

*Tailored to the modern communications  
needs of a large segment of our  
business customers, this mechanized  
service offers flexibility,  
efficiency and dollar savings*

## Centrex — A New Concept of PBX Service

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WE HAVE HAD one of the greatest business construction booms in our history during the past fifteen years and it continues today. New factories, laboratories and office buildings are constantly springing up, often in communities which are themselves entirely new. This rapid and sweeping change has brought increasing concern to telephone company planners about the ways in which we serve these important customers.

PBX switching equipment located on the customers' premises is not always readily expandable due to its inherent capacity or space limitations. This equipment can be expensive to maintain, especially in a large building where there may be a dozen or more individual systems dispersed on many floors. The period of time required to engineer, manufacture and install the equipment required for growth in

these individual systems is often much longer than the customer anticipates in his own planning.

The large office building in any city often houses many businesses. Each of these customers requires communications services which have to be specially adapted in some degree to fit his individual needs. The telephone service for these businesses may range from one or two business lines through several lines with key telephone service up to some fairly large and complex PBX's with possibly hundreds of stations and multi-position switchboards. A similar situation where a single large business occupies several buildings spread over a fairly large tract of land, possibly even a major portion of an entire community, is becoming quite common, too. In such cases the customer may be served by several PBX installations.

There is another aspect to this problem of serving our large business customers and that is the service itself. The original concept of PBX service was designed for situations where the great majority of communications were internal—between stations within the system—with a relatively small proportion of calls into or out of the system. This concept still applies, but the proportions are changing dramatically as businesses become more dispersed, diversified and interdependent.

As business operations become more complex the need for, and use of, communications has increased and the cost of this service has become a greater proportion of the cost of running the business. The control of, and accounting for, this cost has become more important to the customer. In order to provide this service the customer requires more trained switchboard attendants. It has become increasingly difficult and expensive to secure and maintain the skilled personnel needed for this job.

#### ***Needed: A New Concept***

All of these factors quite clearly pointed to the need for a new concept of telephone service for large business customers. CENTREX has been developed specifically to fill their needs. This new service concept will give the PBX customer service that is comparable in speed, flexibility and efficiency with that which the one-line business customer gets. At the same time it will continue to provide the service features that these customers uniquely require because of their size and complexity. CENTREX will also make it possible for the Operating Companies to assure that the plant required for this service improvement is provided in the soundest and most economical manner.

#### ***What Is Centrex?***

CENTREX is a modern, mechanized, complete communications service providing:

- *Direct Inward Dialing (DID)*: incoming calls, local or long distance, can be dialed directly to an individual station user, thereby by-passing the switchboard attendant.
- *Direct Outward Dialing (DOD)*: outgoing calls, local and long distance, are dialed directly by the telephone users.
- *Intercommunication*: all telephones can dial any other telephone on the same system.
- *Individual Station Billing*: all long distance calls will be itemized monthly by station number, showing the city and telephone number called, date of call and cost of the call.
- *Station Transfer*: all incoming calls, local and long distance, may be transferred from one telephone to another with the aid of the switchboard attendant.

With the use of CENTREX, several customers occupying a large building in metropolitan areas may be served by a single CENTREX switching system even though they include a variety of diversified business interests. Each business will have its own console or switchboard and be served with all the features of this new offering. A large customer occupying several buildings on large tracts of land may use CENTREX to serve the entire complex.

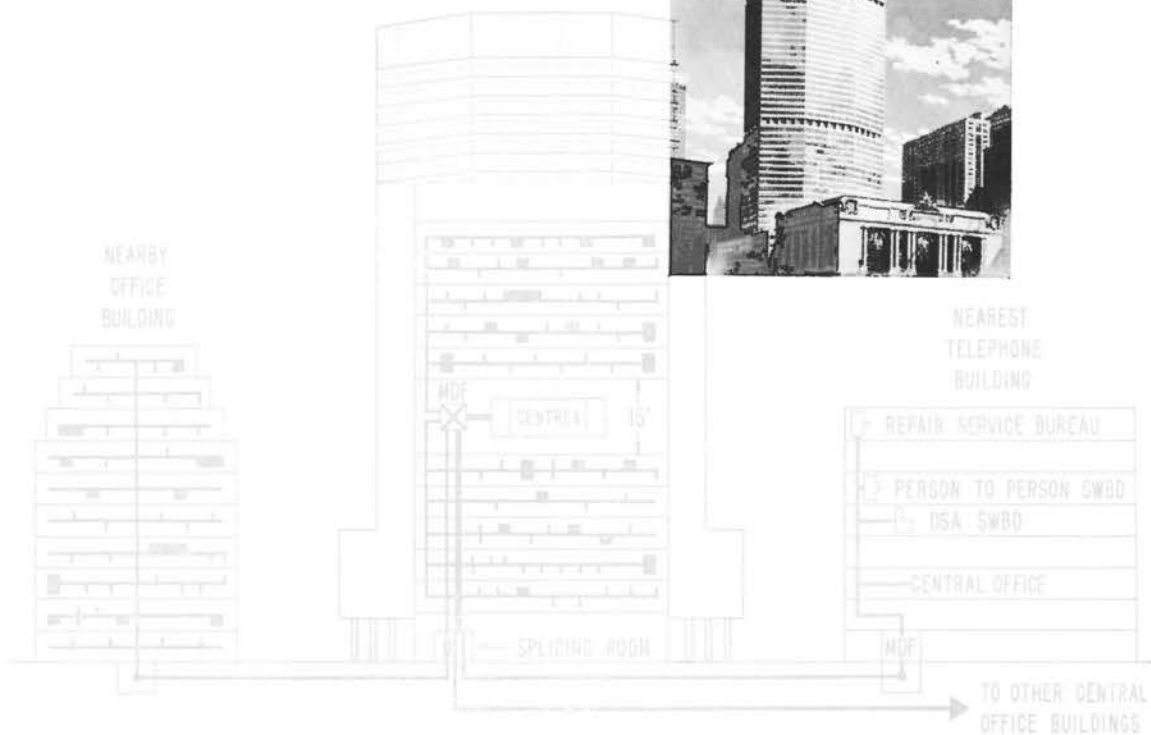
#### ***Service Arrangements***

In those cases where an existing PBX customer is converted to CENTREX and in some other cases, the dial equipment and the attendant facilities may remain or may be located on the cus-

tomer's premises in floor space he provides. In general, such an arrangement will utilize his existing equipment. This will permit CENTREX service with an existing dial PBX and the retention of all the service features the customer is already using. We estimate that four out of every five prospective CENTREX installations will be of the kind in which the existing PBX equipment is retained for basic service. In these cases certain CENTREX features will be provided by a local or tandem office.

To meet the special needs of customers in very large, new buildings housing many businesses or a single large business, the dial switching equipment may be located on telephone company owned or leased premises. In these cases each CENTREX station will be a direct line connection between the customer's premises and the dial switching gear. The normal station equipment and attendant facilities will be located on the customer's premises. Floor space and power

*Typical CENTREX arrangement in rented space will be used in the Pan-American building—which will be the largest office building in the world, and in neighboring office building. Short lines on diagram indicate single stations. Blocks indicate groups of stations.*



normally provided by the customer for a dial PBX will not be required with this arrangement.

### **The Market**

In the field of PBX service, the Bell System's long-range objective is to provide complete dial communications for all our business customers. To do so, we must provide a thoroughly customer-oriented service. We must have service tailored to the customers' needs and more attractive in every way than those the customer can provide for himself or obtain from other suppliers. CENTREX service has much to offer in helping us to fulfill these aims. Although it is now in its infancy, we are confident that the market for it will grow tremendously.

There are 6,700 customers with 200 or more PBX stations who have been identified as the prime prospects for CENTREX. Together, these customers have a total of approximately 3,000,000 stations in service.

CENTREX service at this time will appeal most strongly to these customers because of the tangible economic benefits it offers, i.e., where the customer can realize a substantial dollar savings in attendant and position expense. But the scope of the market is widened considerably by its many other advantages — such as direct in and out dialing, billing by station number and others. The extent of the potential market can be seen in the statistics on our present PBX development shown below.

CENTREX service will appeal to a large and important segment of this market. And there are many customers with less than 200 stations who are good prospects. Among them are customers who have a higher than average proportion of their traffic outside of their own business; those where internal accounting for expenses by operating divisions is considered necessary; others who place value on improved speed of communications. All of these

### **DISTRIBUTION OF PBX's BY SIZE** (as of 1-1-60)

<b>Number of Stations Served</b>	<b>Number of Systems</b>	<b>Approximate Total Number of Stations Served</b>	<b>% of Total PBX Stations</b>
Over 1,000 stations	470	550,400	7%
500 to 1,000 stations	1,140	786,300	10%
200 to 500 stations	5,070	1,572,600	20%
Less than 200 stations	156,270	4,954,000	63%



*Before CENTREX (top) the PBX board in a large New York bank required 14 full-time operators. Now, only five operators and one chief operator are needed, releasing others for work as receptionists, typists, file clerks, secretaries, etc.*

factors indicate a significant market for CENTREX service among many of our PBX customers who have fewer than 200 stations.

The importance of this market for CENTREX service cannot be overemphasized. These customers are the most

frequent users of all of our communications services — key telephone systems, long distance, private lines, teletypewriter, data, WATS and Telpak to mention only a few. The real measure of the volume of usage involving these customers can be seen in the following facts:



greater flexibility in the use of the space required. Billing of long distance calls by individual station number should encourage greater use of station-to-station calling with improved speed of service. Detailed billing of these charges will save both the customer and the telephone company considerable accounting expense. All standard PBX features such as tie lines, dial dictation trunks, conference service, WATS, etc., will also be available to CENTREX customers.

All of this adds up to a completely modern, fully mechanized communications service incorporating the features specifically designed to meet the needs of the prospective users. Although relatively few customers now have CENTREX service, results to date show that those who do have it are enthusiastic, to say the least.

#### ***Developing The Potential***

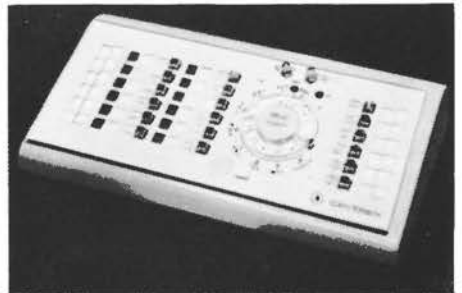
What are the plans for developing and implementing the introduction of CENTREX service? Technical, operational and cost information is already in the hands of the Associated Companies. A small but rapidly growing number of important customers already have this new service. New in-

stallations are being planned and engineered at an increasing rate. The Marketing people, with the cooperation of all other departments involved, are preparing a program to promote the sale of this new service concept. This marketing program will contain information on how to identify prospective customers, sales training material, determination of the customers' requirements, how to make a sales presentation, how to plan a CENTREX job and finally all pertinent technical and operational information needed to insure a thorough development of the market.

The potential of CENTREX in improving service to our present PBX customers is great! There are tangible economic benefits for most customers and for the telephone companies as well. There is a large market for this new service. While the prime prospects are among the customers with 200 or more stations, there are many good prospects among those with less. Future equipment and service developments such as an electronic PBX should make it possible to broaden the market even further. Our job now is to plan and undertake a sound program of marketing this new service with our customers.



*Small, modern desk consoles can replace switchboards. One of two types now in use is shown above.*



*New console to be used in all future CENTREX systems is seen here. It is available in both Touchtone and dial.*