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*Practical Solutions for Communications Policy*

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**Universal Service Tool Kit, Part 1:  
Getting From Here to There:  
Transitions for Restructuring Subsidies**

**July 18, 1994; Revised October 10, 1994**

*Presentation at the July 1994 NARUC Meeting,  
San Diego, CA*

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San Diego, CA*

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## ***Copyright and Project Address***

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**Telecommunications Industries Analysis Project:  
Universal Service Tool Kit, Part 1: Getting From Here to There: Transition for  
Restructuring Subsidies**

Carol Weinhaus, Terry Monroe, Dan Harris, et *al.*  
July 18, 1995.

Presentation at the July 1994 NARUC Meeting, San Diego, CA.

The Telecommunications Industries Analysis Project is associated with the Public Utility Research Center at the University of Florida College of Business Administration.

Gordon Calaway, NECA, assisted with data for some of the analysis.

For information on this research, contact Carol Weinhaus at:  
[www.ConvergingIndustries.org](http://www.ConvergingIndustries.org)

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## ***Project Information***

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### **List of Participants in the Telecommunications Industries Analysis Project, July 1994**

State Regulators	NARUC representatives from: Iowa Utilities Board New York Public Service Commission Washington Utilities and Transportation Commission
Regional Holding Companies	Ameritech Bell Atlantic BellSouth NYNEX Pacific Telesis Southwestern Bell US WEST
Large Independents	GTE Sprint Anchorage Telephone Utility
Interexchange Carrier	AT&T Sprint
Foreign Domestic	NTT America InfoCom Research, Inc.
Local, National, and International Services	BT
Materials Manufacturers	Corning
Telecommunications Equipment Manufacturers	Northern Telecom

#### Sponsors:

Corporation for Public Broadcasting

#### Assisting with *public* data:

Federal Communications Commission  
National Exchange Carrier Association

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## ***Project Information, cont.***

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### **Background on the Telecommunications Industries Analysis Project**

The goal of the Telecommunications Industries Analysis Project is to provide information to support the development of alternative communications policies to meet the needs of stakeholders in an environment that includes competitive and non-competitive markets, federal and state regulatory jurisdictions, and a proliferation of new services made possible by technological advances. The purpose of the project is to produce research and analysis which will assist policy makers in making informed decisions.

The project is a neutral forum of communications industry stakeholders exploring multiple viewpoints on selected issues. This forum incorporates the following elements:

- **Broad representation:** The current forum includes local exchange carriers, interexchange carriers, materials and equipment manufacturers, and regulators. The project actively seeks expansion of this forum to include other communications industry representatives such as competitive access providers, cable television companies, computer companies, electric power utilities, and publishers.
- **Multiple viewpoints:** Participants are required to have an active role in the research and analysis, to represent their own interests, to understand and to assist in developing others' perspectives, and to work toward the common goal of representing multiple views.
- **Analysis and results of alternative policies:** Research tools, including a jointly produced data base and computer software models, and data analysis developed by this forum create a common language for examining issues. The common language allows the participants to focus on underlying issues. Appropriate computer software tools are developed, and existing tools are modified.
- **All data, analysis methods, and results are public:** Data used by this project must be publicly available on a nationwide basis. Research products become public domain information.
- **Neutral setting:** The project resides in a neutral setting, free of partiality, thereby ensuring objective and independent research.

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## ***Project Information, cont.***

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### **What the Project has Done**

The project has conducted public workshops at the national meetings of the telecommunications industry regulators. The project's research papers have been the basis for meetings with the Federal Communications Commission (FCC), Congressional staffs, the Congressional Research Service, and the National Telecommunications Information Administration.



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## ***List of Acronyms***

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### **List of Acronyms**

ARMIS	Automated Reporting Management Information System
FCC	Federal Communications Commission
IXC	Interexchange Carrier
LEC	Local Exchange Carrier
NECA	National Exchange Carrier Association
PCS	Personal Communication Services
SLC	Subscriber Line Charge
Tier 1	LECs with over \$100 million annual regulated operating revenues
TRS	Telecommunications Relay Services
U.S.	United States
USF	Universal Service Fund
WDEM	Weighted Dial Equipment Minutes

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## Introduction

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### Introduction

A companion paper, *Abort, Retry, Fail? The Need for New Communications Policies*, describes reasons why new communications policies are needed for the changing environment.

<sup>1</sup> While it is necessary to look at long-term revisions to the current structure, part of this process is to have short-term transitions to get us from here to there. Transitions are needed for at least two reasons:

- **It is politically unacceptable to have major shocks to companies and customers.** On the first day of the transition to a new structure (phase in), the world should look exactly the same as the last day of the old structure (phase out).
- **It is hard to make a major change when you don't know what the outcome is.** Often people will choose not to act if the result is uncertain, especially if they believe they may be adversely affected.

This paper presents ideas for transitioning from the present subsidy mechanisms to new mechanisms that better fit the changing environment. These ideas present short-term solutions, which, when linked with one another, may help lead to major revisions of the current system. Not everyone will agree with every idea. The intent is to get *new* ideas out for discussion, and not to choose a specific proposal. This paper sets up a framework for exploring numerous viewpoints and allows additions as new ideas arise. Although other concepts of universal service apply to television and radio, this paper focuses on the telecommunications industry.

Each idea answers specific questions, such as "What is the size of the current subsidy?" or "What is the new basis for subsidies?" Each short-term idea shows a transition from the current mechanism to a new one. Different ideas may focus on the same point or on different points. It is also possible to mix and match pieces from each idea, creating variations on a particular theme. For example, *Transition Idea #1* presents four different methods of changing the current source for subsidy contributions. Any of these four may be used separately or in some combination. For an illustration of how two ideas might be combined, see *Transition Idea #4*. This idea combines *Transition Idea #2* (establishes an external funding mechanism - a subsidy clearing house) with *Transition Idea #3* (establishes a contribution charge on the customer bills). By combining these two ideas, *Transition Idea #4* builds a mechanism where customers from multiple sources fund the subsidies.

For each short-term idea, the first day of the transition must look the same as the

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<sup>1</sup> For a discussion of why structural changes are needed, see Weinhaus, Carol; Pitts, Teresa; McMillin, Rob; Jamison, Mark, et al., *Abort, Retry, Fail? The Need for New Communications Policies*, Telecommunications Industries Analysis Project, Public Utility Research Center, College of Business Administration, University of Florida, Gainesville, FL, July 11, 1994.

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## ***Introduction, cont.***

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last day of the current system. There are enormous amounts of money involved, major political fallout, and other consequences that serve as barriers to immediate sweeping changes in the current system. However, if the markets continue to move rapidly due to the forces of technology and competition, major dislocations may occur if no short-term actions are taken. The intent of this paper is to set the stage for how to shift to the long-term. For an example that combines several transition ideas with a long-term approach to restructuring policies, see *Universal Tool Kit, Part 2: Beyond Cost Allocations: Benchmark Subsidy Method*. More transition ideas may be added later.

Data sources and background calculations are in **Appendix A**.

### **Checklist of Issues Addressed by Transition Ideas**

There are basic questions that subsidy proposals should answer:

- What is subsidized?
- Who receives the subsidy?
- Who provides the subsidy?
- What are the mechanisms for transfer of subsidy payments?

It is possible to subdivide each of these basic questions into more specific questions, such as "Who receives the payment?"

A checklist (**Figure 1**) indicates which questions are covered by each short-term idea. As new ideas are developed, they will be added. This list allows comparisons among ideas - what's dealt with and what's not -without assigning value judgements as to whether a particular idea is good or bad.

**Figure 1:  
Checklist of Questions Covered by Transition Ideas**

Subsidy Issue:	Short-Term Transition Ideas for Subsidies						
	Idea #1 Alternative Sources	Idea #2 Create Clearing House	Idea #3 Itemize Bills	Idea #4 Transitions to New Mechanisms	Idea #5 Price Regulation	Idea #6 Customer Need	Idea #7 Providers of Last Resort
<i>What is Subsidized?</i>							
a. What services are subsidized?	x		x	x	x		
b. How are new technologies considered?	x						
<i>Who receives the subsidy?</i>							
a. Who is targeted?	x			x	x	x	
b. What area is targeted?				x	x	x	
c. Whose services are subsidized?	x		x			x	x
d. Who receives the payment?			x	x	x	x	x
<i>Who provides the subsidy?</i>							
a. Who pays into the subsidy?	x		x		x		
b. Who makes the payment?			x		x		
<i>What is the mechanism?</i>							
a. How is funding collected?	x	x		x	x		
b. How are funds distributed?		x		x	x		
c. Who administers the mechanism?		x		x	x		

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## Transition Idea #1

### Subsidies: Alternative Funding Sources

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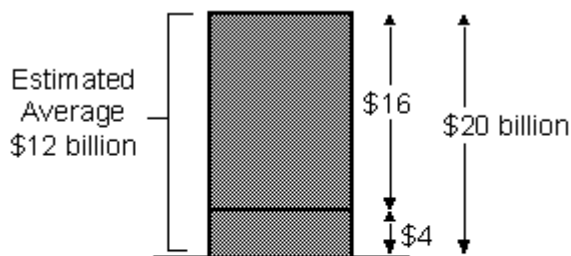
**Objective:** To provide four examples of alternative methods to fund current subsidies.

**Importance:** Changes the approach to funding from the current structure that grew out of a monopoly environment to one that might better fit a competitive environment.

**Assumptions:**

- In **Options 1, 2, and 3** the current subsidies may or may not remain unchanged. **Option 4** is better suited for new or redefined subsidies.
- Communications providers providing essentially substitutable services are treated equally.
- Alternatives for funding subsidies are not mutually exclusive.

**A. What's the current subsidy?**



**1992 Estimated Subsidy Range  
for All Local Exchange Carriers**

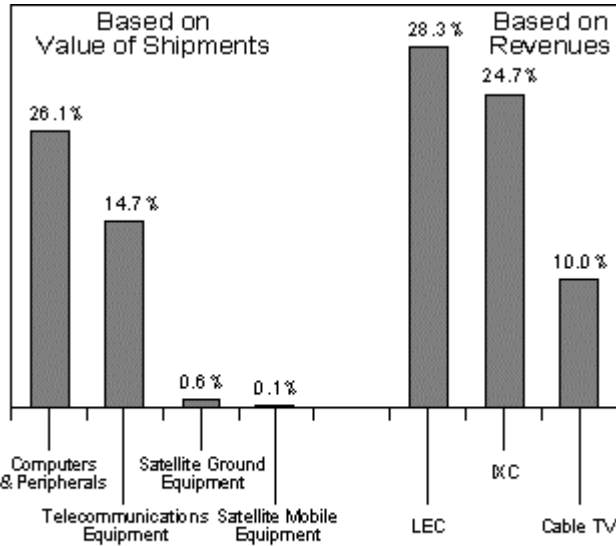
There is a nationwide debate over what constitutes a subsidy □ which services (i.e., telephone, cable TV, computer access, etc.) should be subsidized and by how much.

In the example, the size of the estimated subsidy to local exchange carrier (LEC) customers ranges from \$4 billion to \$20 billion. The \$4 billion is an interstate subsidy. The amount above the \$4 billion includes both state and interstate subsidies. Therefore, the average estimated range for illustrative purposes only is \$12 billion. To give a sense of the magnitude of the subsidy range, the 1992 nationwide LEC revenues are \$91.5 billion.

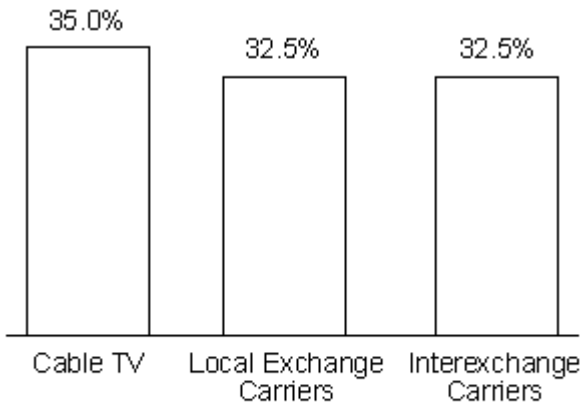
# Transition Idea #1

## Subsidies: Alternative Funding Sources, cont.

### B. Who pays the subsidy?



**% Contributions from Communications Equipment Suppliers and Service Providers**



**% Subsidy Contribution Based on 1994 FCC Funding Formula**

In all four options, during the transition, current subsidies are phased out and eventually are replaced by support payments from the new funding source. Prices that traditionally fund subsidies decrease at the same rate that new subsidy funding becomes available.

#### Option 1:

##### Multiple Contributors for Subsidies:

One method of revising who pays the subsidies eliminates the current patchwork in which some companies' customers pay and other companies' don't. The new mechanism uses some form of tax (e.g., excise tax) on all communications companies (equipment suppliers as well as service providers). The example contains percents based on value of shipments or revenues from representative industries.

#### Option 2:

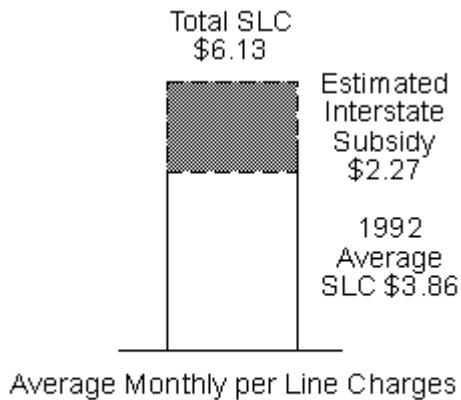
##### Contributions Based on 1994 Federal Communication Commission (FCC) Funding Formula:

A new method of funding the subsidies is based on the formula for 1994 industry funding of the FCC. Three types of companies illustrate this method - cable TV, LECs, and interexchange carriers (IXCs).

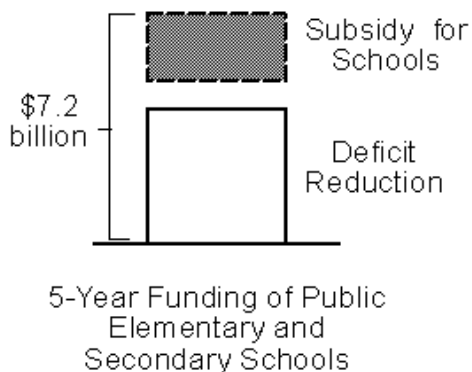
## Transition Idea #1

### Subsidies: Alternative Funding Sources, cont.

#### B. Who pays the subsidy, cont.?



#### Fund Interstate Subsidy with Increased Subscriber Line Charge



#### FCC PCS Spectrum Auction Funds Targeted Broadband Subsidies

#### Option : Increase Interstate Subscriber Line Charges (SLCs) to Cover Subsidy:

The SLC rates increase so that customers pay, on average, for interstate subsidies. In the example, the 1992 monthly average business and residential SLC rates combined is \$3.86. Dividing the estimated interstate subsidy of \$4 billion by the number access lines (142 million) adds \$2.27 to the current rate to produce an average monthly rate of \$6.13.

Increasing the SLC rates to cover all interstate subsidies shifts payments to local customers. By using an average SLC rate for all customers, some customers still receive support since the averaging process itself has some customers paying above their costs and others paying below.

#### Option 4:

#### Use Some of the FCC Personal Communication Services (PCS) Auction to Fund a Specific Objective:

A new method of funding the subsidies uses the FCC PCS spectrum auctions as a revenue source. It is estimated that the auctions will raise \$7.2 billion. A percent of the auction funds a specific objective - such as deploying broadband services in public elementary and secondary schools - instead of reducing the national deficit. <sup>2</sup>

<sup>2</sup> Concepts of PCS spectrum auctions funding public schools and hospitals from Henry Geller, personal communication, 1994.



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## **Transition Idea #2**

### **External Funding Mechanism: Create Subsidy Clearing House**

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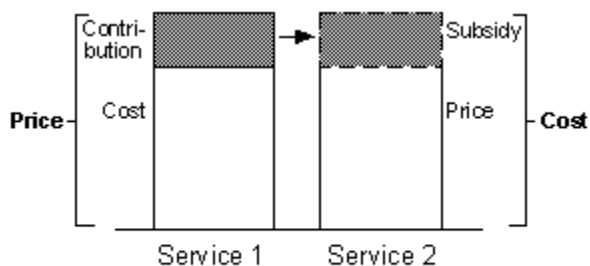
**Objective:** To establish an external funding mechanism (a subsidy clearing house) for all subsidies nationwide.

**Importance:** Sets the stage for changing who pays and/or who funds subsidies. Allows for a transition from current procedures established for a local monopoly environment to be phased out and for new procedures better suited to a competitive environment to be phased in.

**Assumptions:**

- Subsidies are collected from and received by the same customers as today. See *Transition Idea #5* for an example using long distances services subsidizing basic services.
- Level of subsidies does not change.

**A. What's the current mechanism for funding subsidies?**



Customers from Service 1 pay a price that includes a contribution to subsidize Service 2. Customers of both services only see a total price. The contribution charge and the subsidy are not broken out in the bills.

**Subsidy Flow Between Services**

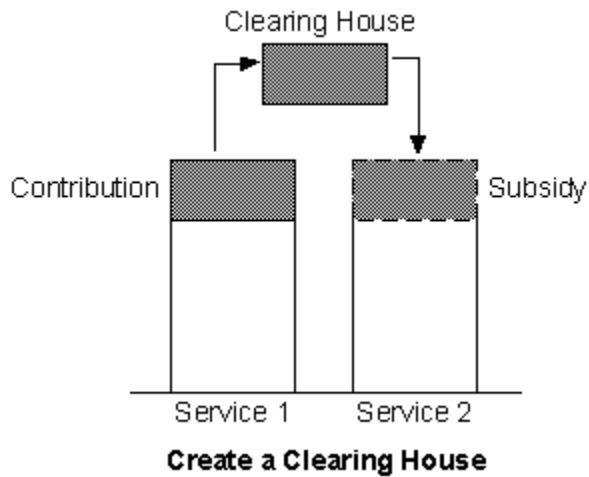
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## **Transition Idea #2**

### **External Funding Mechanism: Create Subsidy Clearing House, cont.**

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**B. What's the new mechanism?**



Designate a subsidy clearing house. For example, put out for bid or choose one or more government agencies.

On day one, the subsidy amount is the same as it was on the last day before the transition started. Companies that collect subsidies send them to the clearing house. The clearing house then sends them back to the companies that collected them.

The customer bills remain as before.

## **Transition Idea #3**

### **Funding Mechanism: Establish Contribution and Subsidy Items on Customer Bills**

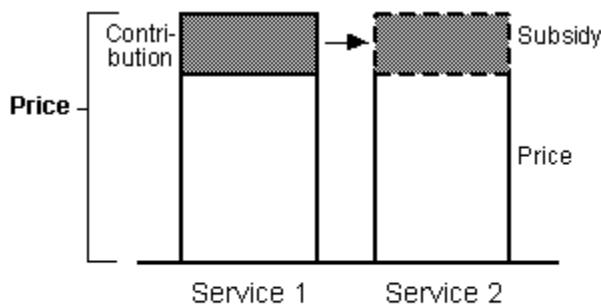
**Objective:** To itemize customer bills, showing a contribution charge for customers funding subsidies and a subsidy amount for customers receiving subsidies.

**Importance:** Sets the stage for changing who pays and/or who funds subsidies. Allows for a transition from current procedures where most subsidy payments and credits are incorporated into service prices and are not itemized.

**Assumptions:**

- Subsidies are collected from and received by the same customers as today. See *Transition Idea #5* for an example using long distances services subsidizing basic services.
- Level of subsidies does not change.

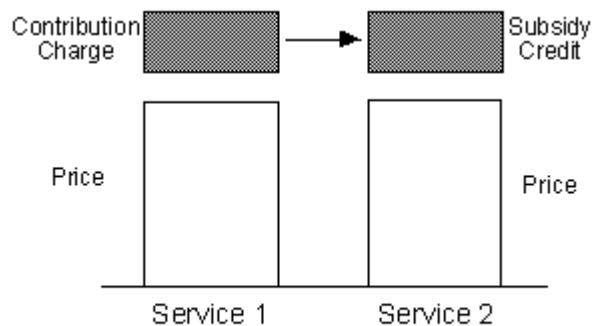
**A. What's the current mechanism for funding subsidies?**



Customers from Service 1 pay a price that includes a contribution to subsidize Service 2. Customers of both services only see a total price. The contribution charge and the subsidy are not broken out in the bills.

**Only Price Appears on Customer Bill**

**B. What's the new Mechanism**



Itemize customer bills. Customers for Service 1 see a lower price plus a contribution charge. Customers for Service 2 see an unsubsidized price plus a subsidy. The total price paid by customers of both services remains unchanged. Nothing changes except the billing items, which allow customers to see what they're paying for.

**Itemized Customer Bills**

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## **Transition Idea #4 Allows Transitions to New Subsidy Mechanisms**

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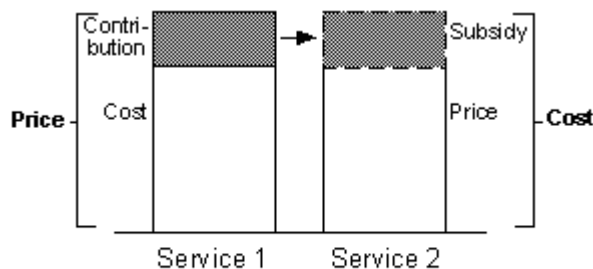
**Objective:** To identify subsidies and collect specifically from multiple contributors.

**Importance:** Allows transition from current to new subsidy mechanisms (new funding sources, new payment mechanisms, and new subsidy definitions). This is accomplished by combining two ideas - a subsidy clearing house and itemized customer bills.

**Assumptions:**

- Assumes the creation of a subsidy clearing house (*Transition Idea #3*) and itemized customer bills (*Transition Idea #2*).
- Level of subsidies does not change.
- Funding source is separate from services or companies subsidized.

**A. What's the current mechanism for funding subsidies?**

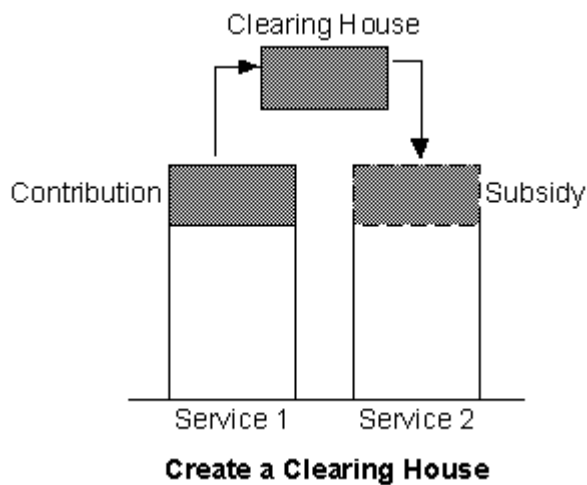


Customers from Service 1 pay a price that includes a contribution to subsidize Service 2. Customers of both services only see a total price. The contribution charge and the subsidy are not broken out in the bills.

**Subsidy Flow Between Services**

## Transition Idea #4 Allows Transitions to New Subsidy Mechanisms, cont.

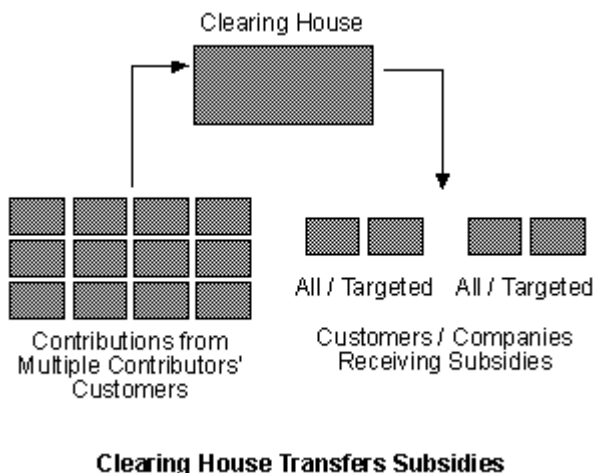
### B. What's the new mechanism?



#### Create a Clearing House

Designate a subsidy clearing house. For example, put out bid or choose one or more government agencies.

On day one, the subsidy amount is the same as it was on the last day before the transition started



#### Multiple Contributors to Subsidies:

Contribution charges that provided the subsidy before are phased out and are replaced by support payments from all communications service providers and equipment suppliers.

Companies that collect subsidies send them to the clearing house.

The clearing house then sends them back only to those companies that have services and/or customers that are subsidized.

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## **Transition Idea #5**

### **Basis for Subsidy: Subsidies Under Price Regulation**

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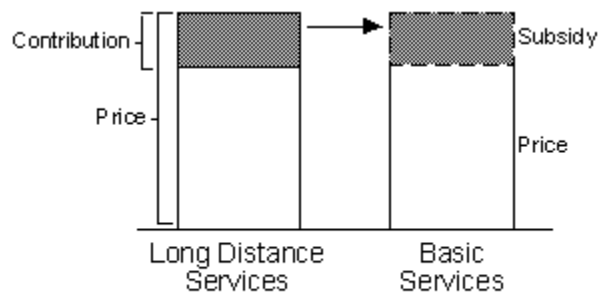
**Objective:** To shift basis of subsidy from cost allocations to price regulation.

**Importance:** Replaces the cost allocation system that requires examination of all costs with a regulatory mechanism that focuses on prices for specific services (basic service in this example).

**Assumptions:**

- A clearing house is formed to collect and distribute subsidy dollars (*Transition Idea #3*).
- Basic Service is defined as "local service" plus subscriber line charges. Long Distance Service is defined as "total access revenues (including the carrier common line charge and interstate subsidies) and LEC toll revenues.
- Only basic services are subsidized.
- Prices are the basis for determining what the subsidies are.

**A. What's the current mechanism for funding subsidies?**



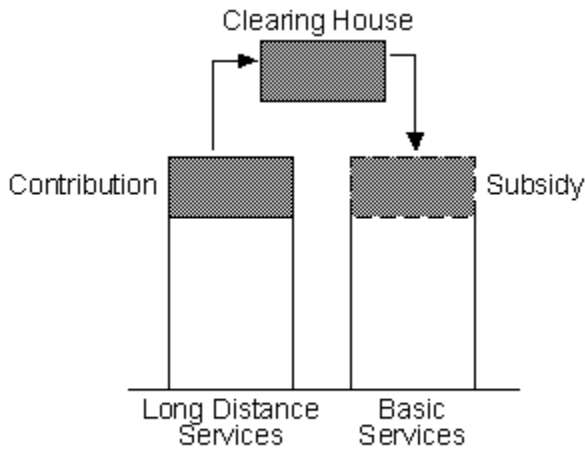
**Example of Subsidy Flow**

The example uses long distance services and basic local services to illustrate customers from one service subsidizing customers of second service. The intent of the chart is to illustrate the mechanism and not to give a number.

## **Transition Idea #5**

### **Basis for Subsidy: Subsidies Under Price Regulation, cont.**

**B. What's the new mechanism?**



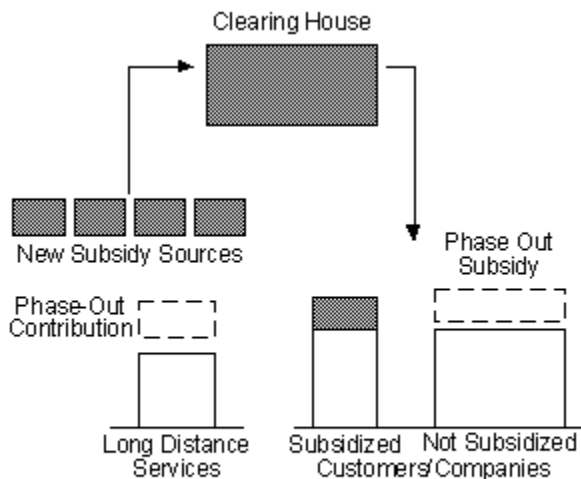
**Create a Clearing House**

**Create a Clearing House:**

Designate a subsidy clearing house. For example, put out for bid or choose one or more government agencies.

Companies that collect subsidies send them to the clearing house. The clearing house then sends them back to the companies that collected them.

The customer bills remains as before.



**Phase Out Old Sources and Retarget Subsidies**

**Transition from cost allocation to price regulation:**

On day one, the subsidy amount is the same as it was on the last day before the transition started.

Companies or customers with costs below market price or target price are not subsidized. Those with costs above receive a subsidy. In the transition, if the new subsidy amount is close to the old one, then there is a flash cut between the old and new mechanisms. If the new subsidy amount is a large increase or decrease, there is a period over which the new subsidy is phased in.

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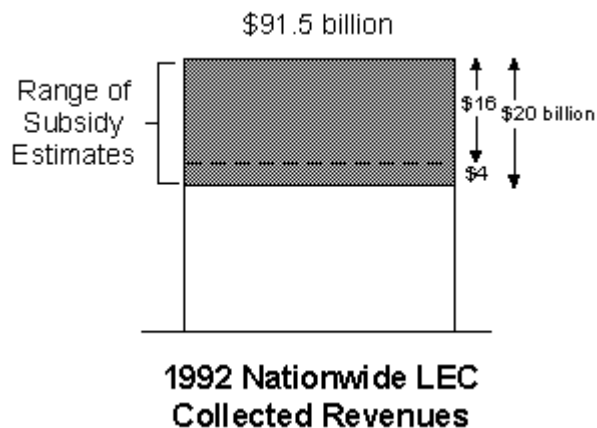
## **Transition Idea #6**

### **Targeted Subsidies: Based on Customer Need**

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- Objective:** To provide subsidies only to customers who need them.
- Importance:** Allows price deaveraging and reduces the size of the total subsidy.
- Assumptions:**
- Subsidies are still needed for some customers.

**A. What's the size?**



The nationwide local exchange carrier (LEC) collected revenues from customers and from interconnecting companies are \$91.5 billion. Estimates of subsidies may include more items and range from \$4 billion to \$20 billion. The intent of this example is to illustrate a mechanism, and not to justify an exact number.

On average, business customers subsidize residential customers, urban customers subsidize rural customers, long distance customers (interexchange carrier, or IXC, and state toll) subsidize local customers.



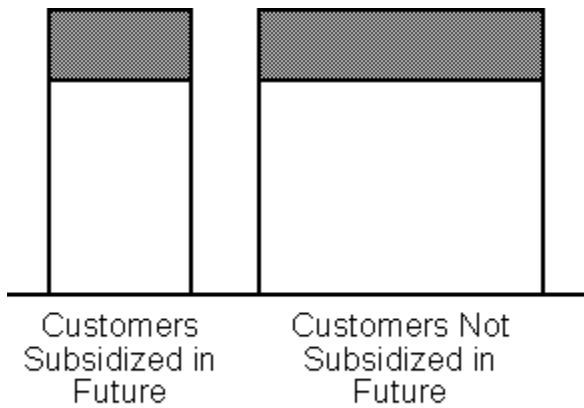
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## **Transition Idea #6**

### **Targeted Subsidies: Based on Customer Need**

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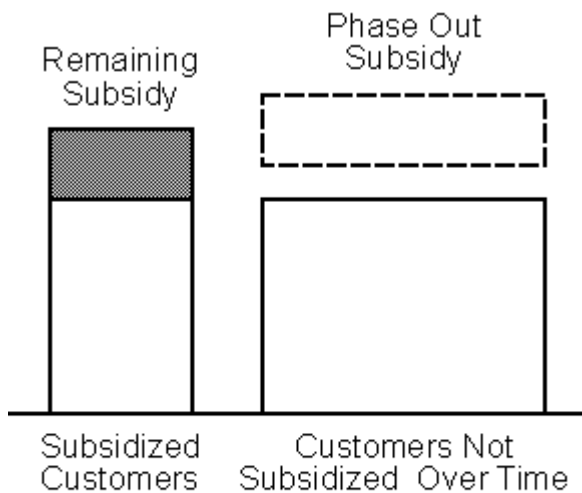
#### **B. What's the new mechanism?**



#### **Start of Transition**

On day one, the subsidy amount is the same as it was on the last day before the transition started. The customer bills remain unchanged.

Establish a funding mechanism to phase out untargeted dollars. Prices increase to cost for unsubsidized customers. Subsidy funding decreased accordingly.



#### **Example of Phase-Out of Some Customer Subsidies**

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## **Transition Idea #7**

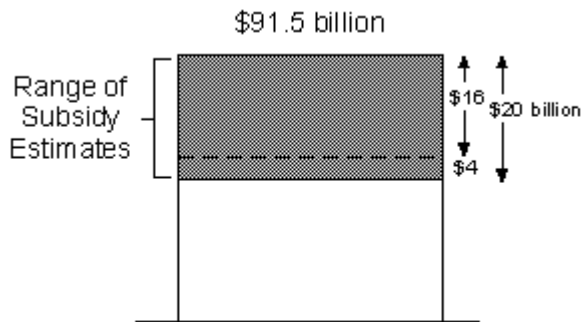
### **Targeted Subsidies: Providers of Last Resort**

**Objective:** To compensate providers of last resort for extra costs they incur.

**Importance:** Allows introduction of new technologies and services to customers or areas that might not otherwise get them.

- Assumptions:**
- Targeted subsidies only for service providers of last resort and their customers.
  - Currently, there are additional subsidies not covered not covered by the provider of last resort payment. These other subsidies are phased out over time.

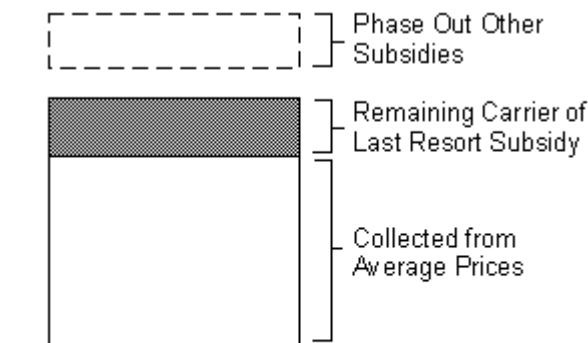
**A. What's the size?**



**1992 Nationwide LEC Collected Revenues**

The nationwide local exchange carrier (LEC) collected revenues from customers and from interconnecting companies are \$91.5 billion. Estimates of subsidies may include more items and range from \$4 billion to \$20 billion. The intent of this example is to illustrate a mechanism, and not to justify an exact number.

**B. What's the new mechanism?**



**Subsidize Providers of Last Resort Only**

On day one, prices reflect the subsidy to the provider of last resort. Existing subsidies decrease, leaving only the provider of last resort costs to be covered.

Existing subsidies decrease by the amount equal to the carrier of last resort costs. The new subsidy replaces remaining subsidy amount.

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## Facing the Future: Initial Ideas for Restructuring Subsidies

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### Initial Ideas for Restructuring Subsidies:

The ideas presented in this paper are only transitional solutions to the subsidy issues. In the future, as markets and technologies continue to change, there will remain a need for long-term solutions.<sup>3</sup>

For example, the potential deployment of an advanced broadband information infrastructure, or "information superhighway," complicates the subsidy issue by challenging the definition of universal service.<sup>4</sup> If the decision is that a high percentage of customers should have broadband services or that a specific group gets assistance, there are new issues that arise. The following questions cover some of these issues:

- Which customers should be subsidized for broadband?
- Should the subsidy be limited to providing access to broadband services or extended to provision of broadband services?
- What is the cost of universal service versus targeted subsidies for broadband services?
- Do we continue the subsidy for existing services (old technologies) as broadband is made available?
- How do we ensure against "electronic redlining"?
- What is the basis for a targeted subsidy for broadband services? For example, should subsidies initially be targeted to public institutions, such as schools and hospitals? To rural areas? To high-cost customers regardless of location? What is the cost of these targeted broadband subsidies?

In addition, there also will be a need for subsidy mechanisms that can work in areas with and without competition, and in both regulated and non-regulated environments. Some of the issues that need to be addressed are as follows:

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<sup>3</sup> See Weinhaus, Carol; Pitts, Teresa; *et al.*, *Abort, Retry, Fail? The Need for New Communications Policies*, Telecommunications Industries Analysis Project, Public Utility Research Center, University of Florida, July 11, 1994.

<sup>4</sup> Weinhaus, Carol; Makeeff, Sandra; Copeland, Peter; *et al.*, *Redefining Universal Service; The Cost of Mandating the Deployment of New Technology in Rural Areas*, Telecommunications Industries Analysis Project, Public Utility Research Center, University of Florida, July 18, 1994.

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## Facing the Future: Initial Ideas for Restructuring Subsidies, cont.

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- What is the new basis for subsidies? Is it competitive market price? Nationwide average price? Incremental costs and overhead in non-competitive markets?
- Is there a method that will apply to all markets, allowing markets to shift between competitive and non-competitive without the need for also revising the subsidy mechanism?
- What happens to the old subsidies?
- Who gets the new subsidy? Is it customers, service providers, or both? Is it for all or just targeted groups?

These issues and others are part of ongoing research by the Telecommunications Industries Analysis Project. It is possible to model impacts of various subsidy choices to promote discussion of the underlying issues.

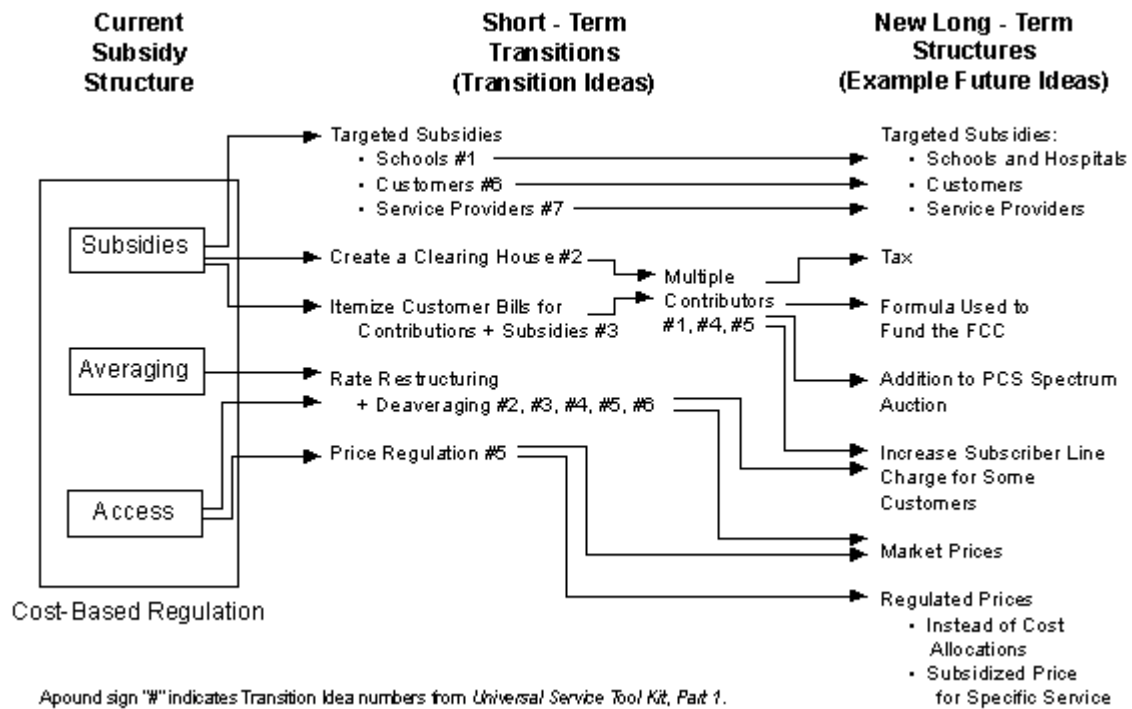
### Steps for Getting from Here to There

**Figure 2** indicates potential steps from the current system (which bundles everything together) to short-term transitions that lead to long-term structures. The intent is to examine structures that better fit an environment that includes some areas with competition and other areas without competition. The arrows indicate the flow from one transition to the next.<sup>5</sup>

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<sup>5</sup> Before the introduction of competition and the break-up of AT&T, the traditional telephone industry had subsidies inextricably intertwined with one another and with a cost accounting system used to regulate the entire industry. Pressures from outside this system have led to the current uncoupling of some support mechanisms, but not all. Deaveraging of prices, examination of subsidy mechanisms, and debates over the amount of access charges are all indications of the dismantling of the old structure.

# Facing the Future: Initial Ideas for Restructuring Subsidies, cont.



**Figure 2:**  
Flow from Current Subsidy Structure with  
Transitions Leading to New Long-Term Structures

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## Appendix A: Data Sources and Calculations

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### Local Exchange Carrier Statistics:

**Figure 3** develops LEC and IXC statistics. This includes total LEC revenues, the number of access lines, and the development of the SLC rates.

Sources: Federal Communications Commission (FCC), *Statistics of Communications Common Carriers*, 1992/1993 Edition, U.S. Government Printing Office, Washington, DC, Table 8.1, page 301. Cited as FCC, *Statistics*.

Data specifications and reporting requirements for the Automated Reporting Management Information System (ARMIS) Quarterly Report (FCC Report 43-01) are described in the *Automated Reporting Requirements for Certain Class A and Tier 1 Telephone Companies (Part 31, 43, 67, and 69 of the FCC's Rules)*, Erratum, CC Docket 86-182, DA 89-1010, Released August 29, 1989. Used for the Tier 1 company data, 1992. Cited as *ARMIS Report 43-01*.

FCC, Industry Analysis, Division, *Telecommunications Industry Revenue: TRS Fund Worksheet Data*, March 1994. Data reported in compliance with FCC, *In the Matter of Telecommunications Relay Services, and the Americans with Disabilities Act of 1990*, CC Docket No. 90-357, *Third Report and Order*, FCC No. 93-357, July 20, 1993. Cited as FCC, *TRS Summary*.

National Exchange Carriers Association (NECA), *Universal Service Fund (USF) Filing*. Data specifications from the FCC pursuant to *Establishment of a Program to Monitor the Impact of Joint Board Decisions*, DA 89-503, Released May 12, 1989.

NECA, *Lifeline Filing*. Based on data filed for Tariff F.C.C. No. 5 (Access Service), pursuant to the 1989 *Access Tariff Filings*, Special Permission No. 88-538 and No. 89-506, and FCC *In the Matter of MTS and WATS Market Structure*, CC Docket Nos. 78-72 and 80-286, *Report and Order*, December 12, 1988.

Data filed in accordance with the FCC, *Commission Requirements for Cost Support Material to be Filed with 1989 Annual Access Tariffs*, 4 FCC Rcd 1662, *Order (Tariff Review Plan)*, December 30, 1988. Used for the Tier 2A and Tier 2B company data.

### **Transition Idea #1A - Estimates for LEC Subsidies**

The estimated subsidy range of \$4 billion to \$20 billion is for illustrative purposes only. The \$4 billion is developed in **Figure 3, Line 30**. It includes interstate subsidies for

**Figure 3**  
**Development of 1992 LEC and IXC Revenues, Estimated Interstate Subsidies, and Number of Access Lines**

Line:	1992 LEC and IXC Statistics:	Billions:	Percent of Total:	Source:
<i>Number of Access Lines:</i>				
1	Total for Development of Ratios, FCC	140,305,827		FCC, <i>Statistics</i> , Table 2.5, page 21.
2	Special, FCC	6,708,337	4.8%	FCC, <i>Statistics</i> , Table 2.5, page 21.
3	Public, FCC	1,543,776	1.1%	FCC, <i>Statistics</i> , Table 2.5, page 20.
4	Mobile, FCC	82,062	0.1%	FCC, <i>Statistics</i> , Table 2.5, page 20.
5	Remaining, FCC		94.1%	
6	Total for Development of Rations, ARMIS	129,091,585		FCC, <i>ARMIS Report 43-01</i> , Sum of lines 2090, 2100, 2110, and 2120.
7	Residential, ARMIS	88,398,781	64.4%	FCC, <i>ARMIS Report 43-01</i> , Line 2110.
8	Residential, Lifeline, ARMIS	3,535,499	2.6%	FCC, <i>ARMIS Report 43-01</i> , Line 2110.
9	Business, Single-Line, ARMIS	4,216,822	3.1%	FCC, <i>ARMIS Report 43-01</i> , Line 2090.
10	Business, Multi-Line, ARMIS	32,940,483	24.0%	FCC, <i>ARMIS Report 43-01</i> , Line 2120.
11	Tier 1 LECs	130,165,000		FCC, <i>TRS Summary</i> .
12	Total Industry	142,088,000	100.0%	FCC, <i>TRS Summary</i> .
13	Residential	91,518,879	64.4%	Apply ARMIS ratios to <i>TRS Summary</i> .
14	Residential, Lifeline	3,660,287	2.6%	Apply ARMIS ratios to <i>TRS Summary</i> .
15	Business, Single-Line	4,365,658	3.1%	Apply ARMIS ratios to <i>TRS Summary</i> .
16	Business, Multi-Line	34,103,141	24.0%	Apply ARMIS ratios to <i>TRS Summary</i> .
17	Special	6,793,547	4.8%	Apply ARMIS ratios to <i>TRS Summary</i> .
18	Public	1,563,385	1.1%	Apply ARMIS ratios to <i>TRS Summary</i> .

**Figure 3**  
**Development of 1992 LEC and IXC Revenues, Estimated Interstate Subsidies, and Number of Access Lines, cont.**

Line:	1992 LEC and IXC Statistics:	Billions:	Percent of Total:	Source:
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18	Mobile	83,104	0.1%	Apply ARMIS ratios to TRS Summary.
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*Revenues, LEC and IXC Cash Flows:*

	Subscriber Line Charge (CLS) Calculations:			
20	Tier 1 Subscriber Line Charge (CLS)	6,034,393,000		FCC, TRS Summary.
21	Calculated SLC	6,587,138,114		Line 6 (Line 2 / Line 1)
22	LEC Collected Revenues (including SLC)	68,166,000,000		FCC, TRS Summary.
	IXC Revenues:			
23	Total IXC	59,372,000,000		FCC, Statistics, Table 1.4, page 7.
24	Total Access (excludes SLC)	23,300,000,000		FCC, TRS Summary.
25	Carrier Common Line Charge (CCLC)	2,900,000,000		FCC, TRS Summary.
26	Interstate Subsidies	976,000,000		Line 27 + Line 28 + Line 29
27	USF	607,000,000		NECA, USF Filing.
28	Lifeline	109,000,000		NECA, Tariff Review Plan, COS1 (H).
29	WDEM	260,000,000		NECA, Lifeline Filing.
30	Interstate Subsidies and CCLC	3,876,000,000		Line 25 + Line 26
31	IXC Access (excludes CCLC, Interstate Subsidies, SLC)	19,424,000,000		Line 24 - Line 25 - Line 26
32	Revenues Kept by IXCs	36,072,000,000		Line 23 - Line 30 - Line 31



**Figure 3****Development of 1992 LEC and IXC Revenues, Estimated Interstate Subsidies, and Number of Access Lines, cont.**

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<b>Line:</b>	<b>1992 LEC and IXC Statistics:</b>	<b>Billions:</b>	<b>Percent of Total:</b>	<b>Source:</b>
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33	Revenues Kept by LECs	91,466,000,000		Line 22 + Line 30 + Line 31
34	Total LEC and IXC	127,538,000,000		Line 32 + Line 33

*Estimated Subscriber Line Charge Rates:*

35	Average Monthly SLC (Business and Residential)	3.86		(Line 21 / Line 12) / 12
36	Estimated Monthly Interstate Subsidy per Line	2.27		(Line 30 / Line 12) / 12
37	New Average SLC	6.13		Line 35 + Line 36

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## Appendix A: Data Sources and Calculations, cont.

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universal service fund (USF), Lifeline, and weighted dial equipment minutes (WDEM). It also includes the interstate carrier common line charge (CCLC). The \$20 billion is from a local exchange carrier sponsored study by Monson and Rolfs. For purposes of discussion, we used this as an upper bound. The whole question of what constitutes a subsidy is a matter of debate. Furthermore, even if the definition is agreed upon, there is another area of controversy of what the actual dollar amounts are. The illustration only covers local exchange carrier subsidies. There is currently a debate over what services should be subsidized (i.e., telephone, cable TV, computer access, etc.).

Source: Monson, Calvin S., and Rohlfs, Jeffrey H.; *The \$20 Billion Impact of Local Competition in Telecommunications*, Strategic Policy Research, Bethesda, MD, July 16, 1993.

### **Transition Idea #1B, Option 1 - Contributions from Multiple Equipment Suppliers and Service Providers:**

**Figure 4** develops percents for new funding sources based on value of shipments for equipment suppliers and revenues for service providers. These are applied to the total subsidy to produce the amount of subsidy contribution.

Sources: U.S. Department of Commerce, International Trade Administration, *U.S. Industrial Outlook*, 1994, 35th Edition, January 1994, pages 26-1, 28-1, 30-1, and 31-6.

*Statistics of Communications Common Carriers*, Table 8.1, page 301.

FCC, *TRS Summary*.

### **Transition Idea #1B, Option 2 - Contributions Based on 1994 FCC Funding Formula:**

**Figure 5** calculates the percent of subsidy contribution based on 1994 funding fees for the FCC.

Source: Estimates from Walker Feaster, Managing Directors Office, FCC, Washington, DC, June 28, 1994. See also FCC, *In the Matter of Implementation of Section 9 of the Communications Act, Assessment and Collection of Regulatory Fees for the 1994 Fiscal Year*, MD Docket No. 94-19, *Notice of Proposed Rule Making*, FCC Order No. 94-46, March 11, 1994; and *Report and Order*, FCC Order No. 94-140, June 8, 1994.

**Figure 4**  
**Percent of Contribution from Communications Equipment Suppliers and Service Providers**

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Line:	1992 Industries:	Dollars:	Percent of Total:	Source:
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*Value of Shipments:*

1	Computers and Peripherals	52,100,000,000	21.6%	<i>U.S. Industrial Outlook, Trends and Forecasts, page 26-1.</i>
2	Telecommunications Equipment	35,350,000,000	14.7%	<i>U.S. Industrial Outlook, Trends and Forecasts, page 30-1.</i>
3	Satellite Ground Equipment	1,400,000,000	0.6%	<i>U.S. Industrial Outlook, Estimates of U.S. Space Commerce Revenues, page 28-1.</i>
4	Satellite Mobile Equipment	350,000,000	0.1%	<i>U.S. Industrial Outlook, Estimates of U.S. Space Commerce Revenues, page 28-1.</i>

*Revenues*

5	Total Local Exchange Carrier	68,166,000,000	28.3%	<i>FCC, TRS Summary.</i>
6	Total Interexchange Carrier	59,372,000,000	24.7%	<i>FCC, Statistics, Table 1.4, page 7.</i>
7	Total Cable Television	24,000,000,000	10.0%	<i>U.S. Industrial Outlook, Trends and Forecasts, page 31-6.</i>
8	Total	240,738,000,000	100.0%	Sum of Line 1 through Line 7

**Figure 4**  
**Percent of Contribution from Communications Equipment Suppliers and Service Providers**

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**Figure 5**  
**Percentages Based on 1994 FCC Funding Formula**

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<b>Line:</b>	<b>Industry:</b>	<b>Estimated 1993 Fee in Millions of Dollars</b>	<b>Percent of Total</b>
1	Cable Television	19.7	35.0%
2	Local Exchange Carriers	18.3	32.5%
3	Interexchange Carriers	18.3	32.5%
4	Total	56.3	100.0%

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**Transition Idea #1B, Option 3 -  
Estimated Interstate SLC Rate**

In Figure 3, Lines 35, 36, and 37 develop the amount of the estimated interstate SLC rate. This is the result from dividing the \$4 billion 1992 interstate subsidy in Line 30 by the total number of access lines in Line 12. This result is further divided by 12 to produce a monthly rate of \$2.27. This estimate is an average that assumes that all customer pay the same amount per line regardless of what their actual costs are.

**Transition Idea #1B, Option 4 -  
Estimated Amount from PCS Spectrum Auctions**

The amount for the PCS spectrum auctions is only an estimate. The actual amount will be determined when the auction occurs. The administration's original estimate was \$4.4 billion. The \$7.2 billion is from the Congressional Budget Office.

Source: The concept of PCS spectrum auctions funding public schools and hospitals from Henry Geller, personal communication, 1994.

Gasman, Lawrence D., *The Wall Street Journal*, "Free Markets for Telecom: Create a Spectrum of Competition," June 9, 1994, page A14.

**Transition Idea #6A and #7A -  
Targeted Subsidies: Based on Customer Needs or  
Provider of Last Resort Requirements**

The same chart is used in both examples. The intent is to give the magnitude of nationwide LEC collected revenues from customers and from interconnecting companies - \$91.5 billion. The subsidy range is (discussed earlier in this section) indicates that subsidies exist but there is debate over what constitutes a subsidy, who should receive them, and what's the actual amount.