WILLIAM L. FITZSIMMONS

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EDUCATION

Ph.D., Resource Economics, UNIVERSITY OF MASSACHUSETTS, Amherst, MA, 1986

Emphasis: econometrics, natural resource economics, microeconomics, project evaluation, and industrial organization

M.S., Resource Economics, UNIVERSITY OF MASSACHUSETTS, Amherst, MA, 1981

Emphasis: project evaluation, and economics of forestry

B.S., Economics, STATE UNIVERSITY OF NEW YORK AT STONY BROOK, NY, 1975

PRESENT POSITION

LECG, Emeryville, CA, December 1993 - present
Director, January 1998-present
Senior Managing Economist, January 1997 - December 1997
Managing Economist, December 1993 - December 1996

- Construct financial simulation models for the analysis of telecommunications issues, including interconnection policies and competitive entry into the local exchange
- Analyze domestic and international telecommunications issues and provide expert witness testimony for regulatory proceedings and litigation
- Work with telecommunications clients to develop and improve cost models
- Assess impacts to telecommunications firms and competition from uneconomic or unlawful policies and practices

PROFESSIONAL EXPERIENCE

BELLSOUTH CORPORATION, Atlanta, GA, January 1988 - December 1993
Senior Economist, April 1992 - December 1993
Corporate Economist, January 1988 - April 1992

- Applied the tools of economic, financial and quantitative analysis to the identification and solution of a broad range of business problems, and developed recommendations for use by senior management in making policy decisions

- Key role in building model of the telephone company that interconnects behavioral equations for capital spending, expenses, real revenues, regulation, and a production function
- Based on model output, formulated and presented policy recommendations and contingency plans to meet expected changes in BellSouth's business environment, such as more severe competition, alternative regulation, and investment in multimedia
- Assessment of potential impacts of wireless on traditional wireline and cellular services
- Analyzed corporate level impacts of prospective mergers and acquisitions
- Derived econometric model that is used to create capital spending targets for the Telco and explore network investment options
- Analyzed corporation's advertising and publishing business to assist with derivation of a new pricing strategy
- Estimated the financial impacts of proposed permutations of interstate price caps
- Provided financial modeling analysis for the tender and bid process for international investments

AT&T, Bedminster, New Jersey, June 1986 - January 1988
Market Analysis and Forecasting

- Developed econometric forecasting models for telecommunication services; identified direction and financial implications of customer migration among private line services; wrote principal components regression software; presented technical and theoretical papers and seminars

PAPER FILED WITH FCC

"LECG Financial Simulation Model of Effects of FCC Policies on Large Local Exchange Carriers," by Dr. William Fitzsimmons, Dr. Robert Crandall, Professor Robert G. Harris, and Professor Leonard Waverman, Paper filed with FCC, August 1996

PRESENTATIONS AND REGULATORY PROCEEDINGS

Expert written testimony and cross-examination on behalf of US West in interconnection arbitration proceedings in South Dakota (Docket No. TC96-184), Montana (Docket No. D96.11.200), Wyoming (Docket Nos. 72000-TS-96-95 and 70000-TS-96-319), New Mexico (Docket No. 96-411-TC), North Dakota (Docket No. PU-453-96-497), Idaho (Docket Nos. USW-T-96-15 and ATT-T-96-2), and Colorado (Docket No. 96S-331T) in 1997

Participated in cost workshops on behalf of US West with the Utah Division of Public Utilities and Minnesota Commission in 1996, 1997, and 1998

Expert written testimony and cross-examination on behalf of US West in consolidated cost dockets in Arizona (Docket Nos. U-3021-96-448, 1996), Iowa (Docket No. RPU-96-9, 1997), New Mexico (Docket Nos. 96-310-TC and 97-334-TC, 1998), Minnesota (Docket Nos. P-442, 5321, 3167, 466, 421/CI-96-1540, 1998), and Utah (Docket No. 94-999-01, Phase III, Part C)

Expert testimony and cross-examination in universal service proceedings on behalf of U S WEST in New Mexico (Docket Nos. 96-310-TC, 97-334-TC), Minnesota (MPUC Docket No. P-999/M-97-909), Wyoming (General Order No. 81), Idaho (Case No. GNR-T-97-22), and Nebraska (Application No. C-1633) in 1997 and 1998

Expert declarations in support of motions for summary judgment by U S WEST in Iowa (June 1997) and Washington (January 1998)

Presentation on "TELRIC Concepts and Applications," Basics of Regulation Conference, New Mexico State University Center for Public Utilities and the National Association of Regulatory Commissioners, Albuquerque, New Mexico, September 18, 1996

November 1998

Attachment 2a

Wire Centers, Line Counts, and Total Route Distance for Indianapolis

	Phase I	Phase II	Phase III
A. Wire Centers	IPLSIN08	ACTNIN01	DAVLIN01
	IPLSIN03	ARSNIN01	FRLDIN01
	IPLSIN02	CRMLIN01	GNFDIN01
	IPLSIN01	FSHRIN01	NBVLIN01
	IPLSIN06	GNWDIN01	SHRDIN01
	IPLSIN09	IPLSIN10	SHVLIN01
	IPLSIN18	IPLSIN21	
	IPLSIN07	MRVIIN01	
	IPLSIN04	MUNCIN01	
		NWPLIN01	
		OKLNIN01	
		PLFDIN01	
		WNTNIN01	
		ZIVLIN01	
B. Line Counts			
Residential	268,526	288,156	41,551
Business	61,630	60,133	9,360
Centrex	152,931	68,520	7,679
PBX	12,691	10,027	741
C. Total Route Distance (Miles)	59	213	70

Attachment 2b

Wire Centers, Line Counts, and Total Route Distance for Columbus

	Phase I	Phase II	Phase III
A. Wire Centers	CLMBOH11	CLMBOH23	CNWIOH83
	CLMBOH26	CLMBOH25	GVCYOH87
	CLMBOH27	CLMBOH44	HRBGOH87
	CLMBOH29	CLMBOH47	LCKBOH49
	DBLNOH89	CLMBOH86	NWALOH85
	UPAROH45	HLRDOH87	
	UPAROH48	NWRMOH66	
	WEVLOH88	WJSNOH87	
	WOTNOH88		
B. Line Counts			
Residential	262,616	191,946	65,035
Business	76,983	38,981	12,050
Centrex	116,061	24,697	3,779
PBX	20,762	5,793	1,732
C. Total Route Distance (Miles)	51	60	43

Attachment 2c

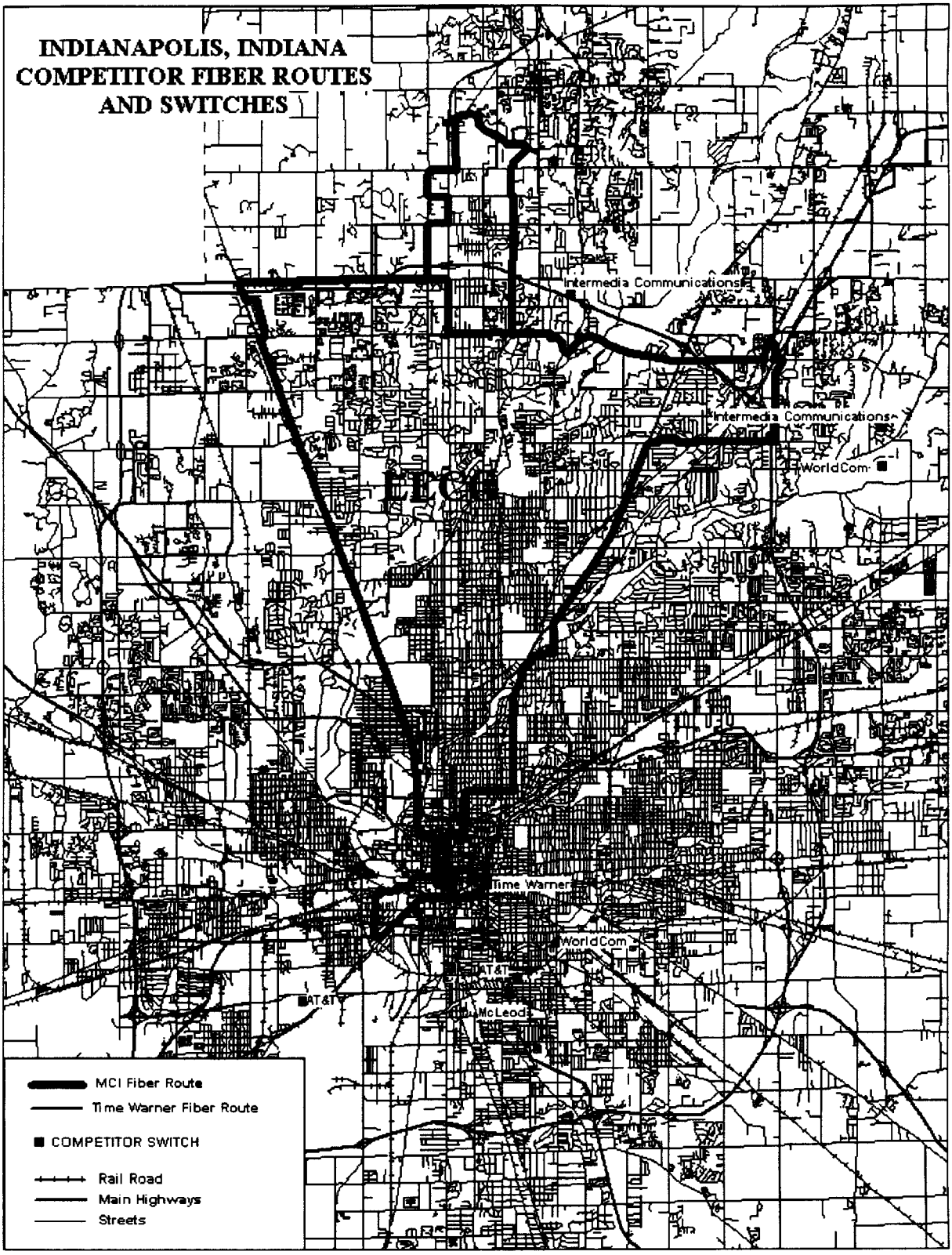
Wire Centers, Line Counts, and Total Route Distance for Toledo

	Phase I	Phase II	Phase III
A. Wire Centers	TOLDOH21	HLLDOH11	-
	TOLDOH38	MAUMOH11	-
	TOLDOH40	ORGNOH69	-
	TOLDOH47	PRBGOH14	-
	TOLDOH53	PRBGOH66	-
		TOLDOH72	-
B. Line Counts			
Residential	106,873	79,984	-
Business	23,837	20,488	-
Centrex	20,493	8,225	-
PBX	5,553	3,741	-
C. Total Route Distance (Miles)	21	40	-

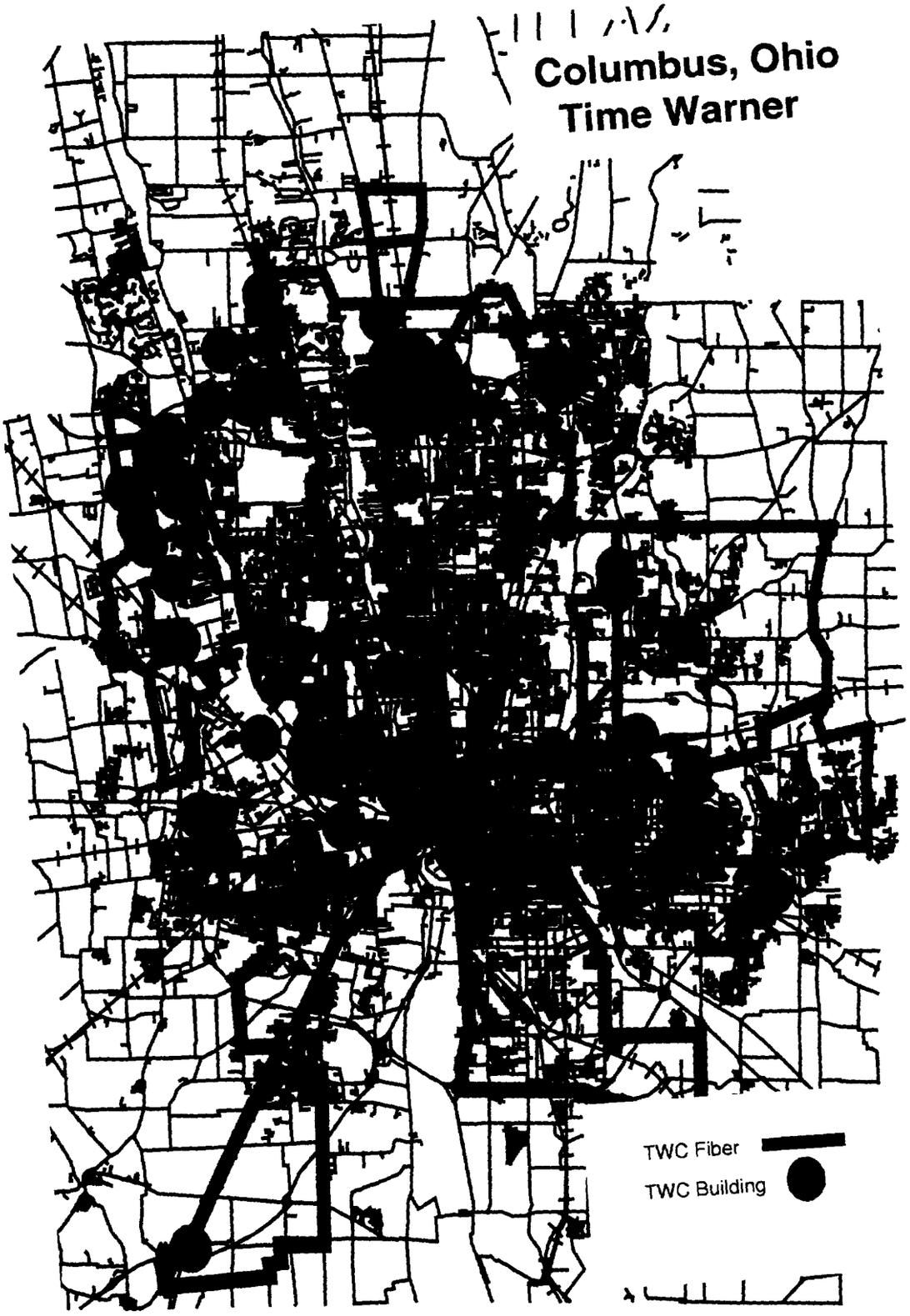
Attachment WLF-3 - UNE Loop and Resale Non-Recurring Costs

	Indiana		Ohio	
	Resale	UNE Loop	Resale	UNE Loop
Service Order - Residential	$ 21.33	$ 14.57	$ 14.07	$ 16.23
Service Order - Business	$ 30.81	$ 14.57	$ 20.33	$ 16.23
Line Connection - Residential	$ 15.80	$ 29.33	$ 8.45	$ 31.00
Line Connection - Business	$ 15.80	$ 29.33	$ 19.41	$ 31.00

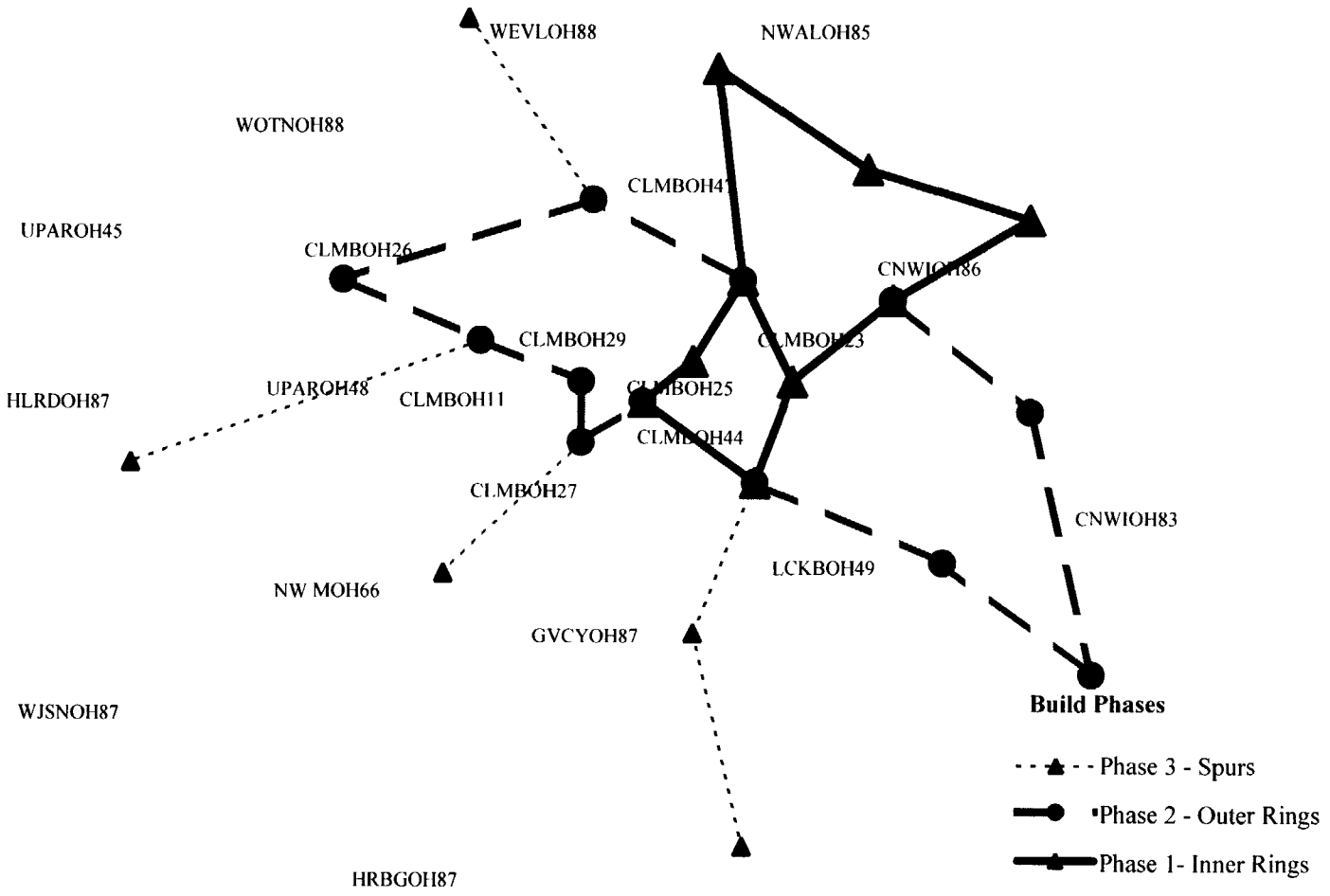
Source: Based on data provided by Ameritech


INDIANAPOLIS, INDIANA
COMPETITOR FIBER ROUTES
AND SWITCHES
Intermedia Communications
Intermedia Communications
WorldCom
LECG
Time Warner
WorldCom
AT&T
AT&T
McLeod
MCI Fiber Route
Time Warner Fiber Route
COMPETITOR SWITCH
Rail Road
Main Highways
Streets

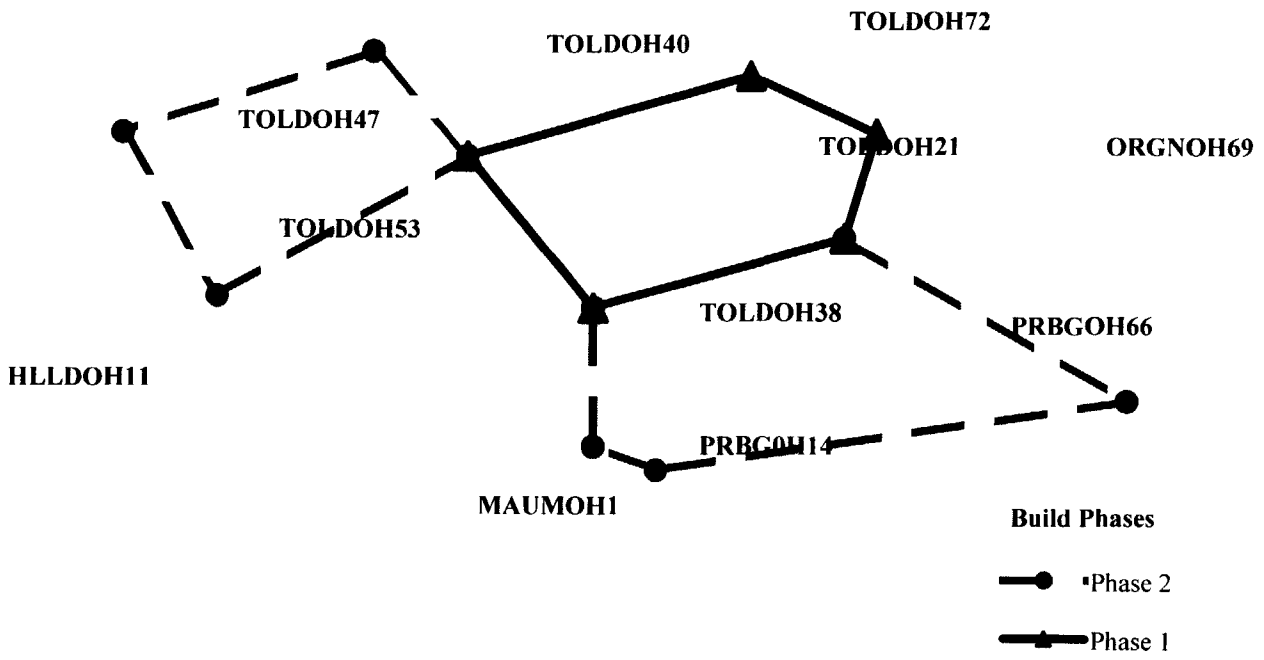
LECG



Network Buildout for Columbus



Network Buildout for Toledo



Cumulative Capital Expenditures Yr. 10 ($M)

	Indianapolis		Indianapolis W/ Anderson/Muncie	
	Tier 1	Tier 2	Tier 1	Tier 2
Cum. Capex				
Fiber and Placement	$12.0	$12.0	$17.7	$17.8
Next Generation DLC	$19.3	$9.8	$21.2	$10.6
Inner Ring Nodes	$0.8	$0.8	$0.8	$1.2
Middle Ring Nodes	$1.0	$1.0	$1.1	$0.7
CO Hub Nodes	$0.4	$0.2	$0.4	$0.2
WDCS	$4.1	$1.5	$4.0	$1.5
Equipment	$25.5	$13.3	$27.6	$14.2
Switch	$18.9	$9.5	$20.8	$10.4
Total	$56.4	$34.8	$66.1	$42.4

	Columbus		Toledo	
	Tier 1	Tier 2	Tier 1	Tier 2
Cum. Capex				
Fiber and Placement	$8.2	$8.2	$3.7	$3.7
Next Generation DLC	$16.2	$8.3	$5.1	$2.6
Inner Ring Nodes	$0.8	$1.1	$0.7	$0.7
Middle Ring Nodes	$0.6	$0.4	$0.3	$0.3
CO Hub Nodes	$0.2	$0.2	$0.1	$0.1
WDCS	$1.8	$1.3	$0.8	$0.7
Equipment	$19.6	$11.2	$7.0	$4.3
Switch	$15.8	$7.9	$4.9	$2.5
Total	$43.5	$27.3	$15.5	$10.5

UNTIL CABLE EVOLVES, AT&T TO RESELL PHONE SERVICE

By Jon Van, Tribune Staff Writer.
Published: Thursday, April 29, 1999
Section: BUSINESS
Page: 3

AT&T Corp., which is working to upgrade cable TV systems so they can carry phone calls and high-speed data, will also be reselling phone service provided by local Bell carriers like Ameritech Corp. during the years the cable upgrades will take to complete, a top executive said Wednesday.

John Zeglis, AT&T's president, told a luncheon gathering of Chicago reporters that even though the nation's biggest long-distance company is committed to delivering phone service over cable TV lines, it cannot rely upon that alone.

"Cable upgrades are multiyear projects," Zeglis said. "We need resale to get into the local market and recruit customers while we're working on cable. But we'll only do resale where it's profitable."

In 1997, AT&T began reselling Ameritech service in Chicago as well as reselling service from other Bell companies in other major cities. But it eventually pulled the plug on that effort after losing billions. That resell scheme involved buying the local Bell service for about 20 percent below retail and then reselling it to consumers under the AT&T brand.

AT&T's new effort focuses on so-called unbundled service, a form of resale with deeper discounts that has been endorsed by government regulators, but has been unpopular with Bell companies.

At present, Zeglis said, Bell Atlantic Corp. in New York and SBC Communications Inc. in San Antonio are the only two Bell companies that are seriously negotiating deals for unbundled resale.

Ameritech and other Bells continue to resist this form of resale, he said.

Consequently, there are no immediate plans

for AT&T to launch local service throughout the Chicago region. Later this year, however, some initial AT&T phone service over its newly acquired cable TV systems here will be launched in selected suburbs.

"It'll be a little like the way we launched touch tone phone service decades ago," said Zeglis. "We did that one neighborhood at a time as we upgraded each central office."

Whenever AT&T may reach a resale arrangement with Ameritech that AT&T regards as profitable, the firm will launch local service across the entire Chicago region, he said.

It will take many years before upgrades to the cable TV systems AT&T has bought or hopes to buy will be completed, Zeglis said.

One reason that AT&T last week offered $58 billion in stock and cash for the MediaOne Group cable TV systems is that it wants to control network connections to its customers rather than depend upon the Bells or other companies, Zeglis said.

"Our strategy is to go end-to-end to our customers and not get caught in the middle as we have been as a long-distance carrier where we must pay the monopolies every time we connect with a customer," he said.

That same desire to control the networks it uses to the extent possible governs AT&T's partnerships abroad with British Telecom in Europe and in Japan.

"We're not going across an ocean halfway around the world and then stop, depending on someone else," Zeglis said.

"Our strategy is end-to-end connections, and that applies to international business customers and to U.S. residential customers."

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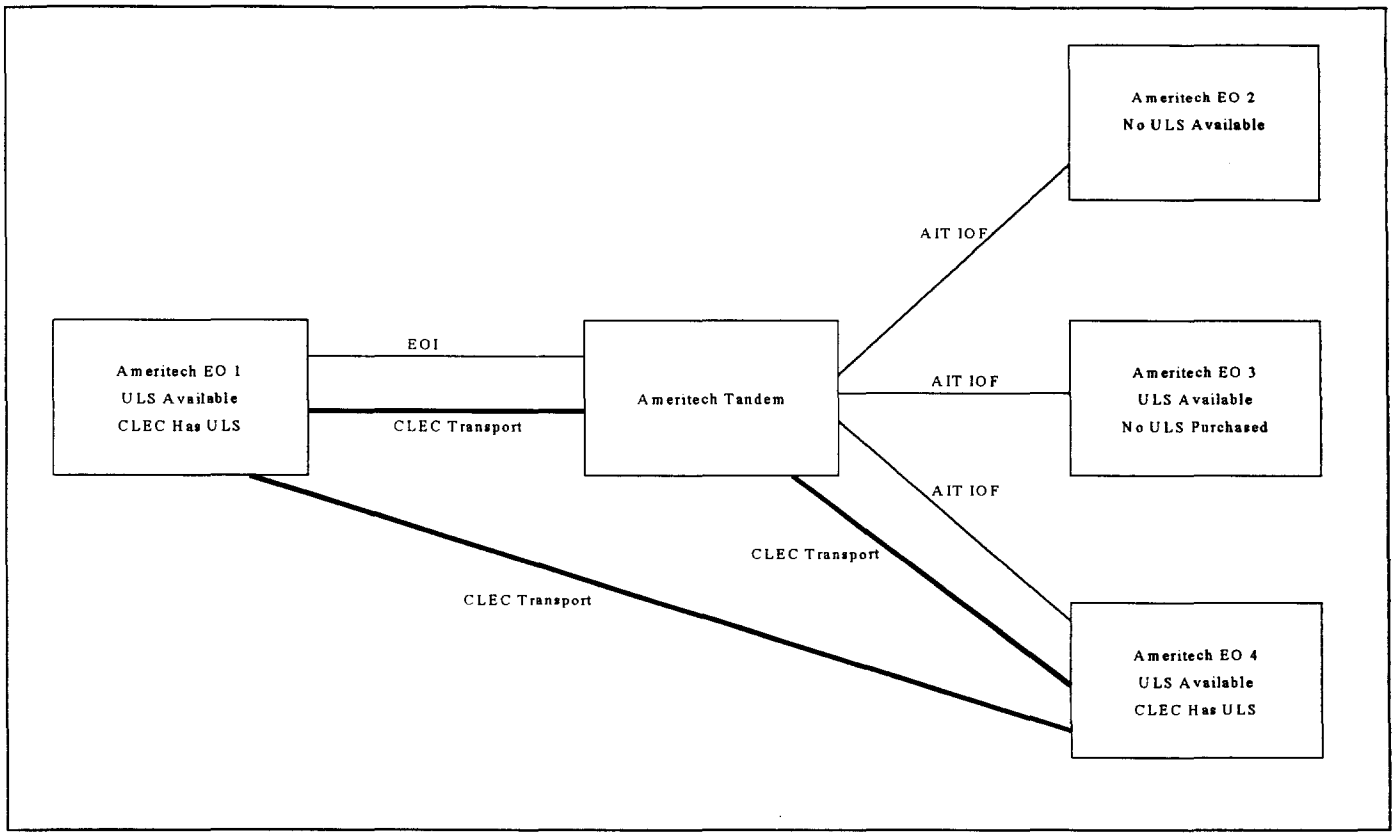

OVERVIEW:
This document addresses the methods a CLEC who subscribes to ULS would use to reach other Ameritech End Offices assuming they do not want to build an overlay network. The various scenarios describe possible configurations that the CLEC might use to enable their customers connected to ULS to reach end user customers at the terminating AIT central offices. It is limited to the portions of the CLEC's network that duplicates shared transport between Ameritech's offices as ordered by the FCC in its 3rd Report and Order. It is also very feasible for the CLEC to arrange to route its traffic to its own switches and to the networks of other incumbent LECs, CLECs and interexchange carriers.

The final section of the document provides an estimate, on a minute of use basis, of the costs a CLEC would incur in using a dedicated network to connect two Ameritech End Offices where they are providing service to their customers by subscribing to ULS from Ameritech.

All scenarios assume the following:
- CLEC would subscribe to ULS to serve their end user customers at AIT EO 1 and AIT EO 4
- CLEC would be billed the monthly recurring ULS charge and ULS usage for all calls originating from ULS line ports subscribed to by the CLEC
- CLEC would have Collocation in place at AIT EO 1, AIT Tandem, and AIT EO 4 to access its UNEs

SCENARIO 1: Traffic From AIT EO 1 to AIT EO 2
- CLEC would subscribe to EOI from AIT EO 1 to AIT Tandem
- CLEC would custom route onto the EOI Trunk(s) using routing instructions provided by the CLEC
- Transport and termination charges would apply to reach AIT EO 2 from AIT Tandem
- CLEC would be billed Reciprocal Compensation for terminating traffic to AIT EO 2

SCENARIO 2: Traffic From AIT EO 1 to AIT EO 3
- CLEC would subscribe to EOI from AIT EO 1 to AIT Tandem
- CLEC would custom route onto the EOI Trunk(s) using routing instructions provided by the CLEC
- Transport and termination charges would apply to reach AIT EO 3 from AIT Tandem
- CLEC would be billed Reciprocal Compensation for terminating traffic to AIT EO 3

SCENARIO 3: Traffic From AIT EO 1 to AIT EO 4

- CLEC has several options to choose from:
  - Use EOI and Transport and Termination
  - Build a dedicated tandem route (AIT EO 1 to AIT Tandem then to AIT EO 4) using dedicated services or elements provided by Ameritech, a third party, or self-provided
  - Build a dedicated route (AIT EO 1 to AIT EO 4) using dedicated services or elements provided by Ameritech, a third party, or self-provided

- Use EOI And Transport and Termination
  - CLEC would subscribe to EOI from AIT EO 1 to AIT Tandem
  - CLEC would custom route onto the EOI Trunk(s) using routing instructions it provided
  - Transport and termination charges would apply to reach AIT EO 4 from AIT Tandem
  - CLEC would be billed Reciprocal Compensation for terminating traffic to AIT EO 4
  - CLEC would utilize this option until there is sufficient traffic between AIT EO 1 and AIT EO 4 to cost justify building their own network within Ameritech's network

- Establish A Dedicated Tandem Route
  - CLEC would subscribe to the following:
    - ULS Custom Routing at AIT EO 1
    - ULS Trunk Port(s) at AIT EO 1
    - ULT from AIT EO 1 to AIT Tandem
    - UTS Trunk Ports at AIT Tandem (minimum of 2; one for trunk from AIT EO 1; the other for trunk to AIT EO 4)
    - UTS Custom Translations at AIT Tandem
    - ULT from AIT Tandem to AIT EO 4
    - ULS Trunk Port(s) at AIT EO 4
  - CLEC would also incur the cost for designing, engineering, and maintaining this network

- Establish A Direct Route
  - CLEC would subscribe to the following:
    - ULS Custom Routing at AIT EO 1
    - ULS Trunk Port(s) at AIT EO 1
    - ULT from AIT EO 1 to AIT EO 4
    - ULS Trunk Port(s) at AIT EO 4
  - CLEC would also incur the cost for designing, engineering, and maintaining this network

COSTS TO BUILD A DEDICATED NETWORK

ASSUMPTIONS:

- Rates are from approved TELRIC rates in the Illinois Tariff
- Average mileage length of 10 miles used for ULT (based on average mileage of the ULT that has been purchased)
- Basic Line Port TELRIC of $5.01 includes $2.44 of non-usage sensitive costs and $2.57 of usage sensitive costs for 1622 MOUs (based on cost data provided in the Illinois TELRIC proceedings)
- ULS Line Port total usage will not exceed 1,622 MOUs
- DS1s will be used between offices
- DS1 facilities will have Clear Channel Capability
- There will be 24 Trunks on the DS1 facility
- To be consistent with earlier comparisons 26 Line Class Codes were assumed required to establish custom routing
- Collocation already in place at all offices
- 20% of interoffice traffic is tandem routed, 80% is direct routed
- Line to trunk ratio of at least 12:1 used (this is value typically used by the industry)
- Average inter-switch usage is 620 minutes per end user
- Average monthly minutes per trunk is 7440 minutes (12 lines/trunk X 620 inter-switch minutes/line)
- Average length of call is 5 minutes
- CLECs cost to monitor, augment, and maintain the network are equal to $425.02 per facility as submitted by Ameritech in the Ohio Shared Transport Cost Study

RATES:	RECURRING	NRC	USAGE
• ULS			
• Switch Matrix			.001584
• Trunk Port (DS1)	56.78	778.06	
• Custom Routing, per LCC		232.00	
• Service Order (Trunk Port)		410.63	
• Service Coordination Fee, per switch	1.15		
• Billing Establishment Charge, per switch		138.12	
• Daily Usage Feed, per message			.000918
• UTS			
• Switch Matrix			.000569
• Trunk Port (DS1)	122.79	780.07	
• Service Order		410.30	
• ULT			
• Interoffice Mileage Termination	17.35		
• Interoffice Mileage, per mile	1.88		
• Clear Channel Capability		443.18	
• Administrative Charge		406.61	
• Design & CO Charge		632.71	
• Cross Connects			
• 2-Wire	.14		
• DS1	.43		

INDIVIDUAL ELEMENT CALCULATIONS:

- ULS SWITCHING MATRIX AT END OFFICE
  - Usage =

    ULS .001584 /MOU

    (Traffic Sensitive portion of Basic Line Port cost = $2.57/1622 MOUs)
- ULS TRUNK PORT AT END OFFICE
  - Recurring =

    ULS Trunk Port 56.78
    X-Connect .43
    TOTAL 57.21 /month
  - Non-Recurring =

    Trunk Port NRC = 778.06
    Service Order = 410.63
    TOTAL 1,188.69
- UTS TRUNK PORTS AT TANDEM
  - Recurring =

    UTS Trunk Port (2) 245.58
    X-Connect (1 ea port) .86
    TOTAL 246.44 /month
  - Non-Recurring =

    Trunk Port NRCs = 1,560.14
    Service Order = 410.30
    TOTAL 1,970.44
- IOF BETWEEN END OFFICE & TANDEM
  - Recurring =

    X-Conn at EO .43
    IOF Term at EO 17.35
    IOF Fac(10 miles) 18.80
    IOF Term at TDM 17.35
    X-Conn at TDM .43
    TOTAL 54.36
  - Non-Recurring =

    IOF Order (to establish facilities):
    Clear Channel 443.18
    Administrative 406.61
    Design & CO 632.71
    TOTAL 1,482.50
    X-Conn Order (to x-connect the facilities to the CLEC's collocation):
    Administrative 406.61
    Design & CO 632.71
    TOTAL 1,039.32
    NRC TOTAL 2,521.82

INDIVIDUAL ELEMENT CALCULATIONS (Cont):

- IOF BETWEEN END OFFICE & END OFFICE
  - Recurring =

X-Conn at EO	.43
IOF Term at EO	17.35
IOF Fac(10 miles)	18.80
IOF Term at EO	17.35
X-Conn at EO	.43
TOTAL	54.36

  - Non-Recurring =

IOF Order (to establish facilities):

Clear Channel	443.18
Administrative	406.61
Design & CO	632.71
TOTAL	1,482.50

X-Conn Order (to cross-connect the facilities to the CLEC's collocation:

Administrative	406.61
Design & CO	632.71
TOTAL	1,039.32
NRC TOTAL	2,521.82

SUMMARY OF CHARGES AT ILLINOIS TELRIC:

	RECURRING	NRC	USAGE
• ULS Switching Matrix (MOU)			.001584
• ULS Custom Routing (26 LCC), per switch		6,032.00	
• ULS Service Coordination Fee, per switch	1.15		
• ULS Billing Establishment Charge, per switch		138.12	
• ULS Daily Usage Feed, per message			.000918
• ULS Trunk Port at EO	57.21	1,188.69	
• UTS Switching Matrix (MOU)			.000569
• UTS Trunk Ports at TDM	246.44	1,970.44	
• IOF Between EO & TDM	54.36	2,521.82	
• IOF Between EO & EO	54.36	2,521.82	

COSTS FOR THE DEDICATED NETWORK:

DIRECT ROUTE (EO to EO):

- Recurring =

ULS Service Coordination Fee (2)	2.30
ULS Trunk Port at EO (2)	114.42
IOF Between EO & EO	54.36
TOTAL Monthly Recurring	171.08

- Non-Recurring =

ULS Custom Routing (2)	12,064.00
ULS Billing Establishment Charge (2)	276.24
IOF Between EO & EO	2,521.82
TOTAL NRCs	17,239.44

- Usage=

ULS Switching Matrix	.0015845 /MOU

TANDEM ROUTE (EO to TDM to EO):

- Recurring =

ULS Service Coordination Fee (2)	2.30
ULS Trunk Port at EO (2)	114.42
UTS Trunk Ports at TDM	246.44
IOF Between EO & TDM (2)	108.72
TOTAL Monthly Recurring	471.88

- Non-Recurring =

ULS Custom Routing (2)	12,064.00
ULS Billing Establishment Charge (2)	276.24
ULS Trunk Port at EO (2)	2,377.38
UTS Trunk Ports at TDM	1,970.44
IOF Between EO & TDM (2)	5,043.64
TOTAL NRCs	21,731.70

- Usage = .000569 /MOU

CONVERSION OF RECURRING TO MOU BASIS:

- Direct Routed Traffic:
  - Trunk Cost (171.08 ÷ 24 ÷ 7,440) = .0009581 x .8 (% Direct Routing) = .0007665
- Tandem Routed Traffic:
  - Trunk Cost (471.88 ÷ 24 ÷ 7,440) = .0026427 x .2 (% Tandem Routing) = .0005285
  - Tandem Routed MOU charge = .000569 x .2 (% Tandem Routing) = .0001138
- ULS Switching Matrix (MOU)
  - Switching Matrix per Minute = 2.57 ÷ 1622 MOUs = .0015845 x 2 .0031690
  - Daily Usage Feed, per message = .000918 ÷ 5 Min/message = .0001836
- CLEC Costs Monitoring, Augmenting, & Maintaining the Network
  - Per Facility Cost (425.02 ÷ 24 ÷ 7,440) = .0023803
- TOTAL .0071417

COMPARISON TO RESALE

- **Average Cost Per MOU (Total of Above) .0071417**
- **Average Cost Per Resale MOU .0170960**