TRUNKING DATA

COLLECTION SCHEDULING

NETWORK SWITCHING ENGINEERING—TRUNKING DATA

NETWORK SERVICES METHODS

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1. GENERAL

1.01 This section provides general guidelines concerning collection scheduling for trunking data. It discusses the purposes of scheduling data collection and provides the system guidelines. Economic considerations are discussed as they pertain to trunking data costs of collection versus the penalties of too little data.

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 References in this section to methods, planning, data requirements, service levels, and equipment requirements are based on American Telephone and Telegraph Company (AT&T) recommendations.

1.04 For the standard meaning of terms and definitions used in this section, refer to Section 780-400-305, "Glossary of Trunk Facilities Terms and Definitions."

2. PURPOSES OF DATA COLLECTION SCHEDULING

2.01 Trunk engineering for planning, forecasting, and servicing purposes is accomplished using average loads measured during significant hours each day. Network administration on a day to day basis uses loads measured during all busy periods for network surveillance.

2.02 Maintaining the network, as well as planning, forecasting, and servicing, requires sufficient amounts of high quality data measured during significant hours. Intelligent scheduling of data collection will assure the securing of measured loads during all significant hours.

2.03 While the busy season and busy hour for most in-service trunk groups are usually well established, they do not necessarily remain constant. The busy season and/or busy hour may change as a result of several influencing circumstances. Some of these include the following:

(a) The addition or loss of a large business customer

(b) A change in the rate structure

(c) New service offerings, eg, direct services dialing.

2.04 Changes in the busy season or busy hour of a trunk group can only be determined when

data collection schedules cover enough study weeks and hours so the change can be recognized.

3. DATA SCHEDULING FOR DATA INTERCHANGE

3.01 Data interchange (DIXC) procedures are established, providing for intercompany exchange of trunk group data required for trunk groups offering and/or receiving overflow to/from trunk groups in another area. The T-TRAN, a telecommunications software system, developed by AT&T data systems, is used for this computer to computer exchange of data.

3.02 Data tapes, produced by the Traffic Data Administrative System (TDAS), are compatible with T-TRAN and can be used for DIXC. This data interdependency necessitates intercompany standard data collection schedules. Section 780-401-200 provides more information about DIXC.

4. TRUNKING DATA COLLECTION SCHEDULING CONSTRAINTS

4.01 The only data collection schedule that guarantees never missing a significant piece of data is one that runs 24 hours each day, 7 days each week, 52 weeks each year. Of course, such a schedule is not practical, economical, or necessary. Patterns of the occurrences of busy seasons and busy hours are usually sufficiently known to permit the establishment of data collection schedules that normally cover the significant hours of the busy season.

4.02 The impact of several data scheduling constraints on the idealized objective schedule forces a realistic compromise that provides an economical schedule that can be programmed and administered. These constraints include:

(a) System constraints that impose a substantial degree of uniformity by providing a minimum annual data collection schedule that includes the common major busy seasons

(b) Equipment constraints that limit the types of data that can be collected

(c) Time constraints that limit both the collection and processing volumes

(d) Practical constraints that require keeping the schedule so that it can be administered economically but effectively.

4.03 Traffic item data from the Centralized Message Data System-Trunk Engineering (CMDS-TE) is often useful for comparing trunk group data. The CMDS-TE data is always expressed in hourly, on the hour, data. No comparison of data can be made between items unless they are collected on the same clock hour in the same study period.

4.04 Occasionally, hourly trunk group data taken on the half-hour may be required for network surveillance purposes; however, it is usually not necessary and is not recommended for network engineering tasks such as planning, forecasting, and servicing.

5. DATA COLLECTION SCHEDULING GUIDELINES

5.01 Each year AT&T publishes a letter that provides a minimum data collection schedule for both CMDS and trunk group data. It must be emphasized that the letter defines a ***minimum*** data collection schedule. Most companies should and do collect much more data to assure the proper identification of busy seasons, busy hours, and their loads.

5.02 The CMDS schedule outlines data collection schedules, up to five each, for:

(a) Twenty average business day (ABD) study periods

(b) Five- and ten-day Saturday study periods

(c) Five- and ten-day Sunday study periods.

5.03 The trunk group schedule outlines up to a 26-week ABD data collection schedule (depending on degree of mechanization) and four 4-day Sunday study periods. The 26 ABD weeks include three 20-ABD study periods coincident with three of the CMDS ABD study periods and designed to cover the normal busy seasons.

5.04 Traditionally, the normal busy seasons fall around the February-March, July-August, and October-November time frames. Data collection scheduling during these system standard study periods assures the availability of data for intercompany and/or interarea exchange of data.

A. Manual Collection of Data

5.05 Careful consideration must necessarily attend data collection efforts in a totally manual en-

vironment which require clerical support in the end office for hourly register reading. Manual reading of traffic data registers is cumbersome and costly, and manual register subtractions are extremely susceptible to error and require many clerical hours of effort.

5.06 Time and effort in a manual environment are usually more wisely spent maintaining minimum data collection schedules while ensuring the quality of the collected data rather than expanding the data collection schedule.

B. Semimechanized Data Collection

5.07 Many operating telephone companies are moving toward a totally mechanized data collection environment. During this move to total mechanization, data collection is usually accomplished in a semimechanized environment; that is, banks of registers are equipped with camera and film, or readings are punched on key punch cards. An example of semimechanization is a small, remote, step-by-step (SXS) end office that is destined to be replaced with an electronic or digital switching system. The office usually remains on camera and film for data collection until replacement.

5.08 The capital dollars necessary to convert such an office to the Total Network Data System (TNDS), or whatever mechanized system exists in the area, usually outweigh the benefits to be gained by conversion.

5.09 In areas where conversion efforts to mechanized data collection are being considered or are in progress, careful study must be given to end offices destined for replacement. For example:

- How long before replacement?
- How is data collected now?
- What are the payoffs for converting to data collection mechanization?
- Do the payoffs exceed the costs of conversion?

5.10 In such locations, minimal data collection schedules are possible for nonconverted offices while expanded data collection schedules are used for converted offices.

C. Mechanized Data Collection

5.11 Operating telephone companies that are totally mechanized, that is, those that are served by TNDS, including the Engineering and Administrative Data Acquisition System (EADAS) or its equivalent, possess more readily available and usually more accurate trunking data. Normal output of TNDS provides current study periods consisting of 4 weeks in the latest 9-week period.

5.12 Due to increased data collection mechanization, AT&T has developed standardized schedules for data collection. Standardization provides the following:

(a) A complete (as opposed to minimum) annual data schedule to:

(1) Avoid costly overcollection of data

(2) Ensure sufficient trunking data is available for all trunk engineering effort

(b) A statement of the types of data to be collected to ensure uniformity of trunk engineering efforts

(c) Data collection uniformity to enhance data interchange.

6. ECONOMIC CONSIDERATIONS

6.01 In today's environment of technically advanced data collection systems, an abundant supply of trunking data is not difficult to obtain. However, certain economic considerations must be studied and reconciled:

- How much data is required?
- What is the cost of collecting and processing the data?

6.02 A data collection and processing cost study must also consider the engineering penalties involved with the availability of too little data.

(a) Inflated data may cause overengineering and, therefore, a larger than necessary capital investment.

(b) Understated data may cause underengineering and result in poor service, above objective blocking of calls, and customer complaints.