

Powerline Communications

Bucharest, October 2002

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- What is PLC?
- What Can PLC Offer for Broadband Access?
- What are the Benefits and Capabilities?
- Issues to Consider?
- Who is Deploying PLC?



- sicurezza: l'uso di oggetti di metallo

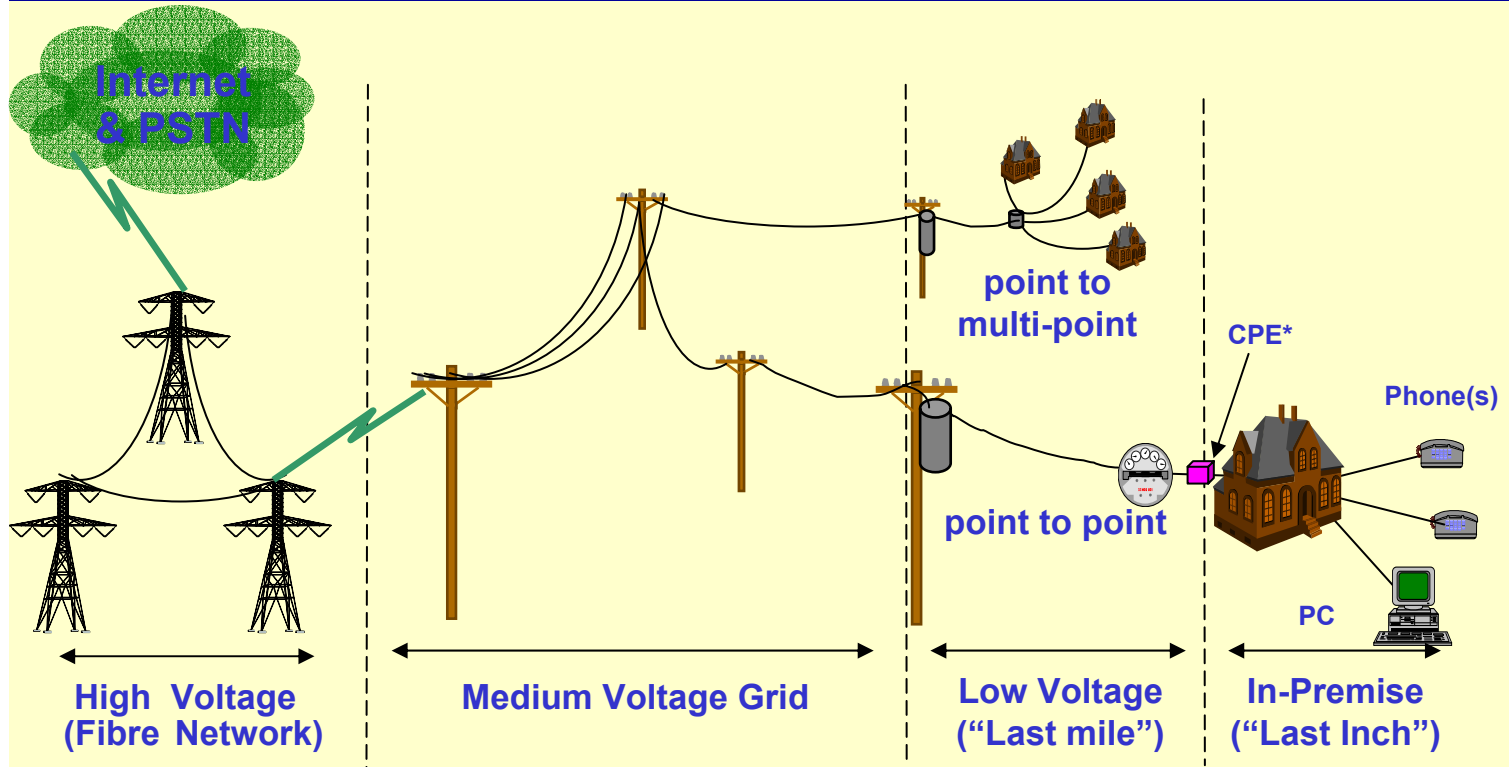






- Use of existing infrastructure
- Almost 100% potential coverage
- No additional wiring needed - just plug in!
- PLC offers ways to bridge the “digital divide” bringing service not just to wealthier users in cities but also to
 - isolated communities
 - socially disadvantaged areas
- Also supports narrow band applications

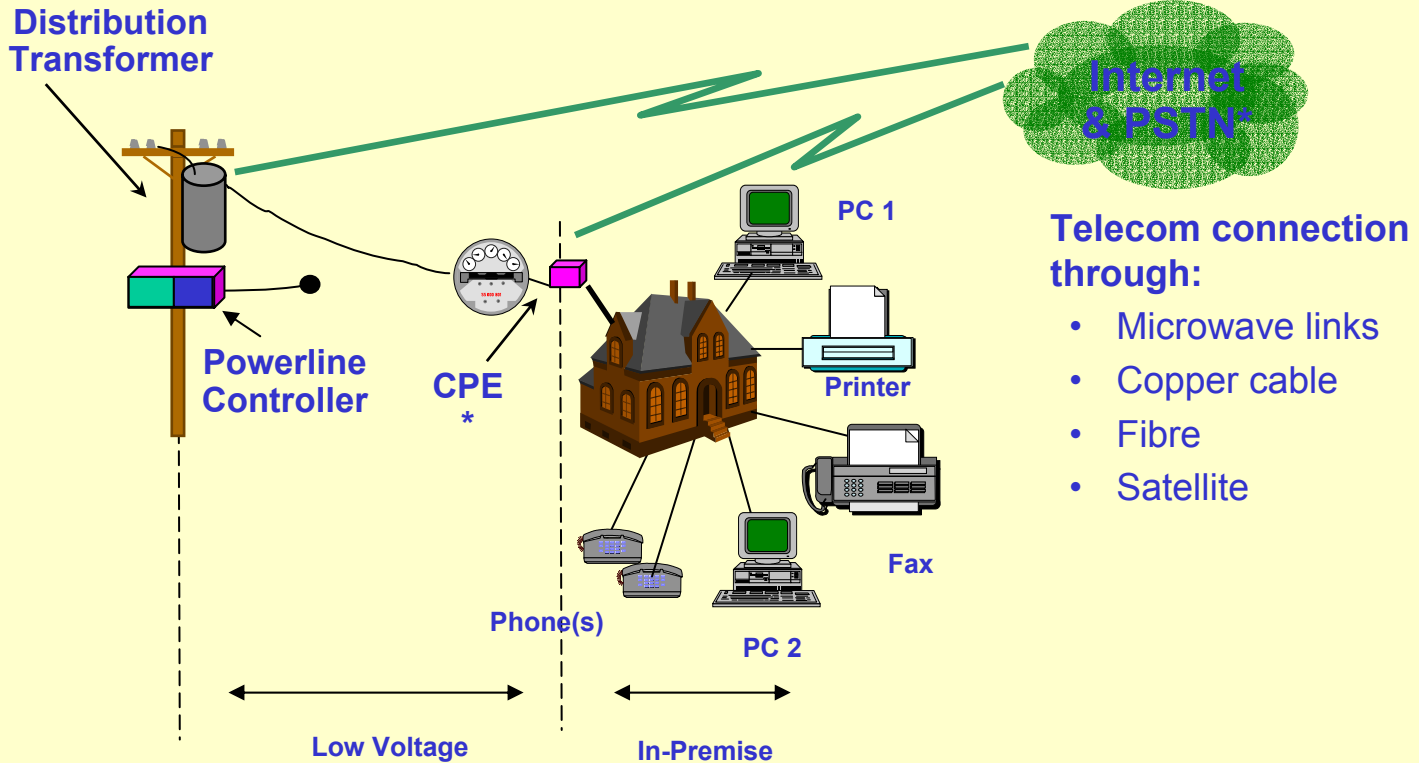
Generic Integrated Model



PSTN - Public Service Telephone Network

* CPE - Customer Premise Equipment

LV Access/In-premise Model



Telecom connection through:

- Microwave links
- Copper cable
- Fibre
- Satellite

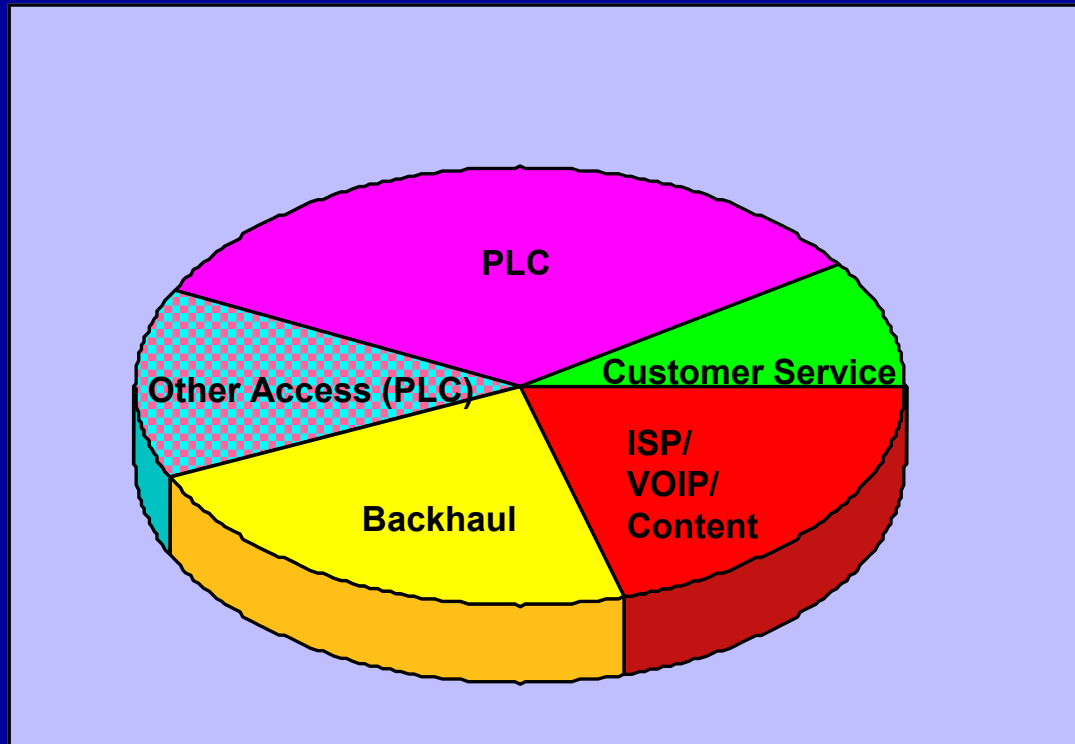
* CPE - Customer Premise Equipment
* PSTN - Public Service Telephone Network

Capabilities



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

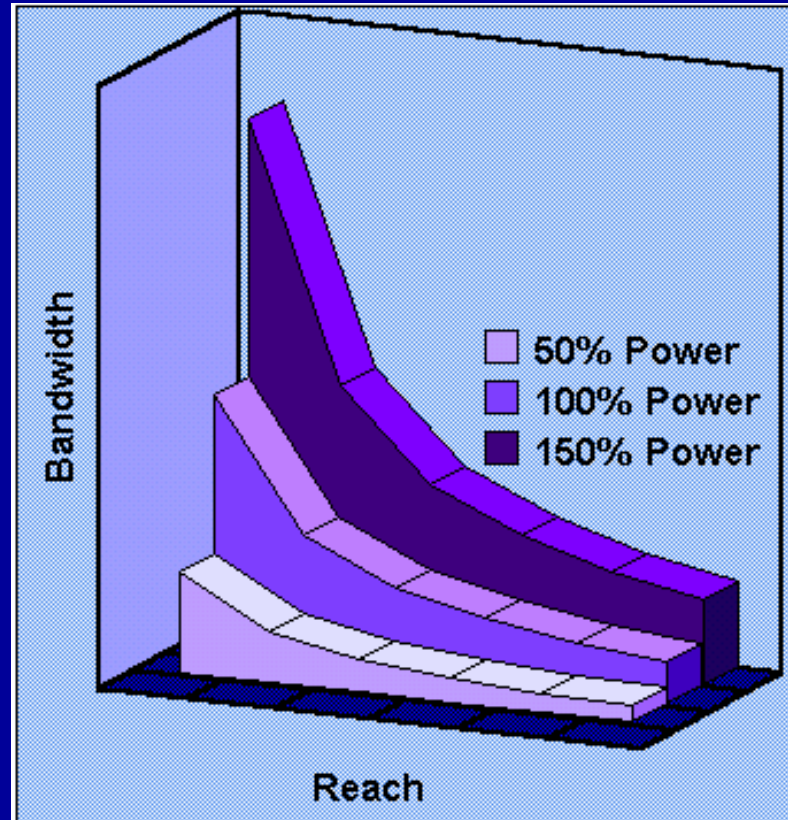
PLC is only ONE part of the chain



PLC works well with other technologies


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

Worldwide Activities



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.”

- 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