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New directions in community information: a  
report to the Socio-Economic Planning  
Directorate Canada Department of  
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New Directions in Community Information 8

A REPORT TO THE  
Socio-Economic Planning Directorate  
Canada Department of Communications

by

John M. <sup>1</sup>Carroll

December 9, 1974

FIRST DRAFT

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## INTRODUCTION

Throughout history, various items of technology have been perceived as instruments serving to divide the human race into classes and enabling the ascendancy class to exercise dominion over all others.

Today the computer is regarded by some as just such a repressive instrument, subservient to governments, corporations and large institutions.

The common man too often sees himself taxed, manipulated, and controlled by computers. The computer makes it easier for big countries to dominate smaller countries, for senior governments to control local governments, for large corporations to swallow up small companies. We may even be witnessing the emergence of cybernetic imperialism.

To make democracy fulfill its promise in a practical sense, it would seem necessary to restore the balance of power.

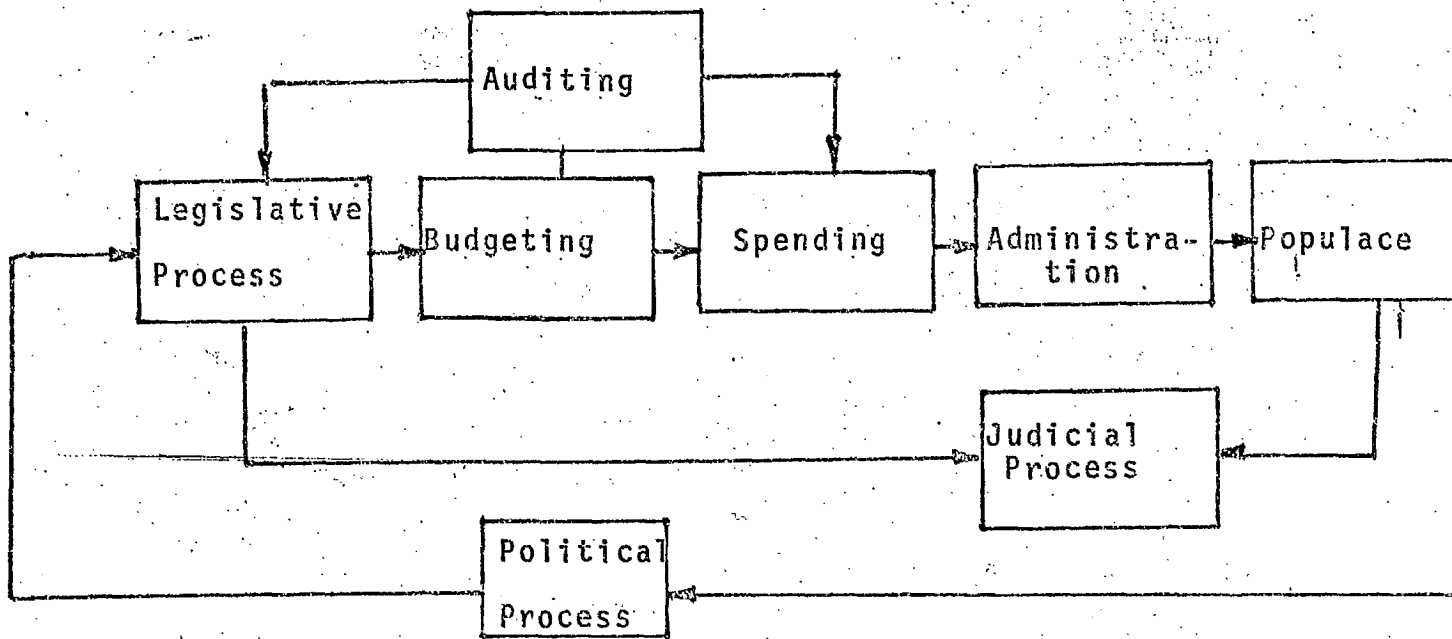
In actuality, the computer is only one of many tools that man has used to re-shape society. Other tools such as: operations research, information science, critical-path scheduling, and planning-programming-budgeting systems, have also played major roles. However, the computer is visible, while the others are ephemeral. Moreover, the computer is

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the catalyst that makes these and other modern management techniques viable.

In a larger sense, man has not really acted to re-shape society according to any purposeful design. He has, rather, reacted to challenges that have their roots in rapidly expanding populations, diminishing supplies of natural resources, and a life style characterized a complex and ever-changing network of interpersonal dependency relationships. The net effect of man's response to the challenge of his new environment has been the emergence of a management structure that the individual citizen perceives as unresponsive to his needs and, indeed, all but unfathomable in its complexity.

The traditional model of government, although it could be insensitive at times, was relatively easy to understand and had at least three built-in feedback control mechanisms.



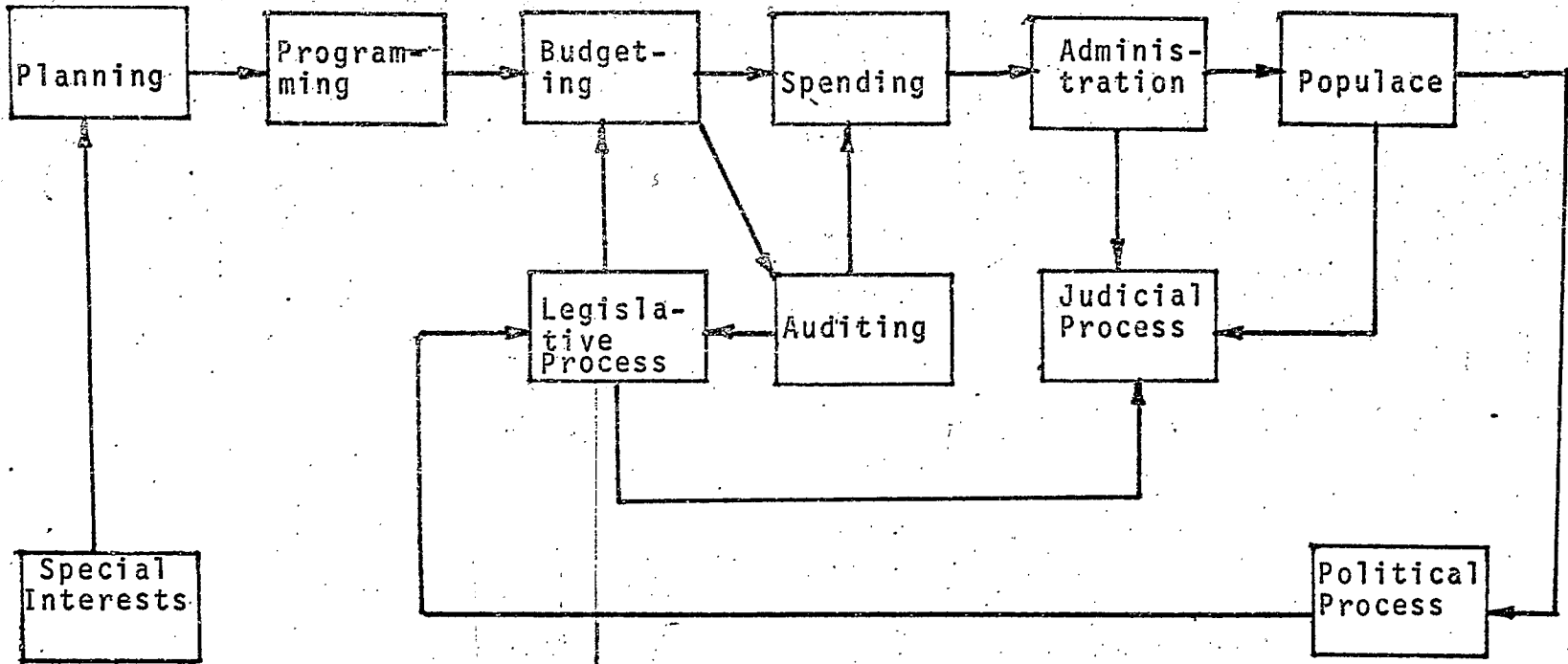
1. An independent auditor reporting to the legislature to compare government spending practice with the budget passed by the legislature.
2. The courts to compare, on demand, the performance of administrators with the law.
3. The political process itself.

Citizens looked to their local member as a source of information and a personal advocate. In the event of widespread dissatisfaction, the electorate could turn the government out of power.

A simplified model of contemporary government shows that at least two activities, planning and programming, now precede bringing down a budget. Although government operations in the past were also planned and programmed, the contrast now is one of intensity. Budgets have become so big and have so much planning and programming embedded in them that the legislature has lost a great deal of effective control. As a result, the role of the local member as information source and advocate is somewhat diminished because of his lack of detailed knowledge of the planning and programming process.

Similarly, the administrative bureaucracy has grown so large as to be beyond effective control of courts and grand juries. Judicial intervention commonly occurs only when some issue of general importance has been sharply defined and this very process of definition may be prohibitively expensive to the citizen seeking redress.

A fourth feedback control mechanism has been added in the contemporary model. It is now common in the planning process to solicit citizen input in the form of briefs and other presentations. However, the process of preparing a brief is costly, and this mechanism is useful primarily to special interest groups.





It is interesting to note that the important area of programming, which subtends the sensitive activities of setting priorities and allocating resources to carry out plans, is almost wholly devoid of feedback control. Furthermore, this function is at least three steps removed from the impact of its actions on the populace.

Easy, quick access to simple accurate information has become an urgent need for both the governed and the governing.

Contemporary society is a complex network whose complexity is tending to increase. Perturbations in the network are amplified and their impact is quickly felt by the populace; changes seem to occur overnight.

On the other hand, the feedback control mechanisms introduce a significant time lag and a threshold barrier; government is seemingly unaware that programs are unpopular until people begin demonstrating in the street.

The inability of many individuals and groups, even government itself, to cope with the resulting confusion has created significant social problems.

Numerous voluntary and public agencies are attempting to help people solve day-to-day problems by providing a variety of information services. These services have at least three shortcomings:

- (1) Such services can be useful only if people are aware they exist and often those who need them most are least informed about their availability.
- (2) The very number and variety of these information services often contribute to confusion and misunderstanding.
- (3) The computer itself appears to add to the confusion by inducing administrators to generate an information overload. This can adversely affect both the administrator and the citizen when specific information is needed quickly in the context of a specific problem.

It is particularly noteworthy that the problem of obtaining citizen feedback (aside from the political and judicial processes) regarding the immediate impact of government programs has not yet been addressed in a systematic fashion.

One of the more urgent tasks facing governments today is that of providing human services to persons who are economically vulnerable.

As industry and commerce have automated their operations, there has been a net loss of employment opportunity. It is an exercise in equivocation to say "people are released from repetitive demeaning tasks" because society has yet to answer the question: "Released to do what?"

Until a more acceptable alternative is discovered, it appears we must accept the fact of the welfare state and assume its costs as a tax we pay for the higher wages and the plethora of modern conveniences we enjoy as by-products of industrial and commercial automation.

Today's post-industrial society is a complex and, for many individuals, a frighteningly hostile environment. ~~People require help to cope with its challenges.~~ Some people, despite all the help we can give them, will, for any one of many reasons, never become able to cope with its challenges.

The human services delivery system is hideously complex; its dimensions are too large to be appreciated by most observers; and each year it consumes an ever greater portion of the income of most Western nations.

There is little dialogue among the deliverers of human services, the recipients of these services, and the public at large. Moreover, within human service agencies breakdown of communication is frequent among administrators, volunteer workers, and concerned citizens.

Among all government functions, the human services delivery system seems to be the most ponderous, slowest to react, most impersonal and least efficient.

Help is urgently needed by the helpers, the needy, and the public to:

- . create awareness of unmet human needs
- . co-ordinate the activities of existing services
- . plan and order priorities, and to
- . furnish informational support to planners and programmers.

At the heart of an improved human-service delivery system should be an information system to compile facts regarding both the impact and availability of programmes and activities. This information is needed by clients, administrators, planners, and by the public at large because this wider dissemination of information would be of assistance in recruiting volunteer workers and promoting a more favourable climate of opinion.

Attempts to provide rapid two-way communication between the governed and the government have lead to the concept of community information centres.

## BACKGROUND

Community Information Centres began almost three decades ago in Great Britain, where social workers, trying to help people cope with the dislocations of World War II, set up a series of local information centres called Citizens' Advice Bureaus.

Today these CAB's, as they are called, are an established fixture in British life. As a result of their information-giving and referral role, they have become a recognized intermediary link in a wide chain of specialized services, programs and institutions in the local community. They answer questions on a broad range of matters, are open to all social classes, and are usually located in the heart of a neighbourhood, close to public transportation. The National CAB Council provides the name, staff training, information manuals and back-up consultation to local centres.

The social unrest that characterized the 1960's, helped convince many people that effective channels for community information would be beneficial as a system to provide timely warning of incipient social unrest, to identify major areas of contention, to communicate proposals for remedial action, and to gauge the effect to such proposals.

Additional social benefits were foreseen from such systems: alleviating urban transportation problems by facilitating plans to provide work at home or within the neighbourhood (6); contributing to upward social mobility or self-realization through open-education programmes; and increasing citizen participation in the political process (16).

~~It was visualized that modern technology as~~ represented by community-wide wired television networks; developments in telephony such as the Picture-phone (13) and touch-tone dialing; and in particular, the remotely-accessed resource-shared computer would all play important roles in the synthesis of a community information utility (5, 13, 14). The early planners didn't specify whether these utilities would operate in the public, private, or voluntary sector of the economy.

Neighbourhood Information Centres were initiated in the United States as part of the "War on Poverty" program which began in 1964.

At least two of these have pursued the community information utility concept. These were located in Brooklyn and in Philadelphia. The latter is no longer receiving support as a consequence of the demise of the "War on

Poverty" during the Nixon administration. The Brooklyn operation has attracted other sources of funds and is undergoing evolutionary development into a computerized information network.

The Community/Neighbourhood Information Centre is essentially a people-to-agency communication channel with the information centre serving in the role of intermediary.

The difference between community information centres and neighbourhood resource centres is that the latter frequently provide services beyond information. This is exemplified by the Crouch Neighbourhood Resource Centre in London, Ontario. Although Crouch is really a branch of the London Public Library, it possesses some elements of the settlement house concept and has at times functioned as a children's game room, womans' social club, day-care centre, teen-age drop-in centre, senior citizens' club, health clinic, and used-clothing depot, as well as a reading room and information centre.

Somewhat allied to the community/neighbourhood information centre, but different in concept and intent, is the Urban Resource Centre. Such a centre exists in London, Ontario. It was modelled after an earlier centre in Amsterdam, Holland. The URC is yet another activity

sponsored by the London Public Library. It furnishes office space for a dozen voluntary agencies, contains a library specializing in material relating to urban problems, provides computer facilities for access to and analysis of statistical information, a Multi-lith press, kitchen facilities and meeting rooms. The URC is essentially an agency-to-agency information centre, working in the interstices between the public and voluntary sectors.

~~Finally, there are people-to-people information centres~~

In London, Ontario, this concept was exemplified by the Learners' Catalogue. Financed by a Local Initiatives Grant, the Learners' Catalogue stored in a computer data bank information contributed by people who wanted to teach and people who wanted to learn in a range of subjects extending from Abacus to Yogi. The computer was used to match up potential learners and teachers.

The best-known people-to-people centre is Tie Line in Los Angeles, California, which deserves mention here.

The Tie Line Corporation is a nonprofit foundation dedicated to facilitate the flow of information from citizens to community institutions, and from citizen to citizen via newsletter and computerized data banks. Tie Line is staffed by young volunteers who receive practically



no pay. Their monthly news service provides information on community agencies where individuals can get free help in seeking a job, medical and dental assistance, mental health support, drug rehabilitation programs, vocational training, senior citizen discounts, legal aid, etc. This news service purportedly reaches some 10,000 subscribers, mostly nonpaying.

A computerized data bank was under development in 1974. Local universities donate computer time. The data bank consists of messages from individuals in the community asking for or offering almost any kind of "legitimate" goods or services. The Tie Line system is designed to store this information so that an individual with a particular need can be matched with the individual who has the resources to meet the need.

The user initiates the cycle by communicating by phone with the information specialist at the data center. If the user offers a good or a service, it is tagged and stored in memory. If he has a request, the specialist searches the data bank and tells the user what, if anything, is available to meet it. If nothing is available, the request is stored in memory for subsequent checking against updated files. The service is mostly based on simple barter. Cash

is also acceptable exchange for goods or services.

Tie Line was by 1974 not economically self-sustaining. The information specialist in Tie Line is the only one who interacts with the computer. Service is theoretically open to everyone. Information requests represent personal needs and personal problems. Barter is preferred over cash. The constituency (or market) is actively solicited and serviced with a monthly newsletter which keeps all up-to-date. The central data bank could potentially evolve into a realtime community information center with many ramifications in economic, political, and social spheres.

Tie Line personnel have indicated that intermediaries such as ministers and social workers have placed requests for personal assistance, such as particular types of psychotherapy, for their "clients". The system acts as a clearinghouse for matching such requests. If a potential match is found, the minister or the social worker screens the response (e.g., group therapy for alcoholics) and advises the individual whether he should follow it up with a personal call or visit.

Many municipal governments have offices where individuals can bring problems on municipal services. In some local neighbourhoods, political parties have sponsored storefront, mobile and other types of information service.

On the commercial level, information is disseminated by "hot-line" radio programs, in newspaper columns especially those of the "newspaper ombudsman" type, through professional, scientific, and technical services and by visitors and convention bureaus.

There is a considerable variation in the quality, comprehensiveness and accessibility of information services. This variation may well cause the centres to contribute to information overload.

In an attempt to overcome some of these disadvantages, information centres which are non-government, general-purpose, and non-profit (that is to say, in the voluntary sector) have sprung up in many communities. Many were originally welfare information services that have recently expanded their operations to serve the total community.

One can now envision a paradigm of information services:

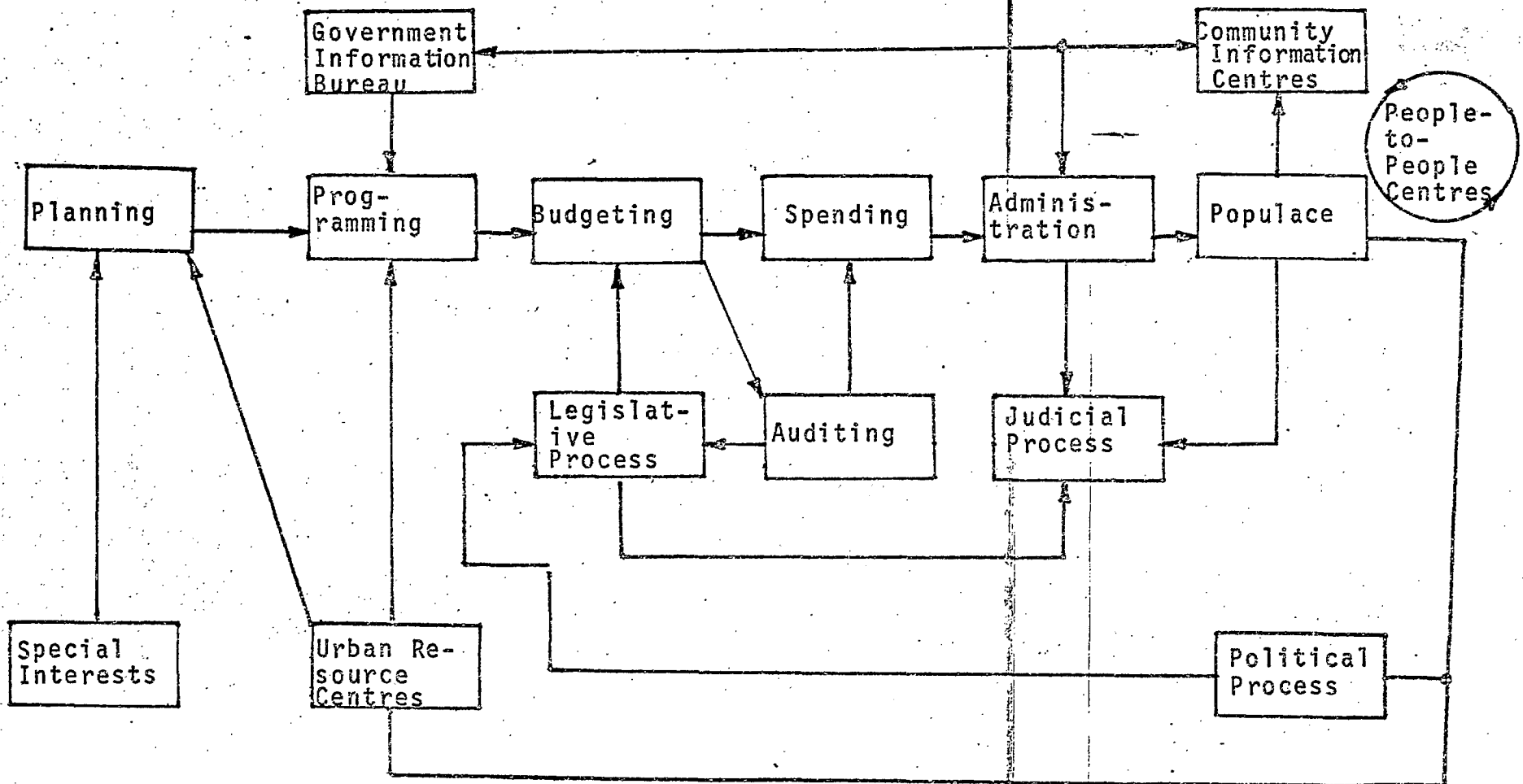
Agency-to-Agency	Urban Resource Centre
Person-to-Person	Community Information Centre
	Neighbourhood Resource Centre
Person-to-Person	Tie Line, Learners' Catalogue

The different kinds of information centres can now be superimposed on the systems model of contemporary government to illustrate how they can provide necessary communication links and feedback paths.

The community information centre would assume a dual role:

- (1) It would provide a communications channel between the citizens and the administrators
- (2) In concert with an inward and outward looking government information bureau, it could provide a much needed feedback control mechanism in the programming area.

The Urban Resource Centres are seen as making available to citizens' groups the resources currently available only to well-financed special interests. Initially these resources would be utilized in preparing input to discussion sessions in the planning area. However, citizens' groups better able to articulate their concerns, could potentially make a similar impact in the programming area.





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It is uncertain exactly how many community information utilities are operating today in North America, what their affiliations are, and whether or not they use a computer in their operations.

The Alliance of Information and Referral Services (10) lists 73 services, 13 of which are said to use a computer. We have reason to believe this count is incomplete.

A study by the Government of Ontario alone dealt with 11 services (8).

We are in correspondance with one other Canadian system (9) which uses a computer. Professor L.I. Press of the University of Southern California has sent us information on one computer-based system in San Francisco (Resource One - this seems to be a people-to-people system), and told us about another, which he is starting in Venice, California. The Alliance survey lists one service for all Canada and says it plans to use a computer; and only one computer-based system for California.

Our uncertainty is compounded by our knowledge that the financing of most community information centres is extremely shakey and that they have been known to cease operations without announcing their demise.

In Canada, the information utility concept has attracted favourable government consideration (18). This is partially attributed to geographical configuration of the country. This vast land, second only to the Soviet Union in land area, consists, for socio-economic purposes of a strip 120 miles wide and 4,000 miles long, mostly bordering on the United States. Few Canadian population centres are out of reach of U.S. television. For this reason, wired TV systems are much more popular in Canada than in the U.S. The wired TV systems exist principally to capture and distribute U.S. signals (19). This provides a ready-made infra-structure for community information utilities (11).

As for the Canadian government, the community utility is looked upon not so much as a social palliative, but as a means for unifying the country in a cultural sense (1).

Government interest has led to at least two studies aimed in part at defining the possible roles a community information utility could play (15). For example, 33 percent of respondents to one survey said they strongly wanted crisis advice available to them from this source. (17).

Like all Community Information Centres, Information London handles inquiries running the gamut from consumer rip-offs, requests for welfare and free dental services, to "What is the Prime Minister's street address in Ottawa?" In many cases,



calls are handled by referral to the appropriate service.

Sometimes the information counsellor finds a simple information request may mask the need for a specific service. For example, one caller asked where she could find references to Canadian divorce legislation. In the course of directing her to the library, it became appropriate for the counsellor to give the caller the name of a family counselling agency, in case she wished to discuss her marital situation further.

Since the war, governments have become increasingly involved in programs designed to better the individual's way of life, e.g., employment, education and retraining, medical care, housing, legal aid and welfare. In recent years, research has increasingly emphasized the need for community information centres as a means of closing the gap between available services and public they were designed to serve.

In April, 1970, the Government of Ontario decided to launch a preliminary investigation of its own possible role in establishing and operating such centres. In announcing the \$50,000 study, the Honourable Robert Welch, then Provincial Secretary and Minister of Citizenship, stated:

"Certainly an important aspect of citizen participation involves the awareness on the part of citizens themselves of the services and facilities available to them in their own community and province, and it is our intention to investigate the role which the Provincial Government might play in making this information more readily available on a community level. In the coming year, then, we hope to establish - in partnership with other levels of government - centres across the province and evaluate their operation in terms of administrative and financial arrangements, use of professional and voluntary staff, client satisfaction, and other matters relating to the collection, organization, and dissemination of information for advice and referral purposes".

It was felt that the study could best be accomplished on a pilot basis ... by giving a series of non-recurring grants to aid new or existing centres in the province. Thus, the Government would be in a position to gain first-hand data on the collection, organization and dissemination of information

in the centres. It would be better able to determine the long-range implications of government involvement in community information centres, and to make recommendations.

As part of this study, which resulted in publication of the report Partners in Information, by Dr. Wilson Head of York University (1971), the Government of Ontario collected information from several community information centres.

The information was collected on hand-written check lists. Each month, the slips were sent to Toronto where the information on them was keypunched and tabulated by computer. A copy of the tabulation was returned to the centre.

During the eighteen months of Dr. Head's study, centre directors and boards came to rely upon these tabulations for an on-going audit of information centre performance. In December 1972, however, the provincial government stopped processing these data collection forms.

At this point the Computer Science Department of the University of Western Ontario became associated with Information London. We wrote a program to produce the same tabulation the provincial government had been doing and from December 1972 until May 1973 undertook to process the data-collection forms.

## ORGANIZATION

The focal point of this report is Information London (Ontario).

Information London started in December 1970 under the sponsorship of the London Adult Education Association when Ms. Ekki Kloezevan was engaged as its full-time director. She was assisted by a part-time secretary (two days a week) and for the first six months of operations by volunteer workers only. Operations began in January 1971.

By 1974, Information London had added three part-time information counsellors (three days a week) to the four volunteer workers, who come in a half day a week each.

Most inquiries are received by telephone. The Centre has three telephone lines. These are answered continuously during the nine-to-five, Monday-to-Friday, business week.

The centre's information resources consist of three conventional filing cabinets in which a folder is maintained on each human resource agency. The folder contains pamphlets, newspaper clippings, correspondance, and aides memoire.

For ready reference, the centre uses a visible index card file with each card giving contact information (agency name, address, phone number, contact person, hours of

operation, area served, and basic functions of the agency) for each human resource agency.

The most frequently used information resource consists of nine loose-leaf binders, sectioned by tabs into subject areas: Emergency, Legal Services, Child Care, Senior Citizens' Needs, Individual Counselling, Welfare and Benefits, Employment, Child Welfare, Family and Marital Counselling, Licences and Permits, Group Homes, Consumer Protection, Factory Outlets, Supermarkets, Used Clothing, Unusual (Consumer) Services, Shopping Malls, Sports and Social Clubs, Federal Politics, Provincial Politics, Municipal Politics, Neighbourhood Groups, Professional Associations, Community Groups and Ethnic Groups.

In addition, the centre possesses a wide range of the customary local directories and general reference books. Acting in concert with the London Public Library, Information London now draws upon its files to publish a 96-page annual directory of human-resource agencies. Each entry contains the data previously described as "contact information".

Many questions are also answered with the aid of a large bulletin board on which are posted clippings from the daily newspaper, regarding coming events, and from a large-scale street map of the city.

## INFORMATION AND RESOURCE CENTRES

INFORMATION LONDON  
294 Dundas St. #109  
London N6B 1T6

432-2211

Office hours: 9 to 5 Mon to Fri

Provides information, referral and assistance concerning a wide range of human resources in the community such as: government services, social services, emergency services, health services, children and youth services, counselling services, employment services, recreation, financial counselling, education, and community organizations. Some special services include: a complete and up-to-date list of nursery schools, day care centres and other facilities for children in London and surrounding area; information on English language and citizenship classes for adult newcomers; a directory of ethnic groups in the city of London; information, guidance and referral to housing of all kinds for senior citizens, families, single men and women, youth, children, those with handicaps and special needs and emergency accommodation as well as information and referrals on landlord-tenant problems; information on nursing homes, homes for the aged, chronic care hospitals, and other facilities and services for senior citizens; information on day and residence camps for families and children.

People in need of such information can contact the agency by telephone, personal interview or letter. Referrals will be made to the agency best equipped to assist with the problems presented.

Area served: London and District

Source of funds: United Way,  
Federal, Provincial and  
Municipal government grants.

## NEIGHBOURHOOD CENTRES

CROUCH NEIGHBOURHOOD RESOURCE CENTRE  
550 Hamilton Road  
London N5Z 1S4

673-0111

Hours: Library and Information Services: 9 to 9 Tues to Fri  
9 to 5 Sat

Other social services: 9 to 5 Mon to Fri

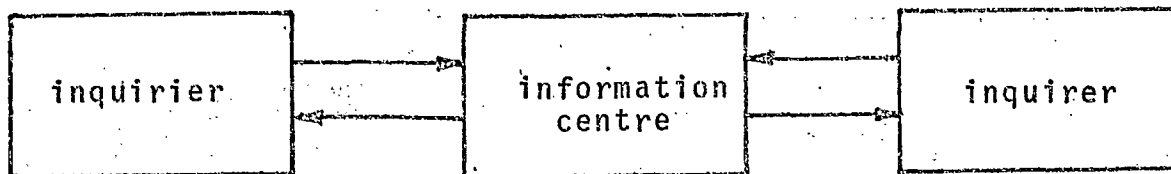
A joint effort of several large agencies (Family and Children's Service Board of Education, Middlesex-London District Health Unit, London Public Library and Art Museum, Ontario Ministry of Community and Social Services and Madame Vanier Children's Services) and several neighbourhood agencies and groups to provide services and skills at a neighbourhood level. Provide more accessible services to neighbourhood resident social services available through inter-professional team approaches; preventative programs to help neighbourhood deal with its problems and concerns. Close connection with citizens group in area. Public health nursing, short term counselling, information and library services; crisis intervention casework; advocacy assistance; referrals; legal consultation; family-child counselling; social and educational programs for all ages; ~~Services for new Canadians include~~ parent education (child management). Services for new Canadians include English classes

Information London receives support from the United Community Services fund and from the provincial government, and has received money from the federal and local governments also. The centre is responsible to an independent volunteer board of directors, made up of public-spirited citizens. Information London can be characterized as a community-oriented, general-purpose, non-profit (voluntary sector) information centre.

~~-----~~A Community Information Centre has three principal activities:

- (1) acquiring information
- (2) storing, retrieving and disseminating information
- (3) collecting data regarding client inquiries as part of a systematic citizen feedback system.

A centre then develops in the following way: at its inception, there may be simply a single, knowledgeable individual who provides information much as an elder sister or clan counsellor in earlier days, when the family represented the basic binding force of society. This surrogate clan counsellor begins by answering inquiries based partially on past personal experience and partially by information gained by personal contact with persons known to know the answers.

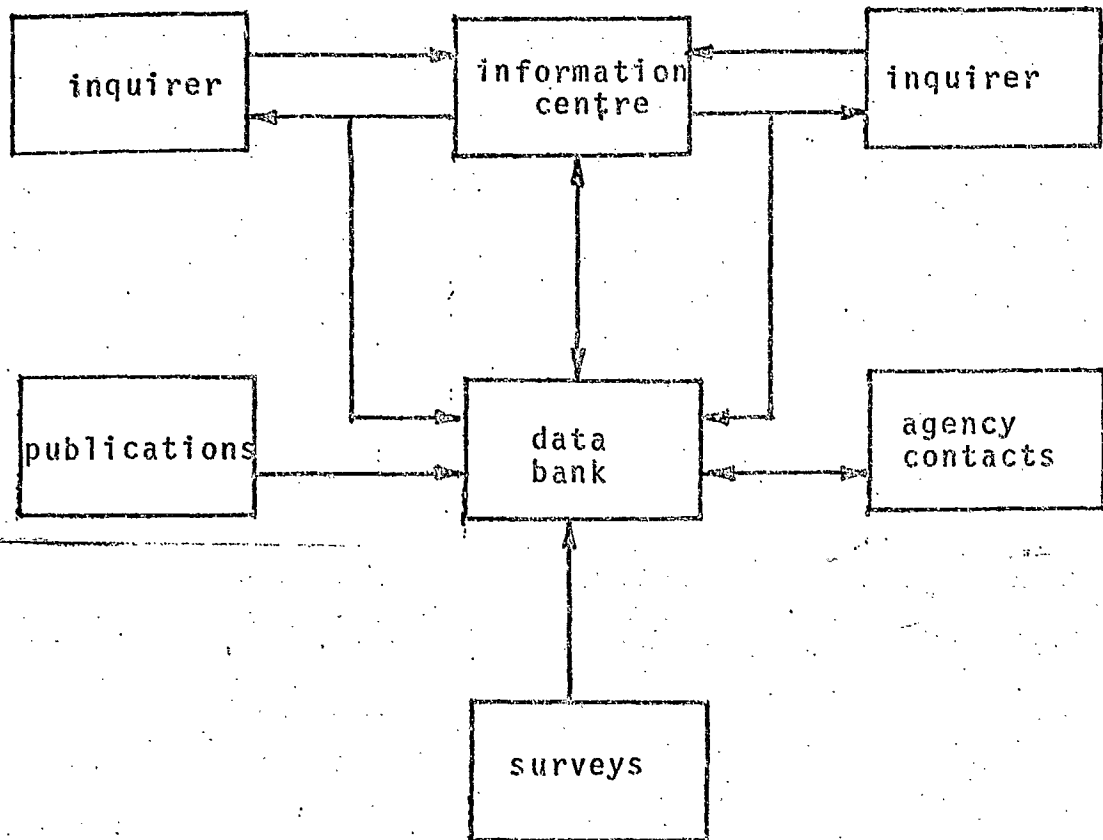


However, the complexity of society soon requires the counsellor to begin building a data bank. This need becomes critical as persons less knowledgeable and well-connected information-wise join the centre's staff.

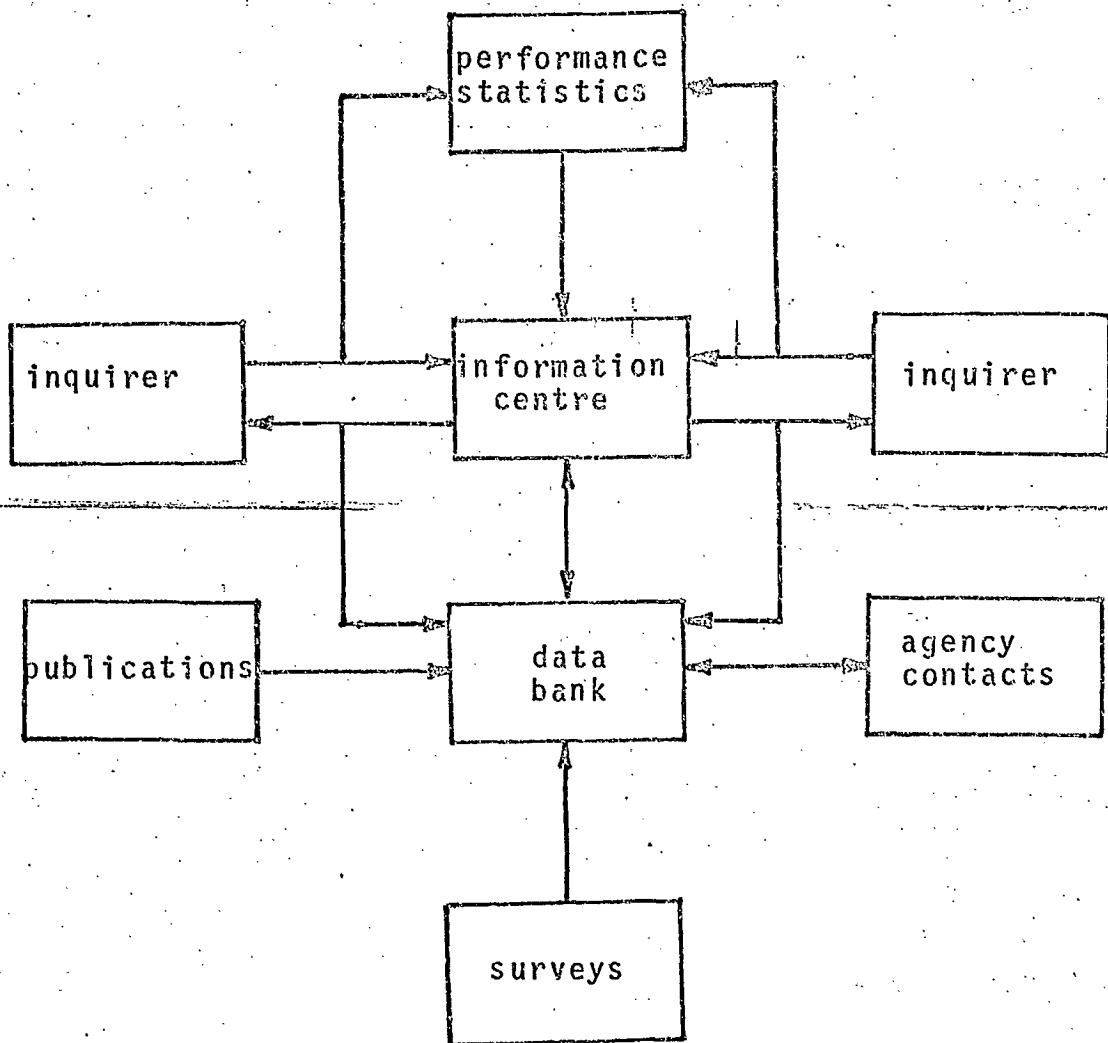
The building process starts by recording information developed to answer specific queries so it can be given to subsequent clients.

Later, the centre begins actively to seek information in anticipation of questions. It does so by acquiring current municipal, provincial, and federal directories; clipping newspapers and periodicals; and calling upon contact individuals in agencies on a regular basis, much as a newspaper reporter covers his "beat". Perhaps the centre will even conduct surveys in important subject areas where no reliable information can be found.





The next step may be to collect data regarding the clientele served and the questions asked, the better to anticipate future information needs and guide the centre's information seeking activity:



Shortly the information centre staff comes to appreciate that perhaps only 2/3 of client inquiries can be answered purely in the local context. Information must now be acquired regarding neighbouring communities, and the provincial and federal scenes.

Fortunately, the information centre now has information in its data bank, as well as its own performance statistics, and these are of interest to other centres. An exchange of information can be used to catalize a working relationship with these other centres.

The foundation for information centre networking has thus become established.

At the same time, three weaknesses of the system become evident:

- (1) Individual community information centres frequently lack the skill and resources to process and collate data into its best form for effective interchange.
- (2) Individual community information centres lack intimate familiarity with the workings of the federal and provincial governments, not to speak of the lack of budget for long-distance telephone calls. Moreover, if a great many community centres made an effort to acquire this information, its acquisition would prove to be burdensome, both to the centres and to the federal and provincial agencies involved.

- (3) Similarly, it is difficult for information agencies operating at the federal and provincial level, to become highly knowledgeable about the human-services delivery system at the local level - especially as it involves the voluntary sector.

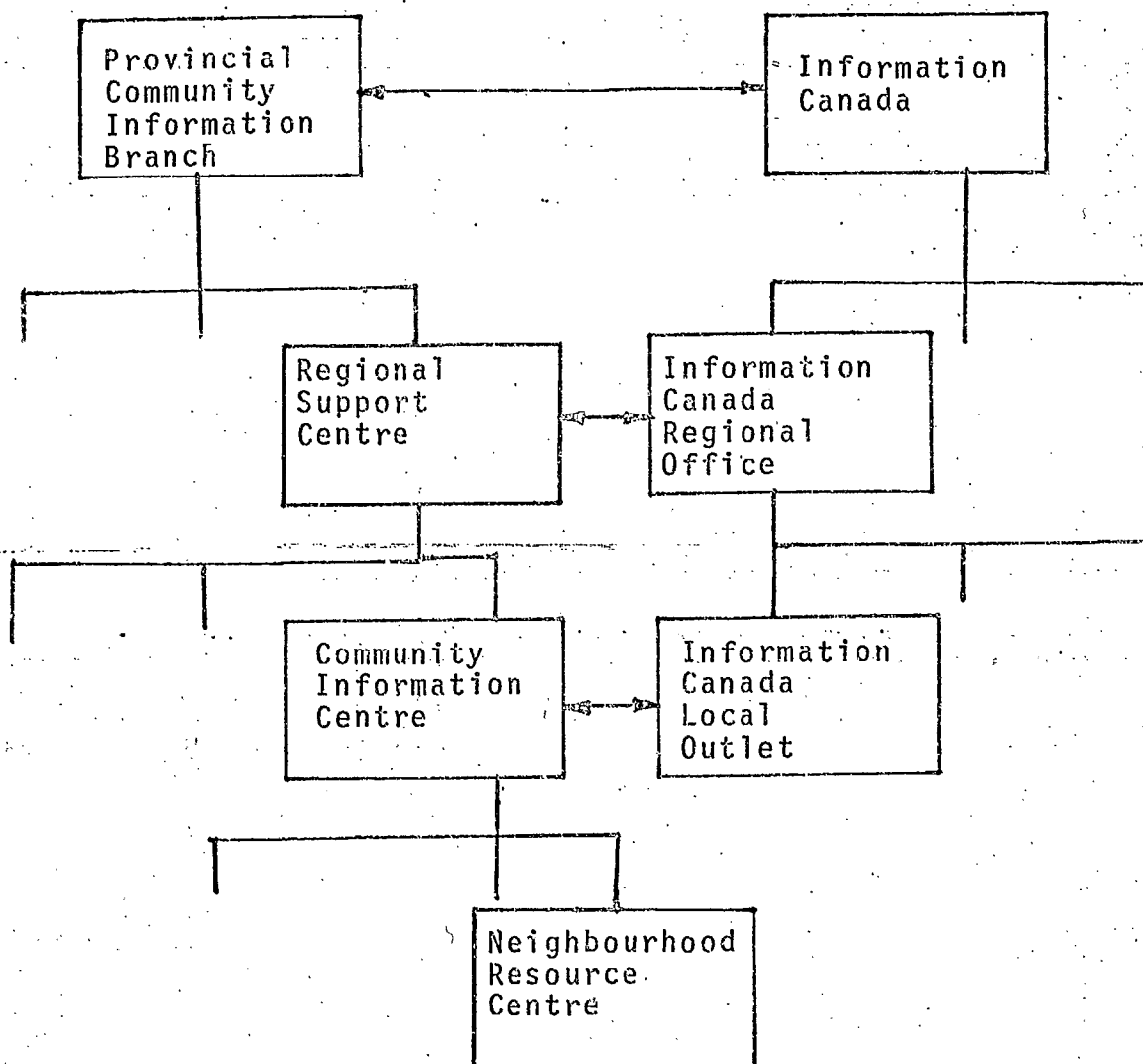
Accordingly, it has been proposed that there be established in the provincial government a community information branch. This branch would have at least four functions:

- (1) To acquire detailed current information regarding the human-service delivery system as it exists at the provincial level, and to disseminate this information quickly to all community information centres in the province.
- (2) To operate regional support centres that would collate local information acquired by community information centres and provide data-processing support to these centres.
- (3) Collect performance statistics about community information centres as a by-product of processing their client-contact data; analyze these statistics to develop social indicators; and deliver the resulting information to government officials concerned with planning and programming (thus completing the feedback control path in this area).

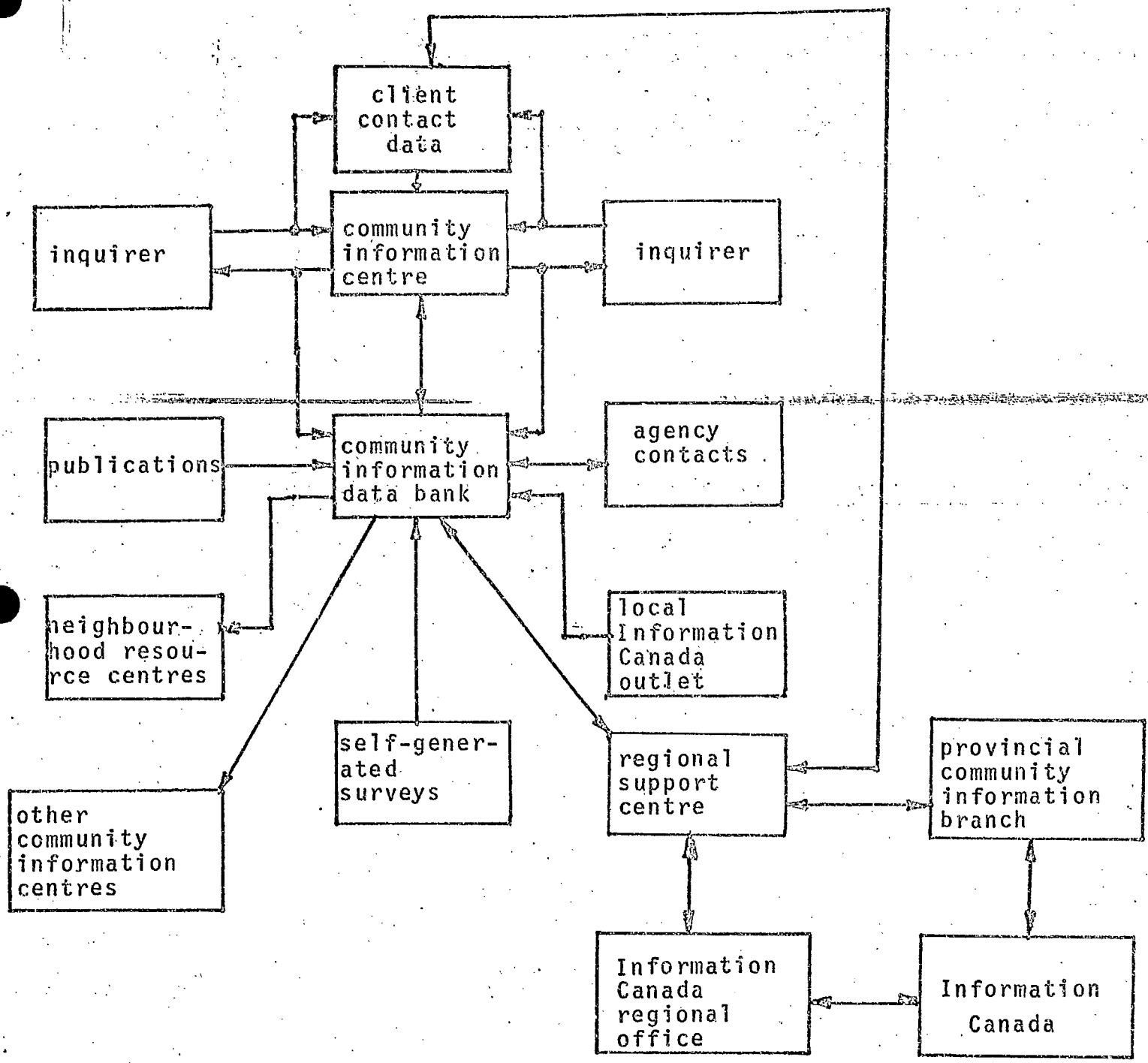
- (4) Administer the provincial contribution to the funding of community information centres.

Inasmuch as Information Canada provides an Enquiry Centre, this agency could be a key to acquisition of current detailed information regarding human services delivery at the federal level.

The interactions between Information Canada and the provincial community information structure might appear as follows:



The addition of network interrelationships then completes the operational model of a community information centre:



To recapitulate the functions at the various nodes in the community information network:

A. NEIGHBOURHOOD RESOURCE CENTRES

1. Provide a walk-in and telephone information and counselling service to local clients with the primary emphasis on face-to-face client counselling.
2. Provide client access to publications relevant to the availability of human services.
3. Advise the Community Information Centre regarding need for additional information resources, unmet human needs in the local service area, and malfunctioning of the human-service delivery system with emphasis on perceived client dissatisfaction.
4. Act as a focal point in conducting surveys of local conditions initiated by the Community Information Centre.
5. Fulfill human needs as dictated by local conditions and the capabilities of its sponsoring body. These activities might include: a game-room for children, organized amateur athletic and theatrical events, child day-care, womens' clubs, senior citizens' clubs, teen-age drop-in centres, hostels for transient youth, health clinics, services to migrant workers, counselling new Canadians, used-clothing depots, etc.



## B. COMMUNITY INFORMATION CENTRES

1. Provide a walk-in and telephone information, counselling, and referral service to clients with primary emphasis on telephone referral and establishing agency contact.
2. Respond to requests for information from Neighbourhood Resource Centres and Community Information Centres in other communities.
3. Establish working relationships with individuals in public, private, and voluntary human-service agencies for purposes of information gathering, referral, and feedback. Work with these individuals to improve the flow of information regarding the availability of human services.
4. Actively acquire and verify human-service contact information from local government and voluntary agencies, published directories, newspapers, and periodicals.
5. Initiate surveys of local conditions where reliable information to be gained by such surveys is otherwise unavailable.
6. Provide local human-service contact information to Regional Support Centres and obtain from that source human-service contact information regarding the provincial and federal governments and neighbouring communities.

7. Maintain a comprehensive up-to-date data bank of reliable human-service contact information.
8. Collate specific human-service contact information to fulfill the needs of public and voluntary human-service agencies.
9. Publish an annual directory of human-service contact information for the benefit of Neighbourhood Resource Centres and the public at large.
10. Keep records of client contacts to monitor the effectiveness of the information centre, disclose unmet human needs, malfunctioning of the human-service delivery system, and need for additional information resources.

### C REGIONAL SUPPORT CENTRES

1. Tabulate and analyze client contact information from Community Information Centres. Deliver statistical reports to the Community Information Centres to guide their operations, and to the Provincial Community Information Branch.
2. Disseminate comprehensive, authoritative, and up-to-date information regarding provincial and federal human-service delivery programs to Community Information Centres.
3. Collate local human-service contact information received from Community Information Centres and maintain a regional data bank of such information so that Community Information Centres can quickly and easily obtain relevant information regarding other communities.
4. Administer provincial grants to Community Information Centres.

#### D. PROVINCIAL COMMUNITY INFORMATION BRANCH

1. Obtain human-service contact information regarding the provincial and federal governments and deliver it to Regional Support Centres.
2. Collate statistics regarding unmet human needs, malfunctioning of the human-service delivery system, perceived areas of citizen concern, and the popular impact of government programs and deliver timely reports to responsible administrative areas of government.
3. Establish formats for collection of client contact data, human-service contact information, data-bank entries, and statistical performance reports.
4. Establish a close working relationship with Information Canada to facilitate the flow of human-service contact information regarding federal programs.
5. Administer the Regional Support Centres.
6. Set budgetary requests and perform the other administrative functions required of a branch of the provincial government.

In terms of support and sponsorship, it is suggested that:

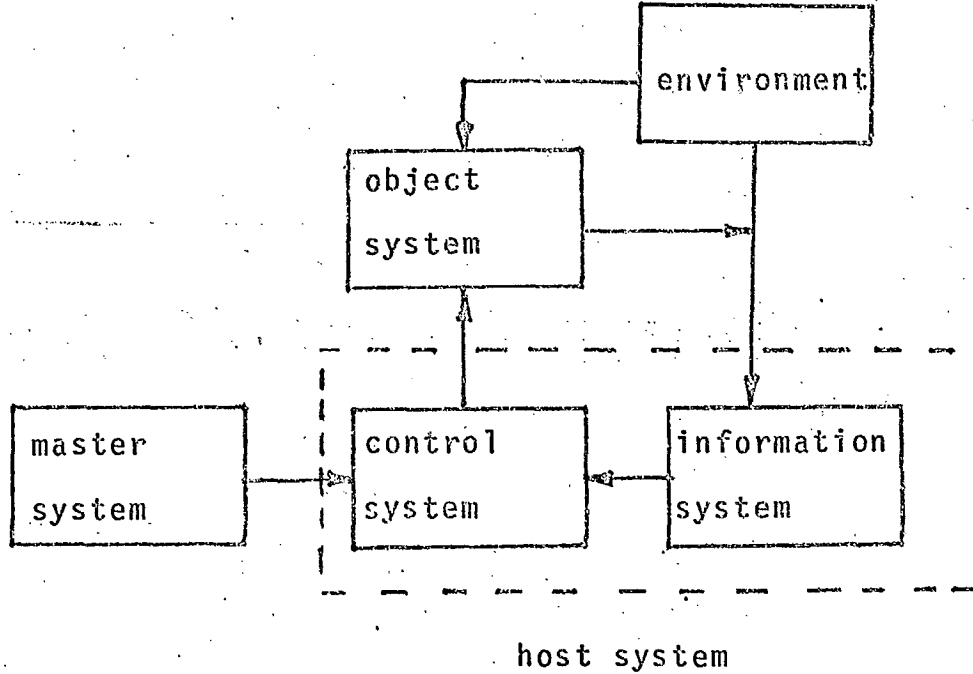
Neighbourhood Resource Centres should be operated as adjuncts to existing institutions in the public or voluntary sectors. Priority should be given to establishing centres in geographical areas in which human need is most urgent. Special consideration should be given to reaching partially depopulated and depressed rural areas, possibly by mobile units such as refurbished busses or semi-trailers. The sponsoring agencies could include churches, public libraries, ethnic organizations, granges, service clubs, fraternal organizations, settlement houses, community schools, and labour unions. It would be hoped that funding would be obtained from municipal grants programs and voluntary contributions. Provincial participation should be limited to providing informational and organizational support. Personnel should include full-time staff members of the sponsoring organization engaged on a part-time basis, temporary workers available through programs such as Youth-in-Action, Opportunities-for-Youth, Local Initiatives Projects, New Horizons, etc., and a high percentage of volunteer workers.

Community Information Centres should be organized in the voluntary sector each responsible to an independent board of directors. They should be funded probably 2/3 by the Provincial Community Information Branch and 1/3 by the local United Community Services Fund. It is essential that there be a nucleus of full-time personnel augmented in peak periods by part-time and volunteer workers.

The Provincial Community Information Branch with its Regional Support Centres is visualized as being an arm of the provincial government.

## CLIENT-CONTACT SUB-SYSTEM

In examining this and subsequent parts of the community information system, the following systems model will be employed:



When this model is applied to the client-contact system, the components of the model are specified as follows:

- |                    |   |
|--------------------|---|
| MASTER SYSTEM      | - Information Centre Management<br>(Board of Directors)           |
| CONTROL SYSTEM     | - Information Centre Executive (Director)                         |
| OBJECT SYSTEM      | - Community Information Centre                                    |
| INFORMATION SYSTEM | - Client-contact information and centre<br>performance statistics |
| ENVIRONMENT        | - Clientele, inquiries, agency response.                          |

The control mechanism of the Community Information System then consists of the Information Centre Executive acting upon the Centre's internal information system in accordance with the directives of the Information Centre Management.

The Information Centre Executive, knowing the perceptions entertained by Information Centre Management, regarding the clientele to be served, the services to be rendered, and the resources available is enabled by use of client-contact information feedback in summary form to:

- . Focus information acquisition activities upon filling the lacunae revealed to exist in the centre's store of information;
- . Proselyze client contacts among underrepresented socio-economic groups in ways such as seeking newspaper advertising in the community and neighbourhood newspapers; placing spot announcements on local radio stations especially "hot-line" shows, ethnic programmes, and consumer-oriented presentations; seeking exposure on television news and consumer-information programmes; setting up temporary information kiosks in shopping malls; posting announcements on community bulletin boards in neighbourhood resource centres, libraries, schools, churches, and supermarkets; and distributing handbills



in schools, shopping malls, and door-to-door. One particularly effective instrument has been a 3-1/2x7-1/2 inch cardboard announcement with the telephone number (432-2211, selected for easy dialing) prominently displayed. An effective vehicle for distributing these cards has been the "Welcome Wagon" hostess. Householders are urged to post a card near the family telephone.

- . Arrange with agencies for an improved flow of information to the public. In this area, contacts with the London Academy of Medicine (identifying doctors in general practice willing to accept new patients) and the Middlesex Bar Association (regarding the fields of specialization of local lawyers) have been especially rewarding.
- . Allocate centre resources so as to improve service to the public such as by setting: hours of work for part-time and volunteer staff, specialization on the part of information counsellors, and creation of specific reference tools (ie. lists and compilations).

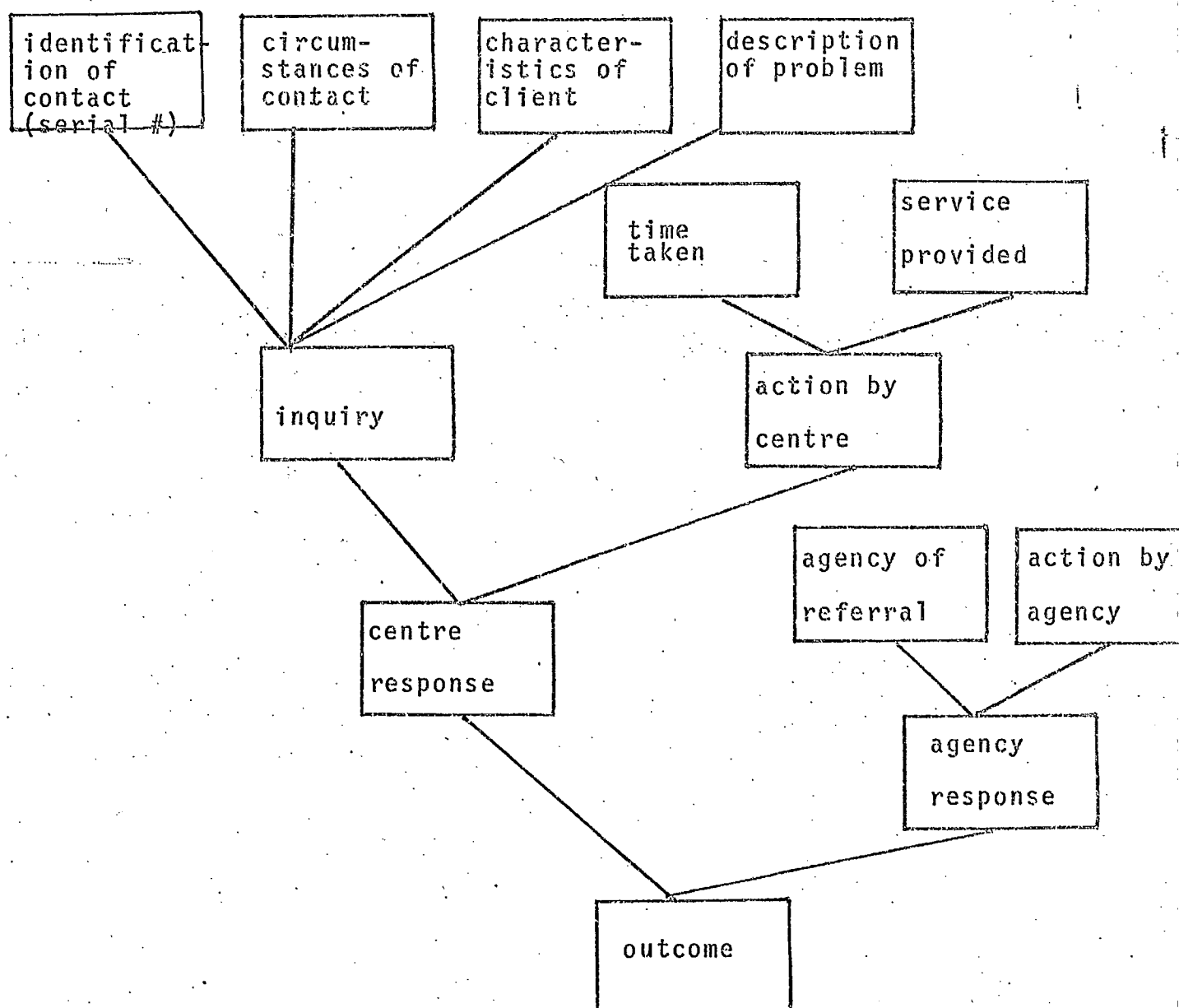
The data sets involved in the information system are:

CLIENT-CONTACT REPORTS

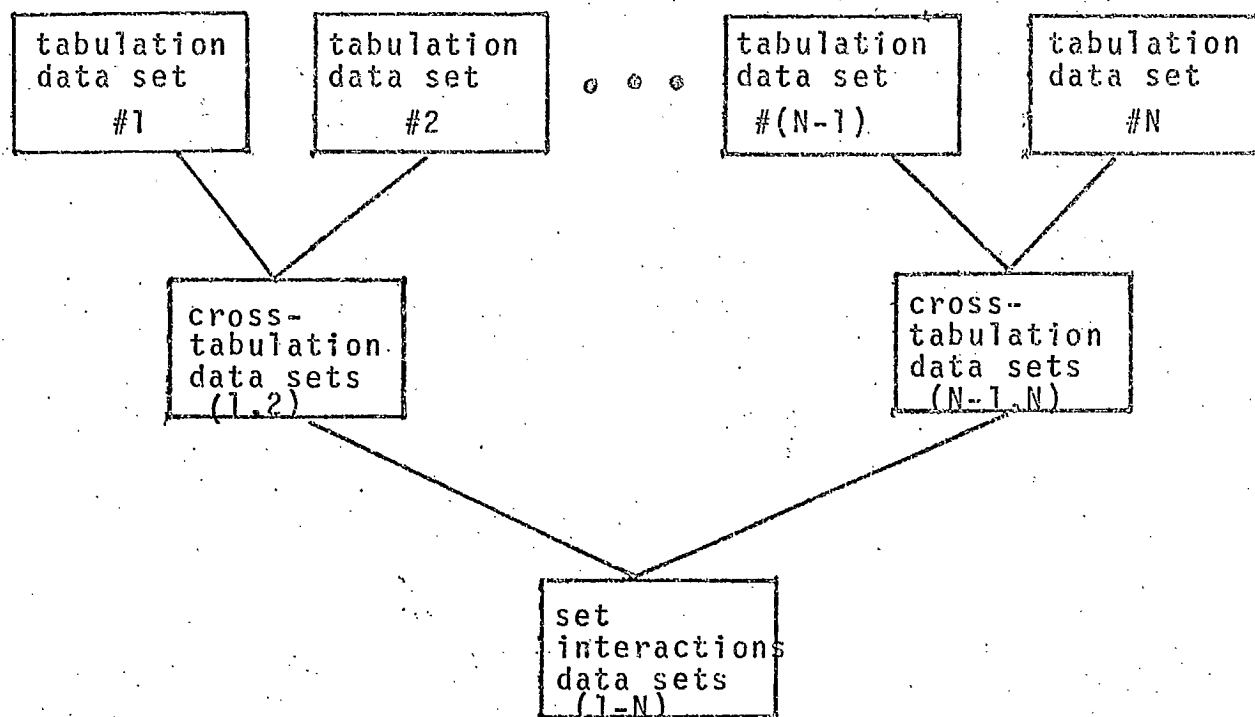
and

CENTRE PERFORMANCE STATISTICS.

Consider first the production of the client-contact report from basic information:



Because client contacts number over 1,500 a month, the reports of individual client contacts are processed by computer each month. Inasmuch as additional client contact information of a narrative nature is frequently recorded on the back of the rationalized data acquisition document, the original documents are returned to the centre for reference after processing the rationalized data by computer. The monthly aggregations are then processed once a year. This processing results in the production of performance statistics as follows:



The monthly and yearly tabulations are delivered in tabular format as a print-out from the computer. Originally only selected attributes were cross-tabulated. Later it was found to be expedient to cross-tabulate all attributes because it was not possible to predict in advance which cross-tabulations would be required. Cross-tabulations are also delivered in tabular format as a print-out from the computer. It has been found to be expedient to store the tabulations and cross-tabulations on magnetic tape because this affords the most efficient means of producing additional copies as required. Each monthly report is retained until superceded by a subsequent monthly report. The yearly report is kept as a permanent record.

Two copies normally are made of each computer print-out. One is delivered to the centre with the data-acquisition documents, and one is retained by the computer centre (Computer Science Department, University of Western Ontario).

From time to time additional copies have been produced. Agencies receiving such copies have included United Community Services, the Provincial Ministry of Community and Social Services, the Federal Department of Communications and the Secretary of State's Department, Citizenship Branch.

Questions which involve set-intersection analysis (ie. cross-tabulation by three or more attributes) are transmitted by telephone to the computer centre, where the answers are developed by running the appropriate aggregation of client-contact data against an inquiry program. Typical of these questions are the following:

- . During 1973-1974 how many clients sought day-care for pre-school children? How many found the service they sought to be unavailable? In what geographical areas of the city did these requests originate?
  
- . During 1973-1974 how many clients aged sixty or older who were either handicapped persons or war veterans, sought low-rental accommodations with home service in South London? How many found the service they sought to be unavailable? How many of these requests were answered by referral to:
  - (a) Ontario Housing Corporation,
  - (b) Voluntary organizations,
  - (c) Missions or churches,
  - (d) Other agencies?

The first client-contact data-acquisition form used was developed by Dr. Wilson Head in the course of his study of Community Information Centres, during 1970. It was used until June 1973. The following rationalized data on the front of the document were processed by computer.

Case identification is provided by a pre-printed serial number (6135), a pre-printed box giving the Statistics Canada region and municipality numbers (54-01, London), an information centre number (100) assigned in the context of the study, and a blank for the date with pre-printed decade (September 18, 74).

54	C1	100
Region	Munic.	Info. C.

**No 6135**

**INFORMATION LONDON**

Date: Sept 18 1974

**Office Hours (A)**  
2 After Hours

**Initial Contact (B)**

- ~~10~~ Public - Self & Relatives
- 11 Public - Other
- 12 Health, Welfare, Rec'n
- 13 Other Gov't Service
- 14 Business, Labour
- 15 Professions & Assoc'ns

**Contact by (C)**

- ~~20~~ Telephone
- 21 Interview
- 22 Correspondence
- 23 Answering Service

**Type of Enquiry (D)**

30 Service Enquiry

- ~~31~~ Address, Phone No. or Name Only

**Special Groupings (E)**

- 40 Aged -- 60 up
- 41 Handicapped
- ~~42~~ Youth 16-21
- 43 Immigrants
- 44 Migrants
- 45 Language Problem

**Category of Enquiry (F)**

- 50 Accommodation
- 51 Adjustment - Family, Indiv.
- 52 Child Welfare
- 53 Employment & Vocational
- 54 Financial
- 55 Health - Physical, Mental
- 56 Home Services
- 57 Landlord and Tenant
- 58 Consumer
- ~~59~~ Rec'n, Educ'n, Vac'n

60 Legal

61 Other

62 General

70 Multi-Problem (G)

73 Urgent (H)

**Disposition (J)**

- 80 Referral (I.C. made contact)
- 81 Direction (caller to contact)
- 82 Referral or Direction Back
- 83 Advice and Guidance Only
- ~~84~~ Information Only
- 85 Other

88 Needed Service doubtful (K)  
or not available

**Service Ref. or Dir. to (L)**

- 90 Municipal Welfare
- 91 Prov'l Welfare
- 92 Canada Manpower
- 93 Un. Insurance
- 94 Natnl. Health & Welfare
- 95 Immigration
- 96 Public Health
- 97 Doctors
- 98 Ont. Housing
- 99 Sr. Citizens Housing
- 100 Hostels - Adults
- 101 Hostels - Youth
- 102 FSA's
- 103 CAS's
- 104 Legal Aid
- 105 Lid - Tenant Bureau
- 106 Day Nurseries
- 107 Missions, Churches
- 108 Sr. Citizens Clubs
- 109 Other
- 110 Recreational Facility
- 111 Educ. Facility
- 112 Municipal Affairs
- 113 Fin. & Consum. Affairs

**Area of Client (M)**

- 120 London - Central
- 121 London - East
- 122 London North
- 123 London West
- 124 London South
- 125 Middlesex County
- 126 Other
- ~~127~~ Found I.C. through (N)
- 140 Agency
- 141 News Media
- 142 Telephone Book
- 143 Other

**Agency Requested (O)**

- 150 Consumers Assoc.
- 151 Volunteer Bureau

Client's Name Mr. [unclear] Age \_\_\_\_\_ Mil. or Other No. \_\_\_\_\_

Address \_\_\_\_\_ Phone \_\_\_\_\_

Children No. \_\_\_\_\_ Ages \_\_\_\_\_ Religion if Applicable \_\_\_\_\_

Initial Contact By \_\_\_\_\_

Comments: *Received in contact with  
& professor a faculty of music*  
*[Signature]*



Characteristics of Contact include the following:

A. When contact was made

1. Office hours
2. After hours (by a telephone answering service).

(This service was provided by the province as an experimental variable in the study, but has since been discontinued.)

B. Initial Contact

- |                               |                             |
|-------------------------------|-----------------------------|
| 10. Public - Self & Relatives | 13. Other Gov't Service     |
| 11. Public - Other            | 14. Business, Labour        |
| 12. Health, Welfare, Rec'n.   | 15. Professions & Assoc'ns. |

C. Contact by

- |               |                       |
|---------------|-----------------------|
| 20. Telephone | 22. Correspondence    |
| 21. Interview | 23. Answering Service |

D. Type of Enquiry

- |                     |                                     |
|---------------------|-------------------------------------|
| 30. Service Enquiry | 31. Address, Phone No. or Name only |
|---------------------|-------------------------------------|

N. How the client found out about the Information Centre

- |                 |                     |
|-----------------|---------------------|
| 140. Agency     | 142. Telephone Book |
| 141. News Media | 143. Other          |

Characteristics of Client include the following:

## E. Special Groupings

- |                   |                      |
|-------------------|----------------------|
| 40. Aged - 60 up  | 43. Immigrants       |
| 41. Handicapped   | 44. Migrants         |
| 42. Youth - 16-21 | 45. Language Problem |

## M. Area of client

- |                     |                       |
|---------------------|-----------------------|
| 120. London-Central | 124. London-South     |
| 121. London-East    | 125. Middlesex County |
| 122. London-North   | 126. Other            |
| 123. London-West    |                       |

Description of Problem include the following:

G. 70. Multi-Problem

H. 73. Urgent

## F. Category of Enquiry

- |                                  |                             |
|----------------------------------|-----------------------------|
| 50. Accomodation                 | 57. Landlord and Tenant     |
| 51. Adjustment<br>Family, Indiv. | 58. Consumer                |
| 52. Child Welfare                | 59. Rec'n., Educ'n., Voc'n. |
| 53. Employm & Vocat.             | 60. Legal                   |
| 54. Financial.                   | 61. Other                   |
| 55. Health: Phys-Mental          | 62. General                 |
| 56. Home Service                 |                             |

Service Provided

## J. Disposition

- |                                   |                              |
|-----------------------------------|------------------------------|
| 80. Referral (I.C. made contact)  | 83. Advice and Guidance only |
| 81. Direction (caller to contact) | 84. Information only         |
| 82. Referral or direction back    | 85. Other                    |

Agency to Which Referred

## L. Service Referral or Direction to:

- |                           |                              |
|---------------------------|------------------------------|
| 90. Municipal Welfare     | 102. FSA's                   |
| 91. Provincial Welfare    | 103. CAS's                   |
| 92. Canada Manpower       | 104. Legal Aid               |
| 93. Unempl. Insurance     | 105. Landlord-Tenant Bureau  |
| 94. Nat. Health & Welfare | 106. Day Nurseries           |
| 95. Immigration           | 107. Missions, Churches      |
| 96. Public Health         | 108. Sr. Citizens Clubs      |
| 97. Doctors               | 109. Other                   |
| 98. Ont. Housing          | 110. Recreational Facility   |
| 99. Sr. Citizens Housing  | 111. Educ. Facility          |
| 100. Hostels-Adults       | 112. Municipal Affairs       |
| 101. Hostels-Youth        | 113. Fin. & Consumer Affairs |

## O. Agency Requested

- |                       |                       |
|-----------------------|-----------------------|
| 150. Consumers Assoc. | 151. Volunteer Bureau |
|-----------------------|-----------------------|

Action by Agency

- K. 88. Needed Service doubtful or not available.

The reverse side of the Head's data-acquisition form contained blanks to accept the following items of information:

CLIENT'S NAME

AGE

MILITARY OR OTHER NUMBER

ADDRESS

PHONE

CHILDREN: NUMBER

AGE

RELIGION IF APPLICABLE

INITIAL CONTACT BY

COMMENTS

None of these data were ever rationalized for computer input. In fact, aside from COMMENTS, none of these data were ever collected systematically the inherent possible advantages for longitudinal follow-up notwithstanding. Whether the reasons are attributable to information counsellor overload, concern for the client's personal privacy, reluctance of client to respond to these questions, or a combination of these factors is a moot point.

It appears that these data are unobtainable and, to preserve the credibility of the community information centre as a source of confidential counselling, perhaps no effort should be made to collect them. It is, in fact, difficult to collect data as to the sector of city in which the client's problem arises. Only in about ten percent of client contacts is this information given.

The COMMENTS section is widely used and in the succeeding data collection document, a mark-sense card, comments continue to be handwritten on the reverse side.

Beginning in June 1973, information regarding each call answered has been recorded on mark-sense cards, instead of on printed forms. The reason for this is that these cards can be read directly by a computer and this makes the preparation of monthly tabulations much quicker.

Mark-sense cards have columns which run vertically and rows which run horizontally. Information is recorded on a mark-sense card by blackening in one printed "bubble" in each digit position of each field, using a special pencil.

The card format selected uses both split fields and full fields. In a split field, the bubbles have values 1,2,3,4,5. A split field can exist either above or below the central horizontal axis of the card. In a full field, the bubbles have values, starting from the top of 1,2,3,4,5,6,7,8,9,0.

Fields A,D,E,K,T,V,Y, and Z are full fields. Half fields have values starting from the top down of 1,2,3,4,5. Fields B,F,H,L,N,Q, and W are half fields using the top half of the card. Fields C,G,J,M,P,R, and X are half fields using the bottom half of the card.

All fields except fields A,T, and Z use only one mark-sense column. They are one-digit fields.

Field A contains a unique, prepunched six-digit case identity number.

A CASE NO.  
26889

UKIO - DATA COLLECTION/INFORMATION LONDON

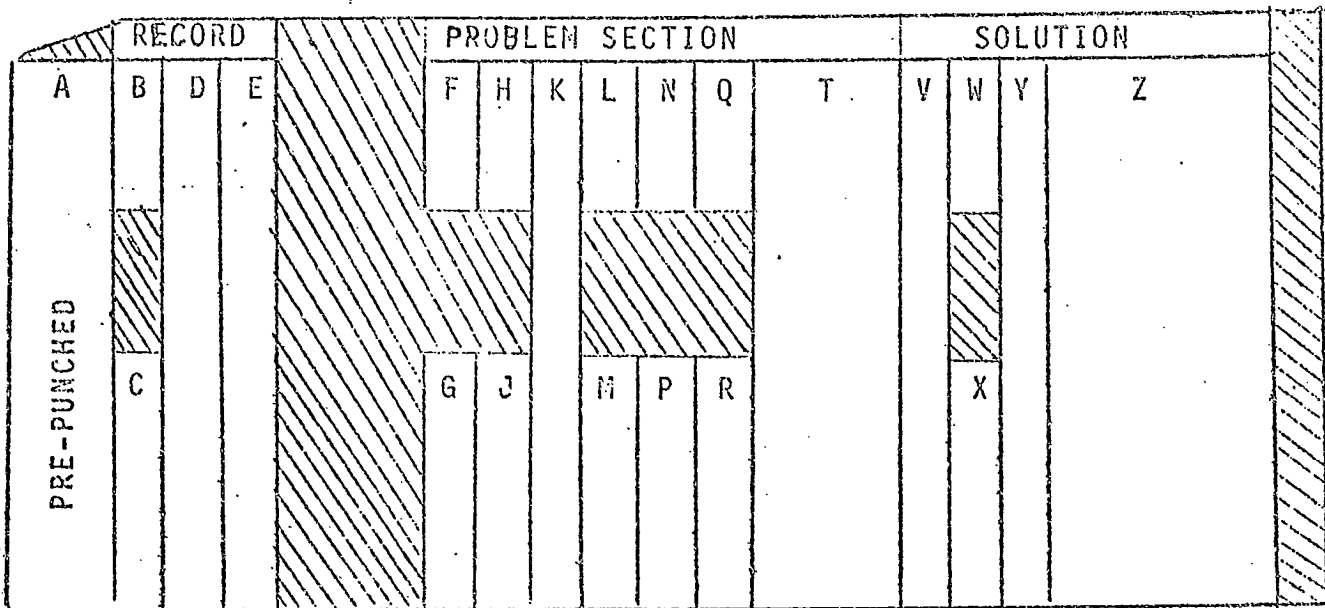
15/12/78

B	D	F
SHIFT	CONTACT	FOUND BY
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
0	0	0

F	H	K	L	N	Q	T	PROBLEM	V	W	Y	Z	SOLUTION	
URGENT?	MULTI-PROBLEM	AGE	MARK-GRANT?	WELFARE	TINE	MAJOR CLASS	DETAILS	DIS-SECTION	WILL-REPLY	AREA	SPONSOR	FUNCTION	DETAILS
1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9
0	0	0	0	0	0	0	0	0	0	0	0	0	0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

REPRESENTATION OF THE MARK-SENSE CARD





Field T contains four full columns. Thus by blackening one bubble in each column, a four-digit number (0000 to 9999) can be recorded. For the time being, marks are made in only the two left-most columns of this field, leaving the two remaining columns unmarked.

Field Z contains five full columns. Thus by blackening one bubble in each column, a five-digit number (00000 to 99999) can be recorded. For the time being, marks are recorded in only the two left-most columns of this field, leaving the three remaining columns unmarked.

A default occurs when a column is not marked or marked in such a way that the computer cannot read it. When a default occurs, the computer records the default value. A default occurs when:

- (a) no bubble is blackened,
- (b) two or more bubbles are blackened in one of the digit columns of a field or half field,
- (c) a bubble is blackened which has no assigned value.

Default, signified by  $\emptyset$ , is not the same as 0 (zero). Zero is the bottom-most value of each full field.

Use of default symbology greatly reduces the time necessary for an information counsellor to record client-contact information, because only unusual events need be specifically marked.

In addition, several changes were made in the data collection format:

Characteristics of Contact

Initial contact was revised to recognize the referral role of Neighbourhood Resource Centres.

Contact by was revised by deleting the "Answering Service" option.

Characteristics of Client, in general, failed to specify the special needs of the client as precisely as Information London desired.

Special Groupings was revised as follows:

age was rationalized into five classes:

- 0 = adult
- 1 = pre-school child
- 2 = school-age child
- 3 = youth (16-25)
- 4 = aged (60 and up)

Immigrant-Migrant categories were combined and extended as follows:

- 0 = citizen-resident
- 1 = newcomer (rather than migrant)
- 2 = immigrant
- 3 = native person (Indian or Eskimo)

In addition, Information London wishes to identify the following special groupings:

Welfare Recipients

Persons in Trouble with the Law

War Veterans

Description of the Problem

Problem categories were renumbered so as to relate mnemonically to the codes used to designate referral agencies. Certain categories were split to afford a more precise definition of the client's problem.

Service Provided was expanded to include the types of service rendered by Information London:

Information Obtained - ie. cases in which the centre calls an agency and obtains specific information in order to answer a client's inquiry. In many cases the agency would be unwilling to give this information to the client directly.

Service Performed - eg. filling in forms for the client, etc.

Found by (Information London item E) corresponds to Head's item Found I.C. Through (N). The present rationalization is as follows:

- 0 or 1 = Telephone book
- 2 = human-service agency
- 3 = news media
- 4 = other

This rationalization, which corresponds to the one previously used by Wilson Head, is apparently deficient inasmuch as it leads to a pronounced over-use of the choice OTHER (98.34 percent of client contacts in October 1974).

Further study is necessary to assess the relative merit of the great number of strategies used to promote client contacts. As a result of such study, it should become possible to adopt a more specific rationalization for the responses in this category.

Time Taken - Information London felt acquisition of this information was essential to make an informed allocation of centre resources. The data were rationalized as follows:

- 1 = less than 5 minutes
- 2 = 5 to 30 minutes
- 3 = 30-60 minutes
- 4 = over 60 minutes

Action by Agency - This is the single most important information item in terms of the value of a Community Information Centre to a senior level of government, because it provides a ready-made social indicator that can be used to monitor the effectiveness of administration, the social impact of government programs, and at the same time give timely warning of incipient social disaffection. The modified client-contact data acquisition document devotes two fields to this item:

Availability

- Ø = the service exists and is available to the client
- 1 = service does not exist
- 2 = service exists, but its availability to the client is doubtful

Complaints

- Ø = not a complaint
- 1 = client complains about how a human-service agency has handled his case.

Agency to which Referred - The relatively small number of options available in the Head form had previously lead to over-use of the "other" (109) category. It was planned to expand the options by use of a mnemonic coding system by which unique descriptive numbers could be derived for each human-service agency.

It was intended that the first digit refer to the sponsorship of the agency, viz:

- ∅ or 0 = other
- 1 = municipality
- 2 = province
- 3 = federal
- 4 = quasi-public eg. universities, hospitals, crown corporations
- 5 = voluntary sector ie. service organizations such as the Canadian Red Cross
- 6 = associations ie. non-profit organizations whose service is rendered primarily to their own membership (eg. labour unions)
- 7 = private sector
- 8 = special designator for a node of the Community Information Network.

In practice, persons using this classification have reported finding it difficult to decide whether a non-government, not-for-profit agency is, in fact, inward (6) or outward (5) looking in terms of how it renders its human service functions.

It is thought, therefore, that it might be preferable to let the code 5 stand for all non-government, not-for-profit agencies to avoid instances of contradictory coding.

The second digit was intended to represent the primary human-service function of the agency:

- Ø or 0 = other or business
- 1 = basic income support
- 2 = human-service in kind (eg. shelter)
- 3 = legal and protective services
- 4 = health care
- 5 = education
- 6 = recreation
- 7 = employment (eg. Canada Manpower)
- 8 = public affairs
- 9 = community activities (eg. home and school associations)

A third digit was provided for in order to obtain a more precise characterization of each agency's function. Indeed, three additional serialization digits are provided in order to yield a unique identification of each agency address (a computerized question-answering system is eventually envisioned). In practice, however, information counsellors found it difficult to work with even three identifying digits and only the first digit (sponsorship) and the second digit (basic function) are marked. However, these two agency classification digits in concert with the problem category and client characteristics suffice to identify unambiguously most agencies. For example:



Given:

Problem Category = accomodation  
 Sponsorship = province  
 Basic Function = service in kind

→ Ontario Housing Corporation

Given:

Problem Category = basic income  
 Sponsorship = federal  
 Basic function = basic income  
 Welfare = no  
 Age = adult

→ Unemployment Insurance Commission

The explanation of the three-digit codes follows.  
 (These are used in one version of the computer information resource bank). In general, the second digit has been chosen in so far as possible to conform to the rubric that:

- 1 = service rendered primarily to individuals
- 2 = service rendered primarily to family units
- 3 = service rendered primarily to youth
- 4 = service rendered primarily to the aged
- 8 = implies a counselling or information service
- 9 = implies an advocacy relationship

If the second digit is 0 or 9 (BUSINESS), the meanings of the third digit are:

- 0 or 0 = other business
- 1 = retail trade
- 2 = home ownership (house and land brokers, mortgages)
- 3 = communications (CN-CP, post office, radio, tv, newspapers)
- 4 = insurance, except health or auto
- ~~5 = banks and other financial institutions~~
- 6 = wholesale trade
- 7 = manufacturing
- 8 = personal service
- 9 = construction

If the second digit is 1 (INCOME), the meanings of the third digit are:

- 1 = welfare payments
- 2 = family benefits, including disability allowances
- 3 = family and youth allowances
- 4 = old-age allowances
- 5 = workmens' compensation and vocational rehabilitation
- 6 = special assistance and supplementary aid (food, drugs, dental treatment, glasses, etc.)
- 7 = grants to individuals (OFY, LIP, student, etc.)  
and loans (farm, industry), retraining allowances
- 8 = pensions (CPP, etc.)
- 9 = unemployment insurance

If the second digit is 2 (SERVICE), the meanings of the third digit are:

- Ø or 0 = social philanthropies
- 1 = transient housing (hostels, etc.)
- 2 = low-rental housing
- 3 = self-realization, i.e., drop-in centres,  
self-help groups
- 4 = senior citizens subsidized housing and old-age homes
- 5 = day-care centres, nurseries and baby sitting
- 6 = thrift shops and free clothing
- 7 = senior citizens' centres
- 8 = counselling - "crisis intervention", "social  
service", "youth work", (family, child, individual)
- 9 = family and children's services

If the second digit is 3 (LAW), the meanings of the third digit are:

∅ or 0 = army and militia

1 = pollution complaints, control measures, recycling, etc.

2 = tenants associations

3 = corrections, probation, parole, detention, residences, and after-care

4 = property and personal protection: property registration, police, fire, emergency measures, private security

5 = lawyers

6 = human rights

7 = courts

8 = consumer protection, debt counselling, advice and complaints, food co-ops, etc.

9 = legal aid

If the second digit is 4 (HEALTH), the meanings of the third digit are:

∅ or 0 = medical philanthropies

1 = private or group practice (physicians, dentists, psychologists, optometrists)

2 = hospitals

3 = clinics, emergency rooms and services and residences

4 = nursing homes and chronic care facilities

5 = home-care, home services, meals-on-wheels, homemakers

- 6 = rehabilitation (physical therapy, self-help, individual and group psychotherapy, sheltered workshops, prosthetic aids, etc.)
- 7 = medically oriented voluntary and professional organizations, clinical and research laboratories
- 8 = health insurance
- 9 = public health and medical information

If the second digit is 5 (EDUCATION), the meanings of the third digit are:

- 0 or 0 = educational philanthropies
- 1 = primary (private or public)
- 2 = secondary
- 3 = community colleges
- 4 = university and professional
- 5 = adult and continuing
- 6 = special schools, tutors, business and trade schools, etc.
- 7 = English classes for immigrants
- 8 = educational counselling and information services regarding educational institutions
- 9 = student organizations

If the second digit is 6 (RECREATION), the meanings of the third digit are:

- 1 = auto ownership, driver's licencing, auto insurance and road service (auto clubs)
- 2 = outdoor living and conservation
- 3 = youth groups (Boy Scouts, Girl Guides, YM-YWCA), etc.
- 4 = senior citizens activities
- 5 = public transportation of people and goods
- 6 = ~~sports (Little League, etc.)~~
- 7 = social clubs and hobbies
- 8 = visitors, conventions, tourism
- 9 = culture and entertainment (libraries, museums, public performances, motion-picture and stage theatres, music, arts and crafts, etc.)

If the second digit is 7 (EMPLOYMENT), the meanings of the third digit are:

- 1 = employment agencies
- 2 = apprenticeships
- 3 = retraining (not the allowance)
- 5 = self-help ("Unemployed Youth Centre", etc.)
- 8 = vocational counselling
- 9 = labour organizations

If the second digit is 8 (PUBLIC), the meanings of the third digit are:

- ∅ or 0 = Indian affairs
- 1 = revenue (taxation, assessment, customs, excise)
- 2 = public works and services (roads, sewers, garbage, building permits, animals)
- 3 = records and licences (birth, marriage, business, etc.)
- 4 = planning, community development, zoning, consultation
- 5 = immigration
- 6 = administration (personnel, finance, etc.)
- 7 = public utilities (hydro, telephone, gas)
- 8 = public information (Information Canada, Statistics Canada, Information London, Reference Library, Visitors and Convention Bureau, Chamber of Commerce)
- 9 = political representation (elected officials, members of parliament, enumeration, voting, returning officers)

If the second digit is 9 (COMMUNITY), the meanings of the third digit are:

- ∅ or 0 = philanthropies to citizens groups
- 1 = volunteer services ("want to serve" or render miscellaneous services not otherwise classified)
- 2 = churches and religious organizations
- 3 = citizens groups
- 4 = home and school associations
- 5 = professional and trade associations, etc., not otherwise classified
- 9 = political parties

In the case of health care, it was found that to cover the range of services available, it was necessary to specify a fourth digit in three cases, viz:

- . If the second and third digits are 41 (PRIVATE PRACTICE), the meanings of the fourth digit are:

1 = physicians

2 = dentists

3 = other

- . If the second and third digits are 42 (HOSPITALS), the meanings of the fourth digit are:

1 = general

2 = special (chronic, childrens, etc.)

3 = psychiatric

- . If the second and third digits are 43 (CLINICS), the meanings of the fourth digit are:

1 = general

2 = alcohol and drug addiction

3 = venereal disease

4 = birth control, family planning, abortion

5 = mental health



As examples of how this classification system works:

111 = Municipal, Basic Income, Individual

→ City Welfare

521 = Voluntary, Service, Transient Housing

→ Salvation Army Mens' Mission

Mission Services Womens' Mission

Mission Services Men's Mission

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Tie-breaking digits would be required for unique identification in this case.

It may be of interest at this point to contrast the directly comparable results obtained in the Head study with those currently being obtained at Information London. The base for the Information London statistics consists of 17,584 client contacts made between June 1, 1973 and May 31, 1974. London, Ontario had, at that time, a population of 233,000.

In the Head study, the June 1971 records of eight of the community information services included in the study were analysed, a total of 6,234 client-contacts. For a variety of reasons, seven of the centres were not able to provide records at that time.

## SOURCES OF CONTACTS

Source	Head	Percent Information London
General Public	77.3	89.76
Health, Welfare and Recreation Agencies	11.0	4.33
Other Government Services	3.2	2.16
Professions & Associations	6.2	1.16
Business & Labour	2.1	1.75
Neighbourhood Information Centres	.2	.38

Health, welfare and recreation agencies, both public and voluntary, plus other government services, make some use of the information centres. However, the overwhelming number of inquiries are received from the general public. A significant number of the "general public" category may include representatives from government and voluntary agencies.

## METHODS OF CONTACTING INFORMATION CENTRES

Method of Contact	Head	Percent Information London
Telephone	80.5	98.45
Interview	12.7	1.35
Correspondence	.7	.19
Answering Service	6.1	

A large majority of inquirers use the telephone as the method of contacting information services. Telephone interviews tend to take much less time than personal interviews. At Information London, 91 percent of the calls were handled in less than five minutes. Neighbourhood resource centres on the other hand, stress personal contact and local involvement and would tend to attract a preponderance of inquirers who walk in from the street.

Information London had during the period covered here no after-hours answering services.

A wide variety of needs are expressed by inquirers. A minority of these needs are met solely by the provision of information by the information centre staff. This does not mean that the staff initially possesses all required information. It is frequently necessary to spend considerable amounts of time digging up information on behalf of inquirers. On some occasions it was necessary to make from three to a dozen telephone calls to obtain this information.

#### VOLUME AND TYPE OF INQUIRIES

Inquiries for	Percent	
	Head	Information London
Service	77.1	66.8
Information only	22.9	33.2

The majority of all inquirers require a more sophisticated assessment and referral by the information counsellor. Many inquirers are not able to formulate their real concerns and considerable skill and sensitivity may be required to determine the real problem.

A comprehensive knowledge of other community resources is essential for the information counsellor to meet the needs of these inquirers. Adequate knowledge and understanding of ~~community service resources~~ requires more than merely collecting files of brochures and other printed material. Personal contact with the staffs of community service agencies is essential to an understanding of their ability to meet the needs of many inquirers.

In October 1974, 71.54 percent of the 1,567 inquiries received by Information London required sophisticated assessment and referral by the information counsellor. Only 88.45 percent of all calls could be handled within five minutes. These figures reflect a growing trend on the part of Community Information Centres to provide additional services beyond simple information.

The number and type of inquiries received by community information centres are summarized in several categories.

## CATEGORY OF INQUIRY

Information Requested	Head	Percent Information London
Accommodation	7.3	2.72
Adjustment- Family, Individual	3.1	1.81
Child Welfare	6.7	3.21
Employment-Vocational	3.8	3.16
Financial	17.9	10.84
Health, Physical, Mental (including Dental)	12.2	6.69
Home Services	2.6	2.01
Landlord and Tenant	1.7	4.21
Consumer	3.9	11.69
Education	4.5	3.13
Legal	1.5	3.47
General	13.7	20.17
Government Service Information	2.3	9.68
Recreation and Vacation	10.4	11.54
Immigration and Citizenship	0.9	.09
Pollution	0.4	1.31
Other	7.2	3.30

In the Head study, the largest single group of inquirers was concerned with financial needs. The data suggests that these inquirers were concerned chiefly with problems of eligibility for general welfare assistance in striking contrast with the

clientele of Information London. Physical and mental health, recreation and vacation, and housing needs rank high in both lists of inquiries received.

Welfare recipients accounted for 2.3 percent of the clients of Information London. In October 1974 the figure was less than one percent. Financial concern during this period accounted only for 4.59 percent of client inquiries. The remaining statistics obtained during the 1973-74 study are not comparable with Head's results. The text now deals only with 1973-4.

Although 91% of the cases were handled in less than five minutes, 51 cases required more than an hour. In 4% of the cases, the client had more than one problem.

The client-contact experience of Information London, according to the membership of clients in recognizable population subsets, was as follows:

POPULATION SUBSET	NUMBER OF CASES	PERCENTAGE (on 17,584)
Aged (over 65)	1,396	7.9%
Youth (16-25)	439	2.5
Handicapped	426	2.4
Newcomers (migrants)	424	2.4
Welfare recipients	399	2.3
School children	286	1.6
Immigrants	226	1.3
Pre-school children	224	1.3
War veterans	135	0.8
Non-English speakers	71	0.4
Native Canadians (Indians)	24	0.1
Criminals	24	0.1

The following cross-tabulations illustrate the range of problems handled by Information London. For each problem category percentages are taken of:

1. All inquiries (17,584)
2. Urgent inquiries (75)
3. Citizen complaints (885), and
4. Citizens' requests which could not be fulfilled (1,307).

PERCENTAGES

CATEGORY	ALL INQUIRIES	URGENT INQUIRIES	COMPLAINTS	SERVICE NOT AVAILAB
Consumer	12	5	30	12
Recreation	12	4	1	8
General	11	3	2	2
Government	10	5	8	8
Income	9	5	8	35
Health	7	28	24	4
Community Activities	7	3	4	4
Landlord-Tenant	4	3	3	1
Accomodations	3	18	1	3
Child Welfare	3	9	1	8
Legal	3	-	3	1
Education	3	4	1	8
Employment	3	-	4	1
Financial	2	4	2	8
Adjustment	2	5	-	-
Home Care	2	8	5	2
Pollution	1	1	2	1
Transportation	1	-	-	1
Political	1	-	-	-
Volunteer Work	1	1	-	-
Immigration	-	-	-	-
Other	3	1	2	2



Cross-tabulations and set intersections involving population subsets having special social service needs tend to reveal areas of unmet need. By doing these studies, a Community Information Centre can serve as a "social early-warning system".

The following facts emerged from multiple-set-intersection analysis of the first year's data:

- .....39 persons who had lost their jobs, complained about how the Federal government handled their requests for Unemployment Insurance payments
- . 215 consumers complained about unsatisfactory merchandise or service
- . 269 calls involved landlord-tenant disputes
- . 96 aged people sought accomodations and twelve were unable to obtain them
- . 125 handicapped persons sought basic income support and twenty-two were unable to obtain it
- . 280 welfare recipients sought additional basic income and seventy-two were unable to obtain it
- . 845 aged persons' sought basic income support and 432 were unable to obtain it

- 67 of these aged persons were already on welfare;  
60 of these failed to obtain the additional support they sought
- 27 of these aged persons were also disabled; 17 of these failed to obtain the additional support they sought

Historical experience with administrative information systems has shown that the application of informatics tends to contribute to centralization of the decision-making function and, consequently, to the concentration of power [8,9].

Increasingly, however, decision makers have found that the available statistical information is inadequate to determine how social programs affect the citizens' quality of life. They have, therefore, articulated their need for real-time citizen feedback and reliable social indicators [12].

The infusion of computer-acquired citizen feedback into administrative decision-making processes, is one way in which a modern computer can help decentralize decision-making [1,4].

An informatic system utilizing a remotely accessed computer can be configured in such a way as to make the rationalization of social programs visible to the citizen [13], and to enable citizen-action groups to acquire counter-information for additional input to administrative decision-making processes [2].

Ultimately, these activities have the potential for reversing the trend toward centralization of decision-making and the concomitant concentration of power. They can, in fact, lead to a diffusion of political power and a realization of participatory democracy [7,10,11].

### INFORMATION ACQUISITION SUBSYSTEM

A Community Information Centre deals with a truly bewildering range of information, principally because it can play so many roles:

- . Clearinghouse
- . Information Source
- . Personal Counsellor
- . Advocate

The clearinghouse role is most easily understood and delimited. The Community Information Centre is seen in this role as a first point of contact for the individual with a problem. The Centre makes an initial assessment of the problem:

- . What kind of service is required?
- . Which agency can best provide this service to this client?

Working under these rubrics only, the Centre's stock-in-trade would be "agency-contact" information. Depending upon the Centre's assessment of client need, the information counsellor would:

- . Furnish the name and telephone number or address of an agency capable of fulfilling the client's needs and, if pertinent, ~~the name of an individual for whom the client should ask.~~ [DIRECTION].
- . Call the agency, obtain information on behalf of the client and deliver this information to the client. [INFORMATION].
- . ~~Make an appointment for the client at the agency.~~ [REFERRAL].

The problems with direction are that:

1. The client may perceive direction as another run-around and become more disaffected than before.
2. The client may be in an emergency situation and be unable to make another call.
3. The Centre receives no feedback as to whether the direction given was correct or not.

There is no real solution to the first problem that can be formally institutionalized. It is essentially a public-relations problem and its solution lies principally with the

individual information counsellor who must radiate a helpful and empathetic attitude to the client.

The second problem can best be solved in concert with the "Phone 911" emergency service programs. The Community Information Centre should be equipped with a direct line to the emergency service desk at Police Headquarters, and with call directing equipment so that calls dealing with fire and police emergencies, emergency ambulance service, suicide prevention, poison control, and family crisis intervention can be transferred directly.

The third problem, that of feedback, requires a concerted follow-up effort coordinated with case intake officers at the agencies to which direction is given.

Agency-Contact Information can be acquired in two ways:

1. The most efficient way is to obtain this information from the agency in question.
2. The most effective way is often to obtain this information from the activity directly involved. This is especially true in dealing with an agency such as a university where considerable autonomy exists among the various activities sponsored by the agency.

Agency-contact information when stored in a data bank, is best retrieved by the human-service functions performed by the agency through its various activities. Thus there must exist in the data bank a horizontal linkage among human-service functions. It is important that the information counsellor be aware when giving direction of the entire range of agencies and activities offering a particular service in order to avoid overtaxing the facilities of some agencies, while underusing the facilities of other agencies offering comparable services.

Agency-contact information includes in the first instance the name of the agency as the ENTITY. This means not only the official name such as "Canadian Red Cross Society", but also the popular name such as "Red Cross" and acronym such as "CRC". When an agency has recently changed its name, it is necessary to know both the present name, such as "Family and Childrens' Service" and the former name, such as "Childrens' Aid Society". Where the name of an agency does not disclose its function, it is necessary to add a qualifying term such as "A.J. Baker-Lawyer".

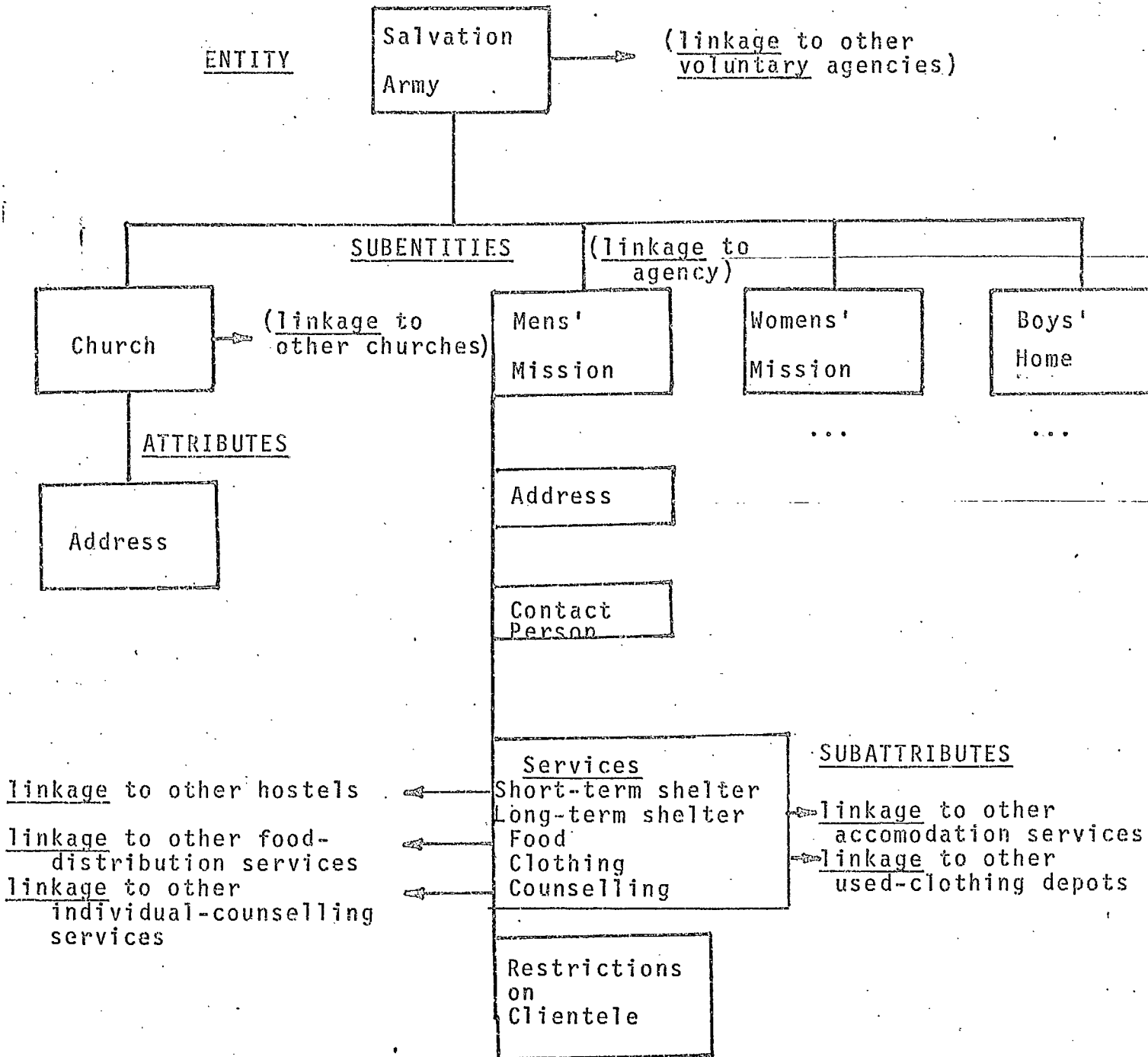
The ATTRIBUTES of an agency are five in number:

1. Telephone number, including alternate numbers and night lines
2. Address for effective delivery of mail: street and apartment or suite number, if any; [Rural Route number, or Post Office box]; city or post office [Terminal]; and postal code
3. Contact person - intake officer, public-relations officer, "gatekeeper", or "transfer agent"
4. Human services - offered with subattributes of:
  - types of service (eg short-term, long-term, etc.)
  - hours of service (for case intake)
  - geographical area served
5. Restrictions on clientele with subattributes of:
  - age group
  - sex
  - affiliation (group membership, religion, etc.)
  - needs of client (eg. "no drug addicts", no incontinent persons, ambulatory cases only, etc.)
  - charge for service or means tests imposed

In some agency contexts, limitations on clientele are linked to types of human-service offered. Where one agency sponsors several activities, each providing different human-services and operating with autonomous intake offices, it is necessary to establish SUBENTITY classes for each activity. The data bank must provide a vertical linkage between activities and their sponsoring agency.

It is necessary only to explicate each activity to the level required within the local context. For example, consider the structure of information regarding the Salvation Army:





When a Community Information Centre provides information to a client, rather than direction, it vacates its clearinghouse role and begins to function as an information source.

The problems involved in providing information are:

- (1) Digging up the information may require an inordinate amount of time on the part of the information counsellor.
- (2) To save time, information counsellors may be tempted to rely on memory or out-of-date files and as a consequence provide incorrect information.
- (3) Preparation of information for the client may consume a great amount of secretarial effort (eg. preparing a list of names and addresses of all child-care establishments for United Community Services).
- (4) After obtaining the information, it may not be possible to get in touch with the client.

Coping with the first and second problems requires exercise of judgment on the part of the Information Centre executive and the individual information counsellors.

Requests for information should be directed to existing sources such as:

- . Published information → Reference Section, Public Library
- . Select a reliable product → Consumers' Association
- . Government documents → Information Canada
- . Engage a lawyer → County Bar Association
- . Find a doctor → Academy of Medicine
- . Find a dentist → Dental Society
- . Visit local points of interest → Visitors' Bureau

A problem arises when one of more of these existing services develops a reputation locally for disseminating biased or misleading information or for rebuffing inquirers. In such cases, the Community Information Centre may be tempted to set itself up as a competitor. Such action may prove to be counter-productive to effective dissemination of community information.

There would seem to exist the need for a local "College of Information", where suppliers of information could meet, exchange information and compare the expressed client perceptions of one another. Perhaps some sort of internal telephone call direction system should be contemplated as was suggested with reference to emergency services.

A second problem is filling ellipsis in the existing information system. A case at point is the child-care problem. The need for expanded day-care facilities was substantiated by set-intersection analysis of client contacts during 1973-74. This study showed that 103 persons sought day-care and that 35

were unable to obtain it, and that most of these lived in South (40 percent) and East London (52 percent).

In response to demand for information regarding availability of child-care, Information London established a comprehensive file on child-care, listing some 45 local establishments together with such information as: address, contact person, hours of availability, age groups served, transportation provided, restrictions on children (ie. spastics, crippled, mentally defective, etc.), cost, and number of places available. Keeping such a file up-to-date and valid, would require a large proportion of the time of an information counsellor, a demand upon its resources that the Centre could ill afford.

It would seem that filling such ellipsis is a legitimate function of a Community Information Centre, but that careful cost/benefit appraisal should be made before such tasks are undertaken.

Furthermore, the Centre should encourage establishment at the earliest possible instant of appropriate specialized information channels to fill these needs; in this case, of an Early Childhood Information Centre established possibly with the help of United Community Services. The need for services such as this should be made known to local representatives of granting agencies such as the Department of Manpower

and Immigration, Secretary of State's Department, and the Ministry of Community and Social Services.

Another lacuna among community information channels was evidenced by an unusually high level of consumer complaints during 1973/74. For a while it was tempting to conjure with the idea of setting up within the Community Information Centre a "discredit" bureau to "blacklist" offending merchants and suppliers. However, cooler heads prevailed.

A meeting was held at Information London, attended by representatives of the various complaint channels in the public and voluntary sectors.

Each representative in turn delivered a frank, concise and informative description of the agency's areas of concern, method of operation, personnel, and locations. The representative then fielded questions from other representatives which were highly professional and penetrating.

The transcript of this meeting afforded an advantageous starting point. The author then visited several of the voluntary agencies and obtained copies of the data collection forms used in order to study each item to determine what data was being collected and its utility.

Then a sample of some 200 cases was drawn randomly from the files of the most active agency visited, and notes taken on each case.

These data provided the foundation for a proposed Uniform Consumer Complaint Form, rationalized for eventual machine input.

The purposes to be served by gathering and collating these data include:

- (1) To consolidate consumer complaints so that the relative magnitude of specific problems can be determined free from errors arising either from failure to include all complaint channels, or multiple counting of the same complaint lodged with several complaint channels.
- (2) To obtain timely indications of fraudulent practices, by use of cross tabulations to reveal patterns of activity based upon geographical area, method of operation, and individuals or companies involved.
- (3) To furnish to each voluntary complaint channel the composite experience of other channels with respect to particular complaint sources currently under investigation.

Complaint Channel

CONSUMER COMPLAINT RECORD

Date: \_\_\_\_\_

Nº 9999

Complaint Source \_\_\_\_\_

Primary Business Classification

- |   |                   |   |                        |
|---|-------------------|---|------------------------|
| A | automotive        | N | novelties              |
| B | banking           | O | oil companies          |
| C | clothing          | P | personal services      |
| D | dept. store items | Q | recreation             |
| E | esthetics & art   | R | real estate, rooms     |
| F | farm & garden     | S | sporting goods         |
| G | groceries         | T | transportation, travel |
| H | home furnishings  | U | utilities              |
| I | insurance         | V | government             |
| J | jewellery         | W | investments            |
| K | contractors       | X | publisher              |
| L | lumber            | Y | collection agencies    |
| M | medical           | Z | miscellaneous          |

Type of Business

- |   |                   |   |                              |
|---|-------------------|---|------------------------------|
| 0 | undetermined      | 5 | washing, cleaning            |
| 1 | retail sales NEW  | 6 | building, renovation         |
| 2 | retail sales USED | 7 | rentals                      |
| 3 | repairs           | 8 | business service (non-sales) |
| 4 | personal service  | 9 | other                        |

Technique of Doing Business

- |   |                  |   |            |
|---|------------------|---|------------|
| 0 | undetermined     | 3 | mail order |
| 1 | itinerent seller | 9 | other      |
| 2 | sales outlet     |   |            |

General Category of Complaint

- |   |   |
|---|---|
| 0 | undetermined                                      |
| 1 | failure to receive merchandise or service         |
| 2 | unsatisfactory merchandise                        |
| 3 | unsatisfactory service                            |
| 4 | liability problems concerning consumer's property |
| 5 | alleged fraudulent practices                      |
| 6 | harassment  |
| 7 | alleged gouging                                   |
| 8 | billing or collection problems                    |
| 9 | other   |

General Category of Referee

- |   |                        |   |                  |
|---|------------------------|---|------------------|
| 0 | undetermined           | 6 | legal channels   |
| 1 | city government        | 7 | complaint source |
| 2 | provincial government  | 8 | no referral      |
| 3 | federal government     | 9 | other            |
| 5 | voluntary organization |   |                  |

Action of Referee

- |   |                     |   |                              |
|---|---------------------|---|------------------------------|
| 0 | undetermined        | 4 | conciliatory toward consumer |
| 1 | hostile to consumer | 5 | agreed with consumer         |
| 2 | disagreed           | 9 | other                        |
| 3 | did not respond     |   |                              |

Outcome

- |   |                             |   |                     |
|---|-----------------------------|---|---------------------|
| 0 | undetermined                | 4 | partially satisfied |
| 1 | consumer at fault           | 5 | totally satisfied   |
| 2 | no redress                  | 9 | other               |
| 3 | breakdown of communications |   |                     |

Note: Specific comments on other side

- (4) To provide for the regular flow of composite consumer complaint information from complaint channels operating in the voluntary sector to appropriate regulatory agencies in the public sector.
- (5) To establish a repository of case histories and the information processing capability to tabulate and analyze this experience to facilitate the preparation of scholarly studies, briefs to lawmaking bodies, and materials for use in consumer education.

It now appears that the information needs of the community would best be served were this information to be gathered by the local chapter of the Consumers' Association of Canada, which agency could then use it to augment its file of Consumer Reports which it currently uses to provide guidance to clients about brand selection.

Information London cooperated in a survey of the language translation requirements of 105 human-service resource agencies performed for the Citizenship Branch of the Secretary of State's Department. The study showed the most popular non-English languages in London to be (in order): Italian, Portuguese, Greek, French, German, Hungarian, and Polish. A sequela of this study may be the establishment of a data bank containing the names of interpreters and translators that may well become another information-giving service institutionalized within the Centre.



Other studies in which the Centre has become involved include a survey of 900 handicapped persons performed by the Action League for Physically Handicapped Adults (ALPHA). The study showed, among other things, that handicapped persons ready, willing and able to become gainfully employed were prevented from doing so by shortcomings of the public transportation system. The continuing dissemination of information arising from this study is now the sole responsibility of ALPHA.

Information London also cooperated in a longitudinal study of 160 native Canadian job seekers, carried out by the North American Indian Friendship Centre. The study showed, among other things, that Indians who were successful in obtaining employment, in contrast with those who gave up looking for work and returned to their reserves, were younger, better educated and had more extensive histories of prior employment, fewer personal problems, higher participation in sports, lower participation in native handicrafts, and lower involvement with social agencies catering primarily to native Canadians. Interesting as these results may be, it is questionable whether information arising out of this study would even be disseminated by the Centre in the course of its normal operations. However, some of the information developed has proven useful in formulating judgments regarding agencies of choice for client referral.

In summer 1973, the Centre experimented with local networking of the information function. On-line computer terminals were set up at Information London, the London Public Library, and the Visitors' and Convention Bureau of Greater London. It was contemplated that each agency would utilize the on-line file creation capabilities of the time-sharing computer to build files useful in its operations and that these files could be shared by the other participants.

The Visitors' and Convention Bureau created files answering, as they put it, the twenty questions most frequently asked by tourists:

1. Playgrounds - location of public playgrounds.
2. Storybook Gardens - location, dates of opening and closing, hours of operation, rides, etc., and admission fees.
3. Eldon House (oldest in London) - location, admission fee and description.
4. Fanshawe Park - location, facilities available, opening and closing dates, hours of operation, fees.

and similar information regarding:

5. Fanshawe Pioneer Village
6. Labatt's Pioneer Brewery
7. Royal Canadian Regiment Museum
8. Skanahduht Indian Village
9. Bruce Trail
10. Tobermory Ferry
11. Restaurants - including seating capacity and food specialties
12. Golf courses
13. Tennis courts
14. Public swimming pools
15. Sightseeing tours of London
16. Horseback riding stables
17. Campsites and trailer parks
18. Day and residential camps
19. Convention facilities and meeting rooms with capacities
20. Attendance at conventions held in London in prior years.

These data proved to be of some help to the Centre in answering recreational inquiries but after the experiment, the Visitors' and Convention Bureau took no initiative to acquire terminal facilities of their own; the Centre did not take the initiative to up-date and revalidate the files; and, as a consequence, much of this information shortly became out-dated and must by now be considered unreliable.

Coping with problem 3, (p. 91), that of packaging information for the client, exemplifies one of the most valuable uses for the computer, but not in the form first envisioned. It had been thought that the most useful way to access computer-stored information would be with the aid of a cathode-ray display tube. However, an information counsellor rarely consults computer-stored information when responding to the verbal type of query. On the other hand, when the client is in actuality acting on behalf of some public or voluntary agency and requests a list, say, of all day-care centres or all nursing homes in the city, the computer affords a convenient vehicle through which the Centre can accede to such a request, a critical shortage of secretarial support notwithstanding. However, to do this requires use of a printing or "hard-copy" computer terminal rather than a visual display unit.

The problem of loss of client contact while obtaining information for him (4) does not seem to be a serious one as long as it is recognized to exist. Although clients are, as a rule, diffident about giving their names, addresses, and phone numbers, it would seem to be no great imposition on the client to require him to do so when the Centre is contemplating expending considerable time and effort on his behalf. Similarly, it is a wise move for the information

counsellor to make a point of requesting precise contact information in these instances to avoid doing a great deal of work for nothing.

Now, to address problems arising in the referral mode:

Essentially, this is an extension of the direction mode, differing from it in that the Centre performs a service directly for the client. Here the Centre begins to assume explicitly the role of personal counsellor and perhaps implicitly the role of advocate.

From an information storage and retrieval point-of-view, agency contact information acquired to fulfill the function of direction should, provided some care in selection and diligence in up-dating is exercised over the names of contact persons, suffice to support the referral function as well.

However, the referral function of the Centre has a good deal of judgmental content. The information counsellor, is faced with making an implicit value judgment regarding the official to whom the client is referred.

This problem becomes more poignant in the case of professional persons or manufactured products and it is unwise ever to recommend a physician, lawyer, or even a brand

of television set. These cases are best handled by direction to the Academy of Medicine, County Bar Association, or Consumers' Association.

Even in the public sector, it is difficult for the information counsellor not to formulate personal judgments such as: this social worker is a "hard nose"; that labour-standards inspector is a highly conscientious worker; or that customs agent is poorly informed regarding his own responsibilities.

No effort has been made to rationalize such judgments and incorporate them in a data base, except that given the choice of whom to designate as contact person for an agency, an information counsellor will cite an official or staff member known to be knowledgeable and empathetic.

Quite possibly there will be, with a rise in the number and quality of Neighbourhood Resource Centres, a decline in the amount of personal counselling done by Community Information Centres.

There is some reason to believe that merely making an appointment for a client is insufficient. Clients have been known not to keep them. In many cases, it may be preferable to refer clients to Neighbourhood Resource Centres, which are better equipped to participate in the role of personal counsellor.

The advocacy role is a dangerous one for a Community Information Centre to assume. Given that it is impossible for any institution or individual staff member to remain free from bias, the Community Information Centre should tend to "tilt" in favour of the disaffected and underprivileged because heaven-only knows how few others take such a stance.

However, there is a vast difference between being in favour of "motherhood" as an abstract concept and impregnating one's wife every year.

The role of the Community Information Centre is to inform and to facilitate communication, not to propagandize either for or against the so-called "establishment".

Yet, aside from such questions of ethics, advocacy is a poor policy, because the information centre hears only the client's side of a contention and, in general, does not know the client. Nor does an information counsellor have time or resources to gather sufficient facts to make a firm assessment of a case.

Other agencies are far better equipped to provide in-depth counselling and advocacy, if required. The function of the Community Information Centre is to open channels of communication, not kick in doors.

## INFORMATION-RETRIEVAL SUBSYSTEM

In general, the objectives of any information-retrieval system are:

- (1) Recall - The system should be able to retrieve as many stored items as are pertinent to a specific request.
- (2) Precision - The System should retrieve only a low percentage of items not relevant to a specific request.
- (3) Speed - The system should be capable of responding within the time required for retrieval of information.
- (4) Ease - Retrieval should not become a chore for operators who may have to spend much of their time using the system; likewise items delivered in response to a request should be in a form immediately useful to the system user.
- (5) Maintainability - It should be cheap and convenient to add new material, delete out-dated material or correct erroneous material.

All systems possess some of these characteristics to a greater or lesser degree.

The art of systems design resides in achieving the balance of qualities that is optimal for a specific application.



Thus far, two retrieval subsystems have been designed for Information London. One is called LONDON. The other is called INDEX. Neither is completely satisfactory, but between them, they indicate the direction of subsystem development.

In the following discussion, shortcomings of each system will be presented at appropriate places in the description (NOTES).

There are three data files in System LONDON:

- (a) The master file contains 5,000 short records each consisting of four fields: name, address, phone number and classification code. The name field contains the full name of an organization furnishing some kind of human service, its common name, initials or acronym, if any, and an additional notation if the name is not descriptive of the organization's function

---

Note 1: A frequent criticism of this system is that the master file contains insufficient information.

---

Classification is denoted by a 12-digit code which specifies affiliation, specifies what human service is furnished and provides unique identification.

---

Note 2: A 12-digit number is awkward to handle and mistakes in typing are frequent.

---

(b) Any number of ephemeral files linked to a unique 12-digit code can be created. Such a file can contain narrative information to any desired length.

---

Note 3: Among the ephemeral files were files copied from the data sheets (binder pages) actually used by information counsellors. These frequently proved to be more helpful than the Master file entries, because they contained more information.

---

(c) A scratch-pad file provides space for brief comments regarding organizations or their services. These comments are linked to the 12-digit codes designating the organizations commented upon.

---

Note 4: The procedure for making scratch-pad entries seems to have been too complex for the average user. This option was seldom used.

---

We have in essence a relational file structure in which the 12-digit code provides the common link.

The master file is created and updated in the batch mode. Only in this way can entries be added or deleted or names changed. Addresses and telephone numbers can, however, be changed from on-line terminals.

---

Note 5.1: The batch updating program was expensive in terms of both key-punching and computer time. The program was never completely debugged. As a consequence, updating is rarely, if ever, done and the master file is usually out-of-date.

Note 5.2: The procedure for changing addresses and telephone numbers on-line is too complex for the average user. This option was seldom used.

---

Batch mode is also employed to produce either individual print-outs for each of the 5,000 organizations or directory listings of the entire master file.

---

Note 6: The directory listing could be a valuable product for reference, training of information counsellors, and exchanging information with other Centres. It could be used as camera-ready copy for the annual directory published and sold jointly by Information London and the London Public Library. Before this can be done, the master file will have to be converted to upper and lower case (128-character ASCII), made more informative [1], cleansed of annoying typing errors, and held to a justified line length of 72 characters.

---

The directory listings can be produced in three formats:

- (1) Entries are listed by affiliation (municipal, provincial, federal, private, etc.), by service offered (basic income; food, clothing and shelter; health care, etc.), and alphabetically within these categories.

The individual print-outs are mailed to the subject organizations in window envelopes when the master file is to be revalidated and up-dated. A letter of explanation, a pamphlet describing the 12-digit code system, and a reply envelope are sent along with the print-out. Respondants are encouraged to check the accuracy of their listing and contribute additional information for the ephemeral or scratch-pad files.

---

Note 7: We mailed out 4,000 inquiries and got only 300 back. Most people considered it an imposition to provide this information. Some got extremely angry and even complained to highly placed local officials. Reproduction, mailing and return postal costs were high (nearly \$300 or \$1 per correction).

---

- (2) Entries are listed by service offered, affiliation, and alphabetically within these categories.
- (3) Entries are listed alphabetically according to a key-word-in-context permutation applied to the augmented name field of the record.

Directories in bound form could be consulted by systems users not possessing terminal access and provide alternative information resources where terminals exist.

There are six modes of operation implemented at terminals: search, display, create, release, change and locate.

---

Note 8: Of which only search and display are commonly used.

---

The search and change modes pertain to the master file. The create, display, and release modes pertain to ephemeral and scratch-pad files. The locate and change modes are privileged only to systems personnel.

---

Note 9: Control over use of these modes is provided by a double password system which, in practice, can be easily circumvented by changing the file, passwords included, by means of system utility programs.

---

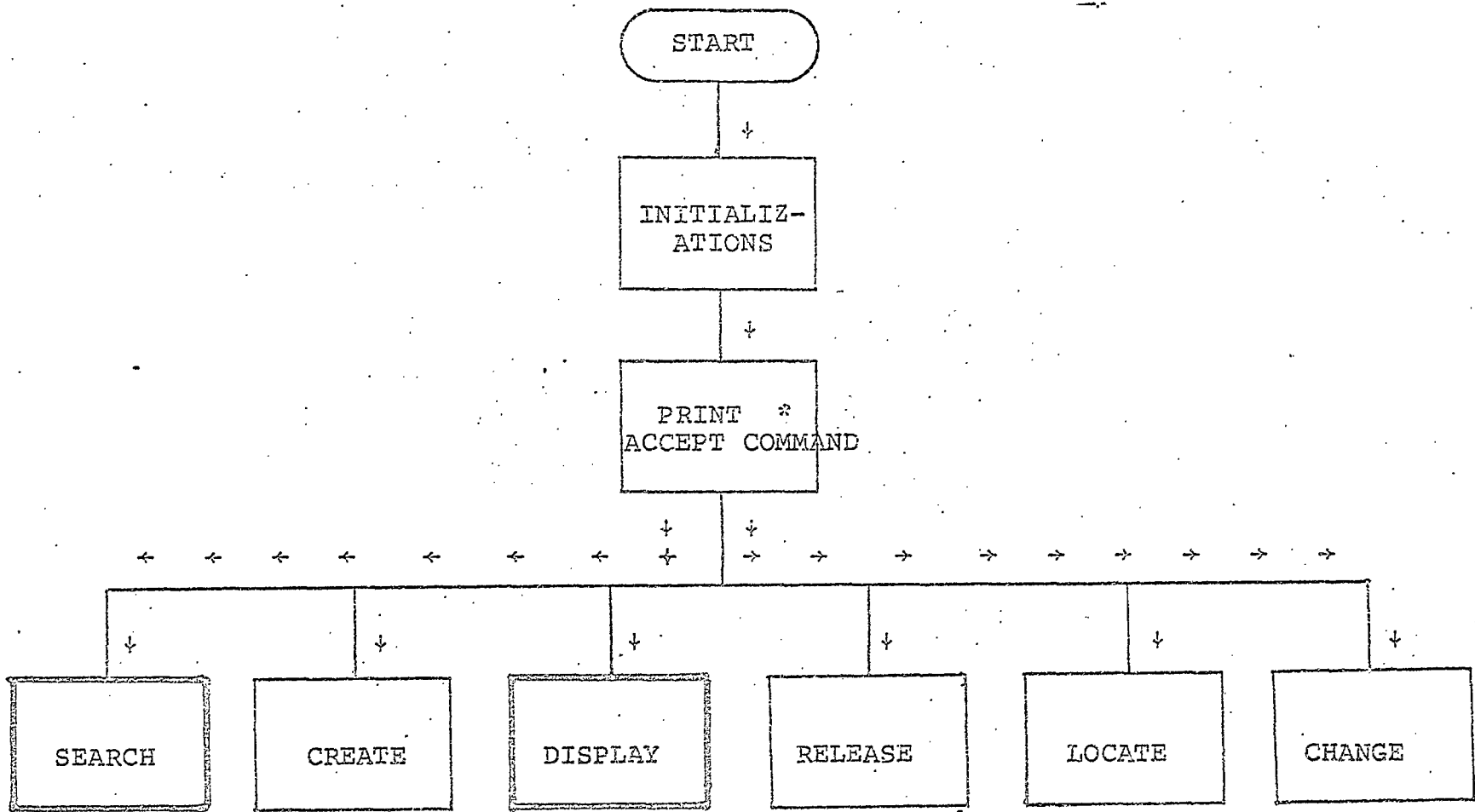
The search mode enables the user to search the master file. The master file can be searched by alphabetic or numeric keys.

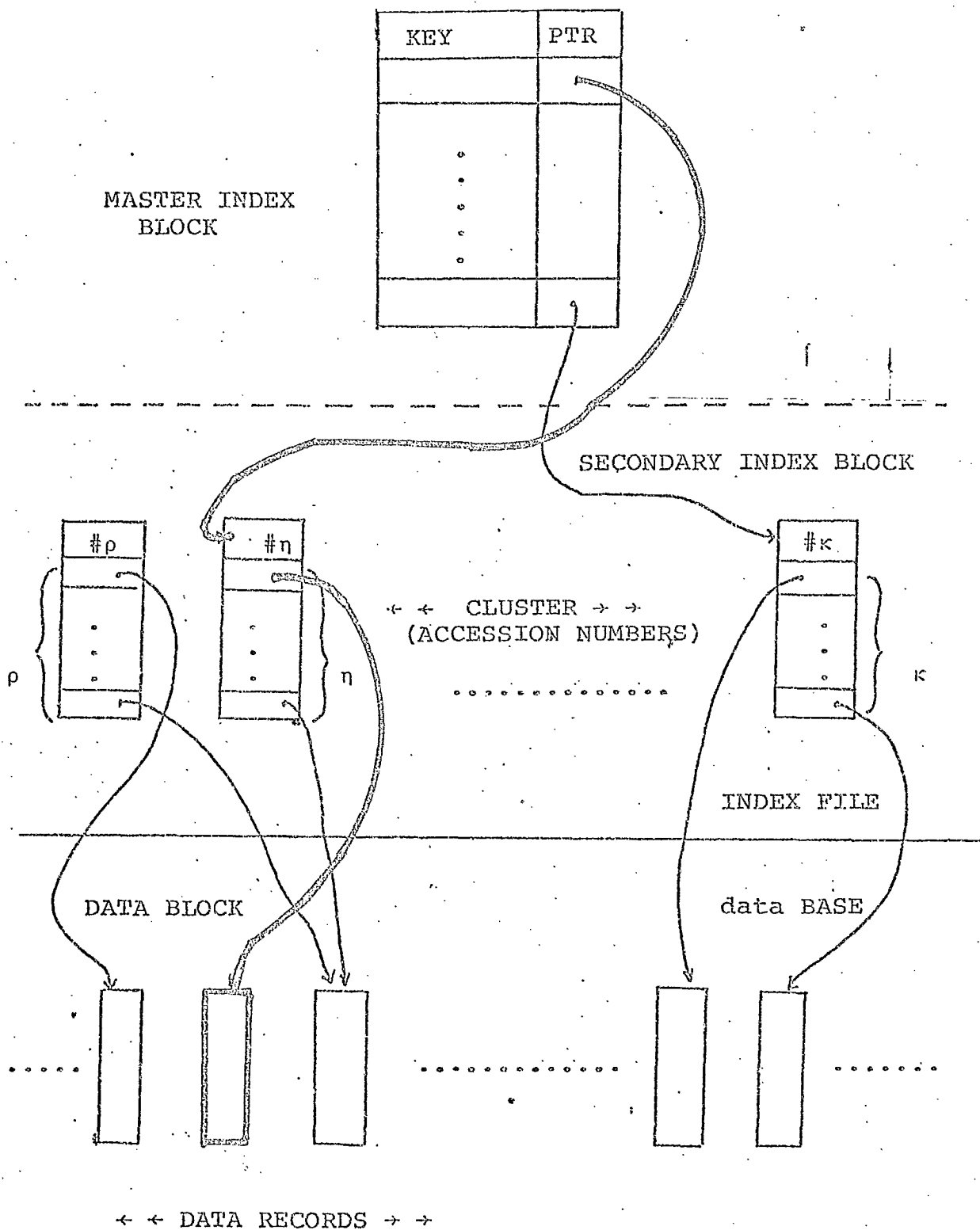
---

Note 10: At first, users hate these numeric keys, but eventually they learn to stop worrying and love them, in which case numeric search becomes the entry mode of choice.

---

The alphabetic index is an inverted file. It consists of an entry table and 4,000 records. The entry table contains a list of the index terms obtained by the keyword-in-context permutation of the master file name field and a pointer to a record. Each record contains a header telling how many records satisfy that key and a list of pointers to master file records in which the key term appears in the name field. The alphabetic index entry table is addressed by binary search.







---

Note 11: An ingenious idea. Each list is sorted which means file data does not have to be transmitted to a work-space while preparing an answer to a set-intersection search (that is, when finding out what specific entries are simultaneously filed under three or more headings) - only addresses need be compared. This feature greatly facilitates the performance of complicated on-line searches. However, the need to sort more than 4,000 files is one of the things that makes updating the system so difficult and expensive.

---

The numeric index is likewise an inverted file, but in four parts. Each part corresponds to a permutation of the 12-digit code which brings the desired digit of the 12-digit classification code into the indexing slot. The first digit designates affiliation. The second, third, and fourth digits designate with increasing specificity the human service offered. Each instance of a digit is one line in the entry table. Corresponding to each of the 12-digit codes is a pointer to the master file record possessing it.

---

Note 12: Same idea as [11]. However, this feature does not contribute so much to overhead because there are fewer numeric files.

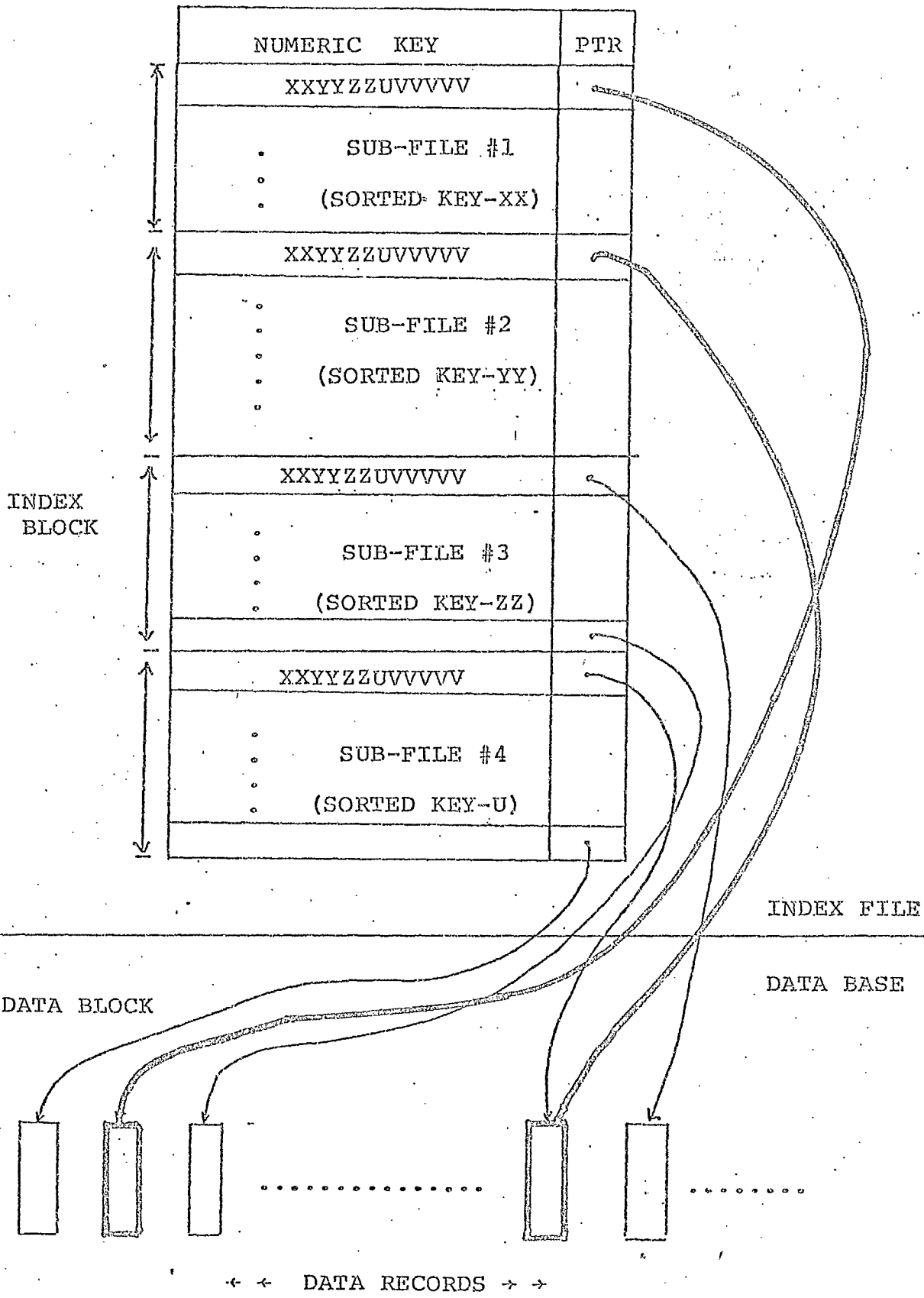
---

Search logic permits any desired combination of the operators: AND, OR, NOT, AND-NOT, OR-NOT with alphabetic or numeric keys; NOT can only be the initial operator.

---

Note 13: Very few systems users have any idea what these commands mean, let alone being able to make intelligent use of them.

---



In searching the file, the user is given a report of the number of hits scored in response to his initial logical request. He is then afforded the opportunity to enhance the precision of his request by adding more terms to it.

---

Note 14: Use of the option to re-specify a search request has led to inexplicable logical contradictions. It is recommended that its use be discontinued.

---

The master file is addressed by pointers from a list satisfying the logical search request.

The user can obtain an initial display of only the first line of each of the records so addressed: the 12-digit code and part of the name field,  $N$  at a time. In the resulting display, each line is assigned an index  $I$  to  $N$ . The user can obtain the complete records one at a time by entering the appropriate index numbers.

Thus four techniques: (1) audit of hits, (2) provision for increasing the specificity of search, (3) abbreviated display of search results, and (4) the facility to ask for only those retrieved records actually desired, help prevent the user from being overwhelmed by the undesired product of imprecise search requests.

The combination of numeric and alphabetic search facilities and the provision for five logical operations constitutes a powerful search facility.

One could, for example, request a listing of all Roman Catholic churches by specifying:

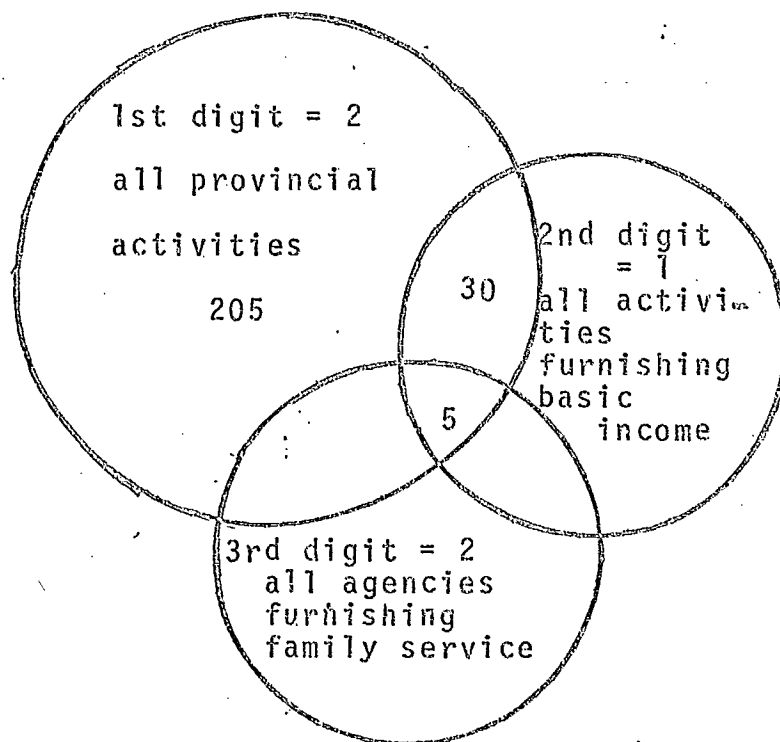
1st digit: 6 (an association)

2nd digit: 9 (community affairs)

3rd digit: 2 (churches)

AND ROMAN \* OR RC.

The search capability of System LONDON is indeed fast and highly precise. Consider the following search. It is for the regional office that administers family benefits:



The following information is displayed in the SCAN mode:

RECORD # :- 1 CLASS KEY :- 020102000005  
GOVERNMENT OF ONTARIO MINISTRY OF COMMUNITY AND SOCIAL SERVICES BOARD  
RECORD # :- 2 CLASS KEY :- 020102000010  
GOVERNMENT OF ONTARIO MINISTRY OF COMMUNITY AND SOCIAL SERVICES FAMILY  
RECORD # :- 3 CLASS KEY :- 020102000015  
GOVERNMENT OF ONTARIO MINISTRY OF COMMUNITY AND SOCIAL SERVICES REGION  
RECORD # :- 4 CLASS KEY :- 020102000020  
GOVERNMENT OF ONTARIO MINISTRY OF COMMUNITY AND SOCIAL SERVICES REGION  
RECORD # :- 5 CLASS KEY :- 021020000025  
ONTARIO DEPARTMENT OF PUBLIC WELFARE

Upon selecting choice #3, the following record is displayed:

020102000015  
GOVERNMENT OF ONTARIO MINISTRY OF COMMUNITY AND SOCIAL SERVICES  
REGIONAL ADMINISTRATION  
764 DUNDAS ST. E 438-5111

The star operator permits right truncation of search terms.

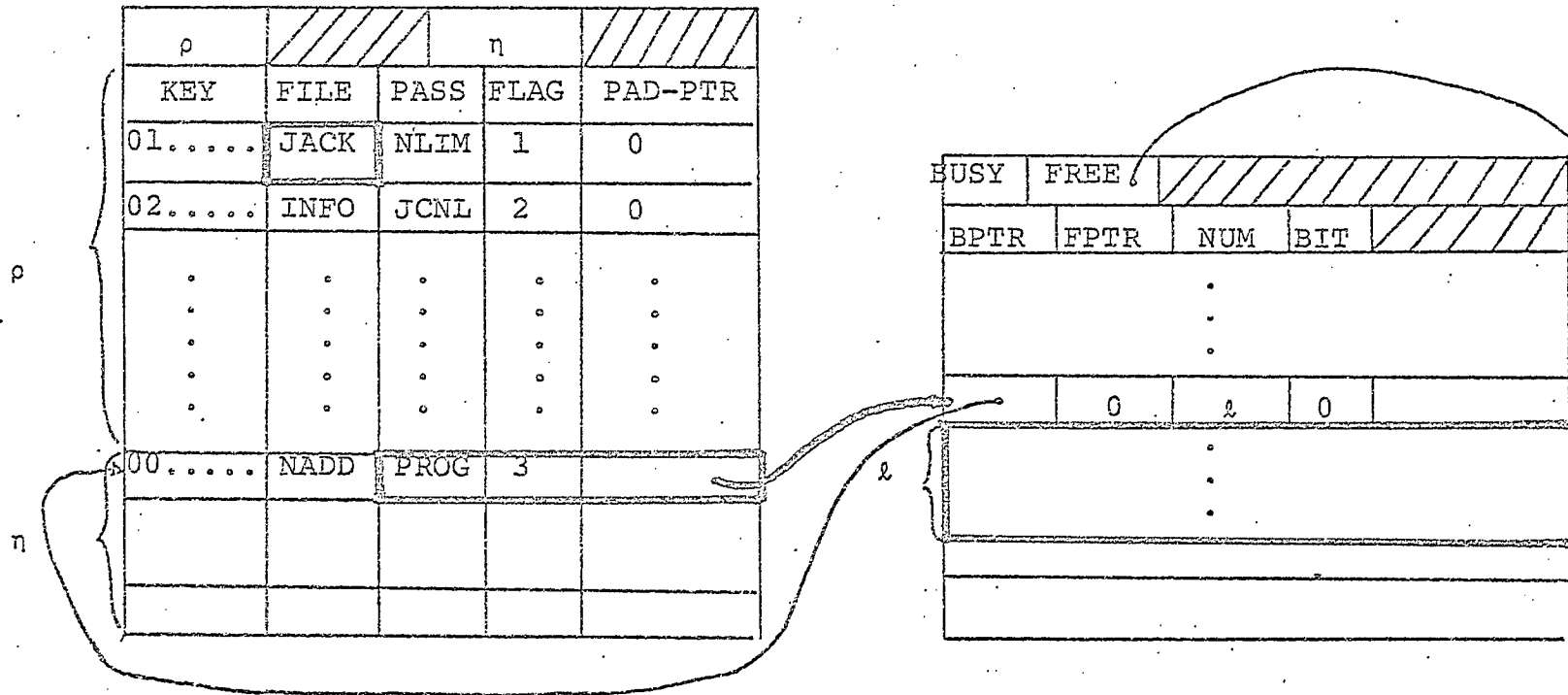
The syntax in the search mode is:

```

    <NUMERIC-KEY> AND <NUMERIC-KEY> AND
- NOT-           -OR-           -OR-
                -AND-NOT-       -AND-NOT-
                -OR-NOT-       -OR-NOT-
    <NUMERIC-KEY> OR <ALPHA-KEY | <ALPHA-KEY>*...
                -AND-
                -AND-NOT-
                -OR-NOT-

```

Both the ephemeral and scratch-pad files are accessed by a key table. The key table is headed by a counter telling the number of keys sorted and the number of keys in an associated overflow table if any. Like the alphabetic and numeric indices, the key table is stored using the computing system's random-access file mechanism. The key table contains the 12-digit codes of organizations for which either ephemeral or scratch-pad files exist.



$p$  := NUMBER OF ENTRIES SORTED

$n$  := NUMBER OF ENTRIES UN-SORTED



Attached to each code is a file name if an ephemeral file exists; a password, a status indicator and a pointer if a scratch-pad notation exists.

The status indicator pertains to ephemeral files. It can contain the following indicators:

- (1) indicates that provision for a file exists, but the file has no data in it
- (2) means that the file exists and has data in it
- (3) means the file has been released by implementing the user release option.

The password corresponds to a password assigned to users who are privileged to create ephemeral or scratch-pad entries regarding the organization designated by the 12-digit key. If a user wishes to create or release an ephemeral or scratch-pad file, he can do so only if he possesses the record password corresponding to the organization he wishes to comment upon.

Should the user forget his password, systems personnel can retrieve it for him using the privileged locate mode of operation to override the security provisions of the system.

Ephemeral files are created using the computer system's serial file access mechanism and by employing macro commands in the computer system's text editor language.

For example: the local Tourist and Convention Bureau has used their ephemeral file to store an index to twenty major points of interest. Entries in this index consist of the name of the attraction and its 12-digit code.

A user retrieves the master file record of the Tourist and Convention Bureau using the search mode and notes its 12-digit code.

He then uses the display mode to retrieve the ephemeral file pertaining to that 12-digit code.

The index provided by the Bureau then enables him to get detailed information on whatever attraction interests him by using the display mode in conjunction with the appropriate 12-digit code.

Ephemeral files can be lengthy. The ones describing tourist attractions will contain descriptions, hours of accommodation, admission fees, and directions. These files are paged so that the user can look just at each page heading and either have it displayed or skip to the next heading.

Success of the system as a community information medium depends upon each privileged user keeping his own ephemeral files up to date. In addition to the tourist bureau, Information London itself maintains several ephemeral files.

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Note 15: Initially it was believed that if computer terminal facilities were made available to organizations whose activities generated community information, they would rush madly to join "the on-line community".

Information London was able to create 26 files because a girl on a Local Initiatives Grant was available and they didn't have anything else for her to do. The Tourist and Convention Bureau created twenty files and got twenty minutes television coverage of it.

The London Public Library promised to create files pertaining to current activities at its several branches, but never progressed beyond storing the hours of operation.

We had hoped the London Free Press would create files dealing with forthcoming events of social and civic importance. They couldn't spare people to do it, but agreed to furnish information to the Computer Science Department, so they could enter it. After

a few weeks, they stopped sending it to us.

The Coalition for Development, a coalition of church groups allied with the Ontario Anti-Poverty League, planned to create files, but their cooperation was conditional upon receiving a development grant from the Secretary of State. There was no grant; consequently, no files.

The "on-line community" idea is probably basically sound, but the author has only found one person (Greg Curnoe, the artist) who enjoyed sitting at a console and typing material into a computer data bank for the sheer joy of it. Otherwise, one has to hire an operator, provide the data, and tell her to start typing. Before any organization will assign a staff member in this manner, its executive has to perceive a tangible benefit arising from the exercise. In other words, "on-line community" or not; if Information London or anybody else wants to be in the information business, they have to go out and dig it up; nobody else is going to give it to them either on the proverbial silver platter or on a remote computer terminal.

---

The very name of the ephemeral files connotes that the information they contain is subject to change over time in contrast to information in the master file which can be presumed to remain invariant between file updates. Even here, however, systems personnel utilizing the privileged change

option can enter from terminals information regarding changes in address and telephone number.

The intent of the ephemeral files is, therefore, to realize a dynamic electronic bulletin board for the community at large.

The scratch-pad file, on the other hand, provides a convenient vehicle for entering brief comments regarding an organization offering some human service.

Scratch-pad notations are contained within a common file. The pointer stored in the key table tells the location of the header of the variable length scratch-pad record. The header contains a flag telling whether the location is free or not, a count of the number of lines following at this location, and a back pointer to the key table. The flag is reset when the release option is exercised. In this way, the system performs dynamic "garbage" collection.

If, when locating a scratch-pad record, it is determined that not enough space exists at the current location to contain the information entered, the system searches for another location that is free and can hold it, transfers the record to the new location, resets the flag in the old location, uses the back pointer to return to the key table, and updates the pointer stored there so that it now points to the new location.

The scratch-pad can, therefore, be described as a double linked list. The program counts the lines required by the new entry after it is typed by the user. The relocation operation is transparent to the user.

---

Note 16: Essentially, here's what we're looking at with the "scratch-pad". Everytime an "ephemeral" files is opened, it means creating a named, disk-resident file that involves reserving a minimum of one block (512 computer words). If such files were used to store graffiti, there would be an unacceptable waste of disk space. The alternative, then, was to collect all the small items into a single file ("scratch-pad"), tagging each item so it could be retrieved on demand (the systems "random-access" option).

Nobody even entered any graffiti. Perhaps people who write on bathroom walls are put off by the complexities this system.

---

System INDEX was intended for use at remote visual-display terminals. It uses as its data base the working files currently prepared and maintained by Information London as pages in loose-leaf binders. There are currently twenty-six such files or data sheets:

- |                           |                                 |
|---------------------------|---------------------------------|
| 1. Welfare and Benefits   | 14. Federal Politics            |
| 2. Used Clothing          | 15. Shopping Malls              |
| 3. Individual Counselling | 16. Supermarkets                |
| 4. Family Counselling     | 17. Child Care                  |
| 5. Group Homes            | 18. Community Organizations     |
| 6. Child Welfare          | 19. Senior Citizens' Needs      |
| 7. Emergency Services     | 20. Neighbourhood Groups        |
| 8. Legal Services         | 21. Factory Outlets             |
| 9. Employment Agencies    | 22. Unusual (Consumer) Services |
| 10. Licences and Permits  | 23. Sports and Social Groups    |
| 11. Consumer Protection   | 24. Crafts and Hobbies          |
| 12. Local Politics        | 25. Ethnic Groups               |
| 13. Provincial Politics   | 26. Professional Associations   |

In addition to the major heading (file name), each file contains several minor headings. For example, the "Child Care" file has the minor headings:

- . Day-care centres
- . Nursery schools
- . Montesorri
- . Facilities for children with special needs.

Each entry consists of the name of the activity, address, and telephone number. In many cases, the entry also gives: name of contact person, types of service rendered, area served, hours of operation, and restrictions on clientele served.

In the first instance, these files were prepared by former university students on Local Initiative Project grants. The students used as sources the vertical and Kardex files of Information London and various Community directories. Entries were validated by telephoning each activity in question.

---

Note 1.1: This file structure provides no facility for vertical linkage. One cannot, for example, get a list of all provincial agencies or even of all activities operated by the Salvation Army, for that matter.

Note 1.2: Typing these files was no great chore, but somebody initially had to go through the descriptions of some 400 local human-service activities and sort them out as to function. This is called pre-coordination and it is a nasty job to do manually.

---

Inasmuch as the loose-leaf binders are the primary working tools of the Centre, the files are up-dated by the information counsellors on duty as they acquire new or different information in the course of obtaining information for clients or making referrals of clients to agencies, clipping local newspapers, or filing new brochures in the vertical files. These corrections and additions are made by handwritten inter-lineations on the data sheets.



Periodically a file will be given to the secretary to alphabetize and retype when it is in danger of becoming illegible because of the number of changes. The longest file consists of more than 500, 80-character lines or almost twenty typewritten pages.

System INDEX uses these manual files as its data base. The files are simply entered into the computer in free format using the monitor command for file creation. They are stored in the project disk area under some name such as FEDPL.DAT (Federal Politics). These files are accessed serially.

System INDEX is essentially a file-reading program that simulates a touch-sensitive panel. The files (45 at present) are divided into subject categories:

- . Human Services
- . Consumer Services
- . Recreation
- . Tourist Information
- . Community Affairs

Files are assigned to categories on the basis of their contents. When the user runs INDEX, the first category is displayed on the screen in the form of a "panel". The panel contains the subject category and up to nine file names each prefixed by a single digit 1-9. For example:

- |                       |                       |
|-----------------------|-----------------------|
| 1. EMERGENCY          | 2. WELFARE BENEFITS   |
| 3. LEGAL SERVICES     | 4. EMPLOYMENT         |
| 5. CHILD CARE         | 6. CHILD WELFARE      |
| 7. SENIORS NEEDS      | 8. FAMILY COUNSELLING |
| 9. INDIVIDUAL COUNSEL |                       |

If there are more than nine files in a given category, two or more panels are provided.

---

Note 2: Appearance of text on the screen is excruciatingly slow over a 300-baud line and impossible over a 110-baud line. On the other hand, if it is desired that data "flash" dramatically before the eyes, the additional cost of high-speed lines (2,400 or 9,600 baud) must enter into the picture.

---

A possible alternative could be to play the standing elements (panels, etc.) from a local cassette tape recorder at a high baud rate and transmit only the variable data (commands and retrieved records) over a 300-baud line. This procedure could, in combination with time-shared multiplexing, save on overhead represented by engaged computer ports and communications lines.

At the bottom of each panel are displayed complete operating instructions so no training is required to use the system.

For example, on the category panels, the user sees the following message:

\*INSTRUCTIONS\*

- (1) TO SELECT A FILE TYPE CORRESPONDING NUMBER
- (2) TO SEE LAST LIST OF FILES TYPE "RETURN"
- (3) TO SEE NEXT LIST OF FILES TYPE "NEXT"
- (4) TO TERMINATE PROGRAM TYPE "EXIT"
- (5) \*FOLLOW ALL COMMANDS WITH RETURN KEY\*

- TYPE COMMAND NOW:

This message is displayed when the program is being run under the "Learner" option. As the user gains familiarity with the system, the "Professional" option may be selected. In this case the message is simply:

\*TYPE 1-9,R,N,E:

Typing a number on the highest row of the terminal keyboard simulates operation with a touch-sensitive cathode-ray screen, in which case the user would merely point to the file name. This file is brought into the computer's main memory and after the user selects a file, a list of keywords is displayed.

For example, if the user chooses "7" (SENIORS NEEDS), the display would be:

```

*** SENIOR NEEDS ***
** RETRIEVAL KEYWORDS**
HOUSING HOSPITALS
CHRONICALLY ILL NURSING HOMES
EMERGENCY ACCOMODATIONS

```

The user types the selected keyword preceded by an asterisk (\*) and the program searches the file for it. The keywords suggested on the display are, in fact, the minor headings of the file. However, the first word of any line can be used as a retrieval keywords if the user knows or can guess it.

---

Note 3: Before performing a keyword search, the program must bring the entire file into the computer's main memory. The time taken to do this is frequently perceptible to the terminal user.

---

The program now searches the file for the keyword and, if found, displays the line containing the keyword and the nine succeeding lines.

The user can see ten more lines of the file by depressing the N(EXT) key each time a display is presented. In this way, the user can enter a file at a predetermined point and browse through it at will. When the end of the file is reached, the program notifies the user of this fact and continues to

display information ten lines at a time starting at the beginning of the file as long as the user continues to depress the "N" key.

Of course, the program can be used also with printing (hard-copy) terminals and in this case, a permanent copy of the file can be obtained.

If the user types in a keyword that does not occur at the start of any line of the file, the program informs the user of this fact and gives him another option:

```

***KEYWORD-COMMAND ERROR***
***THE KEYWORD WAS NOT FOUND***
THE PROGRAM CANNOT INTERPRET THE KEYWORD YOU TYPED
DID YOU REMEMBER THE "*" BEFORE THE KEYWORD?
(1) TO TRY AGAIN, TYPE "RETURN"
    THE LIST OF KEYWORDS WILL REAPPEAR
(2) TO BROWSE THROUGH THE TEXT, PROCEED AS FOLLOWS:
    (A) TERMINATE THE PROGRAM; TYPE "EXIT"
    (B) WHEN A DOT APPEARS, TYPE "TYPE INFO3.DAT"
    (C) TO STOP THE DISPLAY, TYPE "<CONTROL-C>" TWICE
--TYPE COMMAND ("RETURN" OR "EXIT") NOW:

```

The program is, of course, asking the user to go into monitor mode and dump the entire file, and giving the unsophisticated user detailed instructions how to accomplish this. The "INFO.DAT" is the monitor name for the file which the user knows as "SENIORS NEEDS". The program, at this juncture, always furnishes this essential item of information to the user.

After the user types "EXIT", the program displays detailed instructions how to kill the job on the time-sharing system without deleting files.

It is contemplated that Centre files will be created in the first instance at a terminal by use of the monitor command "MAKE".

Pages for information counsellors' binders can easily be duplicated using the monitor "TYPE" command. Similarly, the Centre files can be duplicated in response to requests from public and voluntary agencies, Neighbourhood Resource Centres and other Community Information Centres.

Update could also be accomplished at a terminal by a secretary trained to use the computer system's Text Editor and Corrector (TECO). It is believed that a subset of this language can be taught that will make it easy for a secretary to delete out-dated information, correct erroneous information, and add new information.

A major advantage of having files under control of System INDEX, would be institutionalizing the process of up-dating them, and making copies readily available within the Centre and to other organizations.

---

Note 4: No information counsellor in active telephone communication with a client is going to play "20 questions" with any computer. It is not just that the counsellor doesn't have two hands free for typing. It is a matter of concentration. The analogy to on-line reservations or on-line banking is not valid. Once the teller has taken the customer's bankbook, she turns off on the customer and concentrates on entering his passbook number, which is, incidently, much less demanding in terms of concentration than framing a boolean search strategy.

On the other hand, there would appear to be much merit in displaying a choice of options while the counsellor is engaging the client in conversation provided the work needed to obtain this display does not prove to be too distrating to the counsellor. System INDEX appears to do this quite well.

---

It would not be surprising if the loose-leaf binders remained the reference tool of choice for information counsellors albeit with the pages of the binders regularly (say weekly) produced by computer from a set regularly updated disk-resident files.

A word is in order here about the text editor and corrector language. This language, called TECO, is maintained by the Digital Equipment Co. (DEC). The language contains a great many options and can perform a great many complex tasks. Many computer scientists equate these qualities with software "power".

Actually, very few of the language's attributes are required to correct, update and purge the files used in System INDEX.

On the other hand, it is easy to destroy all or part of a file by using some feature of the language with which the user is unfamiliar, or merely by making a simple typing error at the terminal keyboard.

Accordingly, it might be a good idea to implement a less "powerful" text editor and corrector that can be more readily understood and used by unsophisticated operators.



Having considered the advantages and shortcomings of two alternate retrieval subsystems: System LONDON and System INDEX, it is now possible to specify the dimensions and configuration of a system that will hopefully combine the advantages of the two preceding systems and avoid their disadvantages. The retrieval subsystem will be known as System HYPOTH.

- \* The MASTER FILE will use as its source of information the latest edition of the Community Service Directory, published jointly by Information London and the London Public Library. Judging from the size of the 1975 directory, this file would require at least 150 disk blocks (150 records); one should allow for 200 blocks to accommodate future growth. To facilitate convenient updating of the master file, it would probably be best to use a fixed-length record format and allocate one disk block to each agency/activity. The master file will be built using the "random-access" file provisions of the computer operating system.
- \* Each MASTER RECORD will give agency-contact information regarding one activity of an agency. The average size of a master record will be less than 500 computer words, judging from the contents of the 1975 Directory.

- \* The MASTER KEY (to a master file record) will be derived by hashing the first ten characters of the agency name. The name of each activity will begin with the agency name. For example:

CANADIAN RED CROSS BLOOD-DONOR SERVICE

CANADIAN RED CROSS HOMEMAKER SERVICE, etc.

One hashing algorithm that might be used would involve folding or adding modulo-2 the characters of the first two computer words of each record.

In cases of competition, records will be sequentially stored in an overflow area at the end of the file. Room, perhaps, for 100 percent overflow should be provided.

The serializing key chosen for the master file will permit vertical linkage according to agency name.

- \* The master file will be stored in 128-character ASCII Code in 72-character left- and right-justified lines. Thus the records can be recalled according to agency name to produce camera-ready copy for the annual directory.
- \* The principal method for updating the master file would be to send proofs of directory copy for correction to the local headquarters of each human-service agency. Proof would be corrected in accordance with the subjects' changes

by altering the master file by means of the computer system's Text Editor and Corrector program and then printing out another copy. By stressing the off-shoot print media product, the ill will formerly generated when computer data-bank print-out was mailed, will likely be avoided.

- \* The INDEX FILE would be built using the "serial-access" file mechanism of the computer's operating system. Experience with System LONDON dictates that the index file will require about 100 disk blocks (5,000 records). Room for at least fifty-percent overflow should be provided.
  - \* Each INDEX RECORD will consist of the index key, master keys to master records possessing this attribute, and the length of the record. Inasmuch as record length will depend upon the initial population of index records and an informed estimate of the growth potential of the index key categories, a variable-length format is preferred for index records. However, space for future growth within index key categories should be provided within the records. The overflow area of the index file should be reserved for addition of new index key categories.
- The average length of an index record will be ten computer words.

\* The INDEX KEYS will be derived in three ways:

(1) Each master record will be assigned manually one or more four-digit sponsor-function key numbers. The 2nd, 3rd, and 4th (if any) digits will be pre-coordinated. The 1st digit and the coordinated 2nd, 3rd, and 4th digits will become index keys.

(2) The agency/activity name enhanced by popular names, acronyms, former names and qualifying words (if necessary) of each master record will be processed automatically against a stop or exclusion list of common words ( ).

The words remaining will be truncated to five characters according to an algorithm as follows:

- (i) remove embedded punctuation
- (ii) remove one of each pair of doubled letters
- (iii) remove characters sequentially from the right according to the expected occurrence frequency of characters in English (or French, as the case may be) text.

The five-character codes will become index keys.

- (3) The text of each master record will be processed automatically against a keyword extraction program ( ) to obtain a list of keywords and phrases. Each of these will be processed to obtain index keys in the same manner as the name words were processed with the exception that in the case of key phrases (eg "child welfare") embedded blanks will be removed in Step (i). For example:

Given: CHILD WELFARE

(i) CHILDWELFARE

(iii-1) CHILDWELFAR

(iii-2) CHILDWLFAR

(iii-3) CHILDWLFR

(iii-4) CHLDWLFR

(iii-5) CHLDWLF

(iii-6) CHLDWF

(iii-7) CHDWF (index key).

Use of the index file will afford horizontal linkage among activities based upon human-service functions.

- \* Experience with System LONDON dictates that only AND and OR operators should be allowed in System HYPOTH for RETRIEVAL. It is anticipated that System HYPOTH will be used principally by printing terminals.
  
- \* It is expected that the user will be a specially designated information counsellor trained to operate the System. The user will be provided with a copy of each of these documents:
  - (1) The current copy of the Information London/London Public Library Community Directory
  - (2) An alphabetical list of local human-service agencies/activities
  - (3) A dictionary of index keys in their input (non-truncated) form and truncated forms.
  
- \* It is anticipated that System HYPOTH will be used principally to:
  - (1) Prepare and revise problem-oriented files for System INDEX
  - (2) Produce special directories for public and voluntary human-service agencies and other nodes of the Community Information Network.

\* The user will be expected to supply his request in the form of a fully parenthesized boolean expression consisting of search terms in natural language linked by the operators AND(-) or OR(+).

\* The program will process the request as follows:

- (1) ~~truncate all search terms to produce index keys~~ which will be checked for validity.
- (2) parse the request into inverse Polish notation.
- (3) evaluate the resulting Polish string recalling index records as required.

\* The initial report of System HYPOTH will consist of:

- (1) the number of master records satisfying the user request
- (2) a list of search terms which resulted in the production of invalid index keys; these invalid index keys will be ignored by the program.

\* The user will then have the option of

- (1) phrasing another search request
- (2) receiving a print-out of all master records satisfying the request

(3) the user will have the further option of suppressing the remainder of any single master record after having seen the first line or so.

- \* Whenever Centre personnel find that a master record is incomplete, out-of-date, incorrect, or missing, this fact will be reported to the Centre director who will direct the user to verify the report and, if necessary, change the master record in question accordingly. These changes will be made using the computer system's "random-access" retrieval and text-editing facilities.
- \* It is recommended that System INDEX be retained for use by the Community Information Centre and that the number and content of the files under control of System INDEX both be augmented where necessary by suitable retrievals using System HYPOTH.

It is further recommended that print-outs from System INDEX be obtained periodically (perhaps at weekly intervals) and that these constitute the primary working tools for information counsellors (loose-leaf binder contents).

The indexing and classification procedures implicit in System HYPOTH are at least partially compatible with the Keyword-in-Context classification procedure used by



the provincial Ministry of Community and Social Services. It is believed that similar classification procedures will be adopted by other arms of the provincial government. It is hoped that Information Canada will adopt similar procedures for classifying the human-service functions performed by the federal government.

The distinct possibility exists, therefore, for enriching the content of the master file by inputs from these senior levels of government obtained either directly or through Regional Support Centres, as the case may be. Likewise, were Regional Support Centres to be established, input in the form of master file records could likewise be used to enrich their information resources in respect of human-service opportunities available at the municipal level from both the public and voluntary sectors.

## CONCLUSIONS

There are five areas in which crucial decisions must imminently be taken regarding the future development of Community Information Centres:

- . Control
- . Coordination
- . Communications
- . Computerization
- . Credibility

Control

Problems centering on the control system of a Community Information Centre arise from two factors: diffused sources of funds and other resources, and diffused characteristics of its clientele. The first factor leads to confusion regarding the identity of the MASTER system. The second factor leads to confusion regarding the identity of the OBJECT or "controlled" system. As a result of this confusion, there exist simultaneously at least four perceptions of the control system of a Community Information Centre:

- \* Social activists, who may furnish essential volunteer services, especially in highly urbanized areas, perceive the disaffected as the masters exerting control over local alms-giving agencies.

- \* The Philanthropic Elite, who provide funds through charitable contributions, perceive the local "establishment" as the master exerting control over the disaffected by furnishing them with a relatively harmless "safety valve".
- \* Governments, who provide funds in the form of grants, perceive themselves as masters exerting control over both the disaffected and local alms-giving agencies by their utilization of performance statistics to derive social indicators.
- \* The Middle Class, who provide popular support for Community Information Centres, likewise perceive themselves as masters exerting control over their quality of life and tend to use the Centre as a convenience.

It is not the author's purpose to denigrate the motives of any of these groups. It is the author's belief, however, that at this time the need for responsible and well-informed government should enjoy the paramount priority and as a consequence, government, especially senior levels of government, should emphasize its role by providing the majority of financial support and technical direction.

It is likewise important that the local establishment play a recognized role in supporting Community Information

Centres so the Centres do not come to be viewed as alien structures "parachuted" into the local community. For this reason, Community Information Centres should continue to seek at least minimal support in the form of municipal grants, and allocations from United Community Services.

It is important that the Community Information Centre select its management and executive and conduct its day-to-day operations in such a way as to neither erode its popular support from the middle classes, nor its credibility among the disaffected and especially their social-activist spokesmen (or spokespersons, if one wishes).

#### Coordination

The confusion engendered by the multiplicity of information agencies now forming in the public and voluntary sectors, can perhaps be classified by three contingency models:

Consider first the confusion between public and voluntary information agencies and between special-purpose and general-purpose agencies. This can be clarified by constructing a 2-by-2 contingency model and populating each cell with a representative agency:

	<u>Special</u> <u>Purpose</u>	<u>General</u> <u>Purpose</u>
<u>Public</u>	<u>Nat'l. Revenue Tax Advisors</u>	<u>Information Canada</u>
<u>Voluntary</u>	<u>Planned Parenthood</u>	<u>Community Information Centre</u>

Consider next the basic communication function of establishing channels from and to agencies and people:

<u>From</u>	<u>To Agencies</u>	<u>People</u>
<u>Agencies</u>	<u>Urban Resource Centre</u>	<u>Information Canada</u>
<u>People</u>	<u>Community Information Centre</u>	<u>Tie Line</u>

Finally, in examining the means by which service is rendered (ie by telephone or face-to-face) and the services rendered (ie information-direction-referral or counselling-advocacy) is expedient to utilize two contingency frameworks assigning one to each of two classes of voluntary information services while populating the cells with the approximate percentage of effort each might devote to each particular mode for rendering service.

Neighbourhood Resource Centre

	<u>Walk-In</u>	<u>Telephone</u>
<u>Information</u>	10	5
<u>Counselling</u>	75	10

Community Information Centre

	<u>Walk-In</u>	<u>Telephone</u>
<u>Information</u>	10	75
<u>Counselling</u>	5	10

It has been seen that the Community Information Centre can play any of three roles:

- \* CLEARINGHOUSE for direction and referral
- \* INFORMATION SOURCE
- \* COUNSELLOR.

The primary function of a Community Information Centre is to act as a clearinghouse for direction and referral. This being the case, Community Information Centre could well be viewed as a misnomer. However, were the Centre renamed the

Community Clearinghouse, there is a real danger that the public would mistake it for a factory outlet specializing in carpet remnants and broken sets of closed-stock china.

The role of the Community Information Centre as a primary information source should be restricted for pragmatic reasons (principally limited resources) to filling ellipses in the existing fabric of information services. Moreover, a Community Information Centre should take the initiative to support the formation of special-purpose voluntary and public information services such as the proposed Early Childhood Resource Centre. It can do this in the first instance by demonstrating from analysis of its own client-contact reports that the need for such an information service does indeed exist, secondly by furnishing informational and technical support to the new service during its nascent period and finally, of course, by furnishing support in the form of direction and referral of clients throughout the lifetime of the new service.

Clearly, the Community Information Centre belongs within the galaxy of voluntary agencies that might tend to nucleate around an Urban Resource Centre. Its unique store of informational resources places it in an excellent position to enjoy a permanent symbiotic relationship with those other agencies both as a source and recipient of information.

As a personal counsellor, a Community Information Centre should never aspire to the role played by Neighbourhood Resource Centres. The operational environment of an effective Community Information Centre is in no way conducive to the relaxed atmosphere and intimate one-to-one relationship that characterizes a good personal counselling situation. The Neighbourhood Resource Centre is far better equipped for this task. Moreover, the air of mutual trust between client and counsellor arising out of similar life experiences apprehended in the same locale cannot be effectively simulated by an agency that is by its nature oriented toward the entire community. The same considerations apply to recognizable ethnic communities, only more so. In this restricted sense, one can class establishments such as the North American Indian Friendship Centre along with Neighbourhood Resource Centres.

Furthermore, it is difficult to perform effectively as a personal counsellor without occasionally being tempted to assume the role of advocate. In playing the role of advocate for any person or group, the Community Information Centre immediately jeopardizes its credibility with local human-service agencies who are, at once, points of daily referral for its clientele and essential sources of contact information.



Rather, it should be the role of the Community Information Centre to supply neighbourhood and other resource centres with timely and comprehensive information regarding the availability of human-services from all sources public, private, and voluntary, and to facilitate the referral of the clients of these other centres to appropriate agency contact persons whenever necessary.

The Community Information Centre should, of course, be prompt to refer its clients to Neighbourhood Resource Centres, ethnic counselling centres, or to problem-oriented counselling services, as dictated by the information counsellor's assessment of the client's needs.

#### Communications

There are three basic problems relating to Centre communications and these are distinguished by the identity of the communicator, viz:

- \* HUMAN-SERVICE AGENCIES
- \* OTHER INFORMATION SERVICES
- \* GENERAL PUBLIC

The agency problem involves obtaining information regarding the availability of human-services and delivering feedback regarding the actualization of human-services (as derived from analysis of client-contact information) to both local agencies

and to senior levels of government. A contingency table framework can be used to classify the alternative mechanisms:

	<u>Availability</u>	<u>Feedback</u>
<u>Local</u>	Active Acquisition	Personal Contact
<u>Federal-Provincial</u>	Resources Directory	Processing By-Product

Active acquisition involves routinely clipping the daily newspaper and regularly telephoning contact persons in agencies unless client queries necessitate earlier contact. This procedure resembles the way in which a newspaper reporter regularly covers his "beat" or list of productive news sources.

Personal contact can be realized by: interlocking directorates on agency management boards, informal meeting a deux of agency executives, problem-oriented meetings of agency staff members, collective occupancy of an Urban Resource Centre, or regular meetings of agency executives under the auspices of a local Human-Services Resource Council.

A Resources Directory was prepared by the provincial Ministry of Community and Social Services. Each branch submitted to the Community Information Branch of the Ministry a one-page summary of the human-services it provides. The Information

The first part of the report deals with the general situation of the country and the progress of the work done during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the recommendations made.

The work done during the year has been very satisfactory and it is hoped that the results achieved will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results achieved will be of great value to the country.

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Branch tagged retrieval keywords in each summary, entered the information into a computer, and retrieved under each keyword heading the titles of the branches in whose summaries that keyword appeared, together with the text of the paragraph in which the keyword appeared. Cross-references were provided in cases where keywords were synonymous. The directory was sorted on keywords, printed, and disseminated widely within the province. It is planned to produce similar information regarding other ministries of the provincial government culminating in publication of a composite directory of provincial human services. It is anticipated that, as new programs are instituted, old ones terminated, or major changes instituted, the branches concerned will take the initiative of informing the Community Information Branch of the Ministry of Community and Social Services. The Community Information Branch will then update its data bank and print change entries (perhaps on "sticky" labels) to be distributed to holders of the provincial directory. The Community Information Branch has had conversations with Information Canada, the objective of which has been to induce Information Canada to provide a similar service on behalf of the federal government. Judging from the success of the directory published by the provincial Ministry of Community and Social Service, extension of this service throughout the provincial and federal governments would go a long way towards solving the problem of obtaining timely and comprehensive

agency-contact information from the senior levels of government.

The term "Processing By-Product" presupposes that the provincial government will assume the responsibility for processing client-contact reports on behalf of Community Information Centres and by implication standardizing the format of the data-collection documents and the performance-statistics reports. This could be implemented by Regional Support Centres. Such Centres will undoubtedly appear when and if Regional Government becomes the norm throughout the province. They may appear sooner if perhaps the Ministry of Finance and Intergovernmental Affairs takes an initiative in this direction. Possibly as an interim measure, the Ministry of Community and Social Services could contract this function to the Computer Centres of some provincially supported universities. The important point is that the Community Information Branch should take the initiative to compile statistics regarding unmet human needs and conflicts arising from apparent breakdowns in the human-services delivery system and deliver timely and comprehensive reports to cognizant officials in the planning, programming, and administrative branches of the provincial government.

It is hoped that Information Canada or some other branch of the federal government will take a similar initiative at the federal level. Perhaps what is needed is some sort of general audit of social impact.

Communications among information services at the local level gives rise to four problems. These involve:

- . Prompt on-line switching of emergency contacts
- . Referral of client contacts to special-purpose services
- . Upgrading the informational capability of Neighbourhood Resource Centres
- . Extension of service to rural areas.

There is a critical need for the capability of switching an emergency call to the local emergency centre, while the client is still on the line. Every Community Information Centre should have a direct line to the "Call 911" desk at local police-fire headquarters, an internal switching mechanism capable of transferring the call, and probably the capability of recording such calls on magnetic tape. The local emergency network should include direct telephone connection to centres for poison control, suicide prevention, and crisis intervention as well as fire, police, and ambulance service.

The Community Information Centre should join with Neighbourhood Resource Centres and special-purpose public and voluntary information centres in a local College of Community Information, to exchange information about the services available at each centre and for regular critiques regarding the handling of specific client referrals.

The Community Information Centre should take the initiative to compile an inventory of resources available at each Neighbourhood Resource Centre and make this information available to all resource centres. The Community Information Centre can also use this inventory for guidance in making client referrals. Moreover, the Community Information Centre should actively promote establishment of a newsletter to be circulated among Neighbourhood Resource Centres to publicize the availability of new resources. The Community Information Centre should provide each Neighbourhood Resource Centre with a copy of its directory of human services as well as current copies of the problem-oriented files used by its information counsellors.

There is an urgent need to provide information regarding the availability of human services to persons living in rural areas and small ex-urban communities. The community directory (or a dump of the master file) and a printed aggregation of computer-produced problem-oriented files, could supply the basis for a convenient information package for extension of information

services. However, there remains the problem of bringing this information to the people who need it.

The Local Initiatives Project grants have frequently provided the vehicle for starting Information Centres in small communities. There seems to be, however, good reason for not relying on LIP as the sole source of funds for any important human service. The projects last only, say, six months and thus tend to arouse unfulfilled expectations in people who may already be disaffected. On the other hand, persons on LIP grants, can and have provided valuable support services to established human-service agencies. It has been suggested that information counsellors be sent to rural areas to conduct temporary information clinics. There may be some merit in such a plan, but in the long-term it would seem to be more fruitful to co-opt the support of traditional resource persons and furnish them with packaged agency-contact information. Such persons could include town and village clerks, clergymen, local librarians, and even general-store proprietors. The principal mission of information clinic teams could turn out to be identification of permanent local resource persons. Packages of agency-contact information and training in community information counselling practice should also be offered to personnel of regional-library book-mobiles.



Communication with the public is required to offset an apprehended middle-class bias developing among the clientele of Community Information Centres. Various mechanisms for proselyzing among the disaffected have been suggested including spot announcements on radio, especially ethnic and consumer-oriented programmes. Door-to-door distribution of telephone number cards would seem useful, but use of "Welcome Wagon" for this purpose is almost sure to perpetuate a middle-class bias. Distribution by social workers may be good or bad, depending upon the extent to which the disaffected tend to view the social worker in an adversary role. Distribution to school children and by leaving supplies of cards at points where human-services are actualized appear to be effective.

Finally, there is the possibility that a client seeking certain kinds of sensitive information, may be unwilling to talk to any human intermediary. One could seek substantiation for this hypothesis by leaving copies of a human-service directory in Neighbourhood Resource Centres for casual browsing by walk-in clients and noting whether the directories subsequently exhibit signs of substantial use. If it is determined that in some cases the presence of a human intermediary is an inhibiting factor in the communication-process, some thought might be given to permitting client access at Neighbourhood Resource Centres to computer terminals, especially designed to be rugged and easy to use. A retrieval program such as

System INDEX would appear to be best adapted to this kind of application.

### Computerization

The possibilities for computer assistance in Community Information Centres are bound up in the basic steps of information handling as they relate both to client-contact and agency-contact data, viz

- \* ACQUISITION
- \* PROCESSING
- \* RETRIEVAL
- \* DISSEMINATION

Data acquired must be reliable and comprehensive. Standardized formats should be developed both for client-contact and agency-contact data. Experience at Information London has shown that acquisition of client-contact data in machine-sensible format (ie mark-sense cards) is both effective and efficient. Acquisition of agency-contact data in machine-sensible format could potentially reveal similar advantages. The problem is one of implementation. Agency-contact data is not easily rationalized. It would appear the best way to acquire these data in machine-sensible format is by means of keyboarded terminals possessing facilities for real-time text editing and correction. Such data

capture could be effected by a terminal (which could be an inexpensive teletype terminal connected to a 110-baud line) on-line to a remote time-shared computer; by a terminal connected to a dedicated minicomputer; or by an "intelligent" terminal connected to a local digital cassette tape recorder. In the last case, the data could be transmitted over wire to a remote computer either directly if the computer were operated in the time-sharing mode, or to an incremental tape recorder if the remote computer were operated in the batch mode. Alternatively, the cassettes could be mailed. Centres not possessing terminals, could make use of a standardized data-acquisition document. These documents could be delivered to a computer centre for entry by key-punching or by magnetic tape/disk key entry. The main reasons that automation deserves a role in data entry, are that: automation makes it easy to enforce uniformity in format; once data is brought under control of an automatic system, it cannot become lost or mislaid; and that automation assures adherence to the one-writing principle that not only obviates tedious retyping, but more importantly, insures against insinuation of subsequent typing errors.

Speed is not a major factor in processing of data. Processing can usually be done off-line. Choice of real-time processing over batch processing would have to be justified, indeed, if it could be justified at all, in terms of the

operating convenience for the computer centre, rather than on the grounds of any operational advantage that might accrue to the information centre. The principal results of processing are:

- . Editing, correcting, updating, formatting and sequencing of agency-contact information
- . Compilation of problem-oriented lists of agency-contact information
- . Tabulating, cross-tabulating, and statistically analyzing client-contact information.

There are four possible options open to a Community Information Centre to obtain data-processing support:

- . A provincial Regional Support Centre
- . Obtain service locally
- . Do its own processing
- . The Peoples' Computer.

If the provincial government can see sufficient advantage to itself, the first option would probably be the most cost/effective. The provincial government could realize economics of scale by assuming the responsibility for processing data for Community Information Centres along with its other public responsibilities as part of the provincial government's contribution to the community information movement. Of course, this presupposes that there will be Regional Support Centres and that these centres will have some under-utilized programming and processing capability. If these conditions do not hold true, then the processing of data for community information centres would have to take its place on the scale of other priorities of the provincial government and it is impossible to predict what level of support would be forthcoming.

The possibilities for local support include municipal government computers, community colleges and universities, local boards of education, local businesses and computer service bureaus.

. Municipal governments usually run their computer-centres, like everything else, on a tight budget. Although there might be time available for computer processing on second or third shift, there would be no provision for programming support and no provision for an operator during these periods. Were the municipal government to view such assistance as support in

kind in lieu of operating grant money, Community Centre executives would not take kindly to it, since they would prefer money for discretionary spending. Moreover, data processing ranks below staff expansion and higher staff salaries on the Community Information Centre's own list of priorities.

. Universities and Community Colleges are lavishly endowed with computing power and expertise much of which is, by the nature of the institutions, used in non-productive ways. It may be possible to interest a teacher of computer science in providing data-processing support to a Community Information Centre under the guise of a tutorial exercise or a research study. Indeed, the Computer Science Department of the University of Western Ontario has for three years provided just such support to Information London. However, in the long-term, the objectives of research studies will tend to conflict with the operational needs of the Centre. Moreover, the needs of the University may eventually necessitate placing a limit on the time and effort available for support of a Community Information Centre. Support from this quarter must be regarded as a fortuitous circumstance and at most a temporary expedient.

. Board of Education computers, in contrast with those at Colleges and Universities, are primarily tools of the administration. Their teaching function is secondary; their research function non-existent. Moreover, the teaching exercises done are at a

lower level of sophistication than would be required to meet the needs of a Community Information Centre. Board of Education computers are hedged by circumstances similar to those which surround municipal computers. Furthermore, the local Board of Education has no particular incentive to make any sort of grant either in cash or in support to any voluntary organization.

. The computers belonging to private business are probably subject to tighter budgetary control than are municipal computers. Moreover, it is certain that Community Information Centre executives would prefer to see a cash donation forthcoming from private business instead of support in kind. Cash donations would probably be looked upon with greater favour by taxation authorities who are always perplexed when assessing the worth of a charitable donation in kind and may well come down with a decision unfavourable to the corporate taxpayer.

. Use of commercial computer service bureaus, either time-shared or batch, requires a considerable outlay of cash for running time and a much greater outlay if programming and systems analysis are needed. In no way would any Community Information Centre lay out this kind of money unless it were given to them specifically earmarked for this purpose. On the other hand, if one of the senior levels of government wanted to have the systems analysis and programming done on a contract basis, and then provide periodic operating grants specifically for data processing, there would, undoubtedly, accrue beneficial results both

terms of support to the Community Information movement and new business opportunity for the Canadian data-processing service industry.

The option of a Community Information Centre to process its own data would lead to substantial contradictions:

. Any computer capable of performing the operations implicit in processing data for a Community Information Centre would invariably have far more computing capacity than would be required by any single Community Information Centre. Thus a Community Information Centre possessing a computer would inevitably become a regional centre utilizing its unused capacity to process data for Centres in nearby cities.

. The salaries paid to computing professionals would greatly exceed that paid to the Centre executive. The emphasis at the Centre would inevitably shift to the data processing role with the net effect that the Community Information Centre possessing a computer would become de facto a Regional Support Centre albeit under local control. The outcome would likely be unsatisfactory with neighbouring cities receiving inadequate data-processing support, while the computer-endowed city received superior data-processing and inferior information counselling.



The Peoples' Computer idea derives from the notion that a government (federal) publically committed to participatory democracy should endeavour to even up the unfavourable balance of information power between the citizen and the "establishment" by making computers available to the people. Although it is true that the computer represents a capital resource beyond the means of any single local group in the voluntary sector and likewise beyond the means of most syndicates that could be formed locally in the voluntary sector, possession of a computer in itself would do little to confer information power on its possessor. Substantial support is also needed in the form of systems analysis, programming, clerical and operating support, and above all, management. The Peoples' Computer can become a viable proposition only if supported by an institute that would monitor needs and develop applications programs to fulfill those needs. Its most probable hardware realization would be in the form of several large time-sharing computers with provision for local remote job entry terminals, possibly appended to existing federal government offices. Operation and systems support would have to be performed by computer professionals. Such a national computer utility could be operated by public-service employees as an arm of the federal government, as a federal Crown corporation, or contracted to new or existing data-processing service organizations in the

private sector. Services could be made available to municipalities, voluntary agencies, private citizens, and private business according to a variable rate structure. Several important decisions must be taken before the Peoples' Computer could become an actuality. If and when such a synthesis occurs, Community Information Centres may well come forward among the earliest users.

The primary need ~~for information retrieval in a Community~~ Information Centre is not for real-time retrieval of answers to specific inquiries. Rather the need is to provide information counsellors with a set of reasonable alternatives to promote more equitable use of equivalent human-service facilities. Off-line preparation of problem-oriented lists of agency-contact information can serve just as well as on-line retrieval. A program such as System INDEX can, however, provide a useful training aid for new information counsellors where a high rate of personnel turnover is a problem. One cannot overlook the possibility of providing problem-oriented lists of alternative services in microform and furnishing each information counsellor's position with a microform reader. Indeed, provision for even a single microform reader/printer would facilitate production of hard copy lists for exchange with other centres. It must be realized, however, that agency-contact

information constitutes only about sixty percent of the information disseminated by the centres. The rest has to be dug up by telephoning various agencies and services.

A word is in order here regarding retrieval of client-contact information. When the information sought involves only the cross-tabulation of two categories, this information is most easily obtained from hard-copy print-outs. Where the information needed involves discovering the population in the intersection of three or more category sets, a special query must be addressed to the computer program. It is technically feasible to obtain this information at a remote terminal. A provision for answering such inquiries could be a convenience to the executive of a Community Information Centre.

A Community Information Centre can disseminate the following types of information products:

- . Directories of local human-service activities (DIRECTORIES)
- . Problem-oriented lists of human-service resources (LISTS)
- . Answers to specific questions (ANSWERS)
- . Statistical analyses of client-contact data (STATISTICS)

A Community Information Centre can disseminate its information products to the following recipients:

- . Senior levels of government (GOVERNMENT)
- . Other information or resource centres (CENTRES)
- . Its own information counsellors (STAFF)
- . General public including clients (PUBLIC)

A Community Information Centre can choose among five media depending upon the technical sophistication of its equipment and the technical sophistication of the equipment possessed by its intended recipients:

- . Telephone (TELEPHONE)
- . Print media (PRINT)
- . Computer-output-to-microfilm (MICROFILM)
- . Magnetic-tape digital cassettes (TAPE)
- . Mark-sense cards (CARDS)

The applicability of these media under various contingencies may conveniently be summarized in a 4-by-4 matrix as follows:

	DIRECTORIES	LISTS	ANSWERS	STATISTICS
GOVERNMENT	Print (Tape)			Print Cards
CENTRES	Print (Microfilm) (Tape)	Print (Microfilm) (Tape)	Telephone	Print
STAFF	Print (Microfilm) (Tape)	Print (Microfilm) (Tape)		
PUBLIC	Print		Telephone	

Credibility

Two products disseminated by a Community Information Centre will be assessed critically for their reliability:

- . Answers to client inquiries
- . Reports of client contacts

In the former case the credibility of the Community Information Centre is under its own control. It can and, indeed, must continually verify and update its agency-contact information, seek information from trustworthy and informed

sources, transmit information carefully and understandably, and refrain from answering a question when in doubt (giving direction or obtaining information rather than answering from memory or from possibly out-of-date or erroneous files).

The situation regarding client-contact statistics is different. The fact that clients remain anonymous can give rise to distortions that are beyond the effective control of the Centre.

- \* When statistics show 399 inquiries received from welfare recipients, there is no sure way of telling whether 399 welfare recipients called the Centre, whether one welfare recipient called 399 times, or whether 399 people called who falsely represented themselves to be welfare recipients.
- \* When statistics show that 35 persons seeking day-care for children were unable to obtain this service, there is no sure way of telling whether these requests were legitimate or whether 35 persons who would like to see day-care services enlarged called with requests they felt sure could not be fulfilled.

In other words, as a social indicator, the client-contact statistics produced by a Community Information Centre are subject to ingenious manipulation by dedicated groups or individuals. In this respect, this social indicator is no

different from public-opinion polls, letters to members of Parliament, or letters to newspaper editors.

The only protection from manipulation lies in the facts that:

- . Information counsellors are usually perceptive enough to recognize a fraudulent inquiry
- . Fraudulent inquiries tend to be inconsistent with the pattern of legitimate inquiries
- . The use of client-contact statistics as a social indicator has not yet received widespread publicity.

The possibility of conducting longitudinal studies based upon client-contact information has been mentioned. These studies would give valuable insight into how various classes of people cope with their changing social environment. They would likewise do much to define the role of the Community Information Centre in society. From a pragmatic point-of-view and to ensure the credibility of the Centre as a confidant, these should be sampling rather than exhaustive studies, and client-contact statistics can assist in developing a sampling plan. Moreover, the consent of the client would have to be obtained prior to recording any data concerning or describing the client; additionally the client's identity must be concealed. [This can be done by linking the serial numbers of contact cards pertaining to a particular client to a random number transmitted to the client at the time the client is selected as a subject.] Furthermore, as it is not the business of a Community Information Centre to carry on social-science research, outside investigators, possibly from a local university, should undertake acquisition of these specialized data. Similarly, it would be counter-productive to a high-quality community information service for one Centre to become the site of an undue number of studies merely because of its proximity to a university.



Independent social-science research can contribute to the value of client-contact statistics as a social indicator by obtaining information, through the use of personal inquiry techniques applied to stratified random population samples, upon which to establish base figures for the population of various socially recognizable classes within the Community. These could be used to determine what percentage of each class uses the services of the Community Information Centre. This information can help the Centre assess its relative degree of success in reaching targeted classes among its clientele.