Telecommunications Industries Analysis Project — A Research Agenda for the 90s

Public Utility Research Center
Annual Conference
Gainesville, Florida
April 29, 1994

Telecommunications Industries Analysis Project

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Sources

In 1993, the Telecommunications Industries Analysis Project produced four papers that served as the basis for a NARUC workshop and for meetings with FCC staff (commissioners' and Common Carrier Bureau), Congressional staffs, the Congressional Research Service, and NTIA. For copies of the papers, use the request form on page 15. The papers are as follows:

  
  An examination of the public policy issues associated with the emerging market structures for advances communications. Analyzes a specific broadband deployment issue for only one segment of the multi-vendor environment — the cost of local exchange carrier deployment of a broadband network. Discusses public policy issues that need to be resolved.

  
  An overview of how communications policies might be changed to focus on the customer. Multiple viewpoint are given.

  
  Shows the nationwide impact of urban/rural deaveraging. Gives the magnitude of the amount rural customers pay for the full cost of providing service. Also models two possible alternatives to current rural supports: one changes the targeting mechanism and the other changes the funding source.
Sources for Presentation, cont.


A simple set of charts show that new technologies are evolving and blurring traditional boundaries among industries that resulted from distinct technologies — offset press (publishing), telephone (long distance and local exchange), broadcast (radio, television, cable television), and computer (computer hardware and software). Furthermore, service definitions are blurring as various companies form hybrids across traditional boundaries.

For additional information on the Telecommunications Industries Analysis Project, contact Carol Weinhaus, the Project Director, at the following address: Meeting House Offices, 121 Mt. Vernon Street, Boston, MA, 02108; telephone: (617) 367-6909; fax: (617) 367-7127.

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List of Participants in the Telecommunications Industries Analysis Project, 1994

State Regulators
NARUC representatives from:
Iowa Utilities Board
New York Public Service Commission
Washington Transportation Commission

Regional Holding Companies
Ameritech
Bell Atlantic
Bell South
NYNEX
Pacific Telesis
Southwestern Bell
U S WEST

Large Independents
GTE
Sprint Local Telecom Division
Anchorage Telephone Utility

Interexchange Carriers
AT&T
Sprint

Foreign Domestic
NTT America

Materials Manufacturers
Corning

Assisting with public data:
Federal Communications Commission
National Exchange Carrier Association

Sponsors:
Corporation for Public Broadcasting
Background on the Telecommunications Industries Analysis Project

Informed Policy Debates:
The goal of the Telecommunications Industries Analysis Project is to provide information to support the development of alternative telecommunications 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.

Broad Representation on Project:
The project is a neutral forum of communications industry stakeholders exploring multiple viewpoints of selected issues. The current forum includes local exchange carriers (LECs), interexchange carriers (IXCs), equipment manufacturers, and federal and state regulators. In the next phase, this forum would be expanded to include other communications industry representatives, such as competitive access providers, cable television companies, computer companies, or publishers.

Development of Alternative Policies:
The forum has developed a database and computer software models to analyze issues. The existence of a database and computer software models may not resolve differences of what the data or the results of the modeling process mean. It does, however, allow one to concentrate on underlying issues rather than on data sources by providing a common language. All data, analysis methods, and results are public.
New Alliances, Traditional Industries

Traditional Industries

- Publishing
- Local Exchange Companies
- Long Distance Companies
- CATV
- Television and Radio Stations and Networks
- Computer Hardware and Software

Examples of Companies

- AT&T purchase of NCR and McCaw Cellular; Partners with TCI
- Southwestern Bell purchase of Hauser Communications
- Cox owns the Atlanta Journal and Constitution; Cox and TCI buy Teleport
- United purchase of Sprint and Centel
- Microsoft and Intel develop two-way communications equipment for CATV
- Time-Warner and Cablevision announce plans to connect with long distance
- Prodigy, Compuserve, Internet, etc.

Source: Square Pegs and Round Holes, page 6.

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Mismatch between Government Policies and Industry Structures

<table>
<thead>
<tr>
<th>Converging Technologies</th>
<th>Digital using optical, coaxial, and wireless transmission, with distributed computing, cell-based protocol and switching, and massive storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converging Markets</td>
<td>Integrated, customized solutions across geographic and political boundaries</td>
</tr>
<tr>
<td>Converging Industries</td>
<td>Overlapping, hybrid companies and partnerships</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Government Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copyright</td>
</tr>
<tr>
<td>Cross-Ownership Restriction</td>
</tr>
<tr>
<td>Antitrust</td>
</tr>
<tr>
<td>Price, Earnings, and Entry Regulation</td>
</tr>
<tr>
<td>Patents</td>
</tr>
<tr>
<td>Federal and State</td>
</tr>
</tbody>
</table>

| Copyright                   |
| Cross-Ownership Restriction |
| Antitrust                   |
| CATV Pricing                |
| Licensing, Franchising, and Standards |
| Federal and Local           |

Source: Square Pegs and Round Holes, page 7.

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Who Decides What in Communications Policy?


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Potential Impact of Deaveraging 1991 Urban and Rural Annual Customer Payments Per Line

Urban

$-77$

Rural

Nationwide

+ $316$

Rural

REA

+ $300$


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Potential Alternative: Deaverage and Target Support to Preserve 1991 Rural Service Penetration

Averaging and Other Rural Supports to be Paid by Rural Customers = $8.0 billion

Potential Targeted Support to Customers = $0.7 billion (7.8% of Current Support)

Potential Loss in Nationwide Average Penetration = 7.3%


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Potential Alternative: Fund Rural Support from Traditional and Non-Traditional Communications Industries

Traditional Telephone Industry (LEC and IXC) $116.6 billion 63.4%
CATV $23.0 billion 16.4%
CAP $0.18 billion 0.2%

Legend
LEC: Local Exchange Carrier
& IXC: Interexchange Carrier
CATV: Cable Television
CAP: Competitive Access Provider

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Modeling a Fiber Optic Infrastructure Deployment:
Cost per Line per Month of Broadband Capable Lines — 100% Capable and 0% Equipped

Benchmark: $54.72*
1992 National Average Telephone Revenue

*Derived from total Tier 1 LEC operating revenues (including basic service, state toll, and access).
Note: This cost per line is based on a specific architecture and deployment schedule. Other technologies, policy changes, and deployment schedules will result in a higher or lower cost per line.
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Modeling Full Deployment of Broadband Services: Cost per Line per Month of Broadband Capable Lines — 100% Capable and 100% Equipped

- Benchmark: $54.72* 1992 National Average Telephone Revenue

*Derived from total Tier 1 LEC operating revenues (including basic service, state toll, and access).

Note: This cost per line is based on a specific architecture and deployment schedule. Other technologies, policy changes, and deployment schedules would result in a higher or lower cost per line.

Cumulative Investments for Three 20-Year Deployment Scenarios

Dollars in Billions: 20-Year Scenarios:

- $440 At current spending levels for additions to facilities.
- $420 Equipping all customers with broadband services.
- $230 Providing a fiber optic infrastructure.

The $230 billion is the estimated cost for the entire network — including loop, switching, and interoffice transport for both business and residential. The components of the $230 billion are as follows:

<table>
<thead>
<tr>
<th>Investment Categories</th>
<th>Amount (billions):</th>
<th>Percent of Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop Electronics</td>
<td>$75</td>
<td>33%</td>
</tr>
<tr>
<td>Cable and Wire</td>
<td>$126</td>
<td>54%</td>
</tr>
<tr>
<td>Circuit Equipment</td>
<td>$27</td>
<td>12%</td>
</tr>
<tr>
<td>Digital Switching</td>
<td>$2</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$230</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Beyond Future Shock, pages 29 and 42.

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Potential Alternative:
Additional Revenue Sources to Fund Deployment —
1992 Interactive Multi-Media Revenue Sources

*This number includes the gross cost of goods and some small percentage of this $51 billion would apply to communications.

Source: Beyond Future Shock, page 33.

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