VOIP Presentation to the University of Washington Law School,Technology Law and Public policy,
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What is VoIP

- VoIP is the technology used to transmit voice which has been converted to data and is sent in packets over a data network using the Internet Protocol. The data network may be the public Internet or private data networks

POTS Comparison to VoIP

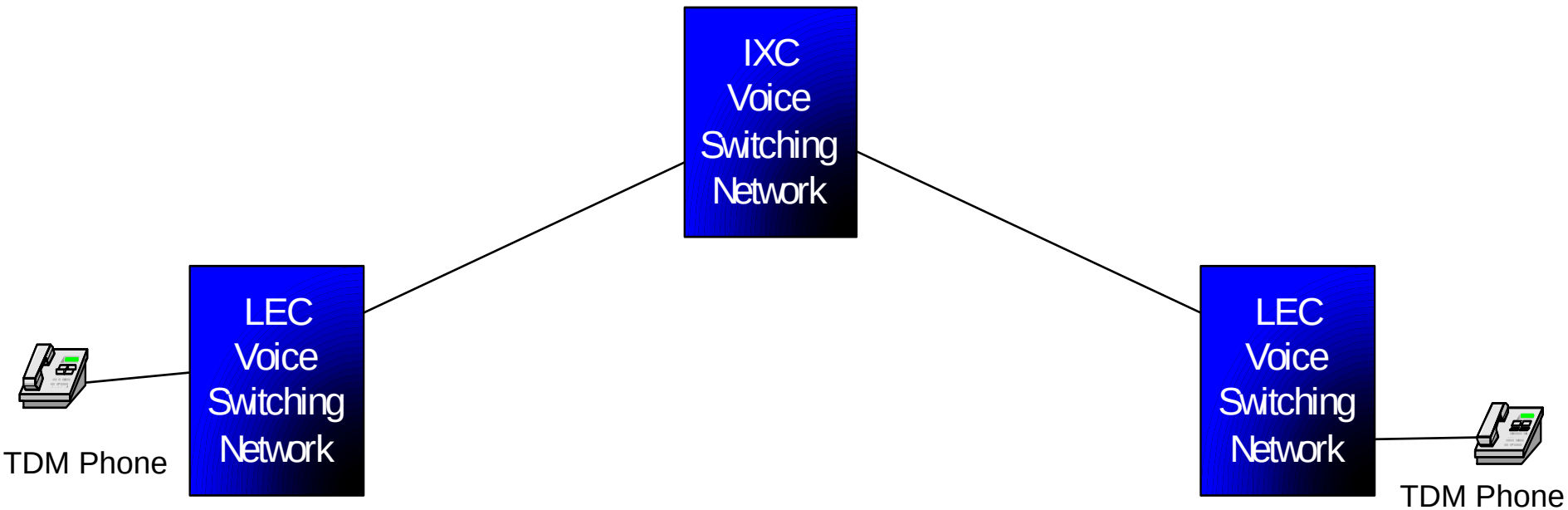
POTS

- Call is transported in ordered timeslots over a dedicated signal path (TDM format)
- Voice requires separate dedicated transport path
- Standard telephone set
- Utilizes Central Office backup power
- Service is geographically based

VoIP

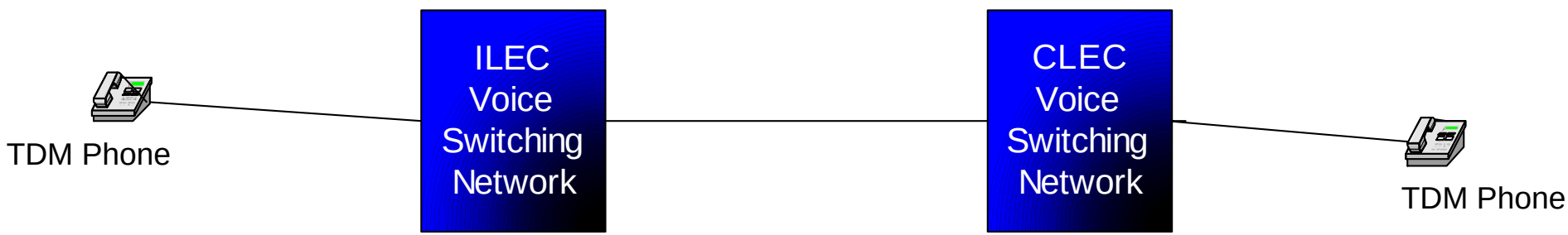
- Call is converted into data packets which may be transported over multiple paths and re-ordered at the destination
- Packet transport allows for more efficient use of network. Voice and data may be combined onto same network
- Requires unique CPE - IAD, SIP phone set, or computer software
- Utilizes device battery backup
- Device has capability to move service to any broadband connection point

Traditional Circuit Switched Telephone Call
(Long Distance)

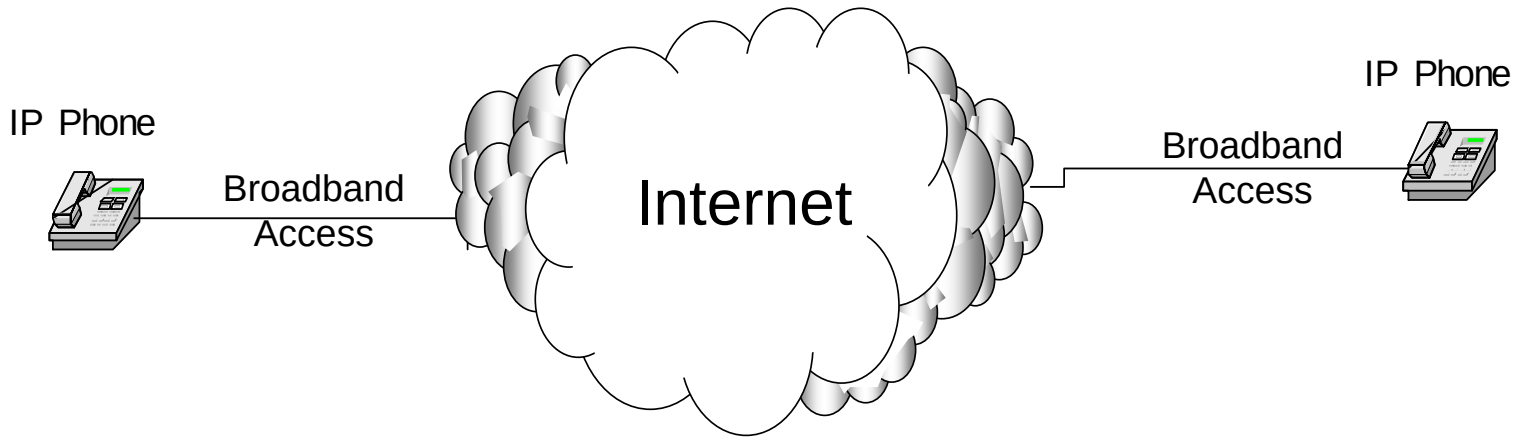


Traditional Circuit Switched Telephone Call

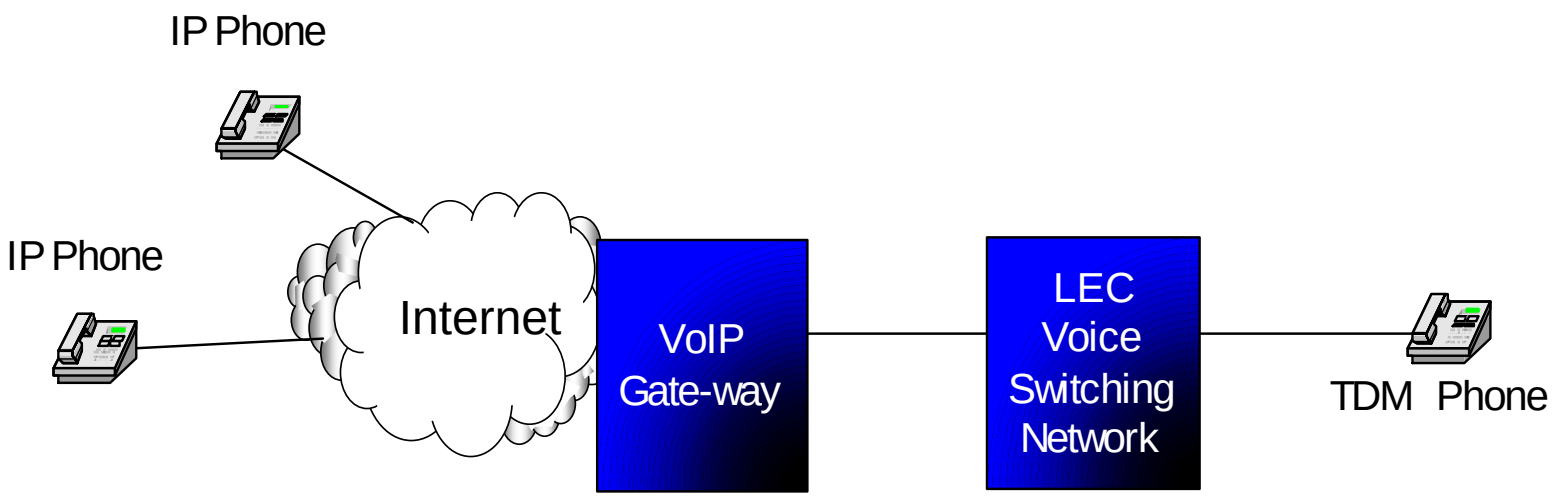
(Local)



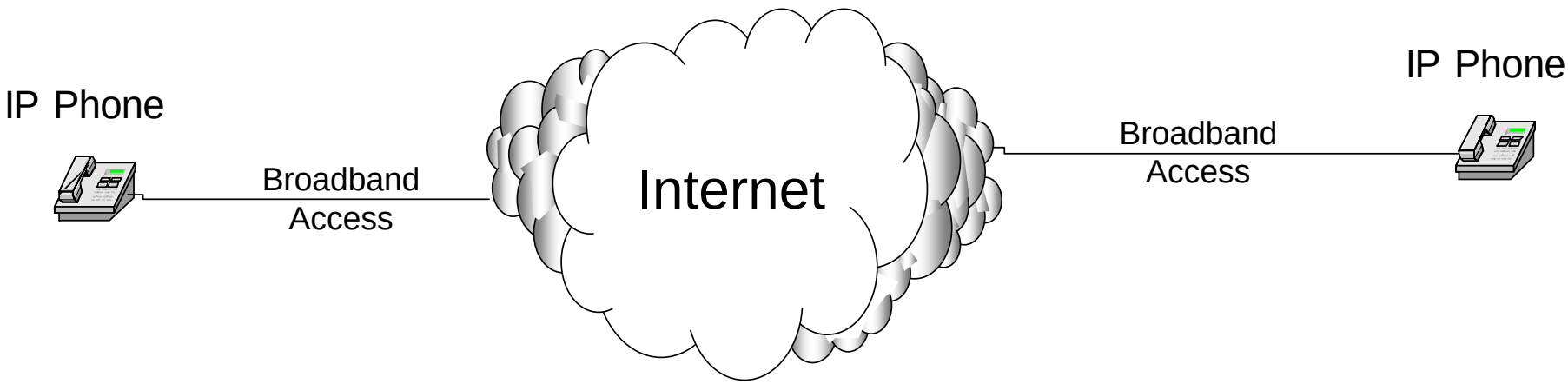
IP Telephone to IP Telephone Call



Combined Traditional Circuit Switched And IP Telephone Call

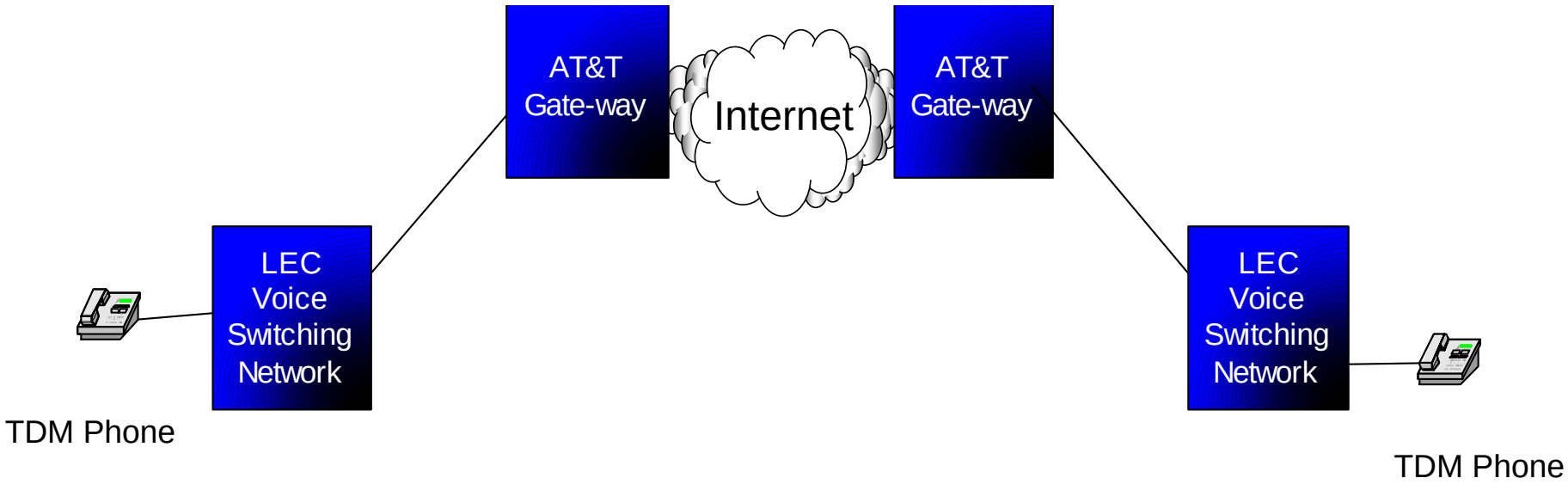


Pulver.com FreeWorld Dialup



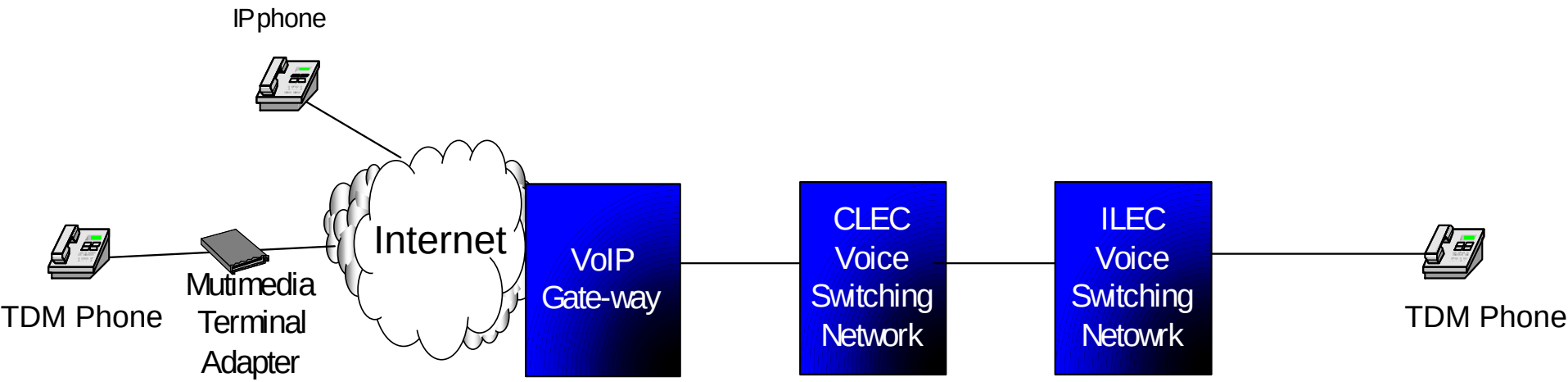
- Pulver.com position has been that they offer directory or translation service and is not telecommunications or a telecommunications service
- FCC declared FreeWorld Dialup to be an unregulated “information service” subject to the Commission’s jurisdiction[1]

AT&T Petition



- AT&T's position has been this architecture is IP telephony service and that AT&T should be exempt from paying access charges
- FCC ruled that AT&T's specific service is a telecommunications service as defined by the Act. AT&T offers "telecommunications" because it provides "transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received."[2]

Vonage VoIP Service



- A hybrid type of technology using both IP and TDM functionality for call completion to PSTN
- Initially ruled by MN PUC to be telecommunications service[3]
- MN Federal District court overruled MN PUC decision and determined service to be an information service[4]
- FCC Notice of Proposed Rulemaking, WC Dkt. No. 04-36; in the Matter of IP-Enabled Services

Industry Challenges

- **Critical Technical Issues & services**
  - **Numbering Resources**
  - **911/E911**
  - **Communications Assistance for Law Enforcement Act (CALEA)**
  - **Persons with disabilities**
  - **Reliability**

- **Critical Non-technical Issues**
  - **Intercarrier Compensation**
  - **Universal Service Fund (USF)**

Regulatory Cites

1 Pulver.com, WC Docket No. 03-45, Memorandum Opinion And Order, FCC 04-27 (rel. Feb. 19, 2004)

2 AT&T, WC Docket No. 02-361, Order, FCC 04-97 (rel. Apr. 21, 2004); WECA v. LocalDial WUTC UT-031472 (June 2004)

3 Vonage, Order Finding Jurisdiction And Requiring Compliance, Docket No. P-6214/C-03-108, MN PUC (Issue Date: Sep. 11, 2003)

4 Vonage Holdings Corporation V. Minnesota Public Utilities Commission, Memorandum and Order Civil No. 03-5287 (MJD/JGL) (Oct.16, 2003)

Definition of Acronyms

VoIP = Voice over Internet Protocol

POTS = Plain Ordinary Telephone Service

IP = Internet Protocol

TDM = Time Division Multiplex

PSTN = Public Switched Telephone Network

FCC = Federal Communications Commission

PUC = Public Utilities Commission

LEC = Local Exchange Carrier

ILEC = Incumbent Local Exchange Carrier

CLEC = Competitive Local Exchange Carrier

IXC = Interexchange Carrier

ISP = Internet Service Provider/Information Service Provider

IAD = Integrated Access Device

SIP = Session Initiated Protocol

CPE = Customer Premise Equipment