

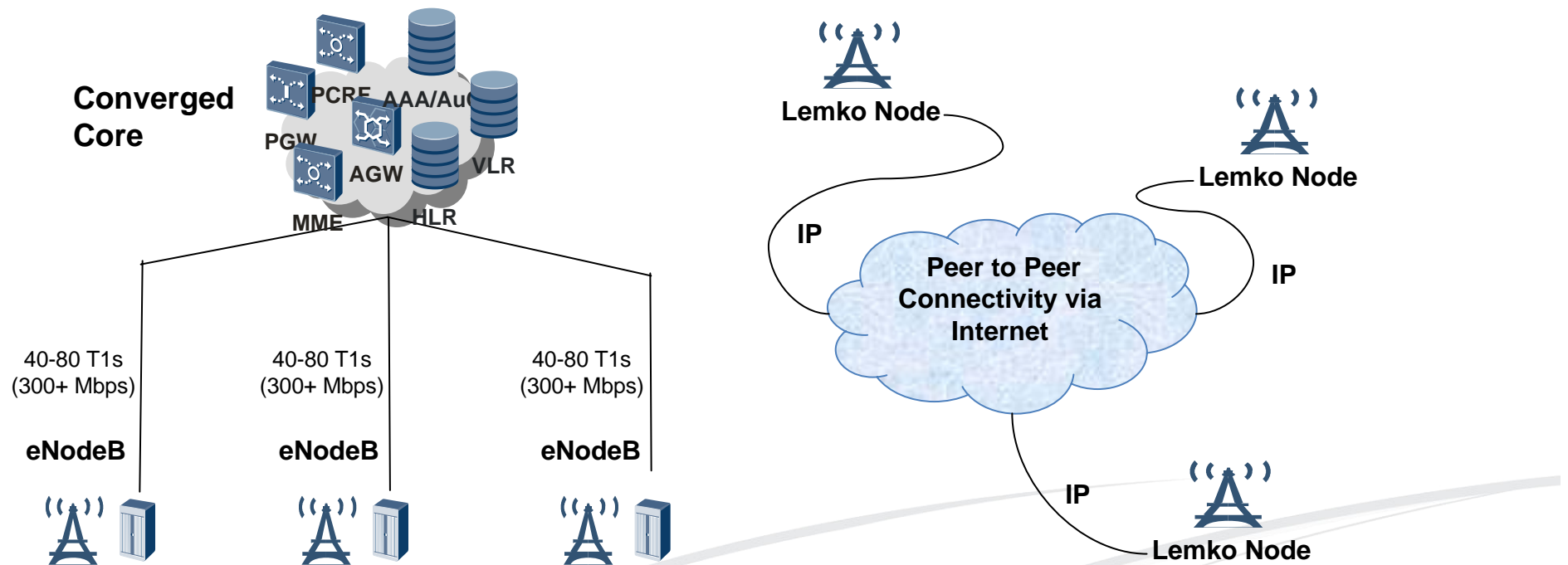


# Importance of Mobile Broadband

- Smart “phone” is a misnomer
  - These are actually handheld computers with voice as an application
  - Consumers value having constant access to the vast pool of information enabled by the Internet wherever they are. This trumps fixed options.
- Mobile networks need to converge onto the Internet
  - Using traditional telephone architecture, backhaul requirements for data are increasing by an order of magnitude
  - Using 4G (System Architecture Evolution -- “SAE”) Phase II architecture, mobile broadband nodes connect as peers via the Internet and provide full mobility without backhauling to a converged core
- Business model for rural communities is radically changed with 4G Phase II
  - Pulls the Internet cloud to rural communities in America
  - Operating costs reduced by over 65%; performance improved by reducing latency
  - Provides sustainable wireless broadband offering for rural telcos
- Spectrum need is critical for rural communities
  - Fixed line business eroding, threatening the viability of rural telcos – the basic telecommunications fabric in rural areas
  - Access to spectrum is major roadblock for rural wireless broadband; spectrum often held by larger carriers who have not built-out



# Mobile to Internet Convergence



**SAE Phase I** – uses IP based interfaces in a traditional telephony architecture.

- Cost of backhaul increases due to higher bandwidth requirements
- Added latency degrades performance

**SAE Phase II** – switching and routing pushed to the edge of the network (Lemko Node).

- Virtually eliminates backhaul
- Significant cost and performance advantages

**LEMKO IS SHIPPING PHASE II NETWORKS TODAY**