## DATA AND SYSTEMS ADMINISTRATION

D.C. Dummer and M.W. O'Reilly

Data administration is currently a hot issue. Several professional groups are attempting to specify the associated requirements and to define the role of a Data Administrator. The results of these activities should provide better management utilization of a company's data resources.

We believe that management of data resources is only a partial solution to increasing the overall effectiveness of information systems within an organization. The information systems which produce reports should be considered as important a corporate resource as the data itself. This is increasingly evident as data bases become larger and data analysis more complex. The number of data processing packages that are available from computer vendors and software development groups is growing at an alarming rate. How can we manage and control these systems?

We are now developing the role of a Data and Systems Administrator (DASA) for the management of corporate data and system elements. The DASA and his staff will act as consultants to information system analysts and designers in terms of available data and system elements. Their experience in developing these system building blocks will enable them to provide guidance during the logical design of an information system.

The use of system elements will also result in a reduction in the cost and effort needed to maintain information systems.

## A STRUCTURED APPROACH TO INFORMATION SYSTEM DESIGN

D.C. Dummer and M.W. O'Reilly

Computer hardware technology is advancing by leaps and bounds. However the software technology effort in information systems design is developing in a haphazard fashion. Attempts to build integrated information systems that can fully utilize a company's data resources have generally failed. The need for standardized information systems design methodology has lately become so obvious that it is difficult to understand why so little has been achieved in this area.

If we know how to manage a common data resource, why can we not apply similar principles to manage information systems? After all, an information system is really only a set of operations to be performed on data. If the set of operations can be factorized (broken down into primitive system elements) and made available as a common resource to the information systems designer, then we are well on our way to controlling the system explosion.

It is interesting to note that the current trend toward structured

programming, the chief programmer team and program libraries provides an ideal framework for implementing this system management concept. Whether each system element would be invoked as a macro, subroutine or run-time reentrant routine would be an implementation decision. As a further advantage, the modular packaging of these system elements will allow optimal software/hardware solutions to be implemented as technology advances.

Dave C. Dummer, Manager
Information Systems Technology
Dept. 7T60 BNR/CRK

Mike W. O'Reilly, Manager
Data Management Technology
Dept. 7T80 BNR/CRK

BELL-NORTHERN RESEARCH
P.O. Box 3511, Station C
Ottawa, Ontario
CANADA