

Testimony of Commissioner Eli M. Noam,  
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ONA: The Need for Partnership

Introduction

From my contact with other regulators it is clear that the states are interested in active and constructive participation in the ONA process. I am encouraged by the signs from state and federal regulators that they may be moving away from past confrontations and toward a more cooperative spirit. And I am pleased at the Committee's interest in this important subject. I hope that it can play a constructive role in establishing collaboration between the states and Washington on ONA.

To understand the developments leading towards an open network, one must first step back and look at the broader trends. Two basic forces shape change in today's telecommunications' networks:

- a) the integrative forces of technology which push towards ISDN and integrated broadband networks, and which raise barriers to entry;
- b) the social and economic forces of pluralism, which move the network towards a decentralized and segmented federation of sub-networks.

The tension between these forces is most pronounced on the front where they intersect: the rules of interconnection of the multiple sub-networks into the integrated whole. Such interconnection is an extension of traditional common carrier principles from users to networks. In coming years policy makers must structure ways in which network interconnection is granted, defined, policed, priced, and harmonized. Specifically, "Open Network Architecture" rules must be formulated in proceedings presently before the FCC and several states. A host of questions must be dealt with, involving technical standards, national uniformity, international collaboration, and the nature of the decision-making process in telecommunications policy itself.

Regulatory structure in telecommunications has paralleled the stages of the industry itself. The monopoly stage of industry structure was accompanied by the regulatory stage of

At the same time, issues of software network interconnection were being considered in the FCC's Computer Inquiries I (1971), II (1980), and III (1985). Critical issues were, among others, the conditions under which AT&T and later its successor companies could provide enhanced telecommunications services. A policy emerged which required them to provide non-discriminatory interconnection to other enhanced service providers as a condition for their own right to supply such services. The companies were also required to establish fully separated subsidiaries. This condition was relaxed in Computer III, but the Bells and AT&T had to establish Open Network Architecture (ONA) arrangements (to be preceded by a preliminary stage of Comparably Equal Interconnection, CEI) that specified interconnection arrangements to the core of local networks, the local exchanges. To make such arrangements meaningful, they had to provide for the unbundling of the elements of these exchanges, such as basic switching, call forwarding, etc.

ONA, in concept, aimed at permitting separate access, interconnection, substitution, and competition with each of the basic elements of the exchange. It sought to provide greater ease in establishing layers of software defined networks superimposed on the basic transport functions. ONA Draft plans were submitted in February, 1988.

The entire 20-year policy sequence of opening the network was virtually totally controlled by the federal level of government -- FCC, Justice Department, Judge Greene, and the D.C. Court of Appeals. The states, through their public utilities commissions (PUCs) fought a long string of losing defensive battles.

Now, with Open Network Architecture on the policy agenda, two interrelated questions were raised:

- (a) What kind of rules should there be for local exchange interconnection?
- (b) Who should set such rules?

These questions are interrelated, because an allocation of regulatory competency to a particular governmental level can be outcome-determinative in terms of policy. For example, leaving corporation statutes to the states has led to some inter-state rivalry for incorporations, led primarily by Delaware, and over time this has brought about a marked relaxation of restrictions on corporate management. But the two questions -- substance and jurisdiction -- are also philosophically interrelated.

Open Network Architecture as a concept of liberal local exchange interconnection is a continuation of strengthening the values of decentralization, openness, and reduction of hierarchy. As a regulatory concept, it was not demand-driven, but was put on

predominance over interconnection to local exchanges is to establish federal control over local networks themselves, since the contradictions in treatment of largely identical service elements would not permit a stable dual regulatory system to coexist over time.

This leads to four major options for jurisdictional power:

(a) an expulsion of the states from the area, which would create major political battles, deprive the policy field of a major source of innovation and experimentation, and eliminate an important element of policy stability.

(b) a full federal withdrawal, which could lead to the U.S. as a telecommunications-Lebanon facing a world of telecommunications-Japans.

(c) non-cooperative coexistence characterized by continuing litigation, delay, uncertainty, and manipulation by various industries' forum-shopping, and ultimate instability. Or

(d) an institutionally collaborative approach, as outlined further below, which establishes a balance between national uniformity and regional and local diversity.

There are, of course, important industry groups, in particular the ESPs, which desire policy uniformity to complement technical standardization. Those arguing for either or both are usually counting their obvious benefits but not considering their more hidden cost in terms of innovation, flexibility, and process. A more careful analysis establishes the need for a system in which uniformity and diversity coexist, as is true for much of the economic system of this country.

State regulatory commissions have only recently begun to explore ONA. New York and Maine have proceedings, California has a task force, and several others are studying the subject. All eyes are on the FCC because of its ongoing rule-making, and some states harbor suspicions reserved for ideas initiated by the FCC. Others view ONA primarily as an attempt to unchain the BOCs. The FCC, for its part, sent out mixed messages to the states. These perspectives, supplemented by mutual incantations of jurisdiction, will not get the issues developed. States must be involved in the substantive policy analysis of ONA issues beyond the jurisdictional question if they are to have a constructive role to play in the potentially far-reaching interconnection developments that are affecting their traditional role in exchange services. And the FCC must recognize that they are part of the process.

interconnection and unbundling really go much further. The FCC has already decided that interstate ONA elements, while based on expressed ESP needs, should be available to anyone, not just to ESPs. This could -- now or later -- include also a wide array of interconnectors with interstate traffic, such as AT&T, the OCCs, long-distance re-sellers, facilities bypassers, private networks, independent telcos, cellular operators, RCCs, other BOCs, and even international or foreign carriers.

This has major ramifications. For example, bypassers could transport interstate traffic (on their own or on leased lines) to the LEC's exchange, have it switched there, and take at least the interstate part (depending on state rules) of the rearranged traffic to its destination. Similarly, they could use the LECs' subscriber lines and switches as a feeder system for their own trunks to major destinations, including to interexchange companies. The distinction between private fixed networks and public switched ones would blur further. Competitive regional and local exchange companies could rapidly emerge, in particular if states adopt intrastate rules similar to the federal ones. And LECs may start to compete with each other for the business of switching the traffic of bypassers, independent telcos, or cellular operators. Interexchange carriers, similarly, could in effect enter local distribution.

In the absence of assured regulatory protection, the BOCs established an in-house containment strategy, which seems to avoid, if possible, the rental of pure switching functions. The FCC intended ONA as an aid to competition and innovation. A fundamental direction was that local exchange companies unbundle exchange services into discrete Basic Service Elements (BSEs) that could be bought separately and as needed by users.

However, apparently to prevent pure transport interconnection, or to avoid ESP exchange access through other carriers that would permit the piece-mealing and bypassing of their networks and challenge the existing pricing structure, the RHCs now uniformly seek to establish something called BSAs, (Basic Serving Arrangements). BSAs consist of two or three elements: an access link from the interconnector to the central office; basic central office functions; and transport between central offices. Different types of BSAs are offered, analogous to present access line arrangements, such as circuit and packet switched service or private-line circuits. By establishing BSAs the RHCs in effect side-step an important part of unbundling. To mix metaphors, they unbundle the bells and whistles, but not the meat and potatoes. Basic switching is not considered a BSE, only the feature add-ons are. And in order to get a BSE, one first needs a BSA, too. Sometimes BSEs require a particular BSA, such as a private line.

potential factor for rejection a negative revenue or technical impact of a BSE on their already existing or forthcoming features and services. Several RHCs, having recognized the business opportunities of some BSEs, find a requested BSE feasible while others do not, or not yet. All of these road-blocks to a BSE require regulatory attention if ONA is to provide access as of right.

It is important to recognize just how complicated these questions are. How finely unbundled should BSEs be? How fast should they be deployed? Who should pay for their development? How standardized should they be across the country and across customers? How customized can they be, and if so, how should the costs be distributed? Can BSEs be resold? What should the extent of facility unbundling be, when at the same time technological forces strengthen the importance of integration, such as in ISDN and integrated broadband networks? What about interconnection to telcos' software programs, data bases, storage capacity, signalling channels, network management functions, billing arrangements, technical specifications, or customer information?

### Pricing

How to charge for ONA-type services is one of the critical questions for suppliers and users. The telephone companies seem to accept the prospect of state regulation of ONA pricing, i.e., of decentralized and non-uniform prices. On the other hand, most ESPs maintain that they want nationally uniform rules and rates, service definitions, interfaces, installation, even administrative procedures -- at least for "standard" BSEs -- and such uniformity requires FCC preemption.

This is an understandable interest on the part of ESPs, many of whom are fledgling firms which desire compatibility and portability around the country. The need for national uniformity in pricing of BSEs and BSAs is not as compelling as, e.g., for basic protocol standardization, as long as pricing is not used to manipulate the competitive environment. It makes no sense to have uniform prices or pricing rules across the country without regard to local costs, conditions of demand, alternative offerings, technological state of the network, demographic and economic characteristics, etc.

No doubt, the desire for national uniformity will lead to calls for a Federal preemption of conflicting state pricing regulation. But such preemption will not work, because it cannot be limited to ONA. Federal preemption would establish prices for BSEs or BSAs that are, as likely as not, different from those of comparable services presently tariffed by the states for intrastate use. This creates the potential for arbitrage and conflict. One can therefore have uniformity only if one preempts

pricing, although some will follow pricing for similar services which may be based on it.

From the state perspective, tracking and recovery of ONA implementation and ongoing costs will be difficult. The integrated structure of regulated BOCs and BOC-ESPs, together with the complexities of joint and common cost allocation make it difficult to detect cross-subsidies or unfair competition. The FCC views the Part X accounting rules as a major non-structural safeguard against cross-subsidization. Many states are currently involved in establishing such rules for their own jurisdictions. The provision of adequate data is essential for any regulatory regime in ONA. It is also necessary to separate the interstate and the intrastate elements of ONA-type services.

A large number of questions need to be resolved. Who should bear the risk of developing and introducing BSEs (and BSAs, if approved)? States do not wish to see ratepayers become involuntary venture capitalists. Must each BSE/BSA be priced according to the same principle, or depending on market conditions? Some BSEs/BSAs may face competitive offerings, while others do not.

In a dynamic environment, there are no easy answers, and the implementation requires the messy task of separating cost and revenues of BSEs tariffed under different principles, and of regulated BSEs from various unregulated functions such as billing. Must each BSE/BSA's revenue cover its own cost, or only in the aggregate? And if not, could there be cross-subsidization that would distort competition?

Conversely, could BSEs be defined so finely as to permit undue price discrimination between users? How much flexibility should there be in the rates? Can users be charged according to negotiated rates, making price discrimination possible? Or are such negotiated rates helpful in ensuring that needs for customized BSEs are met or that later entrants are not overcharged? Similarly, should it be possible for an ESP to obtain exclusivity to a BSE in return for its special development? Which cost definition is used -- average, incremental, fully distributed, etc.? A large number of BSE requests were for voice-analog services such as voice-mail. It seems that segments of sophisticated data service usage has already left the public network. Should there be pricing incentives to bring them back?

Another set of questions relates to what happens to existing services. Are they to be unbundled into oblivion? Who then is to pay for such "stranded" services? Some, presumably, will disappear. Others will be repriced, or their BSE/BSA aggregate counterpart will lead to a different price than before. Could this affect some users negatively? The answer is yes. It is

precluding a BOC from otherwise reasonably available information.

Partly to deal with the competitive problem, Judge Greene, imposed in March 1988 restraints on the use of CPNI information. Adding to the injury, the BOCs are requiring ESPs to provide supporting marketing information in order to assess demand for a new BSE. Thus, the ESPs could alert the RHCs to potential market opportunities. (To their credit, some RHCs have identified this possible conflict and have established BSE reviewers separate from ESP-BOC product managers.) And if BOCs undertake their own studies of the feasibility of BSEs, rate payers as well as non-affiliated ESPs must be protected, as in Part X rules, from bearing the cost of developing information that may benefit the BOC-ESPs.

One way to deal with the privacy issue is to have the BOCs provide to the ESPs, for a charge, data processing service of customer information, including the mailing of letters, unless the customers request full privacy.

Related problems deal with timing. A BOC should not be able to hold off approval and deployment of a BSE until its own affiliated ESP is ready to enter that particular service. BSEs also should not be defined and priced in such a way as to make price-discrimination possible. Nor should departure from national BSE definitions, or the sequencing of introduction, be aimed to give BOC affiliated ESPs a regional advantage over national services.

The BOCs' long-range interest is in a smooth ONA system. It would be a historic mistake for them to stall ESPs. AT&T dragged its feet on OCC interconnection, and eventually the political-legal process became frustrated enough to seek the meat-cleaver approach of divestiture. If the BOCs were to use interconnection as a strategic tool to repress competition, they may be threatened, in a decade or two, by a similar fate, and their exchange operations may become organizationally separated from their transmission functions.

#### Other Consumer Protection and Universal Service Issues

Regulatory policy must consider the likely effects of ONA on residential users. These customers, many of whom have little use for ONA services, could end up paying more, because unbundling may reduce revenue that has previously subsidized residential service, or because it could permit bypass and other revenue diversions. On the other hand, the volume of traffic and of revenues could pick up. At present, a residential phone is used only about 25 minutes/day. An increase of usage by only 5 minutes/day could thus, increase the revenue-flow from usage-sensitive charges by 20 percent.

ONA also could make it possible to provide small users with

therefore a system of dispute resolution. Otherwise, courts, commissions, lawyers and expert witnesses will be extremely busy. It should be in the interests of all parties to create an effective, fast-moving, broad-based, and independent mechanism of coordination with undisputed legitimacy. Such a mechanism should include regional sub-groups. A BSE essential to the Manhattan financial community may make no sense for Wyoming.

On the other hand, e.g., remote meter-reading by utilities may be more important in a rural environment than in a suburban one. To establish uniformity would hence burden those states where demand is low, or retard others where it is high. A compromise may suit neither. There is room for regional bodies to support the national one, reflecting the diversity of regions. On the other hand, some common principles can also be in the interest of the states, since their policy goals could otherwise be undermined by competition among themselves -- a "race to the bottom" -- to attract large users.

To some orderly minds any variation from uniformity is heresy. But total uniformity looks better on paper than in reality. Uniformity has its trade-offs in terms of flexibility and choice. A uniform system, like a convoy, moves at the speed of its slowest or most obstructionist participants. Without belittling the value of uniformity, one should also recognize that there can also be value in some inter-Bell rivalry, since diversity can give an impetus to innovation or efficiency, while economic rationality can lead in a competitive system to some convergence and coordination even in the absence of a regulatory requirement.

Also, uniformity should not be equated with preemption by the FCC. Agreements among the states or between the state and federal levels can achieve the same result. Nor is preemption the less time-consuming procedure, since it could lead to endless and divisive jurisdictional disputes that would spill into other areas. Preemption should only be resorted to after a solid evidentiary record establishes clearly that serious nationwide harm is unavoidable otherwise.

States do not favor the Joint Board arrangement, because it leaves ~~the~~ FCC in the driver's seat. Given their view that local exchange issues are part of their traditional jurisdiction under the 1934 Act, they insist on parity at the least. A coordinating mechanism could have a form such as the following dual system:

(a) An inter-governmental ONA forum of FCC and the states, which would be charged with coordinating the various jurisdictional policy interests. It could, for example, establish a hierarchy of uniformity, by defining certain basic functions where national uniformity is important, and establishing others where regional or local uniformity is



from these forces of pluralism is quixotic. Interconnection of hardware and software networks becomes a central issue, and control over interconnection a key element of regulatory supervision. To attempt policy centralization by squeezing the states out of this area is hence to deny them participation in the control of future telecommunications structure, and they will not take to it kindly. On the other hand, for states to fight the principle of open interconnection is to be tilting at wind mills.

ONA interconnection is a much more complicated affair than the earlier opening up of access for CPE or for long-distance carriers. There is much work to be done in a process that will not stand still. Hence, it would be a costly mistake for public policymakers to leave the substantive issues and retire to the jurisdictional battlegrounds. Nor would it be sensible to try to resolve the myriad issues in advance. What is needed is a collaborative effort, based on agreed upon institutions, that can adequately reflect the amalgam of state and federal interest and come up with a consistent set of ONA policies.

The logic that leads to ONA is also the logic of federalism. If diversity and pluralism is the FCC's goal -- of services, competitors, and options -- it must also view pluralism of policy approaches as a source of strength rather than of weakness. And if non-interference by government underlies deregulation, the FCC should be very careful in denying leeway to others. To be result-oriented in seeking preemption is extremely short-sighted. Presidents, Commissioners, and policy preferences come and go, but the Federal system with its balances must continue.

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