



**Broadband over Powerline (BPL)
Opportunities for Voice Services**

Presented to the UTC Telecom2004

The Business Opportunities of BPL

May 18, 2004



Who is LecStar?

LecStar provides high quality communications services through proven Utility partnership programs

- **Marketing Partnerships**
- **BPL Partnerships**





Who is LecStar?



- Turnkey Utility voice and data program
- Experienced Management Team
- Reliable Service
- Operate in 9 Southeastern US States
- Currently in a BPL trial with a major IOU
- Under consideration for BPL partnerships or trials with several other electric utilities



Discussion Points

- BPL has tremendous potential as 3rd wire
- Carrier objectives are aligned with utilities
- Evaluating BPL voice business case
 - Telecom wholesale costs (ports and loops)
- This is the perfect time for BPL technology
- Potential Structure for Voice over BPL
- Pioneering stage is over
 - Next Steps



Shared Objectives

- Create new profits from existing assets
- Minimize capital expenditure / customer
- Generate internal operational savings
 - Reduced capital requirement gap
- Increase customer satisfaction/convenience
 - More choices and flexibility
- Aid local economic growth and development



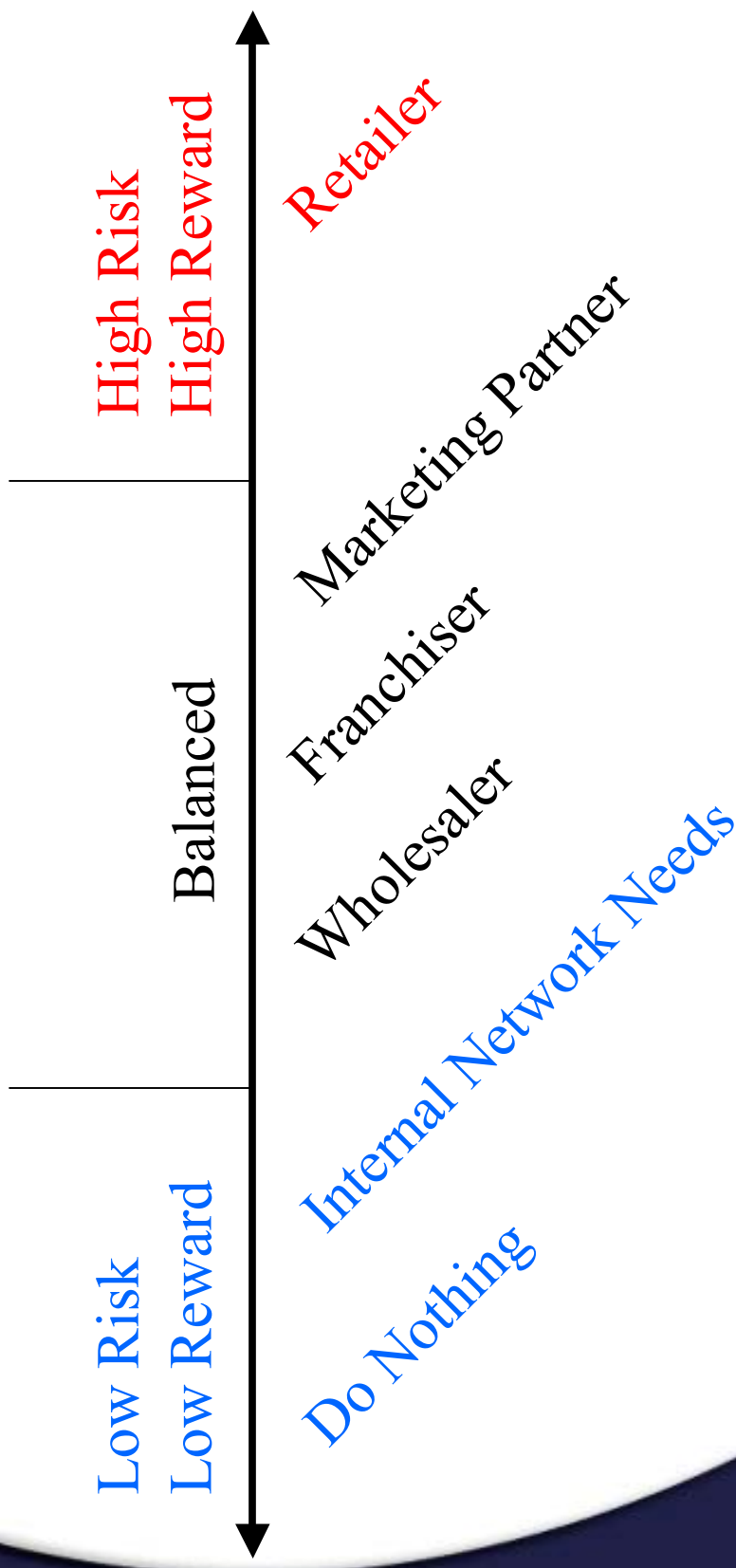
BPL Strategy Questions

5. What is Senior Management's current Distribution Asset strategy?
4. How much capital will Senior Mgmt devote to capture BPL Opportunities?
3. How much Political and Business Risk will we accept for the returns?
2. What options to reduce Capital Expenditures and Risks are available?
1. **What is our Preferred BPL Strategy?**





BPL Strategic Options



BPL Business Case

- Primary elements for consideration
 - Role of Utility on BPL infrastructure
 - Retailer
 - Wholesaler
 - Franchiser
 - Internal Utility cost savings
 - Capital requirement and recovery horizon
 - Operating expenses
 - External revenue sources
 - Economic development value
 - Political capital (local, state and federal)
 - Risk and risk mitigation



Evaluating BPL

- Consider Sources of Value (cont'd)
 - Risk: Most risk assumed by early adopters
 - Pioneering phase is over
 - Investigate ongoing trials and commercial deployments
 - Build your business case using actual data and tested assumptions
 - Efficiency
 - Utilization of existing capacity of assets
 - New use for under utilized copper distribution assets



Evaluating BPL

- Consider Sources of Value (cont'd)
 - Revenues: Unlimited source of potential wholesale access customers with **Non-seasonal** revenues
 - Data
 - **Voice**
 - Customer revenues inverted (electric/comm usage)
 - Access to non-customers (behind master meters)
 - Controls (Government; Commercial)
 - Monitoring (Security / Government)
 - **Economic Development**
 - Federal and state initiatives re: Rural Broadband Access
 - Bell companies using broadband as a wedge issue





Evaluating BPL

- Consider Sources of Value
 - Value of the network is a function of what it interconnects:
 - Retail and Wholesale customers and LANs
 - Utility grid elements
 - Internet
 - Public Switched Telephone Network (PSTN)
 - Vendors
 - Suppliers
 - Partners
 - Government
 - Other utility BPL networks



Telecom Regulation

- Telecom Act 1996 required ILEC unbundling
 - Sections 251 and 271 (*quid pro quo*)
- FCC Triennial Review Order (TRO) Aug '03
 - Initiated state proceedings in 50 states
 - ILECs succeed in vacating portions of TRO on appeal to DC Circuit Court in March 2004
 - FCC seeks appeal to the US Supreme Court
 - FCC urges Commercial Negotiations with 45 day stay
 - AT&T proposes binding arbitration
 - Immediately rejected by Bell companies
 - 1 deal of substance – currently secret (Section 252)



Carrier Wish List

- Partnership with Utilities interested in having wholesale business on BPL
- Ubiquitous network facilities and switching
- Success based pricing model
- Wholesale cost parity or reduction
- Ease of provisioning/troubleshooting/repair
- Batch “hot cut” process
- Standardized CDR billing
- Simplicity/uniformity



Telecom Economics

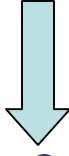
- Carriers pay ILECs the following estimated

averages:

- *Non Recurring* OSS charge \$3.50
- *Non-recurring* install charge \$22.50/AL
- **Monthly Recurring Access**

- **Port w/ Class 5 features** \$6-8/AL/mo
 - Incl: usage, billing records and transport
- **Voice and Data DS0 Loop** \$8-12/AL/mo

Wholesale
Loop
Access
Revenue



TOTAL Port, Loop and Usage

\$14-20 MRC

Key
■ Loop
■ Port
■ Port/Loop





Voice over BPL

- Proposed or Existing BPL infrastructure
 - Leverage BPL infrastructure with new voice products
 - Voice VoIP over BPL offering
 - Termination on Public Switched Telephone Network
 - Class 5 Features (Call waiting, Caller ID, etc.)
 - Voicemail
 - Operator Services
 - E911 (current reliability not a replacement for POTS)
 - Bundled with High Speed Data offering
 - Network Latency issue
- 45-60 day window to deploy (per proposed infrastructure)



LecStar POP

Utility POP

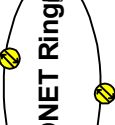
Utility Service Area



LecStar VoIP Network



LecStar Router



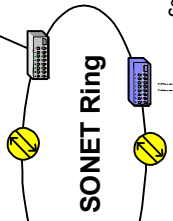
LecStar Router



Utility ADM

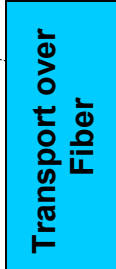


DHCP/Authentication Servers



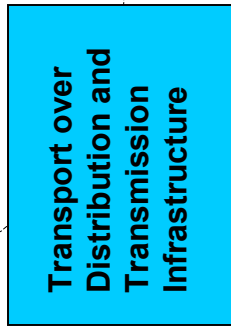
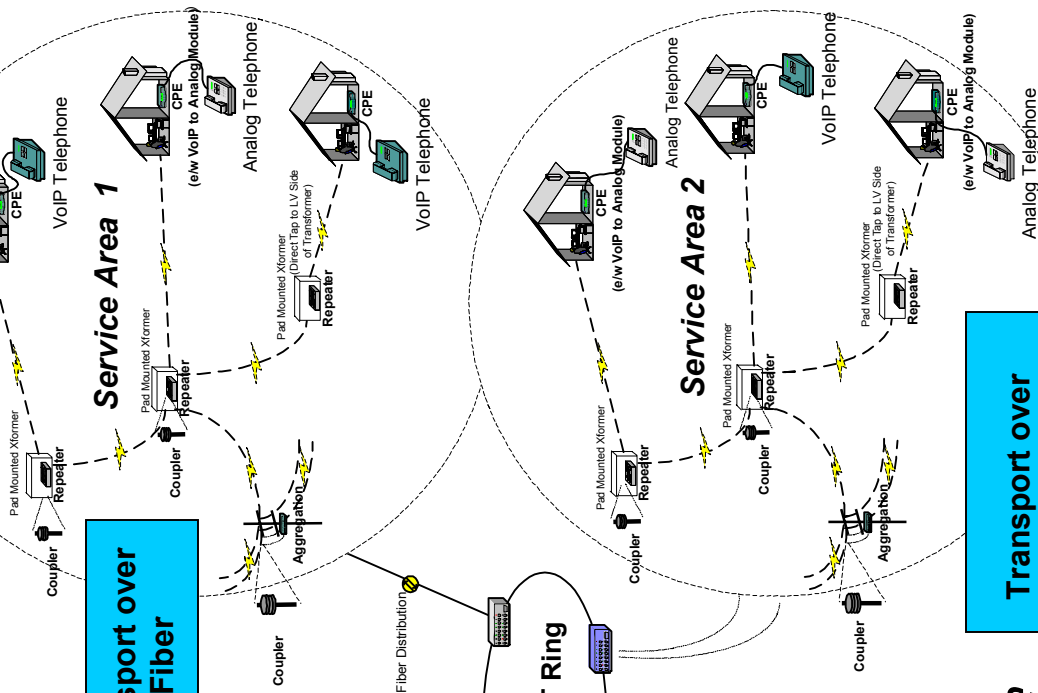
SONET Ring

Fiber Distribution



Service Area 1

Service Area 2



LecStar Proposed Infrastructure



Conclusions

- **Voice services offer new below the line revenue opportunities on and off BPL**
 - Turn key program ready for trials (simple & small at first)
 - Need to determine strategy, roles, responsibilities
 - Cap Ex / Op Ex
 - Revenues
- **Pioneering is over - Build your business case with solid data and assumptions**
 - Consultants - FCC - Partners
 - Vendors - UTC - BPL Utilities
- **Get involved in FCC BPL NPRM debate**





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