THE EMERGING CORPORATE DATABASE ADMINISTRATOR: OVERVIEW

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ABSTRACT

The concept of the database administration function is traced through the literature from the role of interface between applications programmers and operations staff to the coordinator of end user database production. This evolution requires an emphasis on managing the total system utilizing Database Management System software to increase productivity for department operations.

Une nouvelle fonction: la gestion corporative des bases de données.

Le concept de la fonction de gestion d'une base de données est recherché à travers la littérature spécialisée à partir du rôle d'interface entre des programmeurs d'applications et du personnel opérationnel jusqu'au coordonnateur de la production des bases de données. Ce cheminement requiert une emphase sur la gestion du système total utilisant le logiciel de la Base de données du Système de Gestion afin d'accroître la productivité pour les opérations du département.

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INTRODUCTION

The concept of a data base administration function within an organization has been discussed for the past ten years at least. According to the literature, the need for such a function was rooted in two developments. The first was the recognition that data are a valuable resource of an enterprise that have to be conserved, managed and made available for use. Secondly, as data base management systems became available, data processing departments became aware that optimizing their use required a new administrative function (Meltzer 1975).

As Herbert Meltzer remarks in his overview of the administration of data bases, during the first generation of data administration, the economics of computer usage appeared to require the most efficient use of hardware at the expense of the most efficient use of people. Some enterprises may not yet have evolved from that era. However, further development brought the recognition that stored data had to be shared among applications. Among the difficulties that arise are problems of economics, the inability to respond to each of the sharers in a timely, cost-effective manner, problems of discipline, the interference of the sharers with each other, and the problems of change - the inability to evolve the database without time consuming and costly modifications to large numbers of programmes and large quantities of stored data (Meltzer, 1975). To solve these problems and act as an interface between applications programmers and the computer systems operations people, many organizations set up a separate administrative function.

END USER PROGRAMMING

As the various departments in a company have attempted to use the power of the computer to aid their productivity, management have responded with a number of different ways of structuring the resources that provide assistance in the development of computer systems. Data processing professionals continue to be a scarce and expensive resource. The literature was filled with articles suggesting solutions to long applications queues. In 1974 in Don Mills, IBM formed the Information Centre to teach non data processing employees how to access the computer for their own needs. As this particular Information Centre concept has spread to many companies throughout North America it has influenced the evolution of the data processing department. The prediction is that the 1980's will see the data processing department become the manager of the data resource, just as the finance department manages the cash resource. Finance creates a chart of accounts and develops and enforces policies for managing cash. Data processing will be asked to develop a data architecture upon which systems can be designed and built and they will develop and enforce policy and procedures for managing data (EDP Analyzer 1981).

No doubt the proliferation of information centres and software packages has led many departments to assist themselves to manage their

information needs using the computer. From the point of view of the whole enterprise this led to questions of redundancy, accessibility and security. Many of us also remember how ephemeral many of those systems were. They were often poorly documented and once the developer moved on to a new company or the programming support staff went on to other projects, the system faltered and finally failed.

Concurrently we began to see articles in journals such as the Internal Auditor and the Journal of the Society for Management Accountants that were concerned with standards and security for the data a company stored in its computer. These articles introduced the terminology "data base" and "data base management systems" to their readers. They looked upon the data base as a collection of inter-related data stored together on a direct access storage device such as a disk with controlled redundancy to serve more than one application. They called for a standard and consistent approach to add new or modify old data items to the data base (Lobley 1981). The point of view of these articles is not the usefulness of the data to the work of the end user but with the security, data validating procedures and reliability of the data being stored. With multiple users accessing a company's data from a variety of viewpoints they wanted to know who was in charge. They see the data base administrator acting like the controller in protecting the interests of the organization. (Anderson and Techavichit 1982).

DATABASE MANAGEMENT SYSTEMS

As we progressed through the 70s, the problems of standards, redundancy and end user satisfaction were to be met by our beleagured data processing departments using data base management system software. These systems, such as INQUIRE and FOCUS, are a collection of software required for using a database, and presenting multiple different views of the data to the users and programmers (Martin 1982). In addition to all that it was already doing, the data processing organization was being called upon to coordinate systems development on a product by product basis rather than on a system by system basis. For example, with the use of INQUIRE the industrial hygiene department could automate the update of their Materials Safety Data Sheets while research could track developments of the substances involved. The reports from these two data bases under INQUIRE would not look at all alike and could be maintained in TSO, CICS or a number of other operating environments.

It was still the case that the data processor usually considered only the automated portion of the system being developed as being "the system". Little concern was given to the total user environment and how the computer portion fitted into the total system design from the department's point of view (Weiss 1981). In such a situation, even when a data base administrator was appointed, the role was often restricted to compiling data dictionaries and standardizing file access methods. In the meantime, the software vendors emphasized easy-to-use report writers and online query features of their products. In this environment the DBA must function more as a coordinator and less as a technician (Computer World 1982).

In 1982 James Martin defined a data base administrator as an individual with an overview of one or more data bases who controls the design and use of these data bases. He goes on to say that it is often better to use two individuals, the data administrator and a data base designer who designs the physical aspects of the data base. In this setup the data administrator is the individual with the overview of an organization's data, responsible for designing the data model and obtaining agreement about the definitions of data which are maintained in the data dictionary. I haven't met such an individual and I haven't seen an organization which has set up its data model. In the meantime, it has been widely recognized that one individual could scarcely hope to carry out all these functions in a large organization so we start seeing articles about the data administration group whose functions included: planning and user coordination, standards and documentation, software acquisition, database design and performance management (Datamation 1984).

It is not surprising that Datamation had another article in their January 1984 issue which was titled "Wanted: Experienced Kamakazee Pilots" (Sweet 1984). As the data base technology grew so did the call for more data base administrators. Data Management in 1983 did a survey of starting salaries and produced a reading list of the latest data base books. Where do data base administrators come from? Most of the technical training seems to come from on-the-job training and vendor courses. A recruiter remarked that programming was probably the most useful place to begin a career in data base management.

END USERS AND DATA BASE MANAGEMENT SYSTEMS

From the viewpoint of those of us in departments attempting to use computerized information to carry out the objectives of the company, there are problems with data base administration being confined to the data processing world view. Data base administrators were being called upon to elicit their customers needs much as application programmers had, as well as to develop tools such as the data dictionary and to fit their data bases into the operating systems of their companies. For a description of an alternative source of expertise in these areas, look at Datamation September 1983 for a readers' forum article "Librarians: The Untapped Resource" (Koenig 1983).

To look beyond the computerized section of a total information system in an environment requires an information specialist with much wider background than programming code. One corporation described what they were looking for as follows: an information specialist with a specific subject background in the subject matter of the data base; a knowledge of the source of the material accessed by the data base whether it be a physical filing system or parts of other data sets or data bases; a knowledge of commercial data base services and other sources of information for the enterprise. Such a data administrator would be trained on the particular software being used by his company. The function would coordinate the user departments' requirements for reports and maintenance routines with the data processing department's standards for the best system features to meet those needs. While the data dictionary development may still be lodged in the data processing department, there is a requirement for another kind of standard for data base input, i.e. standards for the actual data that are going in the fields which have been defined by the data dictionary.

In many of our organizations, data entry continues to be the low level position which keypunch was, but online systems very often do not have the verification procedure which was built into keypunch shops. The data administrator was therefore seen as the person who would conduct the training for the actual data entry clerks and would monitor the output of the systems. To explore the emerging corporate data base administration role from the user department standpoint, I introduce Kamakaze pilot James Barker.

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