Introduction

The Resale Non-recurring Cost (NRC) Study is filed in compliance with the Illinois Commerce Commission's (ICC) order 98-0866 proceeding for Joint application for the approval of a corporate reorganization involving a merger of GTE Corporation and Bell Atlantic Corporation dated October 29, 1999. The Resale NRC Study is a forward-looking study that accounts for the activities required to pre-order, order, provision and install products and services for Competitive Local Exchange Carriers (CLECs.)

This Wholesale Resale Non-recurring Cost (NRC) Study utilizes an ICC Compliance Rate of Return of 10.2% for any capital related cost calculations.

The cost team consisting of Verizon's cost managers and Subject Matter Experts (SMEs) worked in conjunction with a team of Arthur Andersen LLP professionals to develop the Resale NRC Study template, to identify the process flows for ordering, provisioning and installation, and to gather cost data. This cost study is a Verizon work product.

Resale NRC Study Relationship to Other Cost Studies

The Resale NRC Study is one of Verizon's Wholesale Costs Study modules. There are four other modules: UNE NRC including Operational Support System (OSS) costs, Recurring Costs of Resale, Recurring Costs of UNEs, and the Expanded Interconnection Services (EIS) (collocation recurring and non-recurring) Costs. Though these costs are interrelated, they are not duplicative. Verizon has diligently reviewed all inputs to each of these modules to insure there is no incident of double-counting costs.

Verizon has recurring and non-recurring cost study modules for its Retail and Access products and services. To determine costs for Resale products and services, Verizon utilized each equivalent Retail service as a proxy to determine the costs for Provisioning and Field Work for each Resale product and service. However for Resale Ordering costs, the Retail ordering centers do not handle activities for Resale services. Verizon has established separate National Open Market Centers (NOMCs) to process Competitive Local Exchange Carriers (CLECs) Local Service Request orders.

Cost Study Methodology

For the purpose of this study, the non-recurring cost of a service is the cost of a set of activities that is completed by the company in response to a specific Local Service Request (LSR) placed by a CLEC. These activities are non-recurring in that they are typically undertaken once at the time a service is activated, modified, or discontinued per a CLEC request. Verizon's Resale NRC study is based on Total Element Long Run Incremental Costs (TELRIC) methodology. This methodology supports costs that are:

- Forward looking (assumes industry standard solutions for OSS interfaces):
- Assumes enhancements to Verizon's systems and databases resulting in increased mechanization;
- Long-run (applicable to the foreseeable future);
- Least costs (based on cost-effective utilization of Verizon's legacy data processing systems;
- Based on incremental costs (costs for activities required to pre-order, order, provision, and install a service);
- Consistent with the principles of "cost causation".

Process Flows

Verizon's cost team charted the process flows for each of the following Resale order types:

- New order
- Change order
- Disconnect order
- Record order

These flowcharts identify the activities of Verizon's workgroups involved in the pre-ordering, ordering, provisioning, and installation of the CLEC's Resale order. The processes vary not only by order type, but also by the type of product/service requested. (See Appendix Tab 1 for Process Flows.)

Infrastructure Enhancements

The SMEs and cost team identified changes in Operations Support Systems (OSS) that would impact the way work was handled in each of Verizon's workgroups. OSS enhancements increase mechanization/ flow through thus reducing the level of manual activity associated with certain types of orders.

Depending on the CLEC's systems, processes, and level of mechanization, the CLEC will transmit the Resale LSR to Verizon in one of the following modes:

- Manual Order – CLEC faxes a Resale LSR to Verizon. The Verizon service representative reviews the fax to ensure all information is complete and accurate. If there is an error, or missing information, the representative calls the CLEC for the correction. The service representative then inputs all LSR information into the Secured Integrated Gateway System (SIGS), provides Firm Order Completion (FOC) to the CLEC, and completes the order.

- Semi-mechanized Order – CLEC transmits the Resale LSR electronically. Verizon's Front-end edits will identify errors and return error information electronically to the CLEC. Once through the front-end edits, the order is distributed to a Verizon service representative who inputs the order into the National Order Collection Vehicle (NOCV.)

Many of the Exchange Basic orders flow through the electronic interfaces without human intervention.

- Mechanized Order – CLEC systems interface directly with Verizon's systems; the CLEC-created Resale LSR regardless of the complexity of the service is sent to SIGS where it is processed without human intervention. Error notices and completion notices are sent electronically to the CLEC. A small percent of orders fall-out of the system and require a Verizon service representative to notify the CLEC. Note: for mechanized order processing, the CLEC must meet industry standards for ordering and billing, and must successfully complete collaborative testing with Verizon.

These order entry processes will be offered to each CLEC. The type of order processing the CLEC selects will affect the service order activity costs. For this reason, Verizon developed service order costs for Manual and Semi-mechanized order processing and will over time develop costs for the fully Mechanized order process as OSS solutions are determined and planned for implementation.

Other enhancements to Verizon's OSS result in flow-through for the ordering and provisioning of Resale Basic services (these are the Plain Old Telephone Services – "POTS.") including mechanized facility assignment and switch recent changes for these services.

Cost Data

Resale NRCs were developed using the following methods of data collection:

- Work sampling and SME estimates for the National Open Market Center (NOMC) ordering activities;
- Activity Based Management (ABM) time and motion studies for the National Accounts Customer Center (NACC);
- Time and motion studies, SME inputs and database reports for the provisioning activities;
- Time and motion studies for Central Office Installation activities;
- Database reports and time and motion studies for Field Installation activities.

The SMEs and cost team collected activity times and determined task probabilities. The cost team then calculated the costs for each type of Resale order using the standard non-recurring cost calculation –

Activity Time x Probability x Labor Rate = Cost

The cost team used the most current Loaded Labor Rates for each of the workgroups. (See Appendix Tab 6 for Loaded Labor Rates.)

Verizon's Resale NRC study also includes NOMC Shared/Fixed Costs that are related to Verizon's costs for supporting the NOMC activities. These costs are determined on a Verizon wide basis.

Resale Order Types

There are five Resale order types. Following are descriptions of each order type:

1. New – a New order for Local Wholesale Service establishes a service for the first time or adds additional lines at an existing CLEC customer's location.

2. Change – a Change order applies when the CLEC requests changes in central office switch features for an existing local wholesale service; this can be either a "Change Feature" or a "Change Switch Feature Group" type order. A Change order also applies when the CLEC requests a change in Central Office Interconnection – the cross-connect between the CLEC's cage terminal block and Verizon's terminal block(s) on the Main Distributing Frame (MDF.)

3. Disconnect – a Disconnect order for Local Wholesale Service applies when the CLEC requests that all or a portion of a local wholesale service be removed.

4. Record – a Record order applies when the CLEC changes existing service records without changing the service itself. An example of a Record order is a change of the billing address.

5. Resale Migration – a Resale Migration order applies when the CLEC requests conversion of existing services: Retail to Resale and Resale to Resale.

    - Migration As Is**:** this order type occurs when an existing end user customer changes service from Verizon to a CLEC, or from a CLEC to another CLEC, **and** the end user keeps the same service. This type order requires only the ordering function and FAC provisioning; it does not require central office, or field installation activities. "Migration As Is" is applicable only to POTS.

    - Migration As Is + or –**:** this order type differs from a "Migration As Is" order only in that the end-user wants to add or delete a vertical feature from his existing service. The central office switch must be updated for the requested feature change, and this is accomplished electronically.

    - Migration As Specified**:** this order type occurs when the end-user converts a portion of his Verizon Retail services (at a single location) or another CLEC's Resale services provided by a CLEC. The CLEC specifies the services and service arrangements to be migrated.

The cost team and SMEs determined the Resale process flows for each of these order types for each category of Resale products and services. Then they gathered the non-recurring cost data for the study.

Cost Categories

Resale Provisioning

Verizon's Resale services fall into four categories: Exchange – Basic, Exchange – Complex, Advanced/Special – Basic, and Advanced/Special – Complex. Each of these groupings has a distinct provisioning process and associated non-recurring costs. For each category, Verizon has costed the activities required to pre-order, order, provision, and install the requested Resale service. (Descriptions of the Resale services are in the next section.)

There are two fundamental distinctions between the Resale categories. The first distinction is whether or not a service requires design/engineering. The Exchange services do not require design or engineering, whereas the Special/Advanced services are designed/engineered services with variables specific to the order placed by the CLEC. The Special/Advanced services require Circuit /Design Layout Records (CLR/DLR).

The second distinction is between Basic and Complex services. Basic services can be provisioned using standard network components maintained in inventory without specialized instructions for switch translations, routing, and service arrangements. The Complex services require special instructions for the provisioning of the service to meet the customer's needs. Verizon uses a Data Gathering Form (DGF) to record and organize these instructions for translations and service arrangements.

The matrix below shows each category and list of some of the associated Resale services:

Exchange – Basic	Exchange – Complex	Special/Advanced – Basic	Special/Advanced – Complex
♦ Residence Single Line ♦ Business Single Line ♦ Rotary Line ♦ PBX Line ♦ Vertical Services ♦ 2-Wire Voice Grade Local Loop ♦ 4-Wire Voice Grade Local Loop	♦ CentraNet Line ♦ ISDN BRI Digital Line ♦ Vertical Features ♦ Switch Feature Group	♦ 2-Wire Digital Engineered Loop ♦ 4-Wire Digital Engineered Loop	♦ DID ♦ DOD ♦ ISDN PRI ♦ ATM ♦ Frame Relay ♦ Digital Data Megabit Service

OSS UNE Costs

In this NRC study, Verizon provides costs for access to OSS. Although the costs in this study are Resale related, Verizon has identified and is entitled to recover OSS costs related to changes to Verizon's legacy systems and interface systems. Verizon has identified two types of costs associated with OSS – Transition Costs and Transaction-specific Costs. Transition costs are the costs to upgrade existing OSS and the start-up costs to establish mechanized systems. These infrastructure changes were required to make Verizon's OSS accessible to the CLECs. The

transition costs include the one-time expenses to upgrade the five categories of OSS: pre-order, order, provisioning, repair/maintenance, and billing.

Transaction-specific costs are the costs incurred each time a CLEC places an order; these are the on-going OSS costs to process an LSR or ASR. These costs pertain to the non-recurring systems for pre-order, ordering, and provisioning.

The OSS UNE costs are contained in a separate module of this NRC study unless Verizon is specifically directed by a Commission to file for the OSS cost recovery in a different filing or proceeding.

Other Services
In addition to the Resale cost categories already described, Verizon provides costs for other services the CLEC may need in the provisioning of its LSR. These services are**:**

- CLEC Account Establishment – Verizon establishes the CLEC account in each state that the CLEC requests. The NOMC receives the CLEC profile from the CLEC's account manager, reviews it for completeness, and then enters the CLEC profile information and creates summary bill masters in NOCV. Once the CLEC account has been established for a state, the CLEC may submit an LSR for processing.

- Customer Service Record Search – A CLEC may request Verizon to perform a manual Customer Service Record (CSR) to obtain information about a potential customer's existing Verizon services. The NOMC processes the request and returns the information to the CLEC. (If the CLEC performs a CSR search electronically via the Web-based Interactive Service Environment (WISE), there is no non-recurring cost.)

- Coordinated Conversion – A Coordinated Conversion may be requested by the CLEC for Exchange – Basic and Complex Resale services if it wants to establish a specific appointment for the completion of the service order. Verizon contacts the CLEC for authorization to proceed prior to beginning work on the order, and contacts it after work is complete. This service includes only the additional costs caused by Coordinated Conversion and is in addition to the cost of the underlying LSR. The cost is per occurrence.

  The NRC study develops costs for three steps required for a coordinated conversion:

  Process 1 – identifies the costs for the NOMC service representative's call to provisioning to establish the time of the conversion and to set the appointment.

  Process 2 – identifies the incremental costs of the Facility Assignment Center (FAC) personnel and Central Office Technician(s) to coordinate and cut the ordered Resale service in conjunction with any outside plant work at the scheduled appointment time. There is an "Additional Cost" that applies for each delay of 15 minutes caused by the CLEC, e.g., if the start of the conversion is delayed beyond the end of the scheduled time or if the CLEC delays the conversion once it is underway.

Process 3 – identifies the costs of the field technician to coordinate and cut the ordered UNEs in conjunction with the central office and FAC personnel at the scheduled appointment time. There is an "Additional Cost" that applies for each delay of 15 minutes caused by the CLEC.

- Hot Cut Coordinated Conversion – This service is the Coordinated Conversion mentioned above with the added feature that the CLEC, the Verizon coordinator and the Verizon technicians remain on a conference call for the duration of the service order completion process. Each step of the process is completed sequentially following authorization from the CLEC. Because there is no way for Verizon to estimate or control the amount of time required for a Hot Cut Coordinated Conversion, the cost developed is for a conversion lasting up to one hour. Additional costs will be incurred for each quarter hour thereafter at Verizon's Loaded Labor Rates for the Verizon employees involved.

- Expedite – An Expedite refers to a request by a CLEC to advance the completion of the service order earlier than the next standard Due Date that is normally available. Instead of relying on the automated system for work schedule, an Expedite requires a manual appointment setting process in which NOMC personnel must contact the Division Resource Management group to determine if the earlier completion interval is feasible. In addition to the costs shown in this study, overtime charges may apply if the work is done outside of normal installation work time periods as authorized by the CLEC.

Description of Resale Services

Following is a description of each Resale service included in this NRC study.

Exchange – Basic Services

- *Basic Analog* service is a line side switch connection with an analog 2-wire cable pair employed to provide basic residential and business type Exchange Service. This service is an Exchange – Basic Resale product.
- *2-wire Analog Loop* is a voice frequency transmission facility suitable for the transport of analog voice signals between approximately 300 Hz to 3000 Hz, with line loss levels not to exceed 8.5 dB. A 2-wire Analog Loop may include load coils and bridged tap, as well as carrier derived facility components such as pair gain applications and loop concentrators/multiplexers. The 2-wire Analog Loop is an Exchange – Basic service.

- *4-wire Analog Loop* is a voice frequency transmission facility suitable for the transport of analog voice signals between approximately 300 Hz to 3000 Hz, with line loss levels not to exceed 8.5 dB. A 4-wire Analog Loop may include load coils and bridged tap, as well as carrier derived facility components such as pair gain applications and loop concentrators/multiplexers. The 4-wire Analog Loop is an Exchange – Basic service.

Exchange – Complex Services

- *CentraNet* service is a line side switch connection employed with an analog 2-wire cable pair to provide CentraNet type service. The CentraNet service is an Exchange – Complex product.

- *ISDN BRI (Basic Rate Interface*) service is a digital line side switch connection employed with a 2-wire digital qualified cable pair to provide ISDN BRI Exchange service. The ISDN BRI service is an Exchange – Complex product.

Advanced/Special – Basic Services

- *2-wire Digital Loop* is a 2-wire transmission facility capable of transmitting digital signals up to 160 KBPS with no greater line loss than 38 dB end-to-end measured at 40 kHz without loop repeaters. Dependent upon loop make-up and length, midspan repeaters may be required; in which case line loss levels will be no greater than 76 dB at 40 kHz. In addition, a 2-wire Unbundled Digital Loop, dependent upon loop make-up, may be configured to support Enhanced Copper Technologies (ECTs) such as ADSL. When configured in this fashion, these loops must be provisioned over copper facilities that contain no load coils and minimum allowable bridged tap. The 2-wire Digital Loop is an Advanced/Special – Basic product.

- *4-wire Digital Loop* is a 4-wire copper facility suitable for the transport of digital signaling. This loop type will contain no load coils and minimum allowable bridged tap. A 4-wire Digital Loop may be used by a CLEC to provision services such as ISDN- PRI or HDSL. The 4-wire digital UNE is not available where Verizon has provisioned its local network utilizing Digital Line Concentrators (DLCs). Verizon does not supply the electronics associated with these service types. The 4-wire Digital Loop is an Advanced/Special – Basic service.

Advanced Special – Complex Services

- DID (Direct Inward Dialing and DOD (Direct Outward Dialing) are services used by customers with PBX or PABX type service and are trunk side connections utilized to transport calls to and from the customer location. DID and DOD are Advanced/Special – Complex product.

- ISDN PRI (Primary Rate Interface) is a digital trunk side switch connection employed with a 4-wire digital qualified cable pair to provide ISDN PRI services. The ISDN PRI Trunk Side Port is an Advanced/Special – Complex product.

Vertical features are optional services provided through software programming in the switch, which can be added on a per-feature basis with applicable costs.

Resale NRC Study Organization

The Resale NRC study is organized into the following sections – 1) Summary of Costs, 2) Work Group Costs, and 3) OSS, 4), and 5) Appendices of Data Inputs and supporting workpapers.

Additionally, Verizon has submitted its OSS costs which documents the costs incurred by Verizon to meet the requirements of the Act.

Following is the Summary of Costs.