DESCRIPTION AND JUSTIFICATION

1.0 Introduction and Description of Filing

In this tariff filing, scheduled to become effective June 15, 2004, the Bell Operating Companies (BOCs) propose changes to Tariff F.C.C. No. 1, 800 Service Management System (SMS/800) Functions (SMS/800 Tariff) to modify rates and charges based on current cost and demand data.

1.1 Modify Rates and Charges

This tariff filing is being made by the BOCs to reduce certain rates and charges in the SMS/800 Tariff. The proposed changes, reflecting the BOCs' most current estimates of demand and cost for services provided under the tariff, would decrease revenue over the prospective one-year period of June 15, 2004 through June 14, 2005 by $10,763,217.

The most significant change, accounting for $10.3 million of the revenue impact, is the proposed decrease in the Customer Record Administration (CRA) charge from $0.1833 to $0.1461. A comparison of current and proposed rates, as well as the revenue impact of the rate changes, is displayed in Table 1 (after section 4.7).

The rates covered by this transmittal will expire on June 14, 2005 unless extended or revised by a tariff filing prior to the expiration date.

2.0 Revenue Requirement Development

The prospective revenue requirement for SMS/800 consists of expenditures for ongoing operations from June 15, 2004 through June 14, 2005. Virtually all of the costs are expense items. Specific budget items for SMS/800 ongoing operations are:

1. *SMS/800 Operation and Administration* which consists of: (a) Help Desk operational support to SMS/800 users including telephone assistance related to interfacing with SMS/800 and preparation/maintenance of toll-free number records, and processing of requests for changes in Responsible Organization for toll-free numbers; (b) day-to-day management, planning and administrative oversight provided by the SMT Business Manager (DSMI), external operational support services such as billing and collections, accounting, cost analysis and website support, and other costs such as bad debt (services provided to bankrupt Responsible Organizations), and general administrative

and human resources expenses related to SMS/800; and (c) the indirect cost of significant internal resources that the Bell companies expend to support management, operation and administration of the SMS/800. These resources include employees in the companies' tariff, regulatory, legal, technical, financial, taxation, procurement, accounting, network operations, systems provisioning, and operations support organizations.

During the past tariff year the BOCs have continued to incur bad debt costs for those Responsible Organizations that either filed for bankruptcy protection or voluntarily discontinued service to their customers and could not pay for services rendered. The BOCs are expecting that additional Responsible Organizations will either terminate service or file for bankruptcy protection and thus the estimated 'bad debt' allowance included in the revenue requirement for the coming tariff year (June 15, 2004 to June 14, 2005) is $454,000. This amount is the equivalent of the actual bad debt expenses for 2003.

The estimated revenue requirement of this budget item for the one-year period of June 15, 2004 through June 14, 2005 is $5,813,176 distributed as follows: item (a) $1,563,007; item (b) $3,750,169; and item (c) $500,000.

2. *SMS/800 Data Center Operation* reflects the cost of the production and test/disaster recovery SMS/800 data centers and operation of a Service Center (Help Desk) facility to handle security and access problems. The estimated revenue requirement for data center operation is $27,391,541.

3. *SMS/800 Software Support* includes the provision of software maintenance, computer site and application support, and software development for new features. The estimated revenue requirement for software support is $12,947,596.

A comparison of projected past year and actual past year costs, and projected future year costs are shown in Table 2.

2.1 Revenue Requirement Distributions

The projected revenue requirement for budget (cost) items was distributed to appropriate SMS/800 rate elements by applying distribution factors based on cost-causation analyses. The methodology used is consistent with the methodology used for all previous SMS/800 tariff filings. The distribution factors actually applied are shown in Table 5. Resulting revenue requirement distributions are shown in Table 4 and include distribution to SMS/800 services (including those provided to Service Control Point [SCP] Owner/Operators which are offered via contract). Cost-causation analyses were performed and applied to budget elements as follows:

- A Task Oriented Costing (TOC) study was used to distribute SMS/800 Help Desk costs to rate elements. Each person providing Help Desk support was interviewed individually to identify the primary tasks performed, how often the tasks are performed, and the time (minimum,

maximum, most likely) spent performing them. Each task was then analyzed and associated with the particular rate element it supports. The resulting distribution factors are shown in Table 5, column (a). All other (indirect) operations and administration costs were distributed to all rate elements proportionally on the basis of the relationship of the magnitude of each element to the total. The calculation method and allocation factors developed are shown in Table 4, columns (f) and (g).

? Data center costs consist primarily of: (a) network equipment and facilities needed to provide communications access for customers' links; (b) storage hardware (tape and disk drives) for toll-free number record data; and (c) central processor used to respond to and execute customer requests for SMS/800 services. *Network costs* are attributable almost entirely to rate elements required to access SMS/800. A unit cost analysis of each type of connection to SMS/800 was used to determine its cost and distribute the network revenue requirement on the basis of the relative, weighted (by demand) cost of each type of access. *Storage costs* are related almost exclusively to number records and were therefore assigned to the Customer Record Administration rate element. *Central Processor costs* are attributable to most rate elements. A two-step analysis was used to determine a reasonable distribution of costs. First, the quantity of lines of computer code used by each SMS/800 software application and platform function were determined and distributed to each rate element supported. Then, usage data reflecting a typical month's internal computer transactions for each software application and platform function was recorded and used to identify the relative usage of processing capacity. Since the relationship between rate elements and software applications/platforms had been established and quantified with the lines of code study, the relationship was extended to processor transactions so that they could be assigned to rate elements. The factors developed with the lines of code and transactions analyses are shown in Table 5, columns (b) and (c), respectively. The composite factors actually used to distribute total data center costs are shown in column (d).

? The cost of software support includes software maintenance, site support and software development for new features. The software maintenance and site support dollars were distributed on the basis of the lines of code analysis described previously since there is a reasonable relationship between the magnitude of software code and the amount of support effort required to maintain it. The factors used to distribute software costs are shown in Table 5, column (e).

3.0 Basis of Ratemaking

The rate structure for SMS/800 consists of service elements that are used by Resp Orgs. The proposed rate for each element is based on its projected revenue requirement and demand. The only exceptions are the proposed daily and hourly rates for Additional Responsible Organization Requested MGI Testing and the daily and hourly rates for Batch Update Testing. These rates are based on a

change to a vendor contract. The contractual rate of $180 per hour, or $1,440 per day, is expected to remain valid for the proposed tariff period. This information is shown in Table 6.

4.0 Demand Forecast

The demand forecast for the prospective year is displayed in Table 3. Information and/or data considered in developing the forecast are discussed in the following sections.

4.1 Customer Record Administration (CRA)

This rate element represents the quantity of toll-free numbers for which customer records exist in the SMS/800 and is charged on a recurring (monthly) basis for each number record administered. To forecast demand for toll free numbers, we examined alternative models, searching to find the most accurate and reliable econometric estimation technique suitable for the problem at hand.

The first issue addressed involved data frequency. The toll free number data are collected and reported weekly, but previous tariff filings (as well as the CRA rate element charge) use monthly data. A two-year forecast of monthly data requires a 24-period forecast. Because data typically contain random elements, projections tend to become less reliable with the number of periods forecast. This problem can be mitigated by using lower data frequency, allowing random influences to offset, smoothing observed values. When high frequency forecasts are not needed, modeling the dynamics at a lower frequency is usually more accurate. For example, estimating a moving average error term with quarterly data provides an average over three months to improve the forecast, while using monthly data produces just one month's worth of moving average correction. When the individual months are not required in their own right—as is the case here—the longer observation period provides an error correction more closely related to the longer forecast needed. Of course, lower frequency data yield fewer observations over the same time frame and, all else equal, additional observations tend to improve estimation accuracy. Given that the use of annual data is ruled out due to insufficient degrees of freedom, we chose to perform our estimations with demand measured quarterly. This approach is designed to balance forecast variance against loss of observations.

The monthly forecasts for July 2004 through December 2005 reported in Table 3A represent linear interpolations of the quarterly forecasts. (For instance, if toll free lines were projected to rise from 22,000,000 to 22,300,000 from one quarter to the next, the consecutive estimated monthly totals would be 22,100,000, 22,200,000, and 22,300,000.) For the forecast, we used the unweighted average of the three months in each quarter to construct the quarterly series of toll free numbers. The average monthly number of lines for a quarter was considered to be that number which would accrue to the middle month of each quarter. The middle month for the quarter ending March 2004 is February 2004, the middle month for the quarter ending June 2004 is May 2004, etc. Use of this averaging methodology tended to smooth out random fluctuations, as desired.

Similar to the choice of quarterly data, we chose a three-year estimation window that represents a tradeoff between regime stability and the number of estimation observations. We considered using shorter periods of time for estimation, but found reason to believe that the estimates were more susceptible to short term fluctuations and were less precise. Longer periods were not used because it is believed that factors that might drive demand change over time, and that factors that affected the market as recently as four years ago might not have any influence over current market conditions. It should be noted that this was the methodology used in the previous forecast. Historically, CRA demand has been forecast from three years of data, a practice that makes particular sense right now given the observed change in structure in recent years.

Note that because data available runs only through April 2004, data for the months of May 2004 and June 2004 is unknown. This means that either data for April must be disregarded or that the remaining months in the quarter ending June 2004 must be extrapolated. Since the former option requires disregarding actual data, the latter option is preferable. The methodology for forecasting demand for May 2004 and June 2004 is similar to the methodology used for forecasting quarterly estimates. The difference is that only monthly data will be used in this forecast, as opposed to smoothed quarterly data. The lack of smoothing is acceptable because the demand will only be forecasted two months ahead, which is a fairly short run forecast. Twelve months of monthly data is used in this forecast to capture all the effects that might be observed in a year.

The time series model. Previous forecasts of this same series showed that it was appropriate to use time series models to fit the series, and correcting for serial correlation was necessary. Positive serial correlation is present in time series estimation when predicted values are too high (or too low) because previous predictions were too high (or too low). In essence, serial correlation exists when over-predictions (or under- predictions) bunch together. Failing to detect and correct for serial correlation means that prediction errors are not random and, therefore, contain additional useful information.

Given first-order serial correlation, errors from one period help predict errors in the next. With second-order serial correlation, errors from the two previous periods contain information aiding prediction of the error in the current period. Correcting for serial correlation takes this predictive power into account to improve the accuracy of the estimated equation and its forecast.

We found evidence that there is significant information in past residuals that can be used to improve forecast accuracy. We believe that after correcting for second-order serial correlation, the residuals appeared random. Consequently, we were satisfied with the second-order correction for serial correlation.

Forecasting May 2004 and June 2004 Monthly Demand

Several AR and MA time series models were fitted to the twelve months worth of data ending on April 2004. In no case were MA terms significant, indicating that MA terms should not be included. The first and second AR terms were highly significant in most models, but no greater AR terms were significant at any reasonable level of confidence. In addition, the model producing the highest adjusted R^2 was the

AR(2) MA(0), or AR(2). Therefore, among all Box-Jenkins type models, this model produces the best fit on the twelve months of data ending in April 2004.

The resulting model parameters and summary statistics are:

R-Square = 0.9521 R-Square Adjusted = 0.9415
Akaike Information Criteria -AIC(K) = 23.976
Schwarz Criteria - SC(K) = 24.097

Parameter	Estimates	STD Error	T-Stat
AR(1)	1.7308	0.03354	51.6
AR(2)	-0.84982	0.03796	-22.39
Constant	2,675,600	1,552,000	1.724

Using this model to forecast two months forward results in an estimate of demand of 22,286,000 for May 2004 and 22,453,400 for June 2004. The average monthly estimated demand for the quarter ending June 2004, which combines actual demand from April 2004 with the monthly forecasted demand is 22,285,635.

Forecasting Quarterly Demand Through December 2005

The model that appeared to provide the best fit in previous year's experimentation with several specifications of the auto regressive and moving average corrections was the second order autoregressive, first order moving average specification (i.e., the smallest in sample prediction errors). The model predicts the future value of the dependent variable (toll free numbers) solely by analysis of past values of that variable.[1]

As in the forecast with the time trend, the second order autoregressive correction provides for cyclical variation around a base forecast. In the final specification, however, the base forecast is provided by the moving average correction instead of a time trend. The moving average correction makes an adjustment in the current period for the error from the estimated equation from the previous period. This specification is capable of modeling both the time trend growth period and the flattening out regime change when the coefficients are allowed to change between the two periods by using the moving three-year frames described above.

The same process was followed in preparing the current forecast. The best model obtained using 12 quarters of data was defined by the following summary statistics:

[1] This is an example of the Box-Jenkins approach to time-series modeling that only uses past values of a variable to predict future values.

R-Square = 0.8873 R-Square Adjusted = 0.8451
Akaike Information Criteria -AIC(K) = 26.335
Schwarz Criteria - SC(K) = 26.497

Parameter	Estimates	STD Error	T-Stat
AR(1)	1.3932	0.1253	11.11
AR(2)	-0.56681	0.1266	-4.478
MA(1)	-0.51888	0.3109	-1.669
Constant	4,076,900	4,102,000	0.9938

In equation form, the model indicates that:

Forecasted CRA_{t+1} = 4,076,900 + 1.3932 CRA_t - 0.56681 CRA_{t-1} - 0.51888 u_t + u_{t+1}

4.2 Change of Responsible Organization for Toll-Free Number

This element provides for changing the Responsible Organization for a toll-free number and is charged on a non-recurring (per request) basis. After monthly demand was over 7,300 in 2002, demand in 2003 was approximately 6,750. Projected demand is expected to remain at 2003 levels and is estimated at 81,008 for the prospective one-year period of June 15, 2004 to June 14, 2005.

4.3 SMS/800 Access

This service element provides for the connection of dedicated and dial-up communications links to the SMS/800 and is charged on a recurring (monthly) basis. Demand for dedicated access has been somewhat stable since 2000 and is likely to remain stable in 2004 and 2005. Demand for MGI dedicated access is projected at approximately 29 units per month, and demand for non-MGI access is projected at just over 65 units per month. Average 2003 demand for dial-up access is 916 units per month, and is expected to remain at these levels for the prospective period of June 15, 2004 to June 14, 2005.

4.4 Service Establishment

This service element provides for various aspects of establishing service, i.e., first log-on ID, and subsequent (additional) log-on IDs. Charges for these services are applied on a non-recurring (one time) basis. Demand for first log-on IDs averaged 3.17 requests per month during 2003 and is forecast at that level for 2004 and 2005. Demand for subsequent IDs averaged about 117 requests per month over the same time period, resulting in annualized demand projection of 1,405.

4.5 Reports

This service element covers the provision of special reports ordered by users from the SMS/800 Help Desk and is charged on a non-recurring (per report) basis. The introduction of the Web-based Reporting System (WRS) feature has reduced the demand for special reports from a peak of 75 per month in 2000 to nearly 44 per month in 2003. At this time, use of WRS is not expected to continue to erode demand for the ordering of special reports, and the demand projection for the prospective tariff period June 15, 2004 to June 14, 2005 remains at 523 reports.

4.6 MGI Development and Testing

This service element covers the establishment of a mechanized interface to the SMS/800 for a Resp Org's operation system and is charged on a non-recurring (per request) basis. No requests for additional MGI interfaces are anticipated for 2004 and 2005.

4.7 MGI Additional Testing per Hour

This service element provides for additional MGI testing as requested from the SMS/800 software support team and is charged on an hourly basis as required. Annual demand since 1999 has averaged about 1988 hours of additional MGI testing per year. However, demand for additional MGI testing has slowed in recent years as new MGI users are rare and experienced MGI users become more self-reliant and this trend is expected to continue. The demand projection for the prospective tariff period June 15, 2004 to June 14, 2005 is 1343 hours of additional MGI testing.