Universal Service Assurance:
A Concept for Fair Contribution and Equal Access to Subsidies

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Summary

One very significant cause of regulatory policies that prevent competition in the local telecommunications market is fear that universal service will be threatened. This fear lacks any factual foundation. Local competition will help, not hinder, the realization of universal service. Competitors can and will help provide for universal service. Competition can and will lower the costs of providing universal service. Most consumers can and will have choices of local exchange service providers. Those who do not will nevertheless benefit from the lower prices and better service standards that competition will encourage among all service providers.

Existing local exchange monopolies, nevertheless, claim that competition will siphon off revenues that permit them to offer affordable telephone service to all consumers. Without such revenue sources (known in regulatory parlance as “contributions”), the monopolists’ argument goes, local residential rates will soar, forcing many consumers off the network; or else, for lack of adequate revenue, local telephone companies will abandon communities and offer lower quality service. Since “universal service” is a long-standing national social objective, either outcome is unacceptable to policy makers, and to responsible members of the telecommunications industry.¹

What the United States needs now, immediately, is a new way of thinking about the universal service issue. TCG is not alone in saying this; many policy forums such as the Aspen Institute and the Council on Competitiveness, as well as legislators, regulators and other policy makers, and academics, have been considering the need for a “new paradigm” for universal service for some months now.

¹ The Communications Act of 1934 first expressed the public policy objective of universal service, stating that the goal of the Act is to "...make available...to all people of the United States a rapid, efficient, nationwide and worldwide wire and radio communications service with adequate facilities at reasonable charges."
Consumers Will Have More Choice with USA

A new Universal Service Assurance concept is described in this paper. This Universal Service Assurance (USA) is designed for people. It starts with the premise that the consumer -- not the telecommunications provider -- should be the decision maker. In fact, it takes the concept of universal service -- which up to now has meant merely connectivity for all at reasonable rates -- into the realm of service quality. USA not only guarantees subscribers reasonably priced access to the public telecommunications network; it also guarantees that many -- perhaps even all -- consumers will see a variety of price and service offerings. It gives consumers the benefit that any shopper wants and deserves: choice.

USA for local telephone service customers will erase the fear that any consumer will be denied access to telecommunications service as a result of local telecommunications competition.

Equal Access to Subsidies

What TCG suggests is, perhaps, somewhat unique: the key to the new universal service assurance is equal access. Indeed, it may be the "last step", so to speak, in the equal access process that has driven the telecommunications industry towards more and more competition for nearly thirty years:

First, competitive suppliers of customer premises equipment (telephones and other terminals) gained equal access so as to allow connection of their equipment to the public network.

Next, long-distance competitors gained equal access to local exchange company (LEC) facilities so as to connect customers to long distance networks on equivalent technical and economic terms.

Recently, local telecommunications competitors have sought equal access to local exchange carrier network services, features and functions, so as to reach more customers.

Now, equal access to the local exchange subsidies will be essential to the evolution of local competition.
Equal access to subsidies means that the obligation to serve all customers can be shared. Clearly this cannot happen unless at least two carriers find it equally economic to do so. So long as one local exchange carrier controls universal service provision, competitive carriers cannot even think of expanding service to subsidized customers. Such competitors are doomed to serve only small niche markets, and may never be able to reach out widely to small business and residential customers broadly dispersed. With equal access to subsidies, however, they could do so.

A new would-be player in the local exchange market would willingly serve high-cost or low-income consumers, so long as it could receive for each such customer the same subsidy that the incumbent provider receives. And if the new carrier cannot have access to such subsidies -- assuming they do exist -- regulators and telephone companies can hardly fault competitors for not serving such consumers.

If all local telecommunications carriers have equal access to the subsidies, many more providers will be able to reach many more consumers. If many more providers are in a given market, there will be more sources available from which to derive subsidies. And prices will be driven down as providers attempt to gain market share, so the subsidy requirement will also fall.

Independent Subsidy Fund

Today, most local exchange monopoly carriers claim to cross subsidize their residential service rates with revenues from other services. Rather than continuing such internal cross subsidies, USA would establish an external subsidy fund to which all telecommunications service carriers would contribute. From this fund, all local telephone carriers could "draw" the subsidy required to serve particular customers -- provided they were the customer's chosen carrier.

The contributing carriers initially would include all intrastate and intralATA telecommunications service providers (toll and access) operating as common carriers. Their contribution would be based on their share of the market. While various methods of measuring market share are possible, the most equitable -- and easiest to process -- method would probably be on the basis of net revenues for relevant services.

2. TCG and most economists recognize that the most effective means of achieving goals of social policy is through general tax revenue. Given the history of universal service and the current political climate, however, it is likely that such a proposal would be rejected out of hand. What TCG is proposing, therefore, is by definition a "second best" solution from a theoretical viewpoint. However, it is a "first best" solution from a realistic, practical viewpoint.
The Universal Service Assurance Fund will initially subsidize all low-income and/or high-cost intrastate local exchange service customers in a given state. (As will be discussed below, TCG believes that ultimately, the so-called "high-cost" issue will disappear.)

All facilities-based local exchange carriers will be able to obtain subsidies from the USA Fund on the same terms. For each subsidized subscriber served, a carrier may draw the specified per-subscriber amount of subsidy claimed for the customer.

Any carrier may seek to serve any customer. Any carrier may elect not to serve certain customers— but it must still contribute to the USA Fund.

If the subsidy is properly calculated, few if any individual customers or geographic areas would be "undesirable": indeed, multiple carriers will likely vie for every customer in every region. However, if no carrier seeks to serve a particular area or customer group, regulators must intervene to determine the carrier of last resort. This can be done via an auction (see below).

Open System Can Determine "Real" Residential Subsidy

The USA proposal is based on the premise that residential subsidies are real and substantial enough to warrant a policy change. While this in fact may not be the case at all, there is no other practical alternative. because for years, the monopoly local exchange carriers have claimed that some or all of their residential customers require and receive subsidies from business customers and intra-state toll customers. It is difficult for regulators or competitors to contradict a telephone company that has all the numbers regarding the costs of serving various customers.

Nevertheless, there is good reason to believe one or more of the following:

The claimed cross subsidies do not actually exist.

The subsidies do exist, but are less than claimed.

The subsidies flow in directions different from what LECs claim.
Evidence that No Residential Subsidies Exist

There is ample evidence that, in some states at least, residential services are priced at their cost and subsidies to residential ratepayers do not exist. For example:

In Illinois, Staff of the Illinois Commerce Commission found that, "[b]ased on its analysis of the information, ... the total revenue for local exchange service ... covers the total costs of providing the service." 3

In its recent proposal for regulatory reform, Ameritech stated that, "...In Illinois, where many of the universal service subsidies have been eliminated, local rates are still reasonable and telephone subscribership of 95.6% remains above the national average." 4

In New Hampshire, the Public Utilities Commission found that "... basic exchange services, which currently are priced above incremental cost, recover for NET [New England Telephone] not only the total cost of providing basic exchange service, but contribute additional revenues to cover NET's overall revenue requirement." 5

Evidence suggests that in some states, residential ratepayers are subsidizing non-residential or non-basic services.

In Maine, expert testimony on behalf of the Public Utility Commission Advocacy Staff showed "...that exchange service, measured in the aggregate, is subsidizing other services. The Company's [New England Telephone] proposal to raise the price of exchange service would only exacerbate the subsidy." 6

In light of this evidence, it would be a terrible mistake to put any faith in the claims of the monopoly local exchange carriers regarding the "black box" of their internal subsidy system. The only way to find out for sure whether real subsidies exist or are needed is to replace the "black box" with an open and self-policing system.


Subsidies
Are an Asset, Not a Liability

TCG's proposed Universal Service Assurance is based on a simple observation: at the present time, subsidies are not a liability that telephone companies are doomed to shoulder. Rather, subsidies are an asset, contributing to a guaranteed income stream: revenues that regulators decide local telephone companies must have to earn a reasonable return on their capital and to provide decent service to all consumers in their service territory.

The guaranteed revenues now come in the form of mandatory minimum charges for basic telephone service plus market-based charges for discretionary services -- all of which are, at the present time, monopoly services.

Competitors Won't Subsidize "The Phone Company"

As some of these services are opened up to competition, telephone companies will argue that the so-called "contributions" to universal service are being drained away, because they can no longer price their competitive services above cost to derive contribution. Telcos will lament the shrinking basket of "source" services. They will demand that niche-market competitors continue to skim their slim profits on competitive business services in order to subsidize the phone company via payments deemed "offsets" when competitors interconnect with telephone company services. At the same time, these telcos will make it expensive for these same competitors to connect to the network and thus reach more customers.

These contributions --if they do exist-- may sometimes reach some consumers. Just as likely, the so-called contributions actually support telcos' luxury-level expenses, or their investments overseas or in competitive domestic businesses.

Competitors will continue to resist such unequal terms and conditions. While competitors are willing to support universal service, they are not at all willing to subsidize telephone companies. The only fair way to create a subsidy fund in a multi-provider environment is through an independent, neutral institution.

7. The Association for Local Telecommunications Services (ALTS) defined its position on universal service in the policy white paper "Telecommunications Policy '93" pp. 13-14. In particular, ALTS said:

Assisting individuals who cannot reasonably afford the cost of their telephone service should be the universal service goal.

...subsidizing universal service through regulatory skewing of monopoly rates... provides no incentive to telephone companies to minimize the cost of serving needy consumers.
The present chaotic and adversarial situation hurts all parties, but it hurts consumers most. **If no changes are made in the universal service system, most consumers will have no choice and their rates may be higher than would be the case with competition.**

How USA Would Work

Several federal and state universal service funding mechanisms now exist (see Appendix for description of federal programs). One way to rationalize and make these programs uniform throughout the country would of course be a comprehensive federal approach. However, states traditionally have jealously guarded their regulatory prerogatives, and it is unlikely that such an approach would be unanimously accepted in a short period of time. TCG believes that it would be desirable to develop a comprehensive federal initiative. However, in the short run it may be more practical to advance USA within each state.

This is essential, moreover, because it is particularly at the state level that incumbent local exchange carriers fuel the fear that local telecommunications competition threatens universal service.

Since it is unlikely that all states will adopt the same approach, however, TCG’s proposal is **designed to apply to any level of subsidy requirement determined within a state.** Existing federal high-cost fund mechanisms could continue under this proposal or they could be folded into a single national USA.

The initiative to create the state USA must come either from regulators or legislators, although carriers could and in some cases probably would request government action to do so.

Regulators and, if necessary, legislators must establish equitable rules for quickly certificating new facilities-based local exchange carriers to compete with incumbent LECs.

Regulators or legislators must establish the USA Fund administrator, to be independent of all carriers.
Regulators must provide for full interconnection of local carriers’ networks, so that competitive services are technically, operationally, and economically feasible.\(^8\)

The incumbent local exchange carrier will identify the amount of the subsidy required for it to maintain service to each of the claimed subsidized customers. The basis will be, as now, region-wide average intrastate rates for basic access.\(^9\) These declared subsidies are fixed for a period of time, and are the funding requirement for the USA Fund.

All intrastate common carriers of two-way public telecommunications services contribute to the USA Fund according to their share of the market. This presumes that all subsidized services are open to competition, legally, and subject to competition, economically.\(^10\)

Any facilities-based local carrier wishing to serve a subsidized customer can register as a Universal Service Carrier (USC), and market services to that customer. Once the carrier elects a Universal Service Carrier, the USC may claim the subsidy from the Fund.

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8. The interconnection arrangements needed to facilitate local competition are summarized by TCG’s “Nine Points” initially issued in 1991, and reissued in subsequent years:

1. Central Office interconnection arrangements
2. Connections to unbundled network elements
3. Seamless integration into LEC interoffice networks
4. Seamless integration into LEC signalling networks
5. Equal status in control of network databases
6. Equal rights to and control over number resources
7. Local telephone number portability
8. Reciprocal inter-carrier compensation arrangements
9. Cooperative practices and procedures

9. Where flat rates are charged in some parts of the state but not all parts, the basis must be adjusted to take into account the usage component combined with access, in the flat rates.

10. One possible measure of the total intrastate market is net transmission revenue: revenue less payment to other carriers. Eli Noam of Columbia University first proposed the idea of net transmission revenue in “NetTrans Accounts: Reforming the Financial Support System for Universal Service in Telecommunications,” (mimeo) September 1993. Noam’s definition of Net Transmission Revenue, however, includes interstate services. Although TCG has confined USA to the intrastate jurisdiction, we recognize that it can be expanded to include the interstate markets as well.
During an initial period, all USCIs may compete for subsidized consumers by offering lower rates, improved quality, or new features. They will compete for these customers just as they compete for non-subsidized customers. Consumers have incentive to shop for the lowest price or the best service.

**Example:** The incumbent carrier's cost (including profit margin) of serving a subsidized consumer is $20 per month. The serving carrier receives $10 per month in subsidy from the USA Fund, and charges the customer $10. During the period, a competitive carrier whose cost of providing service is $18 per month offers service at $8. The customer switches to this new carrier, and her new carrier receives the $10 subsidy.

After the initial period of time has elapsed, competition among the carriers for the subsidized customers will have driven down relative average telephone service costs. The difference between subsidized rates and non-subsidized rates must then be recalculated, so as to set the USA Fund's revenue requirement for the next period.

After the size of the new USA Fund is established, carriers contribute again based on their new market share. Any carrier that cannot afford to serve customers at the lower rates with the new subsidy may exit the market. (The auction described below will assure that no market is deprived of at least one carrier).

Even though competition diminishes the need for regulation, regulators will periodically review the subsidy and ensure that it never exceeds the initial proportion of the total monthly rate.

This process repeats itself until, ideally, the subsidy is no longer needed, because basic services are affordable by everyone, everywhere.
Dynamism

The USA program will bring needed dynamism to what is now a static situation. USA subsidies initially are based on the telephone companies' alleged current cross-subsidies. When faced with losing customers, incumbent telephone companies will try to cut their costs, thus allowing them to reduce rates, or to raise them less than otherwise would be the case. At some point, both incumbents and rivals will push their costs to rock bottom. As costs fall, rates in high-cost areas may be low enough that no customer requires a subsidy. In any event, so long as all carriers have equal access to the USA Fund, there is pressure for the dominant carrier to reduce its estimate of the required subsidy.

Free Entry and Free Exit

Free entry and exit in the local telecommunications market are necessary components of the new competitive market place. Free exit in particular will test the claims of existing companies that they cannot afford to serve a particular market without a particular subsidy. If a company makes this claim, it should be permitted to turn over its facilities (at net book value or through an auction) to another carrier willing to serve. This will allay LEC fears of "stranded investment".

Free entry and exit with equal access to subsidies will allow carriers to reach more markets, sooner. It will also encourage innovative service provision, efficient investment and efficient capacity utilization. Because the subsidies enable competitors to earn as much in high-cost areas as they do in low-cost areas, they will seek to enter many markets.

Ultimately, all consumers, subsidized or not, may have the opportunity to choose their local exchange carrier, as is the case today for long-distance services. If several local carriers compete every day for consumers, local rates will be driven down, and consumers will receive superior service without need of extensive regulatory oversight.

If only one carrier wishes to serve a market, that carrier will be the sole recipient of subsidies for subscribers in that market, and will have the obligation to serve.
Carrier of Last Resort Auction

If no carrier wishes to serve at the established rate level, regulators must conduct an auction to determine the carrier of last resort. The auction requires carriers to "bid" the price for residential service and the amount of subsidy required to serve all consumers in that area. The winning bidder (who requires the least subsidy) gets the right to serve all of the customers in that area, and to receive the subsidies needed by its subsidized customers.

The winning provider will receive the required subsidy from the Universal Service Assurance Fund. If the carrier is not the former incumbent, its obligation to contribute to the fund in the next period will rise to reflect its increased share of the total market in the state. The exiting firm's obligation will correspondingly decline.

All two-way public telecommunications common carriers in the state will still have the obligation to contribute to the USA Fund.

Consumer Impact

No new scheme for universal service can work unless consumers understand it, and regulators and other policy makers are confident that consumers will understand it. Consumers will find USA easy to understand. They will welcome the opportunity to shop for local exchange service just as they shop for other services. And the new system will help consumers make informed choices, because the value of the service they receive will be clear to them -- which is not the case under monopoly with internal cross subsidies.

Best of all, in high-cost areas, no stigma attaches to the subsidy because all subscribers in the exchange are getting the same subsidy. If, in addition, low-income subscribers are eligible under state practice for lifeline subsidies, these are individualized, go directly to the consumer, and are supplements to the exchange area subsidies.

The consumer will adapt gradually to the possibility that more than one carrier may offer service in any particular area, and will soon enjoy the challenge of shopping for service quality and price.

Consumers Will Shop for Total Service

The consumer will also be encouraged to compare quality of service as well as price -- and to press for good service quality. When consumers shop for a service package and price, competitors will offer better service at better prices. In a monopoly environment, only a cumbersome and largely ineffectual complaint process can favorably affect service quality.
Customers for subsidy "source" services and recipients of subsidies both benefit greatly over the long run. The process guarantees that declining costs will be passed on to all consumers in the form of lower prices and consequently guarantees lower subsidy contributions from the "source" consumers.

Consumers also will gain because competition will assure that the full range of technology will be applied to the provision of telecommunications services. The least-cost and most appropriate transmission medium -- copper, wireless, coaxial cable or optical fiber -- as well as the most efficient switches, will be employed by competing carriers. Eventually, the need for the subsidy may disappear entirely as rates fall and subscription levels rise even higher.

What Do Regulators Do?

An entirely new role for regulators will arise as a result of USA. This role will be more productive than the responsibility to try to evaluate cost figures submitted by telephone companies -- a task that most honest practitioners agree is impossible to complete with any confidence of accuracy.

As indicated above, regulators are the linchpins of the USA process because they must initially define the terms and conditions of Universal Service Assurance and if necessary, seek legislative authority to alter the existing system.

Following that, regulators have these obligations:

- Oversee the establishment of the independent USA Fund.
- Approve the subsidy at the beginning of each period.
- Determine which "high cost" exchanges and individuals are eligible for USA subsidization.
- Facilitate arrangements for use of stranded plant via "auctions," relying insofar as possible on private transactions so long as they are in the public interest.
- After USA is established, adjudicate disputes when private parties fail to conclude agreement in a reasonable time.

Regulators no longer will have to play the role of watchdog, because that role is played by the contributors to the Universal Service Assurance Fund (the carriers), who have more than sufficient incentive to ensure that the subsidies are minimized.
Does USA Depend on Full Interconnection?

Full interconnection, despite all the benefits it would bring to consumers, has been and will continue to be resisted by the local exchange monopoly. This does not mean, however, that Universal Service Assurance must wait until full interconnection arrangements are in place.

New local common carriers providing two-way local telecommunications services to the public using their own facilities entirely may elect to have equal access to subsidies for their customers -- and will be contributors to the USA fund.

Furthermore, while interconnection helps to attract many service providers, it does not guarantee that all markets would be served by more than one provider. Therefore, with or without interconnection, USA must allow for monopoly.

However, USA, unlike existing internal cross subsidies, encourages monopoly efficiency. So long as the threat of competition exists, and the promise of lower subsidy requirements is part of the threat, any monopolist will try to serve customers more efficiently.

If regulators are dissatisfied with the monopolist's service, or if the monopolist does not choose to serve, the recommended "auction" of the incumbent's facilities will guarantee that, at worst, the result would be the replacement of an inefficient incumbent monopolist with a more efficient monopolist. In other words, if the incumbent refuses to serve customers when subsidies are $X$ per line, and another carrier will serve customers with a subsidy of $X$ or less per line, it is in the public interest to substitute one monopoly for another. 11

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11. Whether this is feasible legally must be examined state by state. Constitutions and public utility laws would not allow regulators to confiscate the property of the incumbent, and would require regulators to raise rates if the telephone company can show under-earnings. However, forced sales that are consistent with condemnation laws and voluntary sales are perfectly feasible and would be more likely to be considered if regulators set the stage for them by adopting Universal Service Assurance. Regulators also have penalty authority that might be used to encourage non-performing providers to exit markets. Here we merely raise an option without recommending that it be chosen.
Time to Move Forward

Continuing to require one carrier to provide local telephone service to all potential customers is inefficient. Universal Service Assurance will harness the forces of the free market to achieve a common good. The inevitable trend toward local competition will be smoother if policy makers and service providers can agree on a new way to take full advantage of market incentives to maintain and to expand universal access to the nation’s telecommunications system. USA takes universal telephone service into the future.

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APPENDIX

Apart from any alleged system of internal cross-subsidies operated by the local exchange companies, the Federal Communications Commission has established plans explicitly designed to encourage and to maintain universal service.

1. Low Income Assistance

The FCC established two plans to assist those customers who would otherwise be unable to afford to pay the various charges for telephone service. The FCC requires that the states establish appropriate and verifiable income eligibility requirements for single line residential telephone service.

A. The Link-Up America plan assists poor customers by paying half of the initial connection charge. The assistance is provided to the customer via reduced charges on the customer’s bill. In addition, Link-Up funds will cover the interest on deferred payments for initial connection charges.

B. Lifeline programs assist customers in paying their monthly charges. Two such plans have been established. The first plan, adopted in December of 1984, reduces monthly charges by the full amount of the Subscriber Line Charge (SLC). Half of the reduction is funded by the national Lifeline fund, and the other half is funded from state sources. The second plan, adopted one year later, reduces monthly charges up to twice the amount of the SLC via a waiver of the SLC up to the amount matched by state assistance.

For the Link-Up and Lifeline plans, the local exchange company reports its non-state supported rate reductions to the National Exchange Carrier Association (NECA), for reimbursement. NECA then bills the interstate long-distance carriers according to their share of presubscribed lines.

For 1992, the local companies were reimbursed $15,237,159 under the Link-Up America plan, assisting 745,113 subscribers. Lifeline assistance amounted to $93,948,079 for 3,449,619 customers.

2. High-cost Assistance

In response to claims that some local exchange areas are especially costly to serve, the FCC established high-cost assistance plans to subsidize telephone service in those areas. The local exchange carrier (LEC) can thus offer service to customers in those areas at less than prohibitive prices. Started in 1986, the FCC's high-cost assistance plan allows local exchange carriers with very high per loop costs to allocate more of their non-traffic sensitive loop costs to the interstate jurisdiction. LECs with loop costs in excess of 115% of the national average receive assistance for up to 75% of the excess costs. The National Exchange Carrier Association collects loop cost data from the local exchange carriers to determine the national average and funding requirements. Funding is provided by the Universal Service Fund which is supported by the interexchange carriers (IXCs). Each IXC is assessed according to its share of presubscribed lines.

For 1992, $607,968,500 was paid to the LECs from the Universal Service Fund.