

On the Need for Computer/Communications in Canada
Proposed CANUNET Program

Elizabeth Payne
October 1973
Department of Communications

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I SUMMARY

This paper identifies factors inhibiting the research on and development of computer/communications systems in Canada. It indicates why these problems must be given prompt consideration and proposes a program to address the problems identified.

The computer/communications industry is accounting for an increasingly large percentage of the country's G.N.P. The growth of this industry is dependent upon the research and development program which supports it. Universities play a unique role in the basic development of computer/communications in that they support a large computer/communications research program and they regard computer/communications as a means of distributing information in the education process as well as a topic for teaching in itself. Thus the manner in which computer/communications research and education develops in the university has long term effects on the industry and society in general. In addition, universities are a relatively large consumer group, accounting for approximately 10% of the total expenditures on computers in Canada.

For the most part, Canadian universities are acquiring computer/communications services from their own computer centres or from neighboring regional computer networks. Recently however, to enrich their educational and research programs, Canadian universities have found it necessary to acquire specialized computer/communications services from sources outside their own regional network services. Since there has been no program to develop Canadian university

networks and there have been few programs to develop Canadian software systems, these systems are relatively underdeveloped compared to those in the United States. Therefore, to acquire attractive, specialized computer/communications services, Canadian universities have begun to buy computer services via networks from universities and other organizations in the United States. The long term implications are clear: Canadian content will decrease in the research and educational activities of Canadian universities. This allows a foreign influence to permeate our culture, social value system and in the long term creates undesirable economic effects.

The Department of Communications proposes to address the problem of north-south flow of computer/communications in the university community immediately. The program proposed in this report is designed to create a minimum acceptable level of Canadian content and social influence in that part of the Canadian computer/communications industry affected by the universities. There is reason to believe that the encouragement of cross-country computer/communications between Canadian universities thus countereacting natural geographical forces, is a promising approach to attain this desired result.

A broad program necessary to address this problem is beyond the mandate of the Department of Communications. What is proposed is that the Department implement an interim, first phase program to encourage interuniversity computer/communications that would take

the form of assistance for the cost of the communications component of computer/communications services between universities. This would act as an immediate stimulus to promote buying and selling of computer services among the universities. At the same time a second phase of a program is proposed that could, if adopted by appropriate government agencies, result in a solution in the long term. It is suggested that this phase of the program would take the form of the development of a prototype network facility together with a software development program. The content of this paper describes the status of university networking in Canada and presents arguments in support of a program through which the universities can create a positive effect on the computer/communications industry in the long term.

II THE STATUS OF COMPUTER COMMUNICATIONS IN CANADIAN UNIVERSITIES

1. Introduction:

The growth of the computer industry in Canada is such that it is likely to surpass the automobile industry in dollar volume in the late 1970's.¹ In 1971 the total of the budgets for computing hardware at member institutions of the Association of Universities and Colleges of Canada (AUCC) was more than \$35 million which accounted for 10% of the total expenditures on computers in Canada. Thus, universities are and will continue to be a significant consumer group for the products of the computer/communications industry. Universities however, exert a far stronger influence than do other consumer groups in that their research and development programs in computer/communications constitute a large share of the total Canadian effort that directly supports the industry. In Canada, with the exception of a few government research laboratories and Bell Northern Research, the largest group of expertise in research and development of computer/communications is resident in the university community. Thus, when considering the development of computer/communications, the university community is looked upon as a basic resource. The importance of this resource assumes an added dimension when the role of the university in the community is considered.

The importance of education and training in computer/communications systems has been stated thus:

1. Science Council of Canada, A Trans-Canada Computer Communications Network, Report No. 13, Ottawa, Queen's Printer, p. 9.

*"According to user and supplier responses to Task Force investigations, education and training in computer/communications and related information systems technology is widely recognized as one of the key factors which will determine the extent, efficiency and effectiveness of computer/communications applications systems in use throughout the nation, and indirectly, the development of the national computer/communications industry. Similar studies in other countries, such as the United States, Japan and Germany have also placed emphasis on this subject."*²

Because of their expertise, their interest and their role in society, the universities have a key part to play in the development of computer/communications to realize national objectives. For these reasons this paper proposes that the university community should be encouraged to participate directly in the development of computer/communications in Canada.

At this time regional university computer networks are in operation in all geographical areas of Canada with the exception of the far-north. Rationalization of costs together with the requirement for improved services have been the major factors in bringing this about. With these facts in mind, it would appear reasonable to assume that interuniversity computer communications, and in particular interprovincial links, will develop on their own. There are, however, several reasons to suggest that timely and significant development will not occur. The combination of high costs for individual use of communications facilities, cheaper and more attractive network services in the United States, computing grants that do not cover communications

2. Branching Out, Report of the Canadian Computer/Communications Task Force, Ottawa, 1972, Vol. I, p. 161.

costs, and general financial constraints at universities has discouraged university users from acquiring remote computer/communications services in Canada.

2. The Origins of CANUNET:

As a result of interest in a national network exhibited by several universities across Canada the Université du Québec was awarded a contract to carry out preliminary studies which eventually led to its submission of a 'Proposal for a Canadian University Network (CANUNET)' to the DOC in March, 1972.³ This network was intended to interconnect the computer facilities and services of Canadian universities for the purpose of supporting their research and educational programs and on which services would be equal in cost to all users regardless of geographic location.

The Department of Communications contracted for two studies to evaluate the proposal in terms of feasibility, need and cost. The first study carried out by the University of Waterloo resulted in a report entitled "CANUNET Interuniversity Computer Service Traffic Study", November, 1972. The second study undertaken by Systemplan Ltd. resulted in a report entitled "CANUNET: An Appraisal of Current Plans and Economic Factors", May 1973. The result of the feasibility studies were such that the Department of Communications could not justify supporting the network program as initially proposed on available information.

3. Appendix I Participants and Contributors to the CANUNET Proposal.

3. Recent Computer/Communications Development in Canadian Universities:

Early in 1973 before the second study mentioned above was received it was learned that some Canadian universities (notably those with large resources) had committed themselves to acquiring remote computer services from universities in the United States for the purpose of strengthening their educational and research programs. Representative of these services are Medline and Plato as well as other specialized computer/communications systems. Appendix II describes these services in detail. The information collected suggested that:

- a) Specialized computer services are being acquired by Canadian universities from the United States and the volume is increasing.
- b) The types of computer services being purchased are fundamental to the research and educational activities within Canada.
- c) Entrepreneurs in the United States have identified Canadian universities as potential customers for research and educational computer services and are actively marketing in Canada.
- d) Canadian university demand for specialized computer services has increased to a level that is resulting in the acquisition of remote computer services.

The situation suggests that Canadian research and educational programs will become increasingly dependent on these north-south links as their use continues to develop. In the absence of Canadian

initiatives, a foreign influence will eventually dominate the nature of application programming and computer use centered at Canadian universities. The sociological implication of these developments is explained in Branching Out:⁴

Whereas computing equipment, including its main machine-oriented software, is essentially "neutral," to the economic and social environment in which it is used, the programming for a specific application and the provision of services depends to a much greater extent on the special interests and circumstances of the community of customers. Some applications are standard the world over - for example, hotel or airline reservations. Others, however, depend on national characteristics, as in the operation of financial institutions and social services - and most particularly in areas where language, education and cultural values are involved, in which case computer services will perform functions very similar to those of the present news media, broadcasting and educational services. There is obviously a considerable difference between a foreign influence limited to the provision of hardware and software, and one which permeates the whole field of application programming and computer use. A domestic capability for application programming, systems development, and provision of services is essential for Canadian solutions, in the economic sector as well as in the rapidly growing fields of general social significance. If such a capability is not maintained, the inevitable pressure of foreign technological advance will lead to situations increasingly in conflict with Canadian concepts, aspirations and goals.

4. Branching Out, Report of the Canadian Computer/Communications Task Force, Ottawa 1972, Vol. I, p. 77.

Such developments are in basic conflict with the goals of Canadian computer/communications policy as taken from the Green Paper, Computer/Communications Policy, A Statement by the Government of Canada:

"The overall goals of Computer/Communications policy as perceived by the government are summarized in the following statement: It is important that computer/communications, as they affect both existing services and lead to the development of new ones, be oriented in such a way as to emphasize the national identity, the achievement of major economic and social aims, both national and regional, and the maximization of Canadian influences and control over the key activities and services."

As a result of these more recent events, information from the initial reports, and departmental reaction to CANUNET, the original CANUNET concept underwent several changes. It was further concluded that if east-west computer/communications links were to be established in any reasonable time-frame, federal government participation was required immediately.

4. The Problem:

Since there has been no program in Canada to promote the sharing of computer resources or to encourage networking among universities, development is lagging considerably behind that in the United States and Europe. Some American university networks were begun as early as 1965. The National Science Foundation in the United States has funded a vigorous program to promote university

computer networking for the purpose of sharing resources. The most advanced network in the United States is the ARPANET (Advanced Research Projects Agency Computer Network) developed by the Department of Defence. Among the members of this network are large university research centres for computer/communications in the United States. Some Canadian universities have expressed an interest in joining this network.⁵ Another major network in the United States is Tymnet, operated by Tymshare Corporation. It is a commercial network consisting of 20 medium scale computers serviced by 80 small computers. Currently at least eight different provinces in Canada are already accessing the Tymshare network to obtain Medline⁶ services. Tymshare is reportedly negotiating for a node on the ARPANET which would automatically give the eight universities across Canada access to the major networks in the United States. The only added communications costs incurred by Canadian users are those to the nearest node of the networks. These nodes are located immediately south of the Canadian border from Boston to Seattle.

Two factors which are inhibiting the development of computer communications among universities in Canada were identified in the course of the investigation leading to this proposal. First, there is no general purpose network available to the universities which provides communications services at acceptable and equitable costs. ARPANET, TYMNET and I.P. Sharp Associates networks are of

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5. Appendix III Letter from U.B.C. denoting university interest and need of networks.
 6. Appendix II-1. Medline.

this type as are most commercially operated computer network services. Since such a network is not available to Canadian universities, communications costs for independent use of computer/communications is prohibitively high. Second, there is a limited set of Canadian software that is both attractive and generally available. A coordinated program does not exist in Canada, nor are there plans for one which will ensure the development of software systems that will meet Canadian needs and thereby counteract the penetration of American network services into the Canadian university system.

III A PROGRAM TO MEET THE NEED FOR COMPUTER COMMUNICATIONS

1. Program Objectives

It is proposed that a program designed to address the problem previously defined must have the following objectives:

1. To establish a Canadian east-west flow of computer/communications within the university community.
2. To promote regional equality by allowing all universities to have equal access to computer/communications based services by sharing costs proportional to use.
3. To encourage Canadian universities to cooperate in the development of computer applications.
4. To promote, in the long term, the development of the software industry in Canada by supporting university research programs that lead to the development of new software systems.
5. To create a national computing community, whose effort is directed to research and education, and which is knowledgeable in the organization, operation and use of general purpose computer networks.

2. Alternative Programs:

The following are alternative programs which are considered possibilities for addressing the problem previously identified.

1. Build a computer/communications network linking the universities across Canada.
2. Support a large software research and development program

in Canadian universities.

3. Implement a program of assistance for communications costs to promote interuniversity computer/communication together with formulating a longer term more comprehensive program.

Alternative 1. Build a computer/communications network linking the universities in Canada

The design and construction of a cross Canada university network (CANUNET) as proposed by the University of Quebec in March 1972, drew the interest and support of the university community across Canada. It provided a focal point for a cooperative effort. In the course of the investigations leading to the CANUNET proposal it became clear that on a cooperative basis the necessary expertise (from universities, industry and government) existed within the country to build the network. It posed the only practical way of distributing a total range of computer services to all university users in Canada, while at the same time giving a Canadian identity to their research and educational programs. As stated by Systemplan Ltd. when submitting their feasibility study of the network, 'It is a very desirable sociological experiment and could be justified on that basis'.

The basic difficulty with the CANUNET network as originally proposed is that it cannot be cost justified with available information. Because the network is not in existence, nor anything resembling it, forecasting network traffic is impossible. It is the enigma of the

service concept, that until a service is available one cannot reliably project its penetration and market volume. In concept, the proposed network resembles the ARPANET. The ARPANET has added a new dimension to computer/communications services, developed traffic loads beyond expectations, but most importantly provided a focus for a large research and educational project thus promoting the utilization of resources and expertise on a cooperative basis. Thus building the network resulted in the creation of resources significantly beyond the network itself.

To help resolve the above questions a pilot network could be constructed in which a few universities participated. This would give rise to a complete set of specifications, costing information, market forecasts and information on the advisability of building a cross-country network.

As stated earlier, a transmission facility is not in itself a solution to the problem of counteracting the north-south flow of computer/communications. In the event that such a communications 'pipeline' were to be made available in Canada it must be viewed as only a partial solution. Major software systems development is a necessary part of a total program to ensure that Canadian needs are met. Otherwise the software systems being developed in American universities will remain equally or more attractive. It is concluded that the building of a network alone is in itself not an expedient alternative.

Alternative 2. Support a large software research and development program in Canadian universities

The argument in favour of this approach is that if attractive software systems were available in Canada, universities would naturally acquire services in Canada. This is undoubtedly true. However as soon as one considers this approach questions arise such as:

- a) What software is needed?
- b) Are there manpower and financial resources available to write it?
- c) How much money will it cost?
- d) How can the software be marketed?

These questions have thus far been only partially answered. What software systems are Canadian universities accessing in the United States? These are probably existing systems not available in Canada that Canadian universities consider necessary for their programs. The "CANUNET Interuniversity Computer Service Traffic Study", by the University of Waterloo received information from universities on what computer software services they required and in what order of priority. Some information is therefore available to define a software development program, but it is not sufficient to form the basis for anything more than short term forecasting of software needs. Neither have existing software resources been identified. It is not known in any detail what software already exists and what resources are available to write software.

This program alternative has a similar failing to the first program proposed. A major software development program to be useful and to accomplish the broad objectives of CANUNET must be marketable, i.e., the software must be distributed to users. A system of incompatible star (regional) networks is not an effective means of

distributing computer/communications services to the universities across the entire country. Hence like the network facility, the software program by itself will not realize CANUNET objectives.

Alternative 3. Implement a program of assistance for communications costs to promote interuniversity computer/communications together with formulating a longer term, more comprehensive program

In a survey of Canadian universities in August, 1973 it was agreed with few exceptions that communications costs were still sufficiently high to inhibit the development of interuniversity computer/communications. Even the universities which were committing above average amounts to computing reported that communications costs assistance would act as a stimulus for promoting interuniversity computer/communications.

An increased amount of interuniversity computer/communications would result in identifying some very useful information for defining a long-term program. First, it would encourage the university community to set up accounting and budgeting procedures for the acquisition of services. This in itself would begin to lay the basic groundwork necessary for the administration of a national university computer/communications system. Second, with the availability of communications cost assistance, universities could shop from other Canadian universities for computer services in which they are interested. This would reveal some indicators of the quantity, type and geographic distribution of the demand for and capability to provide remote services to a network. Thus a Canadian profile of resources and demands for computer/communications in the university community

would emerge. This coupled with information on the north-south flow of computer/communications provide extremely useful data for planning a long term program.

The greatest objection to this approach is the delay in addressing the problems of software development and a communications system to distribute the software. Further, Phase I as outlined does not provide a focal point to generate interest and enthusiasm for a cooperative effort by the universities. To give this program a cohesive factor it is probably necessary to create a 'nerve-centre' in the university community to provide a focal point. This could be done by establishing a software collection, documentation, distribution and control centre at a university. Thus, assistance with communications costs is supported as phase I of a program to create an east-west flow of computer/communications among universities.

Clearly from arguments presented earlier in this paper when alternative programs one and two were discussed, suggestions for a long term program in broad concept at least, emerged. It is suggested that this program should include a well defined plan to stimulate software development together with the development of a prototype transmission facility (network). This then is a commitment to embark upon the necessary research and development activities that will eventually enable universities in Canada to access Canadian software systems on a service-oriented network facility.

3. The Recommended Program

In Canada there is a variety of problems that can be attacked by computer/communications. Canadian solutions if desired

in many cases, must receive support to overcome the competition of the easier solutions suggested by financial and geographic factors. Because of the country's limited and geographically dispersed resources, some means of interconnecting the various groups of expertise in the country and encouraging communications between them must be found. A logical approach is to support the development of cross-country computer/communications in order to counter the more natural development of north-south flow with the United States.

"Hence the options available do not include the choice as to whether or not computer/communications networks will be created; economic forces have made that choice for us. What can be done if Canadians move promptly, is to influence the shape and form of Canadian networks and the goals which they serve. Thus we can ensure that Canadians control the development and applications of networks for the benefit of Canadian society."⁷

The development of computer/communications networks implies more than the existence of the communications facility itself. Traffic on a computer/communications network is generated by a demand for services available on and through the network. Hence the services provided on the network are the justification for the communications facility. There are therefore two components of a computer/communications system. First there is the communications facility itself and second there is the services that are distributed via the communications facility. A solution then is to create a total computer/communications system which provides both the transmission facility and the software

7. Science Council of Canada, A Trans-Canada Computer Communications Network, Report No. 13, Queen's Printers, Ottawa, 1971, p. 16.

services accessible via the transmission facility network. There are many ways by which such a system might be developed. One of the ways is through a government agency in a manner analogous to the CBC. This approach however, is not being advocated. It is nevertheless most desirable in this case that the development of further factors which might lead to the necessity of legislation as in the case of the CBC, be prevented by the immediate implementation of a program designed to address the problem.

It is therefore recommended that the alleviation of communications costs called Phase I of a CANUNET program be implemented immediately for the purpose of encouraging the exchange of services between Canadian universities and to assist in defining the form and structure of a long range program to be called CANUNET, Phase II. Phase II is a plan to develop a total computer/communications system. From arguments previously stated it has become apparent that a communications network facility and a major software development program are necessary to realize CANUNET objectives. Proceeding with this plan depends upon the necessary interest and cooperation being manifest by all government groups and universities who are directly concerned together with their formal commitment to the program. It would appear that such a comprehensive program is the only viable means of counteracting the forces of ARPANET, TYMNET and other networks in the United States which are rapidly penetrating the Canadian university market.

A P P E N D I X I

PARTICIPANTS AND CONTRIBUTORS TO THE CANUNET PROPOSAL

University of British Columbia
University of Calgary
Alberta Universities Commission
University of Saskatchewan
University of Manitoba
Council of Ontario Universities
University of Waterloo
University of Toronto
University of Ottawa
University of Western Ontario
Carleton University
Queen's University
York University

University of Quebec
University of Laval
McGill University
University of New Brunswick
Dalhousie University
St. Francis Xavier University
Memorial University

CESIGU

Association of Universities and Colleges of Canada (AUCC)
National Research Council
Min. of State for Science & Technology
Telesat
Department of Communications
Bell-Northern Research
National Library
Dept. of Industry, Trade & Commerce
Science Council of Canada

Summary of Computer Services Being Acquired by Canadian Universities from American Sources.

1. Medline
2. Additional Educational Services to Medline Users
3. Plato
4. Other Computer Links with the United States

1. MEDLINE:

"Medline is a new computerized service for physicians and other biomedical scientists, developed by the National Library of Medicine, that provides almost instantaneous bibliographic searching of current medical literature. It is as close as a telephone.

Since MEDLINE was inaugurated in November 1971, more than 100 biomedical information centres, including the libraries of 71 medical schools, have installed on-line terminals that connect with the system to search the Medlars data base in Bethesda, Maryland. By the end of 1972, it is anticipated that this number will be increased to about 150 in this country and to other centres in foreign countries.

The MEDLINE system enables a librarian or health professional to search the Medlars files for bibliographic information, using a remote computer entry terminal. The result of the search may be printed directly on the user's terminal (on-line), or, if a large number of citations is involved, it may be printed by the central computer (off-line) and mailed to the user. MEDLINE service provided more than 2200 off-line searches in June. When added to the on-line searches, MEDLINE is now providing more than 70,000 searches per year".

An informal report, April 1973, by the Medline people stated that between July 1972 and February 1973 there were 81,000 Medline searches. The increase in searches is growing at a rate of 13%/month. It is expected that in July 1973, when American users have to pay for searches that the demand will be suppressed by 16-25% but that it will return within 2-3 months.

The following Canadian Medline Centres were trained by the National Science Library since the beginning of 1973 and have become operational early this year:

1. Medical Library, McGill University, Montreal
2. W.K. Kellogg, Health Sciences Library, Dalhousie University, Halifax
3. University of Toronto Library, Science & Medicine Department, Toronto
4. Health Protection Library, Department of National Health & Welfare, Ottawa
5. Medical Library, University of Manitoba, Winnipeg

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1. Programs and Services Fiscal Year 1972, The National Library of Medicine, U.S. Department of Health, Education, and Welfare, DHEW Publication No. (NIH) 73-256, p. 27.

6. Faculty of Medicine Library, Memorial University, St. John's
7. Woodward Biomedical Library, University of British Columbia, Vancouver
8. University Library, Medical Div., Foothills Hospital, Calgary.

2. ADDITIONAL EDUCATIONAL SERVICES TO MEDLINE USERS

"Computer Simulation Projects

The computer has become a medical school faculty assistant, not as a clerk, accountant, or librarian, but as a patient, tireless colleague, ready 24 hours a day, seven days a week to teach, to review, to give and score examinations and to simulate patients with various common or obscure diseases. This new service constitutes the Biomedical Data Network portion of the larger Data Communication Service.

Until the event of the Lister Hill Center's Biomedical Data Network, such computer programs were, by and large, mostly used only on the campuses where they were developed. In November 1970 the Board of Regents of the National Library of Medicine recommended the "organization of a biomedical communications network fundamentally conceived as providing the mechanisms by means of which inter-institutional cooperation and sharing of resources will be used to meet some of the needs of medical education and medical practice.

Three centres are notable in the application of computers to undergraduate and continuing medical education: Ohio State University Medical Center; the University of Illinois Medical Center in Chicago, Illinois; and the Laboratory of Computer Sciences of Massachusetts General Hospital and Harvard Medical School in Boston, Massachusetts. Each of these centres has its own computer, its own unique sets of teaching routines and each is willing to share its resources with others.

Ohio State University Medical School has specialized in the application of computer aided instruction to the first two years of undergraduate medical education. Much of the teaching is done through computer consoles with the students allowed to spend the time they need to master thoroughly the subjects. The University of Illinois Medical Center is best known for the CASE programs. These are simulated clinical encounters in which the computer acts the role of the patient and the student diagnoses and records therapy prescribed on the basis of the computer store of symptoms. CASE is particularly applicable to the second two years of undergraduate education, with applications for continuing medical education. Massachusetts General Hospital offers a wide variety of computer simulations of varying disease syndromes, of biochemical models and of various clinical encounters. The Massachusetts General Hospital programs are expected to be of interest for a wide variety of applications from undergraduate education to actual use by the practicing physician.

Plans are now well underway to connect the computers at each of these centres to the network which also carries MEDLINE, and to make the services of these computer centres available for improved medical education across the nation."²

3. PLATO³

PLATO is a computer-assisted-learning research program directed by Dr. Donald Bitzer at the University of Illinois and was begun in 1964. The computer is a Control Data 6400 with extended core memory. The terminals are a product of the University, combining a plasma display panel with a keyboard and a random-access slide selector. There is currently available (1971) 1000 hours of course material. The system has been designed to support 4000 terminals.⁴

The University of Toronto and the University of Waterloo have both installed Plasma terminals⁵ and special modems purchased from the University of Illinois for the purpose of accessing PLATO. Access is currently available via dial-up telephone but is expected to be replaced by a shared dedicated telephone line. Communications costs are expected to be reduced over normal telephone rates, at least through American territory, by a preferred ETV system of rates. Depending upon the response to PLATO, the universities expect that in the future multiplexing techniques will offer communications savings.

Neither university expects to develop any course work of their own in the foreseeable future.

The above is the first known case of a computer assisted instruction system acquired outside Canada by a Canadian University. There have been suggestions however, to the effect that other CAI systems, notably of the medical type are being "offered" to Canadian educators on a trial basis at not cost.

4. OTHER COMPUTER LINKS WITH THE UNITED STATES

In addition to the acquisition of Medline and Plato there are other services being purchased by Canadian Universities from American suppliers (currently universities).

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2. Report to the Congress, Lister Hill National Center for Biomedical Communications, National Library of Medicine, April 1972, DHEW Publication No (NIH) 72-268, p. 7.
 3. D.L. Perth, D. Bitzer, Advances in Computer Based Education, A Progress Report on the Program of Computer Based Education Research Laboratory, University of Illinois, Urbana, 1969-1970.
 4. Branching out, Report of the Canadian Computer/Communication Task Force, Vol. II, p. 129
 5. From conversation with Dr. John Wilson, Director of the Computer Centre, University of Toronto.

1. The Business School at York University is accessing the Dartmouth University Timesharing System to acquire the use of the business software library. The Business School is paying for this service which it considers necessary to its educational program.
2. The University of Windsor is buying access to the Merit network, with a view to encouraging network use.

APPENDIX III

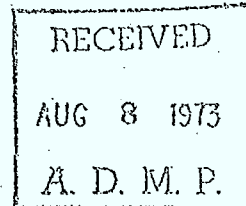
THE UNIVERSITY OF BRITISH COLUMBIA

VANCOUVER 8, CANADA

COMPUTING CENTRE

July 30, 1973.

Mr. D. F. Parkhill
Assistant Deputy Minister
Communications Research Centre
Box 490 Station 'A'
Ottawa K1N 8T5



Dear Doug:

Re: File DOC 102-4 (ADMP)

Thank you for sending me a copy of the CANUNET Appraisal report dated May 1973. Naturally I am disappointed in the demise of CANUNET as a unified plan, but in the light of events and discussions during the early part of this year I am not surprised at the outcome. Many of the technical advantages to forging ahead in 1971 have vanished by 1973 as alternatives bought from elsewhere become more numerous. And from the University side, the scrapping over the spoils and the unfortunate METANET red herring have been far from encouraging.

Turning to the questions raised in your letter of July 20, I want to reiterate my belief that ready access to data bases and programs on other computers should be the next major enrichment provided by the more enlightened universities for their research workers and teachers. I see from my files that as long ago as December 1970 I wrote to you asking for financial support from DOC to put the University of British Columbia onto the ARPA network to provide some Canadian experience in the possibilities and the problems of inter-computer communications. If there is not to be a CANUNET we shall renew our interest in gaining access to other systems by whatever means are available.

We are, of course, more than ordinarily sensitive to communications costs. The other B.C. Universities are much smaller than U.B.C. and have little to offer that is not already offered locally. The nearest major university is the University of Alberta, about 600 miles away. Because U. of A. and U.B.C. both use the MTS operating system we already share many programs by conventional means. Thus our real interest in expanding our horizons probably lies in access to major Ontario centres.

We are therefore definitely interested in a plan for free communications between university systems on an ad hoc basis.

It is too early to say just how we would administer such an arrangement. One thought would be for the U.B.C. to negotiate an exchange of perhaps \$25,000 to \$50,000 worth of services with one or two Ontario universities (on a barter basis). I would then want to send a staff member to each such site for a week or so

Cont'd .../

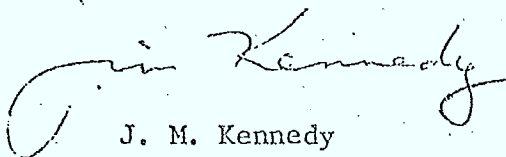
Mr. D. F. Parkhill, Ottawa.

July 30, 1973.

(at someone's expense!) to become familiar with the operations, collect documentation, and establish personal contacts who can be phoned in times of trouble. I would expect reciprocal visits from representatives of the other institutions. At that point we would be ready to publicize the new service through our Newsletter and to give professional assistance to early users to ensure that their first experience with 'pseudonetworking' is a happy one.

I hope these thoughts are of use to you. Please keep me informed on how things are proceeding so that we can be ready to make a formal proposal at the right time.

Sincerely yours,



J. M. Kennedy
Director.

JMK:ls



PAYNE, ELIZABETH
 --On the need for computer/...

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