A CONCEPTUAL FRAMEWORK FOR A FLORIDA EDUCATION COMPUTER NETWORK*

Introduction

This paper sets forth a conceptual framework for a Florida Education Computer Network, as well as recommendations for the initial actions needed to implement the concept.

The impetus for such a concept has been forthcoming over the past several years in the form of special studies, legislation, and State level planning and reorganization. Although there are many alternative approaches to meeting the data processing and information needs of the public education system in Florida, the Department of Education feels strongly that the approach outlined in this paper provides a rational and feasible approach for meeting these needs in the future.

Goals of the Florida Education Computer Network

The major goal of the Florida Education Computer Network is to make available to the school districts, community colleges, State universities, and Department of Education the computing capabilities to meet the needs of management, instruction, and research. The following specific goals further define what is desired for the Network:

1. To provide computer and data processing capability to educational institutions and districts on an equitable basis.

2. To support the use of the computer as an educational tool by providing instructional programs for teacher and student use.

3. To reduce duplication of effort and cost associated with developing and maintaining management information systems and general applications software.

4. To facilitate the information flow between local and State agencies, thus eliminating the cost of reporting systems for individual institutions and districts.

5. To spread the cost of data processing over a wide spectrum of network users, thus making the power of a large computer available to both large and small users when it is needed.

6. To ensure that users have control of their data processing operations and information.

As can be seen, these goals emphasize the opportunities for cost savings through the pooling and sharing of human and computer resources. Although economies may be realized through a computer network, it should not be at the expense of local initiative and control. The network will be available for access by districts and institutions as their requirements dictate. Using this perspective, the computer network is in essence a hardware and software utility which is bought by the user as needed. The network should not be a constraint to the user, rather a resource which can be purchased in the quantity needed.

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These goals also place primary emphasis on developing or enhancing institutional capability to use the computer as an instructional and management tool. The computer has proven to be a powerful instrument for use in the classroom. Likewise, it has become accepted as a vital component in a management information system. However, the widespread use of the computer in the classroom and by management has been hampered more by the lack of understanding of how to use this tool, and its availabilty, than by the state of the technology. It is therefore of utmost importance that school districts, colleges, and universities have this tool available to them, as well as possess the knowledge and capability to use it effectively.

What is a Computer Network?

The computer network conceptualized in this paper is composed of four basic components:

1. a series of inter-connected major computers,

2. terminals (of various capabilities) tied to the major computers,

3. programs which provide a broad range of general services to the users and allow the network to function efficiently and effectively,

4. programs which can be used by educational administrators to carry out their management and accounting functions.

The progression to a "statewide" network should be a planned, evolutionary approach which takes into consideration present political relationships between the agencies, institutions, and districts; the economic opportunities of pooling and sharing resources; and the opportunities afforded by advancing software, hardware, and communications technologies. In other words, no district or institution will be asked to involuntarily give up its computing hardware or to relinquish any control or authority over the direction which it chooses for data processing. The network must provide an economical and attractive alternative for meeting future data processing needs. This approach is a long-range one which may require from ten to fifteen years for full implementation.

It is important that each of the above mentioned components be examined in light of the status which presently exists in Florida. There are several computer systems in the State University System, community colleges, and the district school systems which can be inter-connected to form the central nervous system of the network. One of the first major tasks, therefore, will be the selection of those computer systems which should ultimately be tied together in the Florida network. It should be noted at this point that the first step may not be the physical linking of major computers, rather it is more likely that a series of intermediate inter-connections between specified components and terminal users will be the more rational approach.

The second basic component consisting of terminals tied to major computers is a reality in several of the educational agencies in Florida. The State University System arrangement is an example of the present status of the developments in this area. A number of community colleges have also developed terminal networks to serve in multi-campus environments. Some sharing exists among school districts. The concept of using terminals to place the power of a large scale computer in the hands of a wide range of users is rationally, technologically, and economically feasible at the present time.

The third major component of the network is the programs which provide general services to the users and allow the network to function efficiently and effectively. There are programs which can be purchased or leased which make effective use of a large scale computer in a shared-user mode, and provide for the storage and retrieval of management information. A major inequity which presently exists between educational institutions and districts is in the availability of information processing capability. Making the computer available to all educational users will alleviate this inequity to some extent, but a further step must be taken; i.e., a generalized information collection, storage, and retrieval package must be made available to all of the users in the network. This can best be achieved through the pooling and sharing of resources.

Finally, there are programs which are needed for managing and controlling institutional and district operations. There are many applications which are similar for a specific set of users (universities, school districts, etc.) and for which generalized programs can be written, made available to the network, and supported. There exist examples of such common software development or sharing on a voluntary basis among school districts, colleges, and universities. These examples provide evidence that common applications of software in financial accounting, student financial aid, payroll, personnel, student records, facilities inventory, equipment inventory, library systems, etc., can be developed for educational institutions or districts. It is obviously important that the users be involved in identifying the characterstics of these common-use systems.

To summarize, the Florida Education Computer Network conceptualized in this paper is a rational approach to pooling and sharing of human and physical resources to achieve common goals of educational institutions, districts, and agencies.

Recommendations for Implementing the Network

The Department of Education makes the following specific recommendations for initial implementation of the network:

1. It is recommended that a steering committee be established to provide policy guidance for the development and operation of the network. The committee will be chaired by the Commissioner of Education or his designee and will include ten additional members representing the following user constituencies:

   a. three members representing public school districts,
   b. three members representing community colleges,
   c. three members representing universities,
   d. one member from the Department of Education MIS Committee who shall also serve as secretary of the committee.

   The authority and responsibility of the steering committee should include, but not be limited to, the following:

   a. policies related to participation in the network,
   b. policies related to the organization and management of the network,
   c. the development of short- and long-range plans for the network.

2. It is recommended that a technical advisory committee be appointed to advise and recommend to the steering committee on technical matters related to the development and operation of the network.

3. It is recommended that where feasible, the network be structured from computer systems presently in place in the State.

4. It is recommended that each division of the Department of Education, in consultation with its field constituency, develop plans for utilizing the network to meet its specific data processing and MIS needs.

5. It is recommended that each educational delivery system establish a common software development team. These teams will be responsible for designing and implementing computer software systems to be used for instructional and management purposes in the institutions and districts.