BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Proposed tariff filing by CENTRAL)   DOCKET NO. 890111-TL
TELEPHONE COMPANY to Introduce Centel   )   ORDER NO. 20971
Packet Switching Network   )   ISSUED: 3-31-89
_____)

The following Commissioners participated in the disposition of this matter:

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THOMAS M. BEARD
BETTY EASLEY
GERALD L. GUNTER
JOHN T. HERNDON

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ORDER APPROVING PACKET SWITCHING TARIFF

AND

NOTICE OF PROPOSED AGENCY ACTION

ORDER REQUIRING PROVISION OF PROTOCOL CONVERSION

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BY THE COMMISSION:

Notice is hereby given by the Florida Public Service Commission that the action discussed Section III of this Order is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for formal proceeding pursuant to Rule 25-22.029, Florida Administrative Code.

I. BACKGROUND

On December 14, 1988 Central Telephone Company of Florida filed revisions to its tariff to introduce its Centel Packet Switching Network (CPSN). CPSN is a data transport service that is essentially the same as Southern Bell Telephone and Telegraph Company's PulseLink(SM) packet switching service approved by Order No. 18152, issued September 15, 1987, in Docket No. 870766-TL. In conjunction with CPSN, Centel is proposing to provide protocol conversion through a non-regulated subsidiary. As discussed below, we approve Centel's CPSN tariff. In addition, we have determined that protocol conversion should be offered as a regulated service.

II. PACKET SWITCHING

A complete description of packet switching and its integral relationship with protocol conversion is essential to an understanding of our decisions regarding this service. Packet switching is analogous to the auto train wherein an automobile is sent via normal transportation routes (switched access or private lines) to the rail loading facility (access port concentrator) to be placed on a railroad car (packet) to go via the tracks (56 Kbps line) to a rail yard (packet switch) for switching to another location. Some autos may be loaded on the railroad car and transported with basic (x.25 or x.75 protocol) treatment. Others may require pre-shipment preparation by a

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separate subcontractor (protocol conversion; for example, from asynchronous to x.25) before they may be hauled. Once the railroad cars reach the switching station (packet switch), they may be routed to a local destination or to a distant location via a long-haul provider.

Packet switching is the most economical data transport method yet developed for low to medium speed data due to the large scale multiplexing done in the network. The primary advantage is efficient sharing of network elements among multiple users, reducing transmission costs while increasing reliability and performance. In addition, because the packet is error checked at each packet switch, it is also the most error free form of switched data transport available to the data market.

A customer terminal presents a data message to the network broken into finite groups of characters called bits. These bits are collected into things called packets at an access concentrator. The access concentrator multiplexes the signal onto a high-speed transport facility to a packet switch. The brain of the CPSN network is the packet switch. It reads the packet header and routes the packet on toward its destination. The network routes the packets in accordance with information contained in a part of the packet called the header. Each packet also contains a sequence number and error detection information. The protocol defines how the packet is constructed, and what it must contain.

CPSN may be accessed through two options, direct and dial. Direct access (private line) can be either analog or digital. Dial access is available only through an entity that markets and enhances (converts to another protocol) the "basic" service. In this case Centel is proposing to offer protocol conversion "below the line" as a non regulated service similarly to the way it provides customer premises equipment (CPE).

The provider (i.e. vendor) of the dial port must subscribe to an ordinary dial access line. This dial access line gives the port provider a phone number associated with the port and a connection from the main distribution frame to the port. The vendor sells an enhanced (where the protocol was converted) version of the packet switching service to its customers (e.g. information services like CompuServ and Westlaw data bases). Enhanced packets, used in the context of this filing, are those to which a net (delivered in a protocol other than that which the Company first received) protocol conversion has occurred. Thus, enhancements (protocol conversions) to the basic protocols offered in this tariff are available to the public only on a detariffed basis through vendors, like Centel's below-the-line operations, who subscribe to CPSN service.

In addition to an access line, CPSN service entails several types of recurring rate elements that are dependent on the type of termination chosen by the customer. They are summarized as follows: 1) Termination Charges applicable to dedicated and private dial service;   2) Channel terminations applicable to dedicated service only;   3) Usage charges (per kilosegment) and;   4) Optional switch termination features. The following

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table illustrates which charges would be applied for each type
of termination.

DEDICATED	PRIVATE DIAL	PUBLIC DIAL
Kilosegments	Kilosegments	Kilosegments
Call Attempt	Call Attempt	Call Attempt
Chan. Term.	Chan. Term	Holding Time
Switch Term.	Switch Term.	
Private Ln.	Business Ln.	

There are certain subtle differences in Centel's CPSN rate
structure compared to Southern Bell's Pulselink [SM] tariff.
However, the minor differences in the approach of these
companies still yield functionally similar rates. For example,
while Centel has a single ($ .12) rate for a kilosegment and a
separate set-up ($ .03) charge, Southern Bell utilized two
different kilosegment charges ($.02 for regular use and $.05 for
use of the fast-select option). Southern Bell's fast-select
option included a set-up amount. Centel's tariff includes a
"Network Processing Charge" similar to Southern Bell's Network
Utilization Rate Element (NURE) to recapture the inefficiencies
inherent in having to perform protocol conversion. Both the
network processing charge ($.0476 per kilosegment) and the NURE
(7% added to kilosegment charges) are attempts to recognize the
difference in cost of having to convert the protocol more than
once because of the protocol(s) desired by the customer(s).

Centel has taken a different approach for recovering the
costs associated with "features" that a customer may select for
its access line(s). Centel considers the continual maintenance
of the software, data base and hardware necessary to provide the
features that each customer desires to be recurring in nature.
Centel proposes recurring charges to recover these costs.
Southern Bell, on the other hand, utilized a larger nonrecurring
charge than Centel's and made the "features" nonchargeable.
Southern Bell's reasoned that the features, once programmed or
hardware selected, do not involve significant further expenses.
Both companies impose additional nonrecurring charges to recover
the costs of subsequent changes to selected features. Because
these charges appear inconsequential relative to the other
charges for this service, we are not now overly concerned about
the different recovery mechanisms between Centel and Southern
Bell for optional features.

There are several categories of purchasers of CPSN. First,
there will be information providers (databases) like CompuServe,
Lexis and Westlaw. Second, there will be packet networks like
Western Union, Tymnet and Telenet that wish to provide the long
haul themselves and to purchase the local distribution service
(packet switching) from Centel. It is important to note that
packet switching, with or without protocol conversion, allows
its subscribers to accommodate more of their customers without
having to provide more ports because the service allows several
end users to share the same transport facility (and port)
through multiplexing. This means that the subscribers'

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investments, all other things being equal, can be more
efficiently utilized. CPSN makes available the benefits
inherent in being able to share a multiplexed transport facility
among different end-users. Based on the foregoing, we find it
appropriate to approve Centel's proposed CPSN tariff.

III. PROTOCOL CONVERSION

In conjunction with its CPSN service, Centel proposes to
offer protocol conversion as a non-regulated service with all
revenues and expenses to be accounted for below-the-line. In
Order No. 20828, we set forth our disagreement with the Federal
Communications Commission's (FCC's) jurisdictional analysis of
protocol conversion. By that Order, we determined that protocol
conversion was, in part, an intrastate service and that it was
subject to our jurisdiction. See Order No. 20828. For reasons
set forth below, we have determined that Centel shall offer
protocol conversion on a regulated tariffed basis.

A description of protocol conversion and its integral
relationship with packet switching is essential to an
understanding of our decision in this Section of the Order.

In general, protocols are sets of rules which govern the
transfer of information. With respect to data transmission,
protocols define the manner in which data terminals, networks
and computers interact and communicate with each other. For
example, protocols may: 1) coordinate timing between
transmitting and receiving terminal 2) set modem frequencies
for sender and receiver; 3) check the identity of the sender and
receiver; 4) detect and correct errors; and 5) provide network
features such as closed user groups or reverse charging. The
main problem in describing protocols by function is that they
are being made to perform more and more functions as the cost of
the electronics decreases.

Protocol conversion is the process of converting from one
protocol to another. Low-level protocol conversion, simply
stated, includes those functions that do not manipulate the
content of the data beyond that which is necessary for
transparent transmission of that data. Technically, these
include the first three layers (physical, link and network)
defined by the International Standards Organization (ISO) and
which are embodied in the x.25 and x.75 "basic" packet switching
protocols.

Many electronics firms have been developing better ways to
handle data more efficiently through innovative protocols.
However, businesses are not prone to share their proprietary
inventions with one another. Further, competitors may not wish
to alter their operations to conform to some other protocol. As
a result, not all terminal equipment or systems follow the same
protocol. Without the ability to convert one protocol to
another, there would be no way to integrate the vast majority of
computers for intercommunication.

Testimony elicited from Southern Bell's witness in Docket
No. 870766-TL indicated that 85% of the packet switching service
requires protocol conversion. The testimony also stated that

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without protocol conversion those sales the service would die. Further, the ubiquity of Centel's network among the ultimate end-users makes it efficient for the regulated Company to be in the protocol conversion business.

Upon consideration, we find it appropriate to require Centel to provide low level protocol conversion on an intrastate regulated basis. Accordingly, Centel is hereby directed to file a revised tariff offering low level protocol conversion as an intergral part of its packet switching service within 30 days of the date of issuance of this Order. This docket shall remain open pending receipt and approval of the tariffs identified in this section.

Southern Bell was allowed to begin offering the service in 1987 so that customers could take advantage of the economies it had to offer. Staff believes the same rationale should be applied to Centel's proposed offering as was used in Southern Bell's case. The staff believes that Centel should be also allowed to begin offering the packet switching service now and follow shortly with the necessary tariff pages to offer protocol conversion as a regulated service.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Central Telephone Company of Florida's tariff proposing to provide packet switching services is approved as set forth in the body of this Order. It is further

ORDERED that Centel shall offer low level protocol conversion on a regulated basis as set forth in the body of this Order. It is further

ORDERED that Centel shall file tariffs consistent with our decision in Section III of this Order.

By ORDER of the Florida Public Service Commission, this _31st_ day of _____MARCH_____, _1989_.

STEVE TRIBBLE, Director
Division of Records and Reporting

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.59(4), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

As identified in the body of this order, our action Section III of this Order is preliminary in nature and will not become effective or final, except as provided by Rule 25-22.029, Florida Administrative Code. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, as provided by Rule 25-22.029(4), Florida Administrative Code, in the form provided by Rule 25-22.036(7)(a) and (f), Florida Administrative Code. This petition must be received by the Director, Division of Records and Reporting at his office at 101 East Gaines Street, Tallahassee, Florida 32399-0870, by the close of business on April 21, 1989. In the absence of such a petition, this order shall become effective April 24, 1989, as provided by Rule 25-22.029(6), Florida Administrative Code, and as reflected in a subsequent order.

Any objection or protest filed in this docket regarding Section III of this Order before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

If the action proposed in Section III of this order becomes final and effective on April 24, 1989, any party adversely affected may request judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or by the First District Court of Appeal in the case of a water or sewer utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days of the effective date of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of Records and Reporting within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water or sewer utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.