EVOLUTION OF NETWORK ADMINISTRATION JOB RESPONSIBILITIES

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1. PAST ROLE OF DIAL ADMINISTRATOR

1.01 When our business was less complicated and much more stable, the dial administration responsibilities rested with the District Traffic Manager in the traditional traffic department. The responsibilities appeared to be in the proper department because the traffic department's charge at the time was to manage the "flow of communications over the network." Administration of the toll and tandem entities was normally the responsibility of the group administering the local entities. Specialized toll and tandem administration units were rare. Any network management being performed was limited to local applications and special occasions (e.g., Christmas, Mother's Day). Trunk administration was not organizationally related to dial administration and was usually located in an engineering organization.

1.02 Dial Administration responsibilities generally rested in these major areas:

- Line and Number Assignment
- Data Collection
- Service Reporting
- Customer Instruction
- Intercept Network

1.03 The Traffic Department recognized that these responsibilities could not be carried out without specialized management. The dial administration responsibilities, therefore, were assigned to a specialized group reporting to a traffic manager who was also responsible for toll and local office (operators) management. This dial organization, usually supervised by a first level Dial Administrator, had needs that were quite different from those of the operating force. The job was technically oriented—unlike the operating job. There were also demands of a large operator force while the dial group was relatively small. As a result, the managerial efforts of the traffic manager were directed primarily toward the operating functions, and the dial organization faltered as the associated responsibilities were not fully assumed.

1.04 Sentiment toward the dial administration activities at the time was that the organization was primarily a line and number assignment group

also performing a perfunctory data gathering function. The data collection methods were relatively primitive with many offices having no automatic data gathering facilities. Service monitoring and reporting functions were also carried out. Switching equipment engineering was the responsibility of a traffic engineer within the traffic department and the Dial Administrator was usually not involved in the equipment provision process at all—with the exception of providing data to the engineers.

1.05 The location of the Dial Administrator in the Traffic Organization was as shown in Fig. 1. Any coordination between the administrator and the central office maintenance supervisor (Plant) was interdepartmental.

2. PRESENT ROLE OF NETWORK (DIAL) ADMINISTRATOR

2.01 Many companies continue to maintain a traditional approach and the administration functions are still within the Traffic Department. Where this is the case, the organization structure has been altered to insure that adequate and dedicated managerial talents are applied to the dial administration activities. Many locations have district level Dial Administration Managers. An example of how this type of organization might be structured is shown in Fig. 2.

2.02 Other companies have accepted the switching system's organizational philosophy which combines dial administration, central office maintenance, and network design engineering functions in one department. An example of a switching system organization is shown in Fig. 3.

2.03 The state of the art in switching equipment has changed significantly. Most of the larger offices have traffic measuring devices. There are more classes of service being offered. Mechanization is either with us or on the horizon for many of the clerical dial functions. More and better information and tools are available to the Dial Administrator.

2.04 The responsibilities of the Dial Administrator have increased in proportion with the amount of data and tools available for "managing the flow of communications over the network." The dial responsibilities have expanded to include more than the local office and its originating traffic. The administrator is now responsible for a portion of the "network". Hence, we have a new term for this portion—the "Network Administrator".

2.05 Increased amounts of data and more involvement in the equipment provisioning process have made the job more encompassing and more complex. The administrator is now responsible for managing the switching equipment to protect service, to solve and prevent service problems and to utilize available central office equipment more efficiently. The term "machine manager" is used in many cases in reference to the individual responsible for administering an office.

2.06 Responsibilities related to "customer instruction" and "intercept" do not appear to be consistent with the newer Network Administrator's responsibilities. The network administration responsibilities have now been accepted as those functions that constitute these six major, and quite general, categories:

(1) Data Administration

(2) Equipment Utilization

(3) Office Status Evaluation

(4) Service Problem Analysis & Corrective Action

(5) Transition Management

(6) Personnel Administration

3. PROPOSED ROLE OF NETWORK ADMINISTRATION MANAGEMENT

3.01 The AT&T "Organization Issue" published by the Corporate Planning Organization recommends an operating company structure with the network administration responsibilities within a network services structure. This is the organizational framework within which the administration responsibilities will be carried out in the future. This organization is the recommended or "assumed" organization and constitutes one of the constraints or boundaries within which the responsibilities of the Network Administrator are defined.

3.02 An organizational recommendation which enables network administration responsibilities to be effectively discharged must then be developed considering the departmental structure that encompasses the administration activities. In this

case, that structure is the "network services" department. It should be noted that "local switching maintenance" and "network design engineering" functions, along with other functions related to switching entities or the call carrying network, are also within the same departmental structure.

3.03 Obviously, there will be changes in switching equipment technology as well as more stored program control (ESS) equipment. Switching equipment of the future will be more complex, offer more services, and handle more traffic. Mechanization will replace many of the clerical activities and enable the administrator to manage the job with more tools (e.g., real-time data, mechanized assignment systems, network management centers, customer report summaries, software data reconfiguration systems, etc).

3.04 The amount of data available and the insight that both central office maintenance and network administration management will have into machine performance will require a very close relationship between these two groups. Fig. 5 is a listing of some of the automated systems that will aid both maintenance and administration.

3.05 Many of the tedious and demanding functions, such as data collection and line assignment, will be mechanized. Emphasis will be on service and use of mechanization tools to aid in the service functions. Such topics as network completion, short holding time, high attempt and unusual usage problems will be in the forefront. Administering the network around these contemporary problems will be the challenge.

4. PRESSURES FOR CHANGE IN NETWORK ADMINISTRATION RESPONSIBILITIES

4.01 As stated previously, the responsibilities of the Network Administrator have changed significantly. Network Administration forces have reacted to these changes as the need was perceived. The results are reflected in the variety of organizations in which administration activities are being carried out.

4.02 Administration responsibilities are presently combined with a variety of related and non-related functions. Some of these functions are a part of the responsibilities defined in Part 2, and some (for example, intercept activities and business service activities) are not.

4.03 In addition to the overriding effect that changing responsibilities have had on the Network Administration Organization, there are two main pressures for change that relate directly to administration:

- ***Growth:*** Growth in itself is not the major problem. It is the complexity that is a by-product of growth that causes problems. Routine growth in call volumes, main stations and local entities becomes quite complex when viewed from a network perspective. More direct routes and more alternate routes must be added to handle the growth. The network becomes more complex and more difficult to manage. As products, features, and services grow in a routine manner, so do the service orders and procedures required to coordinate and administer this new growth. New multi-user services (i.e., TNS, BDN, etc.,) or routine WATS growth makes not only the assignment but also the equipment utilization functions more complex.

- ***Technology:*** Changing technology associated with newer generations of local switching equipment has already brought pressure on existing administration organizations. Advanced technology of the stored program control type offices requires specialized skills. These skills can best be obtained from specialized groupings of functions which help provide the required expertise. Mechanization is another form of changing technology that dictates special organizational consideration. Mechanization related to administration groups must be organized so they may benefit from the mechanization.

4.04 This combination of growth and technology places pressure on the Network Administration Organizations to keep pace and to remain viable.

LOCATION OF THE DIAL ADMINISTRATOR
IN ORIGINAL TRAFFIC ORGANIZATION

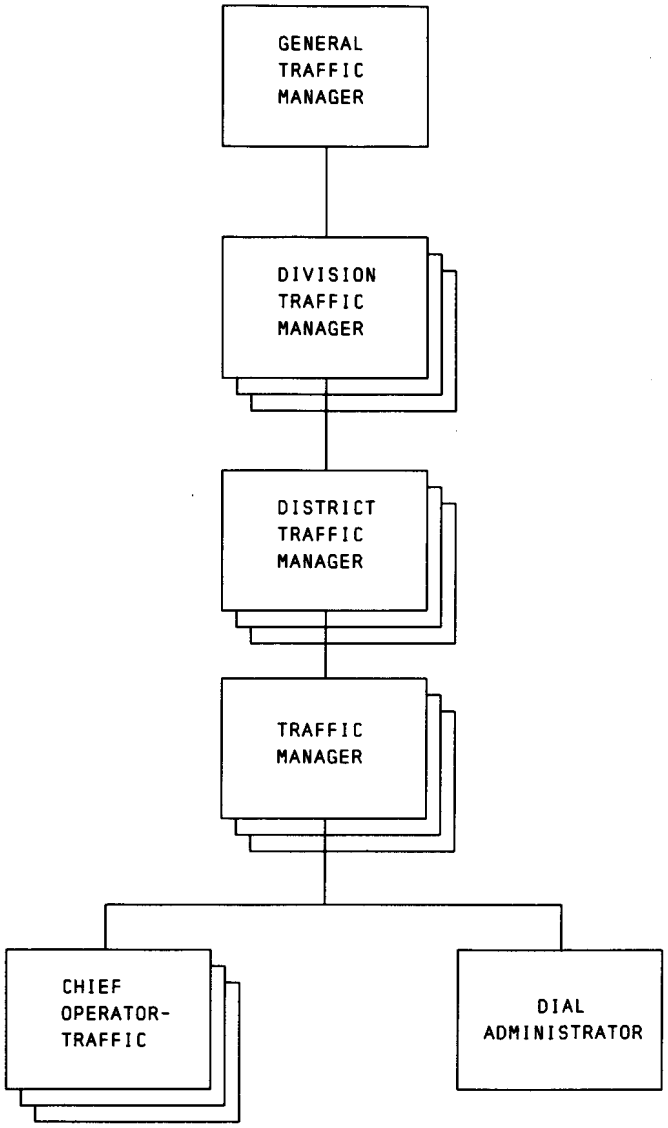

Fig. 1—Location of the Dial Administrator in the Original Traffic Organization

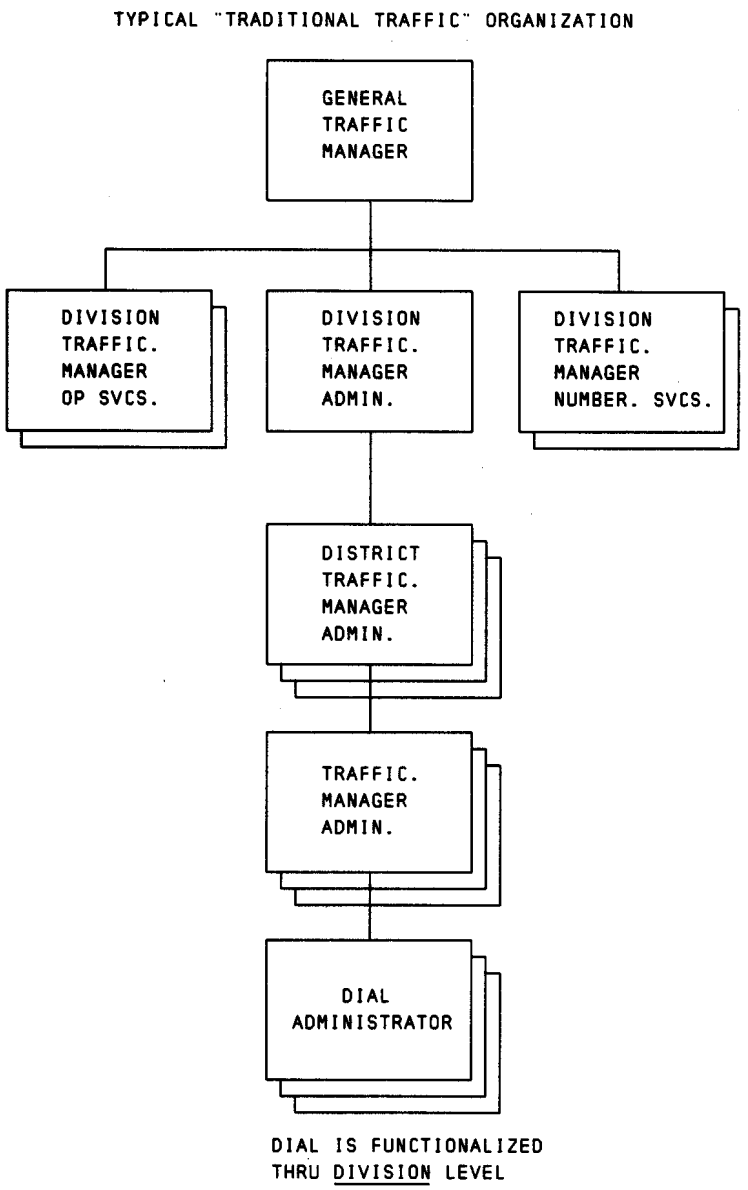

Fig. 2—Typical "Traditional Traffic" Organization

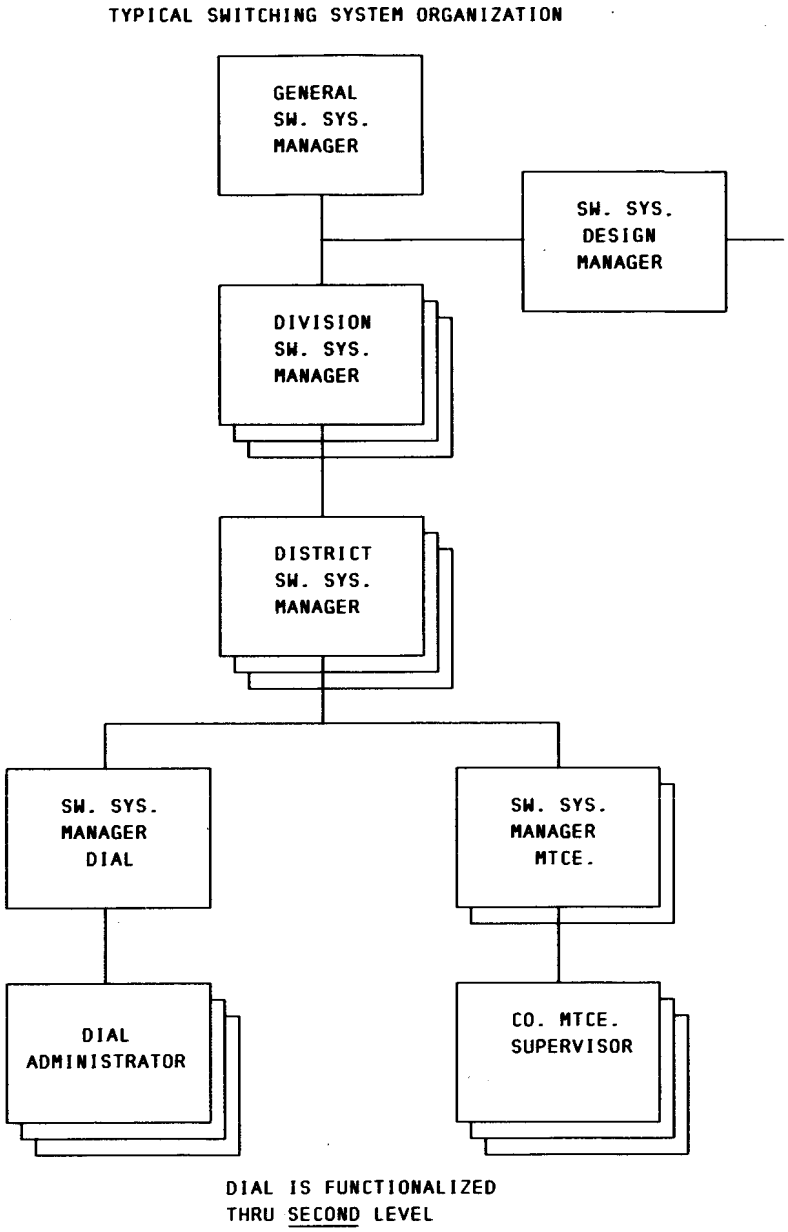

Fig. 3—Typical Switching System Organization

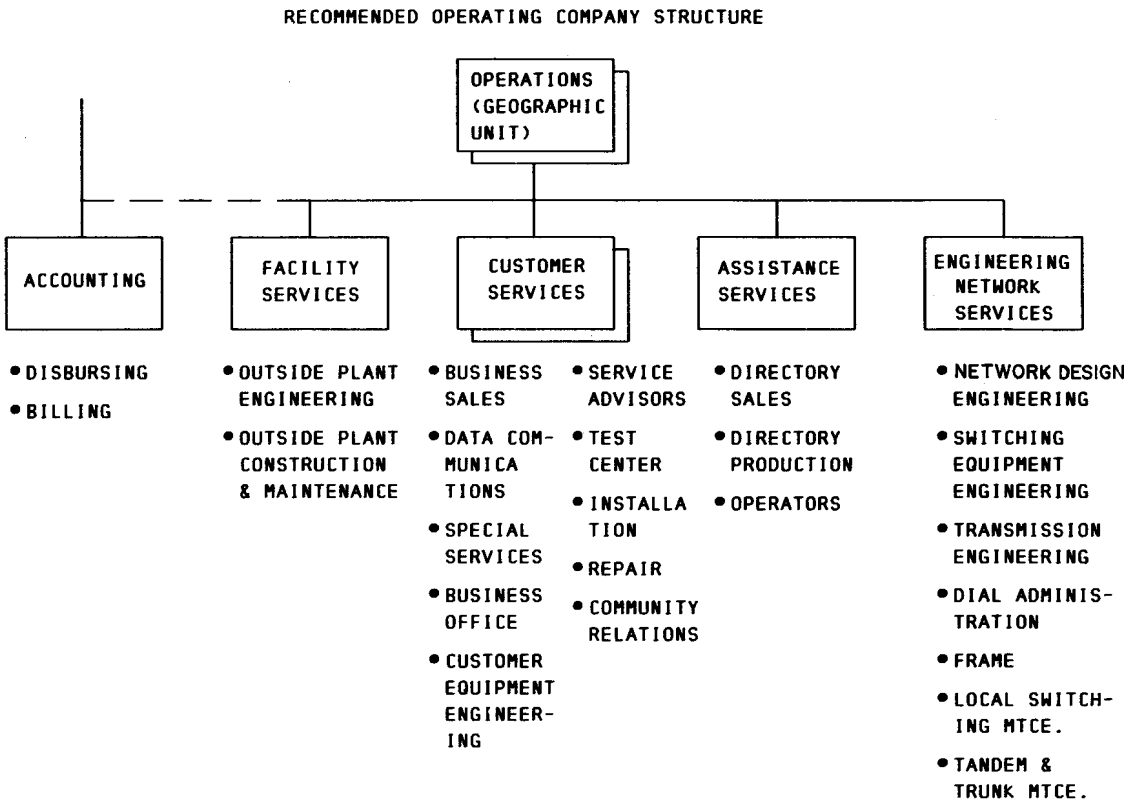

Fig. 4—Recommended Operating Company Structure

AUTOMATED SYSTEMS TO AID MAINTENANCE AND ADMINISTRATION

— Switching Control Center (SCC)
— Centralized Automatic Reporting on Trunks (CAROT)
— T Carrier Administration Center (TCAC)
— Engineering and Administration Data Acquisition System (EADAS)
— Network Management (EADAS/NM)
— Centralized Operator Report Analysis (CORA)
— Computerized Maintenance and Administration System (COMAS)
— Switched Access Remote Testing System (SARTS)
— Computerized AMA Data Recording
— Mechanized Network Analysis System (MNA)
— BISCUS - Facilities Assignment Control System (FACS)

Fig. 5—Automated Systems to Aid Maintenance and Administration