongly agree	43.3	39	32.8	65	35.5	107
Not applicable	3.3	3	6.6	13	6.0	18
TOTAL:	100.0	90	100.0	198	100.0	301



Based on your experience, to what extent do you agree that information/communication technologies have benefitted the Centre: increased collaboration/networking - clients						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Strongly disagree	3.5	3	3.6	7	3.4	10
Disagree	14.0	12	7.8	15	9.2	27
Neither	24.4	21	27.5	53	26.7	78
Agree	23.3	20	30.6	59	27.7	81
Strongly agree	23.3	20	16.6	32	19.2	56
Not applicable	11.6	10	14.0	27	13.7	40
TOTAL:	100.0	86	100.0	193	100.0	292



PART D: TRAINING/COACHING



QUESTION 1

Which of the following would best describe how you feel about the level of training provided by IDRC in communication technology?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
I need more training	60.6	57	53.0	105	56.4	173
I have received sufficient training	35.1	33	44.9	89	40.7	125
I am experiencing training overload	4.3	4	2.0	4	2.9	9
TOTAL:	100.0	94	100.0	198	100.0	307



QUESTION 2

How would you rate your personal ability with E-mail (LAN,WAN)?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	0.0	0	0.0	0	0.0	0
Somewhat poor	3.2	3	1.0	2	1.6	5
Neither	20.2	19	5.4	11	10.6	33
Somewhat excellent	34.0	32	37.6	76	36.7	114
Excellent	41.5	39	55.9	113	50.8	158
Not applicable	1.1	1	0.0	0	.3	1
TOTAL:	100.0	94	100.0	202	100.0	311



How would you rate your personal ability with Voice mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	14.1	10	4.0	8	6.2	18
Somewhat poor	4.2	3	6.0	12	6.3	18
Neither	2.8	2	20.4	41	16.0	46
Somewhat excellent	9.9	7	33.8	68	27.9	80
Excellent	7.0	5	34.3	69	27.2	78
Not applicable	62.0	44	1.5	3	16.4	47
TOTAL:	100.0	71	100.0	201	100.0	287



How would you rate your personal ability with Fax machines?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	5.5	5	3.5	7	3.9	12
Somewhat poor	1.1	1	4.5	9	3.9	12
Neither	13.2	12	17.9	36	16.6	51
Somewhat excellent	27.5	25	34.8	70	33.2	102
Excellent	48.4	44	36.8	74	39.4	121
Not applicable	4.4	4	2.5	5	2.9	9
TOTAL:	100.0	91	100.0	201	100.0	307



How would you rate your personal ability with Biscorn?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	10.9	7	24.5	48	20.6	56
Somewhat poor	1.6	1	8.2	16	6.6	18
Neither	6.3	4	13.8	27	12.9	35
Somewhat excellent	15.6	10	24.0	47	22.4	61
Excellent	17.2	11	18.4	36	18.0	49
Not applicable	48.4	31	11.2	22	19.5	53
TOTAL:	100.0	64	100.0	196	100.0	272



How would you rate your personal ability with Teleconferencing?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	21.9	14	40.1	75	36.0	95
Somewhat poor	6.3	4	10.2	9.4	9.1	24
Neither	7.8	5	12.3	23	11.7	31
Somewhat excellent	0.0	0	2.1	4	1.9	5
Excellent	1.6	1	2.7	5	2.3	6
Not applicable	62.5	40	32.6	61	39.0	103
TOTAL:	100.0	64	100.0	187	100.0	264



How would you rate your personal ability with Computer conferencing?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	17.2	11	41.7	78	36.8	97
Somewhat poor	9.4	6	10.7	20	9.8	26
Neither	6.3	4	9.1	17	8.3	22
Somewhat excellent	7.8	5	1.6	3	3.4	9
Excellent	1.6	1	2.7	5	2.3	6
Not applicable	57.8	37	34.2	64	39.4	104
TOTAL:	100.0	64	100.0	187	100.0	264



How would you rate your personal ability with Internet?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Poor	10.5	8	25.5	50	21.6	62
Somewhat poor	14.5	11	16.8	33	17.1	49
Neither	34.2	26	23.5	46	26.6	76
Somewhat excellent	17.1	13	12.8	25	13.6	39
Excellent	10.5	8	10.2	20	9.8	28
Not applicable	13.2	10	11.2	22	11.2	32
TOTAL:	100.0	76	100.0	196	100.0	286



QUESTION 3

Learning to use new communication technologies...						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
is my responsibility	5.3	5	4.0	8	4.5	14
is the responsibility of the Centre	3.2	3	3.5	7	3.5	11
is a joint responsibility	91.6	87	92.5	186	92.0	286
TOTAL:	100.0	95	100.0	201	100.0	311



QUESTION 4

How would you describe your personal training requirements for E-mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	33.0	31	69.8	139	58.3	179
Somewhat low	21.3	20	14.1	28	16.0	49
Medium (some training required)	26.6	25	9.5	19	15.6	48
Somewhat high	5.3	5	3.0	6	3.6	11
High (maximum training required)	11.7	11	2.5	5	5.2	16
Not applicable	2.1	2	1.0	2	1.3	4
TOTAL:	100.0	94	100.0	199	100.0	307



How would you describe your personal training requirements for Voice mail?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	6.9	5	60.7	120	47.1	134
Somewhat low	9.7	7	18.2	36	15.5	44
Medium (some training required)	13.9	10	15.7	31	15.1	43
Somewhat high	9.7	7	2.5	5	4.6	13
High (maximum training required)	12.5	9	.5	1	3.5	10
Not applicable	47.2	34	2.5	5	14.1	40
TOTAL:	100.0	72	100.0	198	100.0	284



How would you describe your personal training requirements for Fax machines?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	48.3	42	59.1	117	56.2	168
Somewhat low	20.7	18	16.2	32	17.7	53
Medium (some training required)	17.2	15	17.2	34	16.7	50
Somewhat high	4.6	4	3.0	6	3.3	10
High (maximum training required)	4.6	4	1.5	3	2.3	7
Not applicable	4.6	4	3.0	6	3.7	11
TOTAL:	100.0	87	100.0	198	100.0	299



How would you describe your personal training requirements for Biscom?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	11.3	8	31.2	60	27.5	76
Somewhat low	12.7	9	15.1	29	14.1	39
Medium (some training required)	12.7	9	25.5	49	21.7	60
Somewhat high	8.5	6	10.4	20	10.1	28
High (maximum training required)	21.1	15	8.9	17	11.9	33
Not applicable	33.8	24	8.9	17	14.8	41
TOTAL:	100.0	71	100.0	192	100.0	277



How would you describe your personal training requirements for Internet?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	7.4	6	9.6	19	8.6	25
Somewhat low	8.6	7	9.6	19	9.6	28
Medium (some training required)	25.9	21	28.9	57	28.4	83
Somewhat high	11.1	9	16.2	32	15.4	45
High (maximum training required)	37.0	30	27.4	54	29.8	87
Not applicable	9.9	8	8.1	16	8.2	24
TOTAL:	100.0	81	100.0	197	100.0	292



How would you describe your personal training requirements for Teleconferencing?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	4.1	3	7.9	15	7.6	21
Somewhat low	6.8	5	10.5	20	10.1	28
Medium (some training required)	9.6	7	25.1	48	20.9	58
Somewhat high	8.2	6	8.4	16	8.6	24
High (maximum training required)	37.0	27	17.8	34	22.3	62
Not applicable	34.2	25	30.4	58	30.6	85
TOTAL:	100.0	73	100.0	191	100.0	278



How would you describe your personal training requirements for Computer Conferencing?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Low (no training required)	5.2	4	6.8	13	7.1	20
Somewhat low	5.2	4	6.3	12	6.0	17
Medium (some training required)	11.7	9	21.6	41	19.2	54
Somewhat high	13.0	10	5.8	11	7.8	22
High (maximum training required)	36.4	28	27.9	53	30.2	85
Not applicable	28.6	22	31.6	60	29.5	83
TOTAL:	100.0	77	100.0	190	100.0	281



PART E: PERSONAL WORKING HABITS



QUESTION 1

Which of the following communication technologies do you have access to at Home?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Microcomputer	59.0	55	72.8	147	69.6	215
Modem	16.3	15	43.6	88	35.6	110
P.C. Dial In	6.5	6	29.2	59	22.0	68
Zoomit	8.7	8	10.9	22	10.0	31
Other	4.3	4	5.4	11	5.2	16
None of the above	40.2	37	25.2	51	29.1	90
TOTAL:		92		202		309



Which of the following communication technologies do you have access to: Travel/Portable?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Laptop	34.8	24	36.7	58	35.6	84
Other	2.9	2	2.5	4	2.5	6
None of the above	63.8	44	60.1	95	61.9	146
TOTAL:		69		158		236



QUESTION 2(a)

Which of the following statements best describe the impact communication technologies have had on the number of hours you work at the office?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
work less hours	9.3	8	5.6	11	7.1	21
work same number of hours	44.2	38	52.6	104	50.7	150
work more hours	29.1	25	31.8	63	30.4	90
not applicable	17.4	15	10.1	20	11.8	35
TOTAL:	100.0	86	100.0	198	100.0	296



Which of the following statements best describe the impact communication technologies have had on the number of hours you work at home?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
work less hours	10.3	7	3.9	7	5.7	15
work same number of hours	13.2	9	17.1	31	16.0	42
work more hours	25.0	17	40.9	74	37.0	97
not applicable	51.5	35	38.1	69	41.2	108
TOTAL:	100.0	68	100.0	181	100.0	262



Which of the following statements best describe the impact communication technologies have had on the number of hours you work at travel?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
work less hours	4.5	3	0.0	0	2.0	3
work same number of hours	6.1	4	17.6	29	13.2	32
work more hours	18.2	12	18.8	3	18.6	45
not applicable	71.2	47	63.6	105	66.1	160
TOTAL:	100.0	66	100.0	165	100.0	242



QUESTION 2(b)

What are the principal use(s) you make of communication technologies at home?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
E-mail	12.4	11	31.0	62	25.8	78
Word processing	40.4	36	52.8	105	50.2	151
Biscom	1.1	1	6.0	12	4.7	14
Access data banks	1.1	1	10.6	21	8.0	24
Internet	7.9	7	17.6	35	14.6	44
Not applicable	57.3	51	40.7	81	44.5	134
TOTAL:		89		199		301



What are the principal use(s) you make of communication technologies at travel?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
E-mail	7.3	6	21.6	37	17.4	46
Word processing	19.8	16	24.9	42	23.8	62
Biscom	2.5	2	0.0	0	.8	2
Access data banks	1.2	1	2.4	4	1.9	5
Internet	4.9	4	2.4	4	3.4	9
Not applicable	72.8	59	63.9	108	66.7	174
TOTAL:		81		169		261



QUESTION 3

To what extent do you believe that advances in communication technologies over the last couple of years increased your personal productivity?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	0.0	0	3.0	6	2.0	6
2	3.3	3	6.6	13	5.3	16
3	10.0	9	20.3	40	18.0	54
4	30.0	27	36.5	72	35.0	105
To a great extent	54.4	49	31.0	61	37.3	112
Not applicable	2.2	2	2.5	5	2.3	7
TOTAL:	100.0	90	100.0	197	100.0	300



To what extent do you believe that advances in communication technologies over the last couple of years improved your quality of working life?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	1.1	1	7.7	15	5.3	16
2	4.3	4	11.7	23	9.3	28
3	18.5	17	35.2	69	30.2	91
4	38.0	35	27.6	54	31.6	95
To a great extent	37.0	34	14.3	28	20.9	63
Not applicable	1.1	1	3.6	7	2.7	8
TOTAL:	100.0	92	100.0	196	100.0	301



To what extent do you believe that advances in communication technologies over the last couple of years increased your collaboration across geographic and disciplinary boundaries?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	0.0	0	1.5	3	1.6	5
2	1.1	1	4.6	9	3.3	10
3	15.2	14	25.9	51	21.9	66
4	28.3	26	25.4	50	26.8	81
To a great extent	46.7	43	31.5	62	36.1	109
Not applicable	8.7	8	11.2	22	10.3	31
TOTAL:	100 .0	92	100.0	197	100.0	302



To what extent do you believe that advances in communication technologies over the last couple of years decreased your job stress?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	17.0	15	38.1	75	31.9	95
2	27.3	24	19.3	38	22.1	66
3	26.1	23	26.4	52	26.2	78
4	13.6	12	9.1	18	10.1	30
To a great extent	11.4	10	2.0	4	5.0	15
Not applicable	4.5	4	5.1	10	4.7	14
TOTAL:	100.0	88	100.0	197	100.0	298



To what extent do you believe that advances in communication technologies over the last couple of years improved your morale?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	3.5	3	21.4	42	15.6	46
2	4.7	4	20.4	40	16.3	48
3	37.2	32	33.2	65	34.7	102
4	30.2	26	10.2	20	16.0	47
To a great extent	15.1	13	5.6	11	8.5	25
Not applicable	9.3	8	9.2	18	8.8	26
TOTAL:	100.0	86	100.0	196	100.0	294



To what extent do you believe that advances in communication technologies over the last couple of years enhanced your time management?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	5.4	5	16.3	32	13.0	39
2	3.3	3	16.8	33	12.0	36
3	28.3	26	28.6	56	28.3	85
4	41.3	38	25.5	50	30.7	92
To a great extent	18.5	17	9.7	19	13.0	39
Not applicable	3.3	3	3.1	6	3.0	9
TOTAL:	100.0	92	100.0	196	100.0	300



To what extent do you believe that advances in communication technologies over the last couple of years enhanced contact/communications with co-workers?

	Regional		Headquarters		Total	
	%	#	%	#	%	#
Not at all	1.1	1	7.7	15	5.3	16
2	4.3	4	9.7	19	7.6	23
3	14.0	13	23.0	45	21.2	64
4	35.5	33	34.2	67	34.4	104
To a great extent	44.1	41	23.0	45	29.5	89
Not applicable	1.1	1	2.6	5	2.0	6
TOTAL:	100.0	93	100.0	196	100.0	302



QUESTION 4(a)

What is your opinion regarding telecommuting (working at home/travel)?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Very Unfavourable	0.0	0	2.5	5	2.0	6
Unfavourable	5.7	5	2.5	5	3.7	11
Neither	12.6	11	12.6	25	12.7	38
Somewhat Favourable	12.6	11	21.1	42	18.7	56
Very Favourable	25.3	22	49.7	99	42.1	126
Not applicable	43.7	38	11.6	23	20.7	62
TOTAL:	100.0	87	100.0	199	100.0	299



QUESTION 4(b)

Do you think that IDRC should have a formal telecommuting policy?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Yes	63.6	56	70.9	141	68.7	206
No	3.4	3	5.5	11	5.3	16
Undecided	22.7	20	17.6	35	19.0	57
N/A	10.2	9	6.0	12	7.0	21
TOTAL:	100.0	88	100.0	199	100.0	300



PART F: DEMOGRAPHIC INFORMATION



How long have you worked for IDRC?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Less than 2 years	15.6	15	16.8	34	16.3	51
2 to 5 years	39.6	38	26.8	54	30.0	94
5 to 10 years	22.9	22	20.8	42	21.4	67
more than 10 years	20.8	20	34.3	68	30.4	95
Unstated	1.0	1	2.0	4	1.9	6
TOTAL:	100.0	96	100.0	202	100.0	313



Which of the following best describes your position at IDRC?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Management/Executive	11.5	11	16.3	33	15.0	47
Administrative Support	49.0	47	40.1	79	41.9	131
Technical and Non-Program Professional	15.6	3	32.5	64	27.4	83
Program Officer	19.8	19	10.7	21	13.9	42
Unstated	4.2	4	2.5	5	3.2	10
TOTAL:	100.0	96	100.0	202	100.0	313



What division do you work in?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Social Sciences Division	6.3	6	6.9	14	7.0	22
Health Services	6.3	6	4.0	8	4.5	14
Environment and Natural Resources Division	13.5	13	10.4	21	10.9	34
Information Sciences and Systems Division	10.8	8	10.9	22	9.9	31
Corporate Affairs and Initiatives Division	12.2	9	21.3	43	17.9	56
President's Office	0.0	0	7.4	15	4.8	15
Finance and Administration Division	40.5	30	35.1	71	33.9	106
Unstated	24.9	24	.0	8	11.1	35



TOTAL:	100.0	74	10.0	202	100.0	313
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Which office are you located in?						
	Regional		Headquarters		Total	
	%	#	%	#	%	#
Headquarters	0.0	0	100.0	202	64.5	202
Cairo, Egypt	10.4	10			3.2	10
Dakar, Senegal	15.6	15			4.8	15
Johannesburg, South Africa	6.3	6			1.9	6
Montevideo, Uruguay	20.8	20			6.4	20
Singapore, Republic of Singapore	25.0	24			7.7	24
New Delhi, India	9.4	9			2.9	9
Nairobi, Kenya	12.5	12			3.8	12
Unstated	0.0	0			4.8	15



TOTAL:	100.0	96	100.0	202	100.0	313
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International Development Research Centre
Centre de recherches pour le développement international

memorandum - note de service

Date: 1994-11-02

Our file/Notre dossier:

To/A: All Staff

From/De: Keith A. Bezanson

Subject/Objet:

ACIM Communications Study

One of the issues that emerged from last year's APM was the importance of communication in bringing all of us together as *one* IDRC. There was enough concern expressed about how well we communicate with each other and how well we are using the systems that we have invested in, that the newly formed Advisory Committee on Information Management (ACIM) was asked to review the needs and expectations of staff on communications issues, to analyze the successes and shortcomings of existing systems and to make recommendations for new options.

IDRC faces unique challenges in this area: a work force spread around the world, staff who spend much of the year on official travel, and a corporate mission which supports the research and application of new technologies. We also exist in a world where rapid advances in information technologies are changing the way we do our work and how we relate to our clients, colleagues, and partners. Such innovations offer exciting opportunities to facilitate effective collaboration and information exchange across geographical and disciplinary boundaries and to contribute to the overall productivity and health of our organizations. But the technologies are only tools, only enablers. How we implement them and how we ensure their effective use will determine how much these technologies become in reality communications facilitators.

Before you is an opportunity to make a contribution to improving communications within IDRC. The Proactive Group of Companies has developed this questionnaire for IDRC through which all staff are being consulted on their experiences and opinions on communications issues in the Centre. Whether the results point to new systems or better use of what we have, the goal is better and more effective collaboration and exchange.

I urge all staff to participate in this effort and take the time to complete this questionnaire.



IDRC COMMUNICATION TECHNOLOGIES STUDY

Produced by

**The
Proactive Group
of Companies**

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INTRODUCTION

You are now in possession of IDRC Communications questionnaire. Your response to this questionnaire is a key factor in the success of this project! We are asking you to offer your opinion on a variety of key issues that relate to communication technologies in the Centre. Rest assured that this is not a test; there are no right or wrong answers.

IDRC faces unique communication challenges in having a work force spread around the world between the Ottawa headquarters and seven regional offices, telecommunications obstacles within the host countries of some of the regional offices, staff who spend much of their year on work related travel, and programs which span the divisions and disciplines defined by the organizational structure.

Extensive discussions at the APM last fall led to the conclusion that the Centre needs to carefully and systematically review the needs and views of staff on communications issues. This included both formal, informatics-based systems as well as informal, interpersonal channels. It has become one of the tasks of the Advisory Committee on Information Management (ACIM) to study the former, that is the use of computer based communication technologies in the Centre, to analyze successes and shortcomings of existing systems, and to make recommendations to SMC for new options. The ultimate goal is to ensure that the communications technologies in place contribute to the productivity and health of the Centre and to facilitate effective collaboration and information exchange across geographical and disciplinary boundaries.

The purpose of the study is to

- A) Review the use currently being made of existing communication technologies in the Centre.
- B) Solicit the views and needs of Centre staff (both in Ottawa and regional offices) on communication technology issues.
- C) Define additional communications needs in the context of trends within the organization, its operations and programs.
- D) Assess the absorptive capacity and training requirements of Centre staff with respect to new communication technologies.
- E) Make recommendations that will contribute to improved computer communications and the successful implementation of other new communication technologies.

BEFORE YOU BEGIN...

1. The purpose of this questionnaire is to gather your opinions on communication technologies at IDRC.
2. The questionnaire should take you 30 minutes to complete.
3. Without too much analysis, you are asked to circle the response options that most closely represent your response to each question.
4. Your opinions should reflect how you feel about IDRC at the present time (not the past).
5. For those statements that don't apply to you, circle "9" - not applicable.
6. If you change your mind about a response that you have made, simply place an "X" over your "wrong" response, and circle your new response.
7. Please return your questionnaire to your divisional coordinator by November 28th.

PART A: PRESENT PRACTICES INTERNAL COMMUNICATIONS

In this part of the survey, we would like to ask you about your communication practices within IDRC (Ottawa and the regions). Please circle the appropriate responses.

1. Which of the following communication technologies do you use on a regular basis for internal communications?

☐ Telephone	1	☐ Teleconferencing	6
☐ E-mail (LAN, WAN)	2	☐ Computer conferencing	7
☐ Voice mail	3	☐ Internet	8
☐ Biscom	4	☐ Other (Please specify)	
☐ Fax machines	5		

2. What are the principal applications you use each of these communication technologies for (multi-responses permitted). Please circle the appropriate responses for the communication technologies you use on a regular basis.

	E-mail	Voice Mail	Biscom	Fax Machine	Internet	Modem
☐ Word processing/Document creation/Storage	1	2	3	4	5	6
☐ Accessing research databases	1	2	3	4	5	6
☐ Interpersonal communications	1	2	3	4	5	6
☐ Problem solving/ Decision making	1	2	3	4	5	6
☐ Document transfer	1	2	3	4	5	6
☐ Information sharing	1	2	3	4	5	6
☐ Electronic mail	1	2	3	4	5	6
☐ Teleconferencing	1	2	3	4	5	6
☐ Computer conferencing	1	2	3	4	5	6

3. a. Which of the following best describes your own use of e-mail? (multiple responses permitted)

☐ read messages	1
☐ send messages	2
☐ forward messages	3
☐ access and download attachments	4
☐ upload attachments	5
☐ certify messages	6
☐ Other (Please specify) _____	7

- b. How would you rate your following filing habits (i.e., filing and sharing of electronically produced Biscom faxes and e-mail correspondence)?

	Poor				Excellent N/A		
■ filing electronically	1	2	3	4	5	9	
■ printing and filing paper copies	1	2	3	4	5	9	
■ sharing electronically produced messages with colleagues	1	2	3	4	5	9	

Comments:

PART B	PRESENT PRACTICES	EXTERNAL COMMUNICATIONS
---------------	--------------------------	--------------------------------

In this part of the survey we would like to ask you about your communications practices, with external (non-IDRC) partners, clients, suppliers, etc. Please circle the appropriate responses.

1. Which of the following communication technologies do you utilize in your communications with your external partners, clients, suppliers, etc.?

- | | |
|---|---|
| ☐ Telephone | 1 |
| ☐ E-mail (LAN, WAN) | 2 |
| ☐ Voice mail | 3 |
| ☐ Fax machines | 4 |
| ☐ Biscom | 5 |
| ☐ Teleconferencing | 6 |
| ☐ Computer conferencing | 7 |
| ☐ Internet | 8 |
| ☐ Other (Please specify) _____ | 9 |

2. What barriers, if any, do you feel limit your ability to use communication technologies with your partners, clients, suppliers, etc.?

- | | |
|--|---|
| ☐ None | 1 |
| ☐ Lack of compatible technology - hardware/software | 2 |
| ☐ Infrastructure limitations within host countries | 3 |
| ☐ Lack of common networks | 4 |
| ☐ Other (Please specify) _____ | 5 |

PART C Impact

In this section of the survey, we would like your perception of the impact that communication technologies have had on your work at IDRC.

1. How well do you feel you are using the communication technologies that IDRC has invested in?

Not well at all					Very well	N/A
1	2	3	4	5	9	

2. To what extent do you feel information technologies have changed the way we do our work?

Not at all				To a great extent	N/A
1	2	3	4	5	9

3. To what extent do you feel information technologies have changed how you relate to your colleagues with IDRC?

Not at all				To a great extent	N/A
1	2	3	4	5	9

4. To what extent do you feel information technologies have changed how you relate to clients and partners?

Not at all				To a great extent	N/A
1	2	3	4	5	9

5. Based on your experience, to what extent do you agree that information/communication technologies have benefitted the Centre?

	Strongly disagree				Strongly agree		N/A
	1	2	3	4	5		9
■ increased productivity	1	2	3	4	5		9
■ more flexible work habits	1	2	3	4	5		9
■ a healthier and less stressful/workplace	1	2	3	4	5		9
■ more information exchange across geographical and disciplinary boundaries	1	2	3	4	5		9
■ enhanced contact and communications with co-workers	1	2	3	4	5		9
■ new and innovative delivery of programs/services	1	2	3	4	5		9
■ increased collaboration/networking							
◆ colleagues at headquarters	1	2	3	4	5		9
◆ colleagues in the regional offices	1	2	3	4	5		9
◆ clients	1	2	3	4	5		9

6. Are there any other benefits that the changes in communication technologies have brought to IDRC?

7. In your opinion, what are the major challenges or barriers that have accompanied the new developments in communication technologies? What if anything, is holding us back in applying the technology?

- 8. What new innovations in communication technologies do you feel the Centre needs to adopt to enhance its way of doing business?**

Part D: Training/Coaching

In this section of the survey we would like to ask you about the training implications of communication technologies.

1. Which of the following would best describe how you feel about the level of training provided by IDRC in communication technology?

- I need more training 1
- I have received sufficient training 2
- I am experiencing training overload 3

2. How would you rate your level of personal ability on the following communication technologies?

	Poor			Excellent		N/A
■ E-mail (LAN, WAN)	1	2	3	4	5	9
■ Voice mail	1	2	3	4	5	9
■ Fax machines	1	2	3	4	5	9
■ Biscom	1	2	3	4	5	9
■ Teleconferencing	1	2	3	4	5	9
■ Computer conferencing	1	2	3	4	5	9
■ Internet	1	2	3	4	5	9
■ Other (Please specify)	1	2	3	4	5	9

3. Learning to use new communication technologies ...

- is my responsibility 1
- is the responsibility of the Centre 2
- is a joint responsibility 3

4. How would you describe your personal training requirements for each of the following communication technologies?

	Low (no training required)		Medium (some training required)		High (maximum training required)	N/A
■ E-mail	1	2	3	4	5	9
■ Voice mail	1	2	3	4	5	9
■ Fax machine	1	2	3	4	5	9
■ Biscom	1	2	3	4	5	9
■ Internet	1	2	3	4	5	9
■ Teleconferencing	1	2	3	4	5	9
■ Computer Conferencing	1	2	3	4	5	9

5. What training obstacles exist, if any, that inhibit the delivery of training at IDRC?

6. What recommendations would you offer ACIM on the delivery of training on communication technology at IDRC?

PART E Personal Working Habits

In this section of the survey we would like to ask you how communication technologies have changed your own working habits.

1. Which of the following communication technologies do you have access to?

At Home?

- | | |
|---|---|
| ☐ Microcomputer | 1 |
| ☐ Modem | 2 |
| ☐ P.C. Dial In | 3 |
| ☐ Zoomit | 4 |
| ☐ Other (Please specify) | 5 |
| | |
| ☐ None of the above | 6 |

Travel/Portable?

- | | |
|---|---|
| ☐ Laptop | 1 |
| ☐ Other (Please specify) | 2 |
| | |
| ☐ None of the above | 3 |

2. a. Which of the following statements best describe the impact communication technologies have had on the number of hours you work at the office, at home and during travel?

- | | Office | Home | Travel |
|--|--------|------|--------|
| ☐ work less hours | 1 | 1 | 1 |
| ☐ work same number of hours | 2 | 2 | 2 |
| ☐ Work more hours | 3 | 3 | 3 |
| ☐ Not applicable | 4 | 4 | 4 |

- b. What are the principal use(s) you make of communication technologies at home and during travel?

- | | Home | Travel |
|--|------|--------|
| ☐ E-mail | 1 | 1 |
| ☐ Word processing | 2 | 2 |
| ☐ Biscom | 3 | 3 |
| ☐ Access data banks | 4 | 4 |
| ☐ Internet | 5 | 5 |
| ☐ Not applicable | 6 | 6 |

3. To what extent do you believe that advances in communication technologies over the last couple of years have ...

	Not at all				To a great extent	N/A
■ increased your personal productivity?	1	2	3	4	5	9
■ improved your quality of working life?	1	2	3	4	5	9
■ increased your collaboration across geographic and disciplinary boundaries?	1	2	3	4	5	9
■ decreased your job stress?	1	2	3	4	5	9
■ improved your morale?	1	2	3	4	5	9
■ enhanced your time management?	1	2	3	4	5	9
■ enhanced contact/communications with co-workers?	1	2	3	4	5	9

4. a. What is your opinion regarding telecommuting (working at home/travel)?

Very Unfavourable					Very Favourable	N/A
1	2	3	4	5		9

Comments:

- b. Do you think that IDRC should have a formal telecommuting policy?

■ Yes	1
■ No	2
■ Undecided	3
■ N/A	4

PART F DEMOGRAPHIC INFORMATION

The following questions are for the purpose of statistical comparisons between different groups within IDRC. In order to ensure the anonymous nature of your information the computer will automatically disregard any combined group small enough to allow individual responses to be identified. If you feel any of this information will affect your anonymity, you may choose to complete only certain items.

Please circle the appropriate answer (number) in the right column for each question.

1. How long have you worked for IDRC?

- | | |
|----------------------|---|
| ▶ Less than 2 years | 1 |
| ▶ 2 to 5 years | 2 |
| ▶ 6 to 10 years | 3 |
| ▶ more than 10 years | 4 |

2. Which of the following best describes your position at IDRC?

- | | |
|--|---|
| ▶ Management/Executive | 1 |
| ▶ Administrative Support | 2 |
| ▶ Technical and Non-Program Professional | 3 |
| ▶ Program Officers | 4 |

3. What division do you work in?

- | | |
|--|---|
| ▶ Social Sciences Division | 1 |
| ▶ Health Sciences | 2 |
| ▶ Environment and Natural Resources Division | 3 |
| ▶ Information Sciences and Systems Division | 4 |
| ▶ Corporate Affairs and Initiatives Division | 5 |
| ▶ President's Office | 6 |
| ▶ Finance and Administration Division | 7 |

4. Which office are you located in?

Head Office

- ▶ Ottawa, Canada 1

Regional Office

- ▶ Cairo, Egypt 2
▶ Dakar, Sénégal 3
▶ Johannesburg, South Africa 4
▶ Montevideo, Uruguay 5
▶ Singapore, Republic of Singapore 6
▶ New Delhi, India 7
▶ Nairobi, Kenya 8

THANK YOU FOR YOUR ASSISTANCE.

PLEASE RETURN YOUR QUESTIONNAIRE TO YOUR DIVISIONAL
COORDINATOR BY NOVEMBER 28TH.

Any final comments?

STATISTICAL TOLERANCES

Probability Level-- 19 times out of 10
Range of error is plus or minus

Where percentage shown is:																	
With a Sample of	1% or 99%	2% or 98 %	3% or 97%	4% or 96%	5% or 95%	6% or 94%	8% or 92%	10% or 90%	12% or 88%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	45% or 55%	Maximu m Toleranc e
75	2.3	3.2	3.9	4.5	5.0	5.5	6.3	6.9	7.5	8.3	9.2	10.0	10.5	11.0	11.3	11.5	11.8
100	2.0	2.8	3.4	3.9	4.4	4.8	5.4	6.0	6.5	7.2	8.0	8.7	9.2	9.6	9.8	9.9	10.0
150	1.8	2.3	2.8	3.2	3.8	3.8	4.4	4.9	5.3	5.8	6.5	7.1	7.5	7.8	8.0	8.1	8.2
200	1.4	2.0	2.4	2.8	3.1	3.4	3.8	4.3	4.6	5.1	5.7	6.1	6.5	6.8	7.0	7.0	7.1
250	1.3	1.8	2.2	2.5	2.7	3.0	3.4	3.8	4.1	4.5	5.0	5.5	5.8	6.0	6.2	6.2	6.2
300	1.2	1.8	2.0	2.3	2.5	2.8	3.1	3.5	3.8	4.1	4.6	5.0	5.3	5.5	5.7	5.8	5.8
400	1.0	1.4	1.7	2.0	2.2	2.4	2.7	3.0	3.3	3.6	4.0	4.3	4.6	4.8	4.9	5.0	5.0
500	0.9	1.3	1.5	1.9	2.0	2.1	2.4	2.7	2.9	3.2	3.6	3.9	4.1	4.3	4.4	4.5	4.5
600	0.8	1.1	1.4	1.8	1.8	2.0	2.2	2.5	2.7	2.9	3.3	3.8	3.8	3.9	4.0	4.1	4.1
800	0.7	1.0	1.2	1.4	1.5	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.2	3.3	3.4	3.5	3.5
1000	0.6	0.9	1.1	1.3	1.4	1.5	1.7	1.9	2.1	2.3	2.6	2.8	2.9	3.1	3.1	3.2	3.2
1400	0.5	0.7	0.9	1.0	1.2	1.3	1.5	1.8	1.7	1.9	2.1	2.3	2.4	2.5	2.6	2.7	2.7
2000	0.5	0.6	0.8	0.9	1.0	1.0	1.2	1.3	1.4	1.6	1.8	1.9	2.1	2.1	2.2	2.2	2.2
2400	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.8	1.9	2.0	2.0	2.0	2.0

SCOPE OF ENABLING EFFECT

Scope A → Scope B → Scope C
 Competitiveness Enhancement → Wealth Creation → Quality of Life Improvement

Level 5
 I.T. - Based New
 Concepts & Paradigms
 ↑
Level 4
 I.T. - Enabled
 Strategic Management
 ↑
Level 3
 I.T. - Dependent
 New Products
 ↑
Level 2
 Quality
 Enhancement
 ↑
Level 1
 Cost-Reduction

A5	B5	C5	Highest Level
A4	B4	C4	
A3	B3	C3	
A2	B2	C2	
A1	B1	C1	Lowest Level

INTENSITY OF
 ENABLING EFFECT

The Enabling Hypothesis:

- Historical Flow Upwards through higher levels of Enabling Effect
- Historical Flow Horizontally Towards increased Scope of Enabling Effect
- Combination of the two in a diagonal moving from the lowest enabling level A1 to the highest level C5.

SCOPE OF ENABLING EFFECT

Scope A → Scope B → Scope C

Competitiveness → Wealth → Quality of Life

Enhancement → Creation → Improvement

Level 5
I.T. - Based New
Concepts & Paradigms



Level 4
I.T. - Enabled
Strategic Management



Level 3
I.T. - Dependent
New Products



Level 2
Quality
Enhancement



Level 1
Cost-Reduction

A5	B5	C5	Highest Level
A4	B4	C4	
A3	B3	C3	
A2	B2	C2	
A1	B1	C1	Lowest Level

INTENSITY OF
ENABLING EFFECT

Part E: Question 4a

Telecommuting

- ▶ I think the Centre needs to explore this option.
- ▶ It is only a matter of time before it will be commonplace.
- ▶ I like to come into the office to work. I intensely DISLIKE the idea of working at home.
- ▶ It depends entirely on the nature of the tasks to be done.
- ▶ Due to time differential between Home Office and the Region (7-8 hours) working from home was a blessing.
- ▶ I think the future lies in that direction.
- ▶ This is the future and has many advantages with little to no disadvantages.
- ▶ I strongly prefer to do my work at the workplace.
- ▶ I already work ENOUGH. Not anxious to work more hours at home - prefer some separation and QUALITY of life at home!
- ▶ I would like to see this examined in the context of maternity leave and certain types of sick leave.
- ▶ If the type of work can be carried out equally well at home or in the office, I think it is appropriate.
- ▶ If implemented properly, this is something that could save millions and increase productivity.
- ▶ It will work very well in some positions, but definitely not all.

Part D: Question 5

Training Obstacles

The principal obstacles inhibiting the delivery of training of IDRC tends to be the conventional "time" and "money" barriers. Scheduling is also seen to be an issue. In terms of learning on the job, the concept of "continuous coaching" may be more effective than day on training. Follow up technical support after training is also perceived to be of value. Some respondents also felt that there was an absence of a training strategy at IDRC.

- ▶ Scheduling to meet individual needs.
- ▶ Inadequate resources - money and person years to design, delivery and support training.
- ▶ Cost and time.
- ▶ Lack of prioritization. Lack of clear link to corporate directions/emphasis.
- ▶ Training is not always synchronized with the arrival of the relevant software.
- ▶ Follow up technical support questions often come with use after training.
- ▶ The time frame in which training is given is somewhat slow in respect to the degree in which it is required.
- ▶ Non-existence of training strategy.

Part D: Question 6

Training Recommendations

The recommendations suggested by respondents on the delivery of training tended to revolve around offering short courses in a timely fashion, providing mentoring and good technical support, devoting more time to training, etc.

- ▶ Timelines for introduction of new communication technologies should correspond with training. Consult with users to find out **PRECISELY** what training they do need.
- ▶ Offer short, concise, personal training that allows people to ask questions pertinent to their applications.
- ▶ Self-administered tests to rate oneself for each of the technologies. There should be 'tutorials' or other appropriate training tools that can be used by different people at different levels.
- ▶ At this time, it seems to me that training is rather ad hoc-recommend a well-considered training plan be implemented.
- ▶ Mentoring/tutoring. Good technical support.
- ▶ Make it a **PRIORITY**.
- ▶ Use a variety of training formats.
- ▶ Provide training at time of introduction of technology - not months later.
- ▶ Short training sessions - the all day computer workshops are too long.
- ▶ Hands-on training. Follow up session where problems that have been encountered can be discussed and re-explained.

Part C: Question 8

New Innovations in Communications Technology

When asked what new innovations in communications would enhance IDRC's way of doing business many of the comments revolved around electronic filing systems and wider use of internet. Other suggestions included multi-forms of conferencing (i.e. telephone, video, computer and groupware.)

- ▶ Centre-wide access to internet
- ▶ More use of groupware such as Lotusnotes.
- ▶ Advanced networking technology. Multiple services distributed across a LAN with all capabilities (Gopher, FTP, etc.)
- ▶ Teleconferencing and bulletin boards.
- ▶ The Centre should adopt a much better voice mail system! It is one of the least friendly around.
- ▶ Scanner for input of documents, windows, E-mail and voice mail.

Other comments were offered such as "Let's master the existing technologies before moving ahead with new ones" and back up system to LAN for down periods.

Major Challenges/Barriers

The major challenges or barriers holding IDRC back in apply communication technologies tend to "Human" factors, i.e. training, loss of person to person communications, stress. Other factors are seen to be financial, frequent breakdowns (i.e. Lan going down).

- ▶ Managing the change process among staff who are more resistant to change.
- ▶ "LAN crashes and unreliable equipment."
- ▶ "The loss of person to person communications."
- ▶ "The new CT's have enormously cut interpersonal contact and rapport."
- ▶ "Lack of training and time for training."
- ▶ "We have been applying tomorrow's technology to yesterday's organizational structure. Changing the organizational structure and people's attitudes/way of working are the greatest barriers."
- ▶ Lack of time. Lack of proper training. Lack of communications from key staff.

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CHRONOLOGICAL EVENTS ORGANIZATIONAL RENEWAL

- | | | | |
|-------|--------|--------------------------|---|
| 1990 | Fall | ☐ | First draft of "Towards 2000" presented to the Board |
| <hr/> | | | |
| 1991 | Spring | ☐ | Appointment of the new President (Keith Bezanson) |
| | | ☐ | Transition team struck to manage the changes that will take place as a result of the Strategic Framework exercise |
| | Fall | ☐ | New strategy and mission presented to the board and accepted |
| | | ☐ | President authorized to streamline structure/downsize 20% within 2 years |
| <hr/> | | | |
| 1992 | Spring | ☐ | All redundant staff notified |
| | | ☐ | Program Support Units begin |
| | Summer | ☐ | All redundant staff terminated |
| | Fall | ☐ | Divisional retreats etc undertaken to prop up morale |

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CHRONOLOGICAL EVENTS

TECHNOLOGICAL EVOLUTION

The following is a profile of the historical evolution of the introduction and development of information technology within IDRC.

1979	☐	Introduction of HP 3000 minicomputer for financial systems management
1982	☐	Introduction of Micom systems for wordprocessing and remote access to HP minicomputers
1983	☐	Introduction of HP microcomputers in EDP Services and the Office of the Treasurer
1987 Winter	☐	Office Automation Workforce proposal endorsed
Fall	☐	First IBM micros begin arriving in HQ as part of a Centre-wide automation plan
	☐	Computer training
	☐	Introduction of Micros in regional offices
1988 Fall	☐	Pilot Banyan Vines LAN network implemented
1989	☐	Work Station Deployment Program completed for all HQ staff
1990 Spring	☐	Banyan Vines LAN implementation completed in HQ
Summer	☐	Banyan Vines LAN installed in ASRO
1991	☐	Banyan Vines LAN installation in LARO
1992	☐	Banyan Vines LAN installation in MERO/EARO/BRACO and SARO
	☐	Pilot systems development projects pipeline in dBase and AutoPS in Lotus and wordperfect
	☐	Trial internet connection

- | | | | |
|-------|--------|--------------------------|--|
| 1993 | Winter | ☐ | Initial radius development in Windows |
| | Spring | ☐ | IDRC officially on the Internet |
| | Summer | ☐ | IDRC Gopher "on line" to the Internet |
| | Fall | ☐ | Banyan Vines LAN installation in ROSA |
| | | ☐ | Initial modules of RADIUS delivered (i.e. AutoPS, Pipeline, Institutional dBase) |
| <hr/> | | | |
| 1994 | Summer | ☐ | Version 1.2 of most radius modules implemented at HQ and in ASRO |
| | Fall | ☐ | Version 1.3 of radius delivered and installed at HQ ASRO, LARO, EARO and BRACO |
| | | ☐ | Asia Program approved, which includes the Pan Asia Networking initiative |
| | | ☐ | ASRO Internet node (idrc.sg.com) activated |
| <hr/> | | | |
| 1995 | Winter | ☐ | Pilot program begun to implement an Internet Web server at HQ |