Am. Ill. Rehearing Ex. 13.0

DIRECT TESTIMONY ON REHEARING OF STEPHEN J. WAKEN

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stephen J. Waken. My title is Executive Director – Operations Support Systems Strategy and Planning. I am employed by SBC Management Services, Inc., and work at 530 McCullough, Room 3-A-5, San Antonio, Texas 78215.

Q. DESCRIBE YOUR OCCUPATION AND EDUCATIONAL BACKGROUND.

A. I have a Bachelor of Science degree in Electrical Engineering from Oklahoma State University.

I obtained full-time employment with Southwestern Bell Telephone Company in 1980. Since that time I have held a variety of management positions in Network Engineering and Operations. Specific assignments include the following: Special Services Engineering, Detailed Equipment Engineering, Customer Network Engineering, Long Range Technical Planning, Circuit Provisioning and Network Operations Staff.

I have held several positions in the area of network operations systems planning and architecture, including development of the long distance customer care, billing, and network management applications. I also worked in international

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assignments in Mexico and the United Kingdom to develop systems strategies and business plans.

Q. DESCRIBE YOUR CURRENT RESPONSIBILITIES.

A. My current responsibility involves work program planning and systems architecture for applications used by the SBC 13-state wireline operation. My organization works with subject matter experts to identify new business needs, then recommend changes to the existing systems architecture that will accommodate those needs. We also recommend prioritization that take into account business, customer and regulatory aspects.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to explain the difference between systems described in previous testimony as "Operations Support Systems" or OSS, and "Back Office Systems" or BOS. I will provide testimony concerning the types of information contained in Ameritech Illinois' back office systems and some of the broad capabilities of those systems. My testimony demonstrates that using gateway systems to obtain loop qualification information is preferable to obtaining such information via direct access to those back office systems, because gateways provide CLECs with loop qualification information quickly and in a standardized and usable format. I also provide an analysis of the costs associated

with enhancing Ameritech Illinois' back office systems to comply with the Commission's requirement to unbundle the Project Pronto network, more specifically, to accommodate CLEC "collocation" of plug-in line card equipment in a Pronto DSL-equipped Remote Terminal, which is subject to rehearing in this case. My analysis demonstrates that Ameritech Illinois would have to spend approximately $95-132 million to enhance just its back office systems to accommodate the CLEC-owned equipment.

Differences Between Back Office Systems and OSS

Q. PLEASE DESCRIBE THE DIFFERENCE BETWEEN AN OPERATIONS SUPPORT SYSTEM (OSS) AND A BACK OFFICE SYSTEM.

A. OSS are front end systems that provide customer CLECs with pre-ordering, ordering, provisioning, maintenance/repair and billing functions. OSS applications are designed with CLEC customers (and Ameritech Illinois' retail representatives) in mind. They help CLECs (and Ameritech Illinois' retail representatives) create requests and receive information from the multitude of specialized back office systems in use at Ameritech Illinois. Examples of OSS include EDI, Enhanced Verigate, EBTA, Loop Qual, and Enhanced LEX.

Back Office Systems, in contrast, were not designed to accommodate direct access by either Ameritech Illinois retail representatives or customer CLECs. Rather, back office systems are specialized systems that Ameritech Illinois uses to manage its business operations. Since back office systems are used to manage

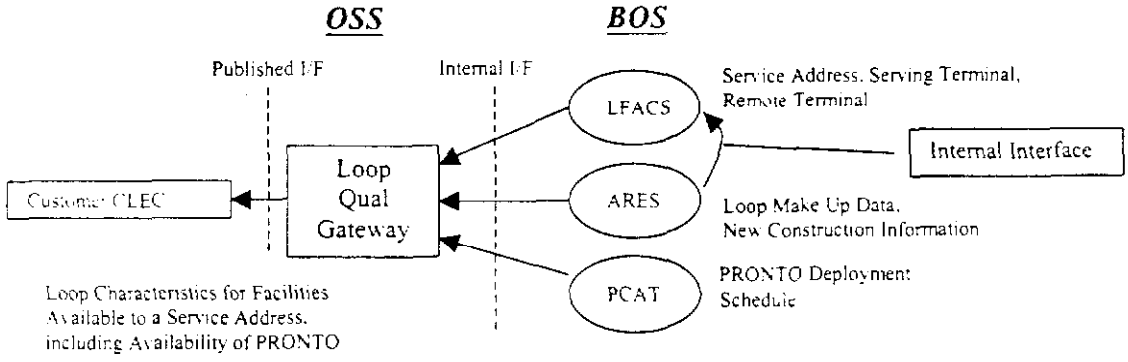
Ameritech Illinois' network and internal resources, they are developed to fit the business needs of each specific work group. Ameritech Illinois has work groups that specialize in construction, assignment, provisioning, design, surveillance, monitoring, dispatch, productivity and analysis. As a result, each of the back office systems contains information *only* about a specific area. For example, the back office system called PRONTO Construction Administration Tool, or PCAT, is used to identify, prioritize and track the status of upgrading remote terminals for PRONTO. As the construction completes, this BOS sends availability information to Loop Qual, which the Customer CLECs can use to begin offering services using that capacity.

There are more than one hundred centrally managed, and many more local, back office systems in use at Ameritech Illinois today. The following are considered back office systems: ARES, LEAD/LEIS, LFACS/FACS, LMOS, MARCH, PLAN, SOAC, SWITCH/FOMS/FUSA, TIRKS, WFA/C, WFA/DI, and WFA/DO systems.

Q. PLEASE DESCRIBE THE RELATIONSHIP BETWEEN OSS AND BACK OFFICE SYSTEMS.

A. OSS and back office systems work together to pass information between them. Back office systems store information and the OSS gateways provide a fast, efficient means of obtaining information from many different back office systems

in a single inquiry. The following diagram illustrates the relationship between an OSS and a back office system. As the diagram demonstrates, an OSS accumulates information from numerous back office systems and transports that data to the CLEC customer:



Q. DESCRIBED THE INFORMATION CONTAINED IN BACK OFFICE SYSTEMS.

A. Each BOS has many types of information, depending on its specific purpose. Ameritech Illinois creates this information during the construction, management and activation process. Any information that is available and required is given to the OSS as Ameritech Illinois and its Customers identify the need for it.

Specific types of information contained in back office systems include:

- Inventory of services from all retail and wholesale customers
- Inventory of network elements and their specific usage

- History of service, trouble and maintenance activities
- Work load of individual centers and technicians

Unlike back office systems, OSS do not permanently store any database information. Rather, the OSS are designed to receive a request from a Customer CLEC, then access all of the back office systems that have information related to that request. The OSS receives all of that data from the back office systems and reformats that data to adhere to the industry interface standard. The OSS then sends that information back to the requesting customer CLEC. Simply put, OSS are tools that allow CLECs to request many pieces of information that may be contained in several different data bases, and then quickly brings the requested information back to the CLEC in a useable format.

Q. CAN AMERITECH ILLINOIS' CUSTOMERS OBTAIN INFORMATION THAT IS IN THE BACK OFFICE SYSTEMS?

A. Yes. Ameritech Illinois often provides information from its back office systems to its customers and other interested parties. One of the primary functions of Ameritech Illinois' OSS interfaces such as Datagate and Verigate is to assimilate information from the various back office systems, then present it in a manner suitable for customer use. Ameritech Illinois gives this information to both wholesale and retail customers as part of the service or product purchased. Ameritech Illinois also provides information from its back office systems to regulatory agencies, e.g., service results.

Q. CAN ALL AMERITECH ILLINOIS EMPLOYEES ACCESS ALL OF THE BACK OFFICE SYSTEMS?

A. No. Ameritech Illinois has strict guidelines that permit employees to access only those systems required to perform their assigned duties. Access is granted only by virtue of the employee's job position or with explicit individual approval by management. In many instances, Ameritech Illinois does not allow direct access to back office systems from non-company locations in order to protect the security of the network. Attachment A to my testimony, entitled "SBC Communications Inc. Information Security Policy", clearly communicates Ameritech Illinois' position to all SBC employees.

Examples of employees who have direct access to an Ameritech Illinois back office system include the following:

- Outside Plant Engineering clerk. Employees holding this position would have access to ARES to perform a manual loop makeup at the request of a CLEC. As described in the testimony of Mr. Mark Welch, an Ameritech Illinois Engineering clerk performs a manual loop qualification when the mechanized loop qualification process is unable to return loop make-up information. It is important to note, however, that an OSP Engineering clerk would not have access to the service order system.
- A FACS clerk. An employee holding this position loads cable inventory into LFACS from an engineering work order. A FACS clerk, however, would not have direct access to the ARES system.

- An assignment specialist. An employee holding this position accesses SOAC and LFACS to assign pairs to an order. If the assignment specialist has a problem making the assignment, he/she would send it to the OSP Engineering group to resolve it.

I should note that, although certain employees have direct access to certain back office systems, it is highly unlikely, and in fact is contrary to company security guidelines, that any one Operations employee would have direct access to all back office systems.

Significantly, regulatory rules prohibit retail sales representatives from directly accessing Ameritech Illinois' back office systems that are not available to wholesale customer CLECs. Rather, as Mr. Mitchell describes in his testimony, retail sales representatives utilize the same or comparable OSS interfaces as customer CLECs, and are not granted access to the Ameritech Illinois Back Office Systems that contain loop qualification information. In short, these employees cannot access any information other than that provided over the OSS interfaces, and therefore are at parity with the Customer CLECs.

Q. QUESTION NO. 9 OF COMMISSIONER SQUIRES' QUESTIONS STATES:

PLEASE LIST ALL SYSTEMS/INTERFACES INCLUDED WITHIN AMERITECH-ILLINOIS' OSS SYSTEM [I.E., PREORDER, ORDER, PROVISIONING, MAINTENANCE/REPAIR, AND BILLING]. PLEASE INCLUDE IN THIS LIST THE FOLLOWING FACTORS PERTAINING TO THESE SYSTEMS.

A) A DETAILED DESCRIPTION OF THE INFORMATION INCLUDED WITHIN THESE SYSTEMS, DENOTING THE INFORMATION THAT IS PROPRIETARY IN NATURE;

B) THE SIMILARITIES AND DIFFERENCES BETWEEN PROVIDING "DIRECT ACCESS" TO THE FUNCTIONS OF OSS AS OPPOSED TO EDI OR GUI ACCESS TO THOSE FUNCTIONS? FOR EXAMPLE, WHAT INFORMATION OR BENEFITS WOULD DIRECT ACCESS PROVIDE THAT EDI OR GUI ACCESS WOULD NOT? OF THIS INFORMATION, PLEASE JUSTIFY WHAT IS NEEDED VIA DIRECT ACCESS AND WHY?

HOW DO YOU RESPOND TO PART A OF COMMISSIONER SQUIRES' QUESTION?

A. Since Ameritech Illinois' back office systems also contain information regarding the internal management of Ameritech Illinois' personnel and resources, SBC considers much of the information in those systems to be proprietary. Ameritech Illinois also has an obligation to its wholesale and retail customers not to share their personal and confidential information with other service providers, unless permission has been granted to do so. Moreover, several back office systems contain information that could be used to compromise the integrity of the network and the security of end-use customers. As a result, information in many of the back office systems should not be and is not provided to persons who have no legitimate need for the information—including Ameritech Illinois employees.

I have provided Attachment B that updates the BOS information contained in Exhibit RLJ-2, which was attached to Robin Jacobson's rebuttal testimony filed in this docket. As this attachment demonstrates, many of these Ameritech Illinois' back office systems contain information that is confidential to end-users, customer CLECs, and Ameritech Illinois. Back office databases contain high security information such as: (1) fiber and cable deployment (routes of cable to airlines, airports, police stations, fire stations, hospitals, and government agencies); (2) access to unlisted telephone numbers; (3) technician dispatch for Special Services; and (4) security alarm information.

More specifically, SWITCH contains an inventory of all CLEC tie cables in Ameritech Illinois' central offices, which always has been considered proprietary. SWITCH and TIRKS contain an inventory of trunks and circuits, including circuits belonging to CLECs. With direct access to these two systems, a CLEC could search for DS3 trunks between two central offices, and view all of the circuits running over the DS3 and the circuit owner. This would allow one CLEC to analyze another CLEC's business and even market penetration. Additionally, data contained in WFA is considered proprietary, because it pertains to management of Ameritech Illinois central office, outside, and center personnel.

Notably, although PREMIS is not used by Ameritech Illinois, PREMIS contains information about existing or working service at a given location, and who

provides that service. This information is not related to OSS and has always been confidential and proprietary.

In addition to demonstrating the confidential nature of the information in many of Ameritech Illinois' back office systems, this attachment demonstrates that many of the systems to which the Commission ordered direct access do not even exist for Ameritech Illinois, including: SORD, LASR and PREMIS.

Moreover, many of these systems contain *no loop qualification information* whatsoever. Such systems include: ACIS, ASON, APTOS, CABS, CRIS, ESOI, MARCH, SOAC, SWITCH, TIRKS, LMOS, WFA/C, WFA/DO and WFA/DI. Any technical loop information found in these systems simply reflects the data generated and maintained in the ARES and LFACS systems.

Q. CAN YOU PROVIDE ANY SPECIFIC EXAMPLES OF THE PROPRIETARY INFORMATION CLECS WOULD BE ABLE TO VIEW WITH DIRECT ACCESS TO AMERITECH ILLINOIS' BACK OFFICE SYSTEMS?

A. Yes. For instance, a carrier with direct access to Service Order Analysis and Control, or SOAC, could use information in that system for marketing purposes. SOAC contains data on all open service orders within an Ameritech Illinois geographical area. It has service orders for all retail customers, all special services customers (*i.e.* burglar alarm, PBX trunks, local transport services),

interexchange carrier circuits and CLEC services for all Ameritech Illinois' wholesale and retail customers. SOAC does not have the capability to restrict access by service provider or customer type. A user with direct access to SOAC could look at any order, and could view services being sold by competitors.

I also have attached to my testimony as Attachment C two examples of the actual screens a CLEC could view with direct access to Ameritech Illinois' back office systems. I did not directly access any back office system to obtain this information. Rather, I was given special authorization to obtain this information for the express purpose of using it in this testimony and the information was given to me by each of the Ameritech Illinois individual back office system administrators. These screens demonstrate the highly proprietary nature of the information CLECs could obtain through direct access to back office systems.

Example 1 is from the Loop Maintenance and Operations System, or LMOS. This back office system contains customer, network and service information to permit an outside technician to access and repair a customer's service. As the example shows, a CLEC with direct access to LMOS would be able to view information about the customer, whether the number is published or non-published, detailed information about their local service, who provides their long distance service, and information that describes how to access their line outside of the customer's location. Ameritech Illinois protects this information at the

request of the customer and public authorities, and to prevent unauthorized access, harassment or tampering with the service.

Moreover, because an unauthorized user could use LMOS to identify an individual's non-published telephone number, that user could obtain that person's address and locate the cable pairs that serve that person's telephone line. Access to the outside plant facility at a terminal location permits disabling or use of that individual's line for unauthorized purposes. For example, the unauthorized user could make a long distance call without the knowledge of the end-user customer. Direct access to the back office systems could allow this to occur without Ameritech Illinois being able to detect it.

Example 2 shows how direct access to LFACs would allow CLECs to use information for marketing purposes. With direct access to LFACs a CLEC could view all of the services in a cable facility at a particular customer location and other locations served by that cable route. By using this information, a CLEC can generate a sales "call list" for all Ameritech Illinois customers on that cable route.

As these examples demonstrate, Ameritech Illinois' back office systems contain many types of information: Customer name and address; customer telephone number (regardless of whether they are published or non-published numbers); cable and pair assignments; customer-provided special premises access information that was made available to enable the work to be performed, i.e. the

key to the gate to the back yard is under the door mat. no one is home call my sister at xxx-xxxx one hour before work is to be done. daughter will be home alone, but will let you in; and Can Be Reached (CBR) telephone numbers. The sensitive nature of this information is self-evident.

Q. WHAT WOULD BE NEEDED TO PROTECT THE CONFIDENTIAL NATURE OF THE INFORMATION YOU JUST DESCRIBED?

A. The easiest and most logical way to protect the confidential information contained in Ameritech Illinois back office systems is to use the OSS gateways that Ameritech Illinois has provided to the Customer CLECs and Ameritech Illinois' own retail subsidiary. The gateways have been designed with this express purpose in mind. These gateways enable CLECs to quickly access all the information that the customer CLEC is entitled to obtain and presents that information to the user in a readable/usable format. Any enhancements made to the back office systems to permit direct access, yet protect confidential information in those systems, would simply be repetitive of the capabilities built into the gateways.

Q. HOW DO YOU RESPOND TO PART B OF COMMISSIONER SQUIRES' QUESTION, WHICH ASKS FOR AN EXPLANATION OF THE SIMILARITIES AND DIFFERENCES BETWEEN PROVIDING "DIRECT ACCESS" TO THE FUNCTIONS OF OSS AS OPPOSED TO EDI OR GUI ACCESS TO THOSE FUNCTIONS?

A. Direct access to Ameritech Illinois' back office systems would not provide CLECs with any additional information than they already receive via Ameritech Illinois' OSS, GUIs and EDI interfaces. Nor would direct access to back office systems provide CLECs with any demonstrable benefit. In fact, access to information via Ameritech Illinois' OSS, GUIs or EDI is faster and easier than direct access to the back office systems. In order to understand why access to information via OSS, GUI or EDI is preferable to direct access to back office systems, it is necessary to understand the differences between back office systems and interfaces.

The term Graphical User Interface, or GUI, is a technical term that describes the "look and feel" of computer software and usually refers to a user's ability to see pictures on the computer terminal and use a mouse to navigate through the screens. In contrast, almost all of the Ameritech Illinois' back office systems use a "Text Interface". This is an old technology that was developed before the widespread use of personal computers. A Text Interface usually has a black and white screen, cannot show pictures or drawings, and usually does not support a mouse.

Accordingly, it is easier to navigate with use of GUI technology than it would be to navigate through a back office system itself. In fact, in order to make information easier for a customer CLEC to access, SBC has used GUI technology to improve the front-office OSS, *e.g.*, Loop Qual. Although GUI technologies could be added to the back office systems, the cost of doing so presently would far exceed the benefits, and adding GUI technology to back office systems would merely be repetitive of the GUIs Ameritech Illinois already provides for the OSS gateways.

Electronic Data Interchange, or EDI, refers to the capability of an OSS to electronically exchange information with a customer CLEC computer system. SBC participates in a number of industry forums (Ordering and Billing Forum, CLEC Collaboratives, etc.) to define those interfaces in a manner that allows the systems to communicate with each other quickly and efficiently.

The back office systems do not use EDI technology as defined in standard industry forums. Rather, they all use internal, non-standard formats to communicate between the other back office systems and OSS. An OSS receives information from various back office systems in various non-standard formats, and then translates the information from all those systems into EDI so that it can be provided to the Customer CLEC in a readable/useable format.

Q. WHY DOES AMERITECH ILLINOIS USE GATEWAYS?

A. Ameritech Illinois designs OSS in a manner that helps the CLECs quickly and easily access information. OSS keep track of where the information is located in the back office systems and the format of that information. The OSS retrieve the information from several back office systems and provides it to the CLEC. Mechanizing these steps eliminates the need for gateway users to know which back office system stores certain information and the format of the information in each system.

To be more specific, if a CLEC did not use an OSS to obtain relevant information, it would have to access multiple back office systems in order to obtain the same information. As explained by Mr. Mitchell, the CLEC would have to exit the back office system, enter an OSS gateway to create an LSR, translate the information obtained from the back office system into the correct ordering format, and manually insert that information in a newly created LSR—a very time-consuming set of tasks.

In sum, OSS provide a published interface to the customer CLEC that enables the user to initiate a single transaction to generate a loop make-up request. The Loop Qualification Gateway is responsible for initiating individual transactions to each of the Back Office Systems in their internal format and language. The Loop Qualification Gateway will receive the information back from each system,

format it into a single screen or transaction, then send it back to the Customer CLEC.

Q. PLEASE EXPAND ON YOUR STATEMENT THAT DIRECT ACCESS WOULD REQUIRE CLECS TO MAKE INQUIRIES IN SEVERAL DIFFERENT BACK OFFICE SYSTEMS IN ORDER TO OBTAIN LOOP QUALIFICATION INFORMATION.

A. As my earlier diagram demonstrates, loop qualification information is contained in several different back office systems. Absent use of Ameritech Illinois' OSS, a Customer CLEC wishing to obtain loop qualification information would be forced to make a manual inquiry in *each* of the back office systems that contains loop qualification information.

This manual inquiry is the same manual loop qualification process that would be performed by Ameritech Illinois engineering personnel for CLECs when the mechanized process does not bring back the necessary loop qualification information. As part of the agreed-upon loop qualification process, Ameritech Illinois engineering personnel often perform a manual loop make-up for a CLEC using the individual back office systems. Based on recent samples, this operation typically requires fifteen to twenty minutes. Using the same samples, SBC has designed the Loop Qualification system to return identical results to the requesting CLECs in 120 seconds or less, and that information is return in the proper format for use in the LSR.

Q. **PLEASE EXPAND ON YOUR STATEMENT THAT BACK OFFICE SYSTEMS CONTAIN INFORMATION IN VARIOUS DIFFERENT FORMATS.**

A. Each BOS is specialized for a particular work group or network technology. Each BOS has its own language, methods and procedures used by the Ameritech Illinois personnel to manage their partitioned part of Ameritech Illinois. In addition, each system has non-standard and/or proprietary interfaces that do not fit any published industry model. The Gateway OSS translates non-standard and unique designations into a standardized GUI or an interface that SBC and the Customer CLECs can maintain through Change Management. Given the number of back office systems and the variety of formats used in those systems, such standard designations would be impossible to create without some sort of OSS gateways.

To be more specific, one function of Ameritech Illinois' OSS gateways is to standardize nomenclature from different back office systems. In other words, when various SBC regions use different nomenclature to describe the same data element, the OSS gateway can "map" those different nomenclatures to standard fields that can be recognized by all CLECs, thereby simplifying the published OSS interface. SBC is fully responsible for ensuring that the gateway accurately translates the back office system information to the description provided via the published Accessible Letter.

Q. PLEASE EXPAND ON YOUR STATEMENT THAT GATEWAYS ACCUMULATE INFORMATION FASTER THAN DIRECT ACCESS TO BACK OFFICE SYSTEMS.

A. Back Office Systems are not subject to the same availability and response time requirements of OSS. Where an OSS may be designed to provide a very rapid response time for the Customer CLEC, a BOS is not guaranteed to respond in the amount of time needed by a service representative while talking to a customer. As noted above, accessing back office systems can take as long as fifteen to twenty minutes, while access to information via the Loop Qual gateway is designed to take a maximum of only 120 seconds.

Additionally, the size of most of the back office systems, and the fact that most of them use mainframe hardware, dictates that they must be taken out of service for maintenance at night and on weekends. This makes them ill-suited for applications that require them to be available at all times.

Q. DOES AMERITECH ILLINOIS USE ANY OSS GATEWAY TO CHANGE, LIMIT OR FILTER ANY INFORMATION TO THE CUSTOMER CLEC?

A. Ameritech Illinois does not filter any loop qualification information. The OSS gateway will always be programmed to retrieve all data to which the Customer CLEC is entitled under applicable law.

It could be said that OSS gateways perform some "filtering" functions, because they do not allow CLECs to access non-OSS-related information and information that is confidential to end-users, CLECs and Ameritech Illinois. For example, Ameritech Illinois' gateways are used to "mask" customer proprietary information. Protecting confidential information in this manner is commonplace, because using OSS gateways to perform this function is less costly than making modifications to the legacy back office systems.

Nevertheless, the fact remains that CLECs obtain via OSS interfaces *all* OSS-related information to which they are entitled. If CLECs were allowed to directly access Ameritech Illinois' back office systems, Ameritech Illinois would be forced to make enhancements to its back office systems in order to protect confidential information to which CLECs are not entitled. This would merely be repetitive of the gateways' function.

Q. DOES AMERITECH ILLINOIS UTILIZE GATEWAYS FOR ITS OWN USE?

Yes. For many of the reasons described above, Ameritech Illinois internally uses Gateway technologies when offering customer network management services to our retail and wholesale customers. It has proven over time to be an effective way to create and maintain software applications that require the use of multiple Back Office Systems. We have also found that translating some of the arcane codes used in the back office systems to a standardized format reduces training time and helps make the users more productive.

Q. IF CUSTOMER CLECS WERE GIVEN DIRECT ACCESS TO AMERITECH ILLINOIS' BACK OFFICE SYSTEMS, WHAT CHANGES WOULD AMERITECH ILLINOIS NEED TO MAKE TO ITS NETWORK?

A. One of the most important points to recognize with respect to the back office systems is that most of them were developed in the 1970s and 1980s. The system designers did not have technologies that are now considered basic, such as Graphical User Interfaces and complex security features. In addition, the designers did not contemplate access to the back office systems by Ameritech Illinois' retail representatives or customer CLECs and, therefore, did not create the foundation required in the software. Accordingly, massive enhancements to the software in *all* of the back office systems would be required in order to accommodate direct access to those systems by CLECs.

The primary change to the back office systems that would be required if direct access were permitted involves the addition of security features that would allow a customer CLEC to access only that information that applies to their service, personnel or network, and only to that which they are entitled to view. Since the back office systems were designed for internal use only, these changes would be significant. Examples of these enhancements include the following: designation of Customer Proprietary Network Information (CPNI), designation of other Service Provider information and designation of Ameritech-IL proprietary information. All of Ameritech Illinois' back office systems would have to be

modified to identify this information and segregate it from the information that CLECs are entitled to access. In some cases, the amount of money and time required to enhance the back office system in this manner could exceed the cost of completely replacing it.

A direct access requirement also could force Ameritech Illinois to develop new functionality in its back office systems. Ameritech Illinois does not provide advanced services and, therefore, functions performed by the ILEC when accessing its back office systems may not match the functions needed by the Customer CLEC when directly accessing those systems. As a result, Customer CLECs would likely request new functionality or a different presentation of the information by the back office systems.

In addition to the software enhancements, access to the back office systems can be permitted only through secure Ameritech Illinois access facilities. Indeed, Ameritech Illinois does not permit access to the BOS without going through the secure corporate network, on a dial-up or private line basis. Accordingly, Ameritech Illinois would need to reconfigure the secure network to accommodate non-employee access.

Much has been written in the press regarding unauthorized access and manipulation of the network and systems by non-authorized personnel. SBC and Ameritech Illinois take security extremely seriously and have detailed policies

regarding access to its systems. Although read-only access may limit the ability of the CLECs to manipulate the network from a BOS terminal, it would still allow the CLEC to identify physical access points in the outside plant and specific facilities used for each local service customer.

As noted above, many of Ameritech Illinois' back office systems are very old, and Ameritech Illinois' back office employees use older technology hardware and software to directly access the back office systems. Accordingly, in order to directly access an individual back office system, the Customer CLEC may be required to purchase and maintain this same type of terminal access equipment and software, or SBC would be required to modify the applications to accommodate non-SBC standard equipment. Ameritech Illinois would expect to recover the additional costs associated with rearrangement of the SBC secure network to accommodate such access.

Q. HOW MUCH WOULD IT COST TO ENHANCE THE BACK OFFICE SYSTEMS SPECIFIED BY THE ORDER, SO THAT DIRECT ACCESS BY CLEC CUSTOMERS COULD BE ACCOMMODATED?

A. The back office systems identified by the Order, ARES, LEAD/LEIS, LFACS/FACS, LMOS, MARCH, PLAN, SOAC, SWITCH/FOMS/FUSA, TIRKS, WFA/C, WFA/DI, WFA/DO, are systems developed by external vendors.

Telcordia, who owns the rights to all of the indicated systems except LMOS and ARES, was contacted at the time that this Commission issued the Order to discuss time and costs associated with providing access to one or more of these systems. Telcordia informed Ameritech Illinois that, in order for Telcordia to provide estimated development costs, Ameritech Illinois (presumably in conjunction with the CLECs) would need to develop and provide to Telcordia detailed functional requirements and operational methods and procedures. For each application, Ameritech Illinois and the CLECs would have to bring together the subject matter experts from the CLEC collaborative efforts so that they could agree on the data elements and functionality required for those enhancements.

Telcordia indicated that, once they were notified about how Ameritech Illinois would be using the systems and the functions needed by the CLECs, they would need several months to determine what software enhancements would be required and to develop costs that accurately reflect those enhancements. Telcordia would provide firm time and cost estimates at the conclusion of that analysis.

To complicate matters further, CLECs may not agree on the functionality required, and some Customer CLECs may identify a business need for something different than other CLEC Customers. Accordingly, Ameritech Illinois would be required to follow the process discussed above in order to accommodate those additional requests—which would further increase Ameritech Illinois' (and if proper cost recovery were mandated, the CLECs') costs.

Because Ameritech Illinois does not have the information necessary for Telcordia to do the above analysis, at the time of this direct testimony, I do not have estimates from Telcordia of the costs to enhance Ameritech Illinois' back office systems. Past experience, however, tells me that several hundreds of millions of dollars would be required to add the security and partitioning capabilities to the requested systems. Past experience also tells me that the amount of time required to construct these enhancements probably would go well beyond any time frame the customer CLECs may request and, therefore, would be a subject of additional proceedings.

I should also note that one of the non-Telcordia systems, LMOS, has been discontinued by its owner, Lucent Technologies. Although Lucent has committed to support Ameritech Illinois' use of LMOS until it can be replaced, there is no assurance that it is technically feasible to satisfy the BOS direct access provisions of the Order as they pertain to LMOS.

Q. ARE THERE OTHER COSTS THAT WOULD BE INCURRED BY AMERITECH ILLINOIS OR THE CUSTOMER CLEC IF DIRECT ACCESS TO THE BACK OFFICE SYSTEMS WERE PERMITTED?

A. Yes. Each BOS is updated one or more times per year to add new functionality to the application. These updates may affect the information or its presentation, as well as changes to interfaces to other back office systems and OSS applications.

Ameritech Illinois users receive training on these changes, and Customer CLECs would require training on those changes as well.

Additionally, different SBC regions often use the back office systems in different ways, which result in different interpretations in each region. Again, the Customer CLEC would require training on these issues. Ameritech Illinois may also have to establish a "help desk" to provide assistance to non-Ameritech Illinois users.

As Ameritech Illinois deploys the modifications to its internal systems, the Customer CLEC would find that changes in the back office systems would often affect those back office systems', and the CLECs' methods and procedures. This would create additional costs for Ameritech Illinois and the CLECs.

Q. CAN YOU IDENTIFY ANY OTHER PROBLEM WITH PERMITTING DIRECT ACCESS TO AMERITECH ILLINOIS' BACK OFFICE SYSTEMS?

A. Yes. Back office systems use non-industry standard interfaces to communicate with each other and with the OSS. Ameritech Illinois often makes changes to its back office systems. This permits Ameritech Illinois to make management and productivity improvements to those systems without impacting customer CLECs. Ameritech Illinois does not go through the change management process when making changes to its back office systems, unless those changes affect OSS

interfaces. The problem with direct access to Ameritech Illinois' back office systems is that it could potentially require Ameritech Illinois to go through the change management process for every single change to its back office systems. If SBC were forced to coordinate these updates to the back office systems through the Change Management Process, the time and additional functionality required could cripple our ability to incorporate rapid changes into our business. This would have the result of doing significant harm to Ameritech Illinois' business operations by not permitting Ameritech Illinois to use automation in the manner it deems necessary to manage its network, and would negatively affect the quality of service to end users.

Q. COULD AMERITECH ILLINOIS USE THE BOS CHANGES THAT WOULD BE REQUIRED TO ACCOMMODATE CLEC DIRECT ACCESS FOR ITS INTERNAL OPERATIONS OR TO PROVIDE SERVICES TO OTHER CUSTOMERS?

A. No. Ameritech Illinois has no need for BOCA changes of this type. We would prefer to use the OSS gateway technologies, as they are much more efficient and less costly for this purpose. Most of the Gateways are owned by SBC, meaning that our internal Information Technology organization can make modifications rather than going to an outside vendor.

Back Office Systems Modifications for Unbundling of Pronto

Q. WHAT WOULD BE THE COSTS ASSOCIATED WITH MODIFICATION OF AMERITECH ILLINOIS' BACK OFFICE SYSTEMS TO ACCOMMODATE CLEC-OWNED LINE CARDS IN THE PRONTO DSL REMOTE TERMINAL EQUIPMENT?

A. Ameritech Illinois' back office systems are designed to manage only equipment owned by Ameritech Illinois. These systems are developed in accordance with the accounting rules specified by FCC Rules Part 32, which require the maintenance of basic property records for each asset used to provide regulated services. Since the FCC never anticipated that Ameritech Illinois would manage other service providers' equipment, we have never identified the need to develop systems that have this capability.

The ability to receive, track, manage, place, repair, replace and return non-Ameritech Illinois equipment is a new functionality that must be added into the Ameritech Illinois systems infrastructure. The biggest single expenditure involves the ability to accept and handle a specific CLEC's asset, use it in the manner prescribed on a service request, then return that same asset back to its owner when its use is no longer required.

I have made some assumptions as to the functionality that may be required if SBC is required to maintain other service providers' equipment. This list is not

intended to be exhaustive, and any changes or modifications could cause the cost estimates to vary.

- The CLEC must be able to transmit an order to Ameritech Illinois to place a piece of plug-in equipment in an Ameritech Illinois-owned Pronto DSL remote terminal mounting.
- The CLEC must be able to specify which remote terminal, plug-in and port to use to activate their end-user customer's service.
- Ameritech Illinois technicians must have a process to receive the CLECs' plug-in equipment, associate it with one or more service orders and obtain instructions as to its configuration and usage.
- Ameritech Illinois must be able to track the exact location of each individual CLEC piece of equipment from the time it is received until the time it is returned to the CLEC.
- Ameritech Illinois must be able to prevent its systems from automatically using one CLEC's equipment for use by a different CLEC.
- Ameritech Illinois must be able to project the number of remote terminal slots that will be required by the CLECs so that mountings can be accurately provided.
- Ameritech Illinois must have a procedure for replacing CLEC-owned plug-ins that cause the CLEC's customer to go out of service.
- Ameritech Illinois must have detailed instructions from the CLEC as to return and repair procedures.

- Ameritech Illinois must be able to determine if non-Ameritech Illinois equipment is causing service problems for other customers, then take corrective action to prevent that equipment from doing so.
- Ameritech Illinois and the CLEC must establish a change notice procedure that allows upgrades or fixes to be applied to the equipment when the manufacturer issues a change.
- Ameritech Illinois must be able to measure common resources, for example power, bandwidth, processor, etc., in order to allocate costs to the user of those resources.
- Ameritech Illinois would require the ability to bill a CLEC for maintenance dispatches required to perform any function related to that equipment. This may be on a "per-dispatch" basis for an install or replacement order, or may be on a "per-hour" basis for personnel required for more extensive purposes, such as troubleshooting.

Based on my current knowledge, I estimate that the range for the above enhancements to Ameritech Illinois' back office systems is $95 million to $132 million dollars. I have attached as Attachment D to my testimony a more detailed breakdown of this cost estimate.

Significantly, this estimate does not include potential costs that Ameritech Illinois does not believe it should be responsible for. For example:

- Ameritech Illinois is not responsible for warranty or repair of CLEC-owned equipment.
- Ameritech Illinois is not responsible for providing technical support for CLEC-owned equipment. Ameritech Illinois employees would perform only those activities that were specifically directed by the CLEC on the work order.
- Ameritech Illinois is not liable for any CLEC-caused out-of-service conditions, including the loss of ability for end users to access emergency services such as Enhanced 911.
- Ameritech Illinois is not responsible for maintaining an inventory of spare CLEC-owned equipment.
- Ameritech Illinois does not maintain compatible or spare equipment that could be used if the CLEC does not have adequate inventory to maintain their customers' service.

If Ameritech Illinois were ordered to be responsible for these tasks as well, that would drive my cost estimate even higher.

I should also note that the estimate I have provided does not include enhancements to the Operations Support Systems, which would vary depending on the exact structure of the UNEs ordered by the Commission. The cost of OSS enhancements also will depend on the functional requirements of the CLECs, which must be determined through collaborative sessions with the CLECs. Because of these uncertainties, the figure I have provided is a rough estimate.

based on my experience in the industry, and may vary after the details of any necessary modifications became known.

BACK OFFICE SYSTEMS MODIFICATIONS FOR THE HFPL-UNE

Q. HAVE YOU PROVIDED COST SUPPORT FOR AMERITECH ILLINOIS' HFPL-RELATED OSS MODIFICATION CHARGE.

A. Yes. I have attached as Attachment E to my testimony a detailed breakdown of the costs associated with modifying Ameritech Illinois' back office systems to provide the HFPL UNE. As the Attachment demonstrates, Ameritech Illinois already has incurred costs of $21,700,000 for these systems modifications, and will incur an additional $7,500,000 once the enhancements are fully implemented. Significantly, these costs do not include costs Ameritech Illinois has incurred to date to deploy "work-arounds," or temporary procedures for providing the HFPL UNE.

CONCLUSION

Q. CAN YOU SUMMARIZE THE MAJOR POINTS OF YOUR TESTIMONY?

A. Yes. The key points are as follows:

1. Ameritech Illinois OSS interfaces provide CLECs with all OSS-related information to which they are entitled. Ameritech Illinois does not filter information to which the customer CLECs are entitled.

2. Ameritech Illinois and CLEC retail sale representatives access information in the back office systems through OSS interfaces—not via direct access to those systems, and therefore are treated at parity. Back office systems contain information that is not related to the provision of xDSL services, and that may be confidential to the end-user, a CLEC service provider, or Ameritech Illinois. Access to non-OSS-related, confidential information in the back office systems raises concerns about the security and reliability of the public telephone network.

3. The legacy back office systems listed in the Commission's Order are owned by non-SBC software development companies. Most of the systems were developed in the 1970's and 1980's, and none were designed for direct customer access. Their age, size, technology and complexity would cause the costs of the changes necessary to accommodate CLEC direct access to be significant. Moreover, the costly changes that would be necessary to permit direct access by CLECs would merely be duplicative of capabilities that can be or are already provided by the OSS.

4. Graphical User Interfaces and Gateway technologies are the fastest, most efficient and cost effective ways to give customer CLECs and Ameritech Illinois employees access to the OSS-related information stored in the back office systems.

5. On a preliminary basis, I estimate that the BOS-related costs of accommodating CLEC "collocation" of plug-in line cards in Project Pronto DSL NGDLCs to be between $95 million and $132 million.

In closing, I also should point out that Ameritech Illinois has proven over years of working with interexchange carriers that, through the use of industry standards and forums, as well as collaborative efforts, Ameritech Illinois (in conjunction with CLECs) can create highly efficient electronic processes for its wholesale customers. By the use of proven technologies such as middleware and electronic gateways, it is possible to refine complex processes and improve our systems interaction. Forcing expensive, resource-consuming and unnecessary changes, such as those that would be associated with a BOS direct access requirement, would not improve the process, and would only create problems and unnecessary costs.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY ON REHEARING?

A. Yes.