ATLANTIC UNIVERSITIES COOPERATION IN INFORMATION SYSTEMS

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Atlantic Universities Cooperation

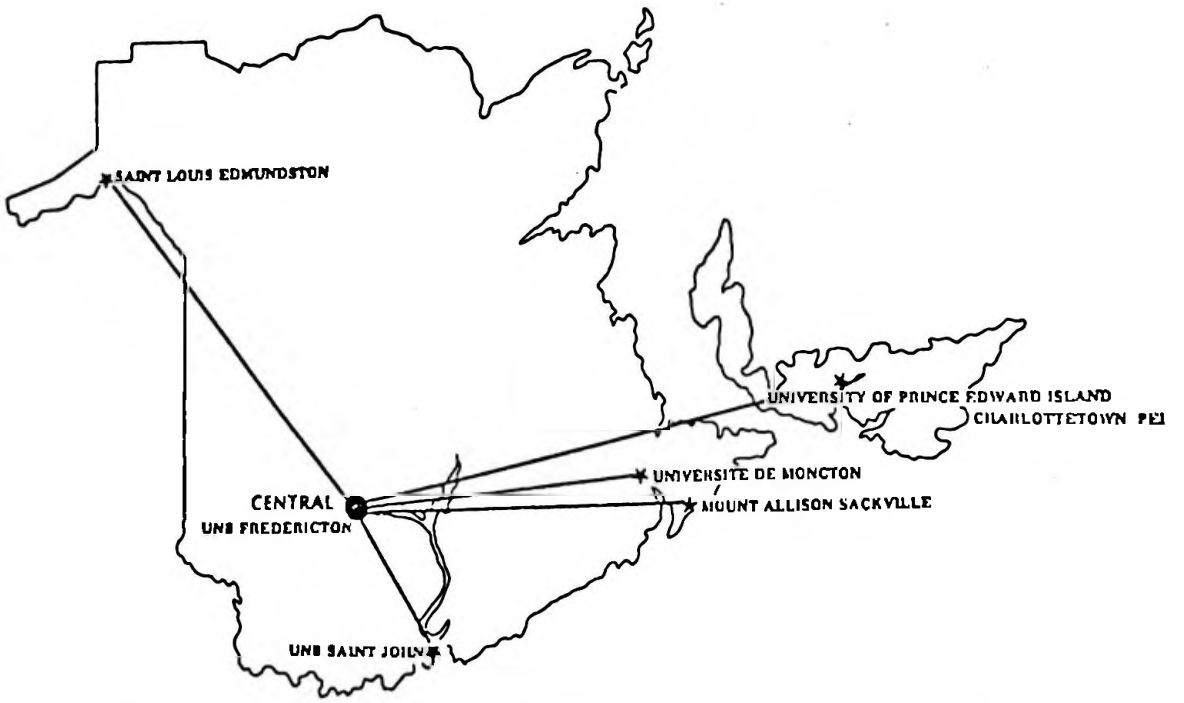
The universities in the Atlantic provinces have traditionally had less financial support than most universities in the rest of Canada. Because of these financial constraints, Atlantic universities have had a history of cooperative efforts including the Association of Atlantic Universities (AAU), the Atlantic Provinces Inter-University Committee on the Sciences (APICS) and more recently, the Maritime Provinces Higher Education Commission (MPHEC). The AAU is a voluntary organization of universities (similar to the Council of Ontario Universities) and was founded in 1964 to assist universities in cooperative efforts. The sciences have received special attention in the region with the establishment of APICS to encourage dialogue and cooperation in the sciences among universities and research institutions. In recent years cooperation has proceeded even further with the creation of the MPHEC (which is the funding body for all higher education in the Maritime provinces) in a regional effort to attain a more effective and efficient utilization and allocation of resources in the field of higher education.

In addition to these general areas of cooperation, the Atlantic universities are making several attempts at significant cooperation in dealing with computers and their uses. With the cooperation of the AAU, the business officers have agreed on a common definition of terms to assist in uniform financial reporting. The Atlantic governments, the MPHEC, the federal government and the AAU cooperated in the Atlantic Universities Computer Study (AUCS) which was undertaken in 1974 in an attempt to make recommendations that would make the most effective use of present and potential computer resources available to the Atlantic universities.

Computer Networks have been one of the major areas of cooperation among Maritime universities. The New Brunswick Educational Computer Network (NBECN) was established in 1972 with three founding universities and is shown in Figure 1. The University of Prince Edward Island was added to the NBECN in 1974. One of the recommendations of the AUCS[1] was the establishment of the Nova Scotia Educational Computer Network (NSECN) which was established in January 1976 and is illustrated in Figure 2. Thus, all universities in the Maritime provinces are members of a computer network.[2]

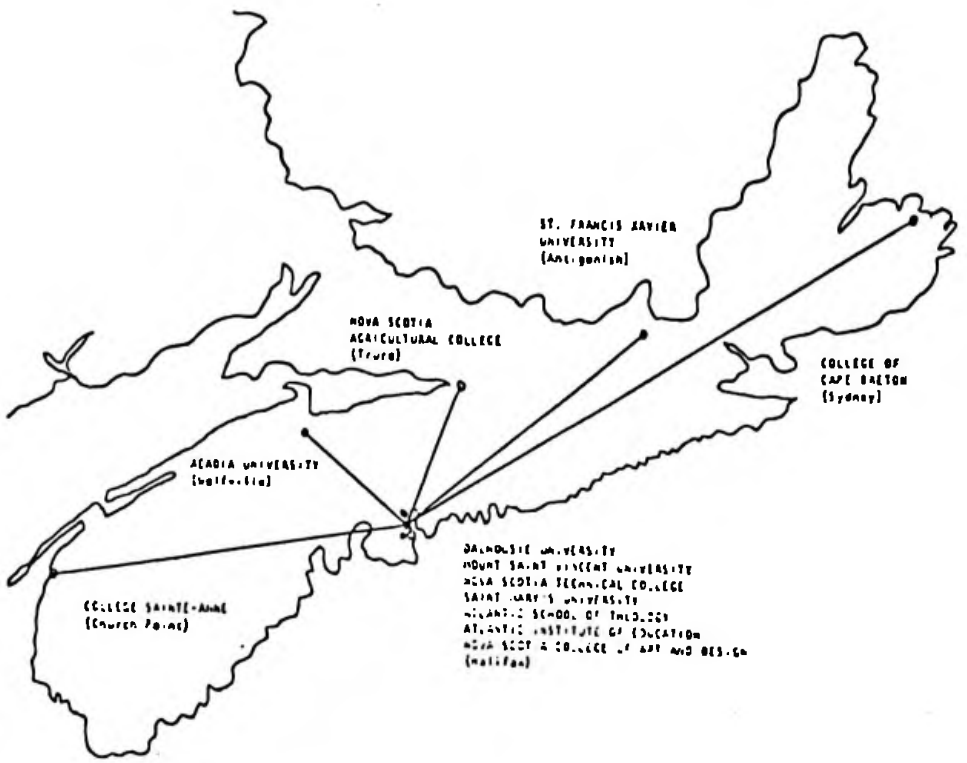
A cooperative computer cataloguing project, which is reported on in detail at this conference, is one of the most recent Atlantic cooperative ventures.

One of the latest joint efforts is a cooperative approach to administrative information systems which is reported on in this paper.



NEW BRUNSWICK EDUCATIONAL COMPUTER NETWORK

FIGURE 1.



NOVE SCOTIA EDUCATIONAL COMPUTER NETWORK

FIGURE 2.

Administrative Information Systems

The use of computers for administrative applications in universities has progressed rapidly during the past twenty years. In the 1950s, computers were used to automate clerical tasks in the area of student records, payroll and other financial records. These applications have developed in some cases into sophisticated student information systems in the 1970s. However, some systems have remained as little more than automated manual systems without taking advantage of the technological advances in computers. In general, administrative computer uses in universities have tended to lag behind similar uses in industry. Nevertheless, the impact of computers on universities has been significant as indicated by Roskens (3):

> "No single force, with its myriad permutations, has had greater impact upon the style and operation of American colleges and universities in the last half century than computer technology..."

There seems to be a large increase in administrative information systems (AIS) development in the last few years and this is indicated by the number of publications reporting on AIS efforts.[4] Perhaps, the financial constraints facing universities and the demands for accountability have forced institutions to turn to more sophisticated methods in the allocation and reporting on scarce resources. The literature now refers to integrated and management information systems rather than administrative applications, and data base management systems for information retrieval. However, in spite of this progress, two major problem areas still remain

according to a recent survey reported in Mann (5):

1. Key application areas are not developed.
2. Lack of user involvement and capability in systems design.

Because of severe financial difficulties, many universities have attempted to improve their systems with a minimal financial expenditure by either cooperating in a shared systems development[6] or importing successful software from another institution.[7] There have been successes with both approaches and recently formed networks and consortia seem to indicate that this trend to cooperation will continue.

AUCS Recommendation

Data on the administrative uses of computers in 45 Canadian universities was collected by the Canadian Association of University Business Officers (CAUBO) in cooperation with the Educational Technology Branch of the Federal Department of Communications. This data is contained in a "Survey of Administrative Information Systems."

Detailed information on the uses of computers in Atlantic universities was gathered during the Atlantic Universities Computer Study and this information is contained in"Computing in Atlantic Universities,"[1] the final report of the AUCS. A summary of the administrative computer applications is shown in Table 1.

Table 1

Summary of Number of Administrative Applications

	Maximum	Acadia	CCB	CTT	Dalhousie	Memorial	Moncton	Mt Allison	St F X	SMU	UNB	UPEI
Student Records	19	11	8	8	9	9	6	9	11	14	10	8
Financial Applications	21	0	0	8	8	12	0	1	1	7	9	13
Personnel/Payroll & Benefit Accounting	17	0	0	8	7	8	0	0	0	0	6	4
Physical Resources	10	0	0	1	1	0	0	0	0	1	1	2
Planning	9	2	0	2	2	1	2	2	2	0	3	2
Library	12	2	0	2	7	6	1	3	0	5	1	1
Total	88	15	8	29	34	36	9	15	14	27	30	30

AVERAGE 22

From the two above reports it can be seen that all Atlantic universities have less than 50% of the administrative computer applications at the University of Western Ontario and lag behind the other universities in Canada in the use of computers for administrative information systems. Since the Atlantic provinces have about ten universities with a full-time enrollment of less than 3,000 students, including six with an enrollment of less than 2,000, the above statistics might not be surprising.

The first general purpose computers acquired at most Atlantic universities were for research purposes and the use of computers for administrative purposes was a slow and gradual process. The small enrollment of most Atlantic universities, and the scarcity of administrative computing personnel have all been contributing factors to the rate of growth of administrative systems.

Even though the current state of information systems among Atlantic universities is rather limited, most universities are spending a considerable amount of time and money in modifying and updating their current systems and several universities are considering major new systems, especially in business applications.

The AUCS report considered the probability that as many as twelve (12) universities -- most funded by the same agency -- would collectively incur extensive financial expenses in developing independent (but mostly duplicative) information systems. The possibility of cooperation concerning the development of information systems was considered as an area with great potential especially since Maritime universities had already agreed to cooperate in sharing computer resources via Networks.

There exists an alternative to this duplication of systems: Design and program one excellent information system to meet the needs and requests of every institution. The final report of the AUCS advocated this position and recommended that a study be undertaken to determine the feasibility and practicality of such a common information system.

Cooperative Information System Study

Cooperation is a term that often receives general support up to the time that real action is to take place. Many reports and recommendations have been made at all levels of education and among many universities strongly encouraging cooperation. However, in many situations the recommendations died with the report. It now appears that times of financial constraints and demands for accountability have caused many educational institutions to seriously investigate cooperation to see if jointly one can obtain as good or better services for equal or less money. This has been the case in the Atlantic provinces with the existence and success

of the New Brunswick Educational Computer Network, the Nova Scotia Educational Computer Network and the Newfoundland and Labrador Computer Services Limited.

The information system study mentioned above was intended to determine the feasibility and practicality of a cooperative approach to university information systems. Although the study is not yet a reality, it is envisioned that the objectives for the study could include:

1. To substantiate the case for cooperative information system development.
2. To report on current cooperative information system developments.
3. To identify information requirements of universities, the MPHEC and Statistics Canada that are not presently being provided.
4. To identify and address major reservations and/or restrictions universities might have with respect to a common system.
5. To determine various alternative ways for cooperation concerning a common information system.
6. To recommend actions to be taken to achieve information system cooperation.
7. To determine alternative approaches to the delivery of the information system software and recommend an approach.
8. To estimate resources required to implement recommendations.

The study will require visits to each university in the Atlantic provinces where designated university officials will be interviewed to ascertain their needs, so that a decision can be made on the design requirements of any cooperative information system. These interviews will provide an opportunity for the expression of reservations or restrictions (for example, confidentiality and security of data) or special requirements at every university. A recommendation on the feasibility of developing such a system and the elements to be incorporated into the system in order to accommodate the suggestions, would then be made. Since any cooperative information system should be an integrated one, Administrators, Business Office Personnel, Registrars, Physical Plant Directors, Alunmi Directors, etc., must be consulted to ensure that it will be both comprehensive and practical in addition to increasing an awareness of the potential and limitations of the system.

Current Status

Several consulting firms with previous experience concerning computer cooperation in higher education have expressed an interest in undertaking the study described in the previous section. As this article is being written, consultation is underway in preparation to receive bids from firms interested in doing the study and it is hoped that the final report of this study will be available by the fall of 1977.

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