Powerline Communications

Bucharest, October 2002

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Contents

- What is PLC?

- What Can PLC Offer for Broadband Access?

- What are the Benefits and Capabilities?

- Issues to Consider?

- Who is Deploying PLC?

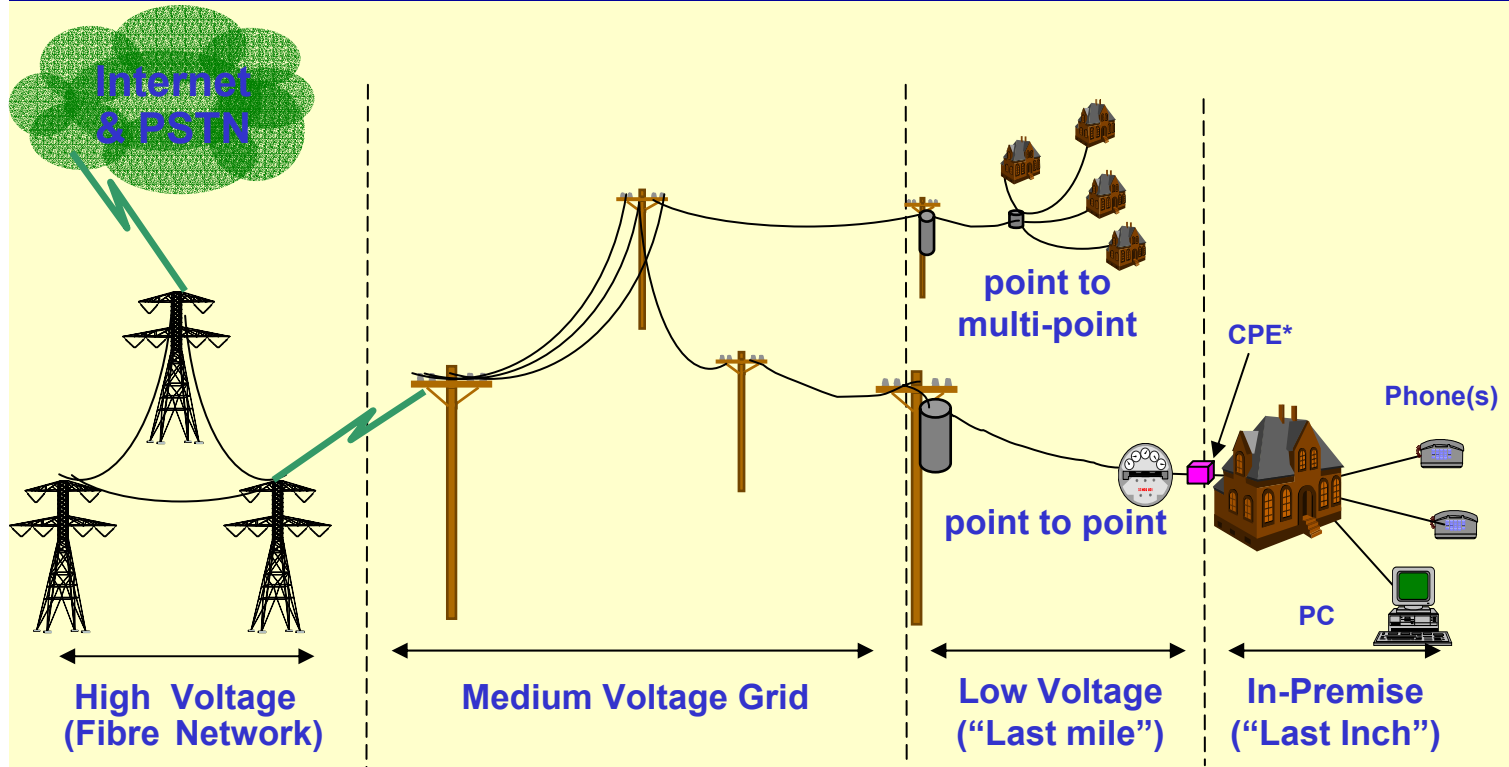-straumurinn liggur á netið

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- Use of existing infrastructure

- Almost 100% potential coverage

- No additional wiring needed - just plug in!

- PLC offers ways to bridge the "digital divide" bringing service not just to wealthier users in cities but also to
  - isolated communities
  - socially disadvantaged areas

- Also supports narrow band applications
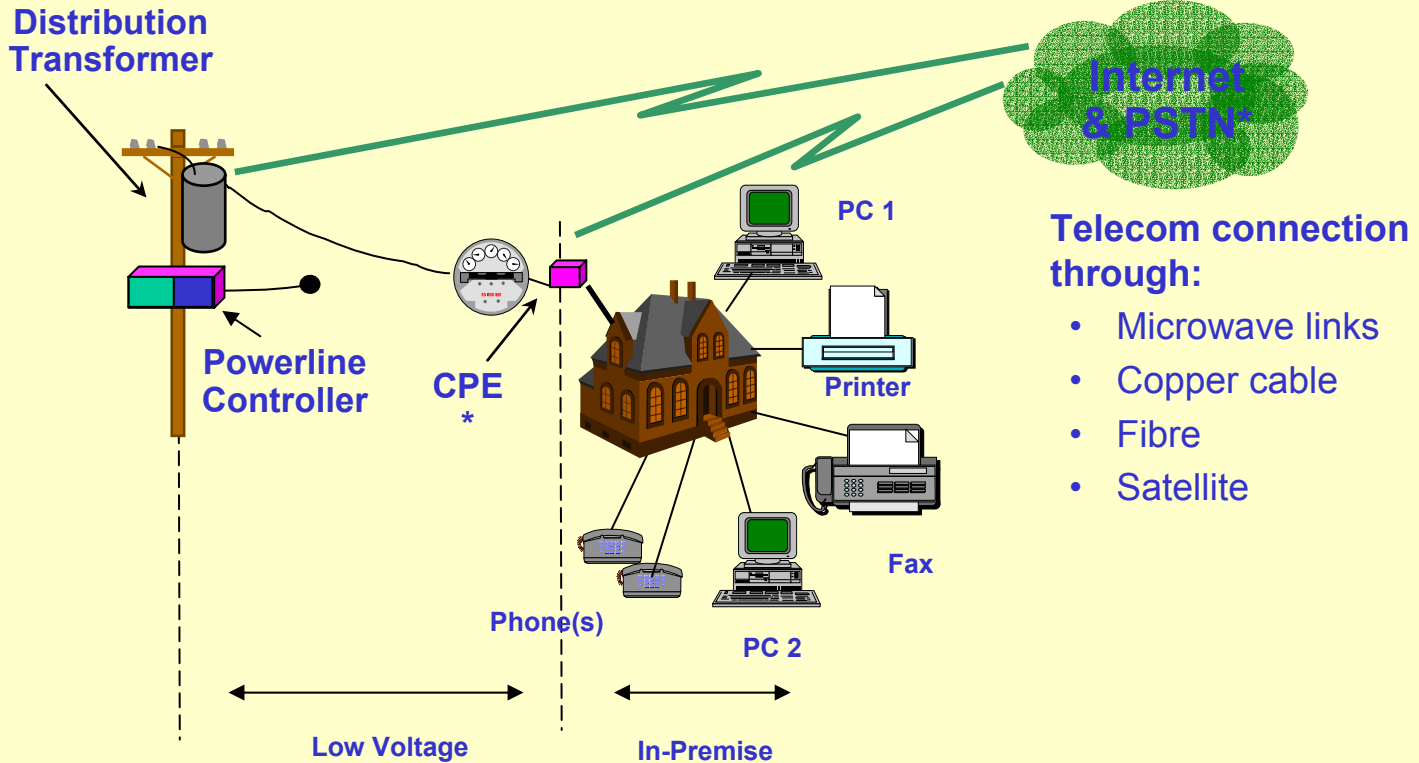
Generic Integrated Model

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Internet & PSTN

point to multi-point

CPE*

point to point

Phone(s)

PC

High Voltage (Fibre Network)

Medium Voltage Grid

Low Voltage ("Last mile")

In-Premise ("Last Inch")

PSTN - Public Service Telephone Network

* CPE - Customer Premise Equipment

LV Access/In-premise Model

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Distribution Transformer

Internet & PSTN*

PC 1

Telecom connection through:

- Microwave links
- Copper cable
- Fibre
- Satellite

Powerline Controller

CPE *

Printer

Fax

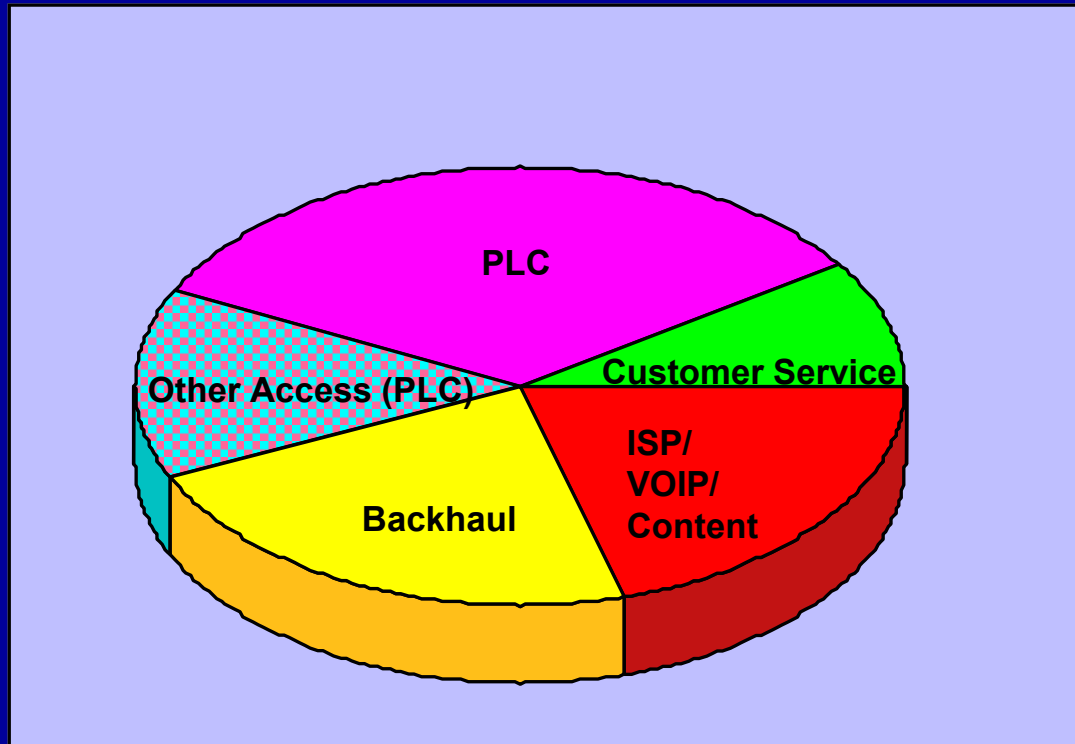**Phone(s)**

PC 2

Low Voltage

In-Premise

* CPE - Customer Premise Equipment
* PSTN - Public Service Telephone Network

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System	Bandwidth (now)	Reach	Bandwidth (2003/2004)
In House	1-10Mbps	100m	50-100Mbps
Access (LV)	2-20Mbps	250-500m	50-100Mbps
Access (MV)	2-20Mbps	1 - 3km	50-100Mbps

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Regulation

- Achieve the balance between
    - bandwidth
    - reach
    - power
    - emissions
    - cost
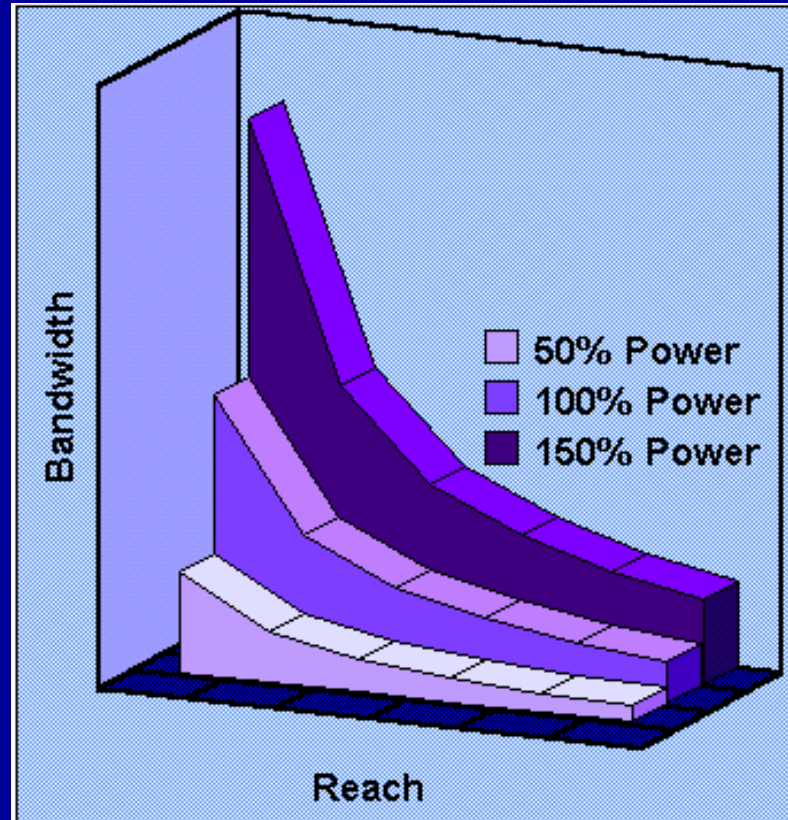
European Activities

🇩🇪 EnBW ; MVV; Energie Wasser Niederrhein; Energieversorgung Offenbach; Stadtwerke Hameln; Stadtwerke Solingen

🇦🇹 TIWAG; Linz Strom; EVN

🇮🇹 ENEL

🇪🇸 Endesa; Union Fenosa: Iberdrola;

🇵🇹 EDP

🇬🇧 Scottish & Southern Energy

🇱🇺 Nuon

🇫🇷 EDF

🇨🇭 Diax; EEF

🇫🇮 SENER

🇮🇸 Lina.net

🇸🇪 Sydkraft; Evicom; Elforsk; Vattenfall

🇳🇴 Viken; Lyse Energi

🇵🇱 Stoen; ZKE; Gdansk; Pattern

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🇺🇸	AEP; Southern; EMC; Ameren; Consolidated Edison
🇧🇷	CEMIG; COPEL; AES
🇵🇪	LUZ DEL SUR
🇨🇱	Chilectra; CGE
🇦🇺	ETSA
🇯🇵	Tokyo Electric Power Co
🇸🇬	Singapore Power
🇭🇰	Hutchison Whampoa
🇮🇩	PLN

Indonesia: Eddie Widiono, PLN's CEO: "The company's intention is to use its powerline grids to reach tens of million customers in remote areas."

Summary

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- PLC works well and conveniently
  - users like it!
- PLC can be a competitive solution for access and in-building distribution
- PLC can help with roll out of broadband virtually anywhere
- PLC can help bridge the Digital Divide