

*802.11-Based Wireless
Technology
to Enhance Premises
Voice and Data Services*



AT&T to Provide Local Broadband Access

1996 Congress passed the Telecommunications Act, Long distance carriers permitted local access again

1996-1999 Local exchange companies block long distance carriers access to their lines

1998 AT&T purchased Tele-Communications Incorporated

1999 AT&T purchased Media1



AT&T to Provide Local Broadband Access

With these cable acquisitions and other broadband access methods, AT&T anticipates being able to offer broadband service to ~2/3 of the U.S households over the next 4 - 5 years.

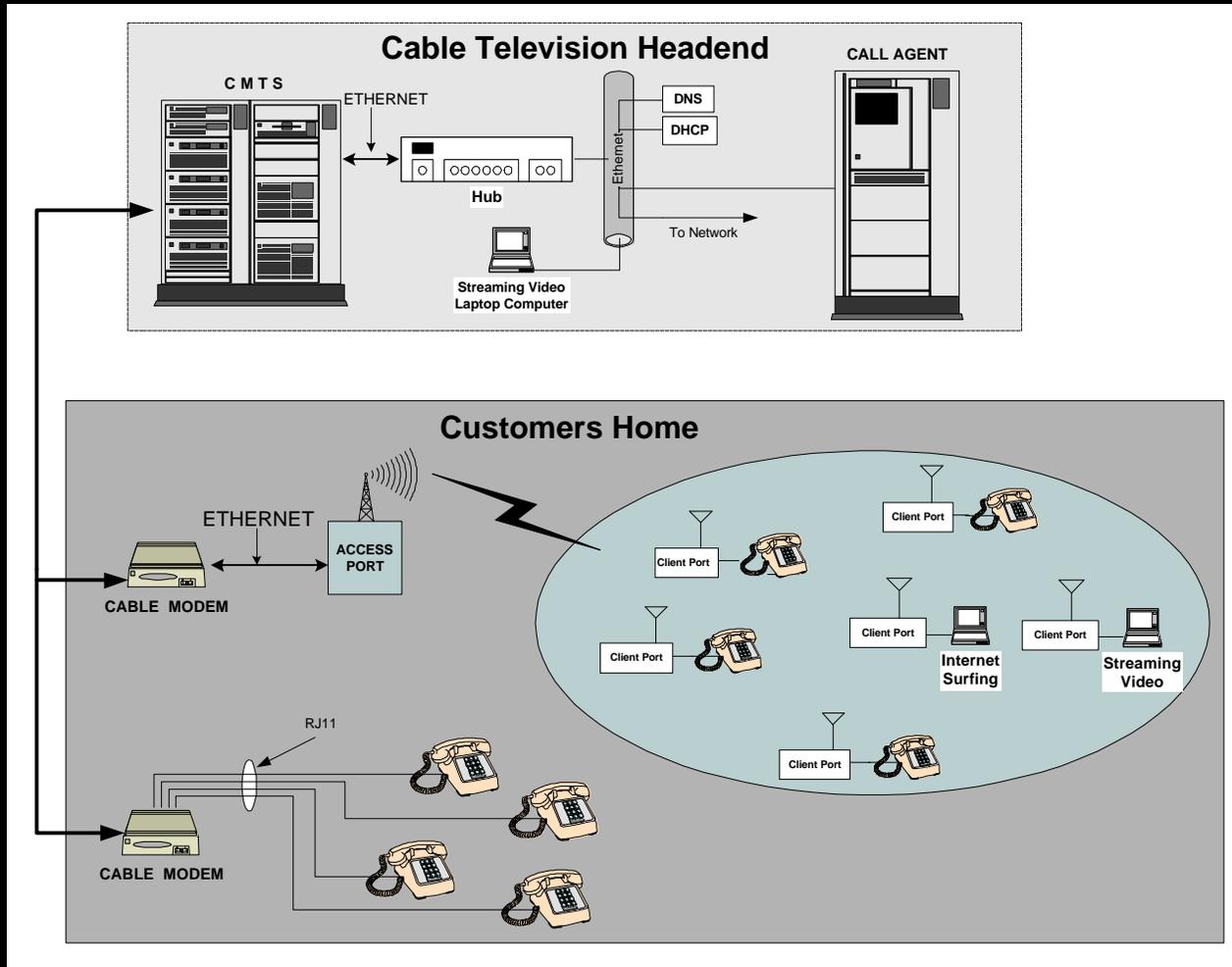
Now having broadband pipes to the edge of the home, it is necessary to extend those pipes into and through the home.

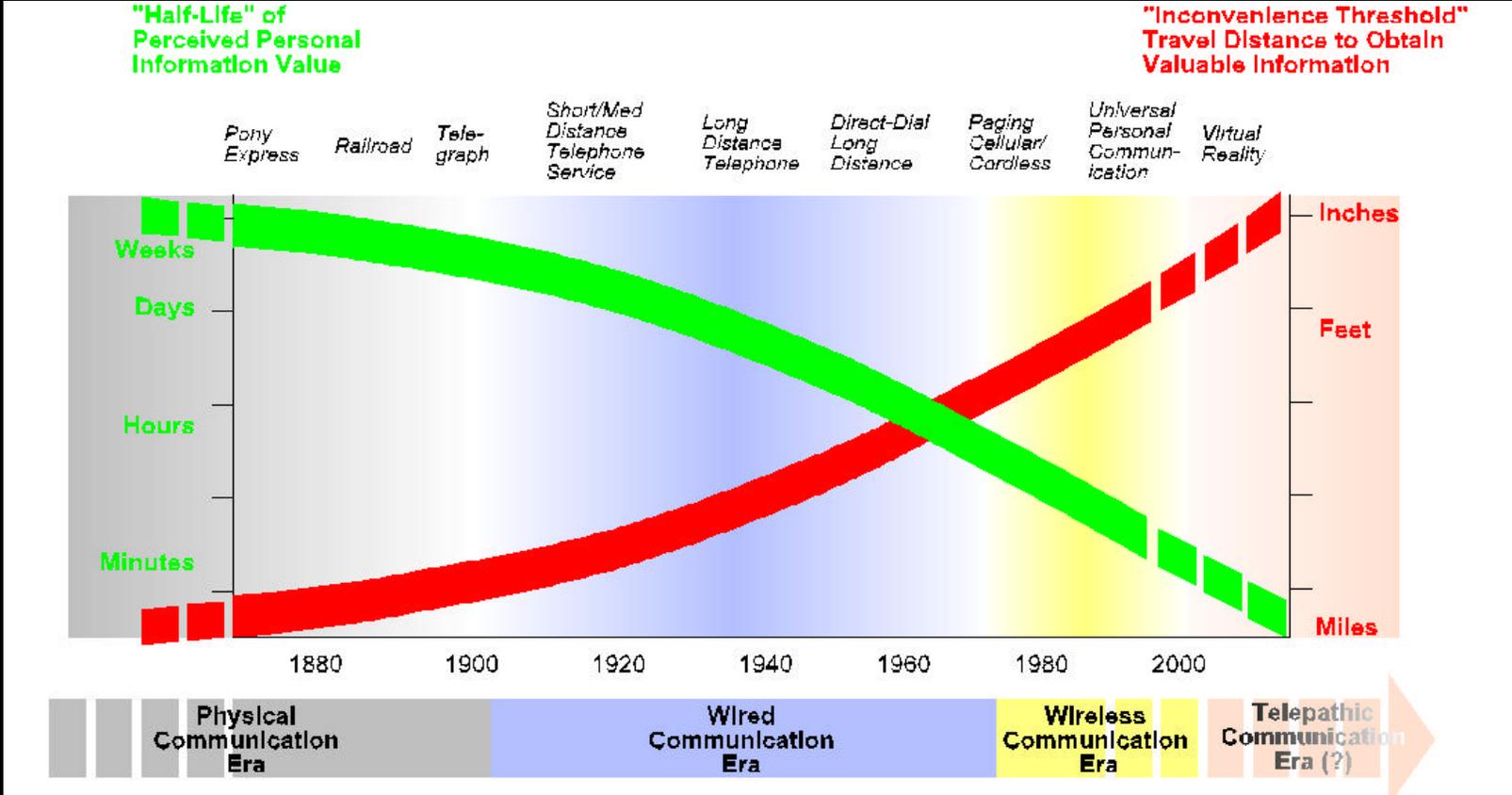
Rewiring the home for broadband distribution is very expensive and irritates customers

Wireless is an extremely attractive solution for premises broadband distribution



A Wireless Access Application

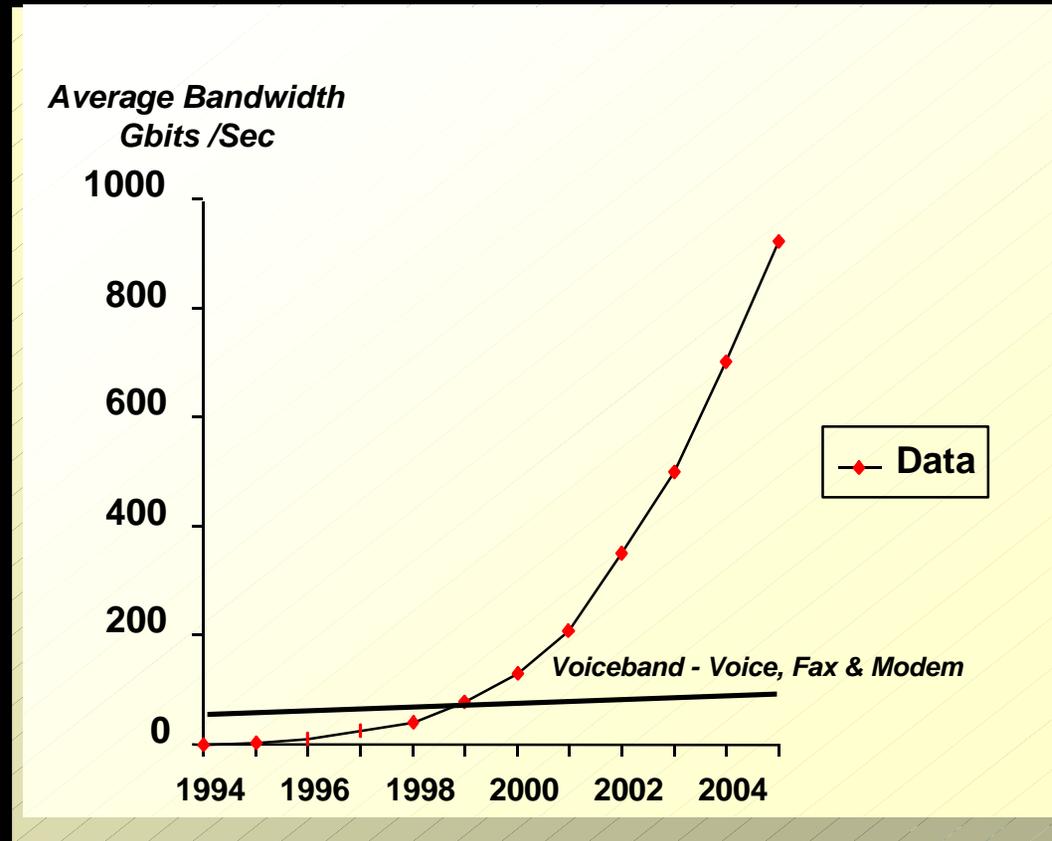




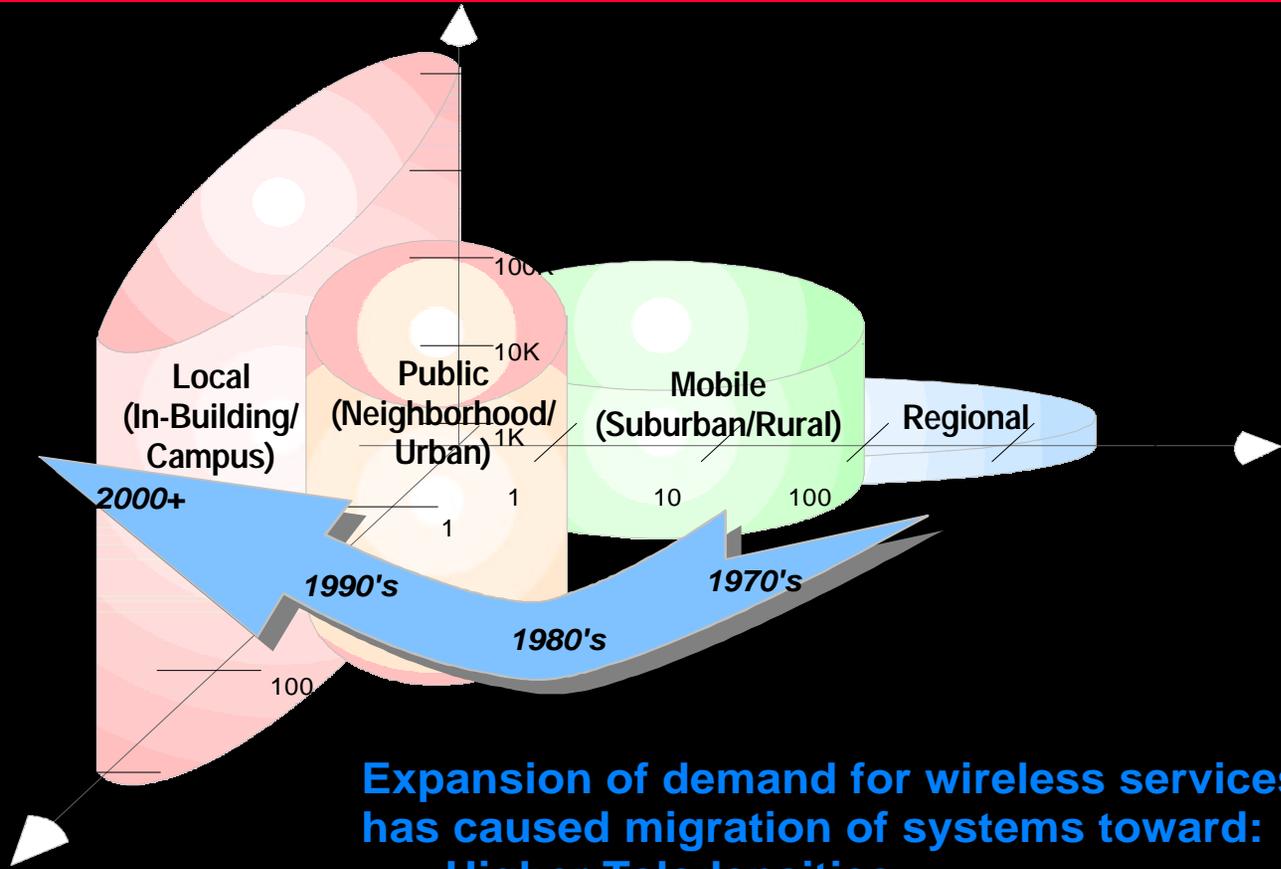
Each communication technology advance has shortened the useful life of information and increased the need to obtain new information more rapidly regardless of the situation or location...

Data Communications Trends

Post Year 2000: "Transition from a voice focused network supporting data, to a data focused network supporting voice"



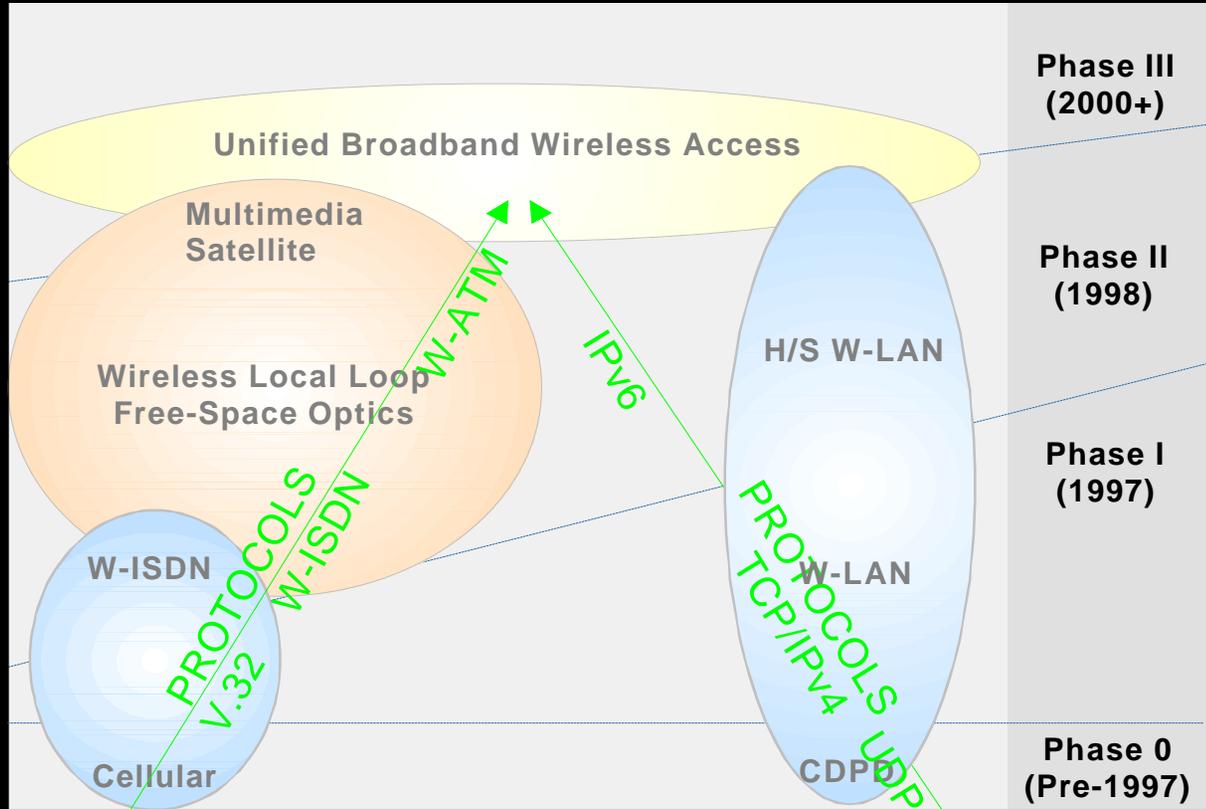
Wireless Service Trends



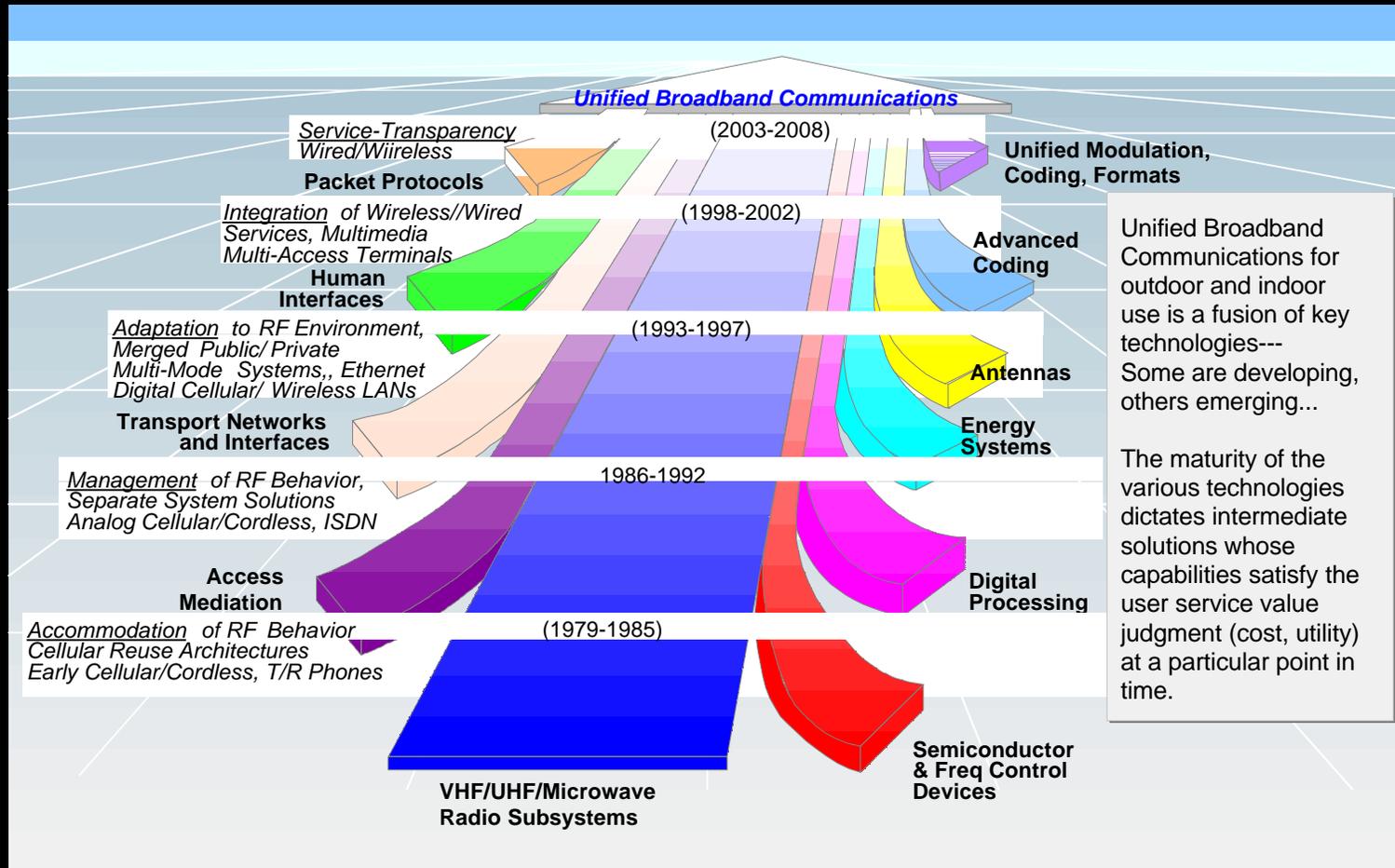
Expansion of demand for wireless services has caused migration of systems toward:

- Higher Teledensities
- Better Communication Quality
- More Throughput/User

Future Multimedia / Wireless Technology Convergence



Technology “Superhighway On-Ramps” for Communications Networks

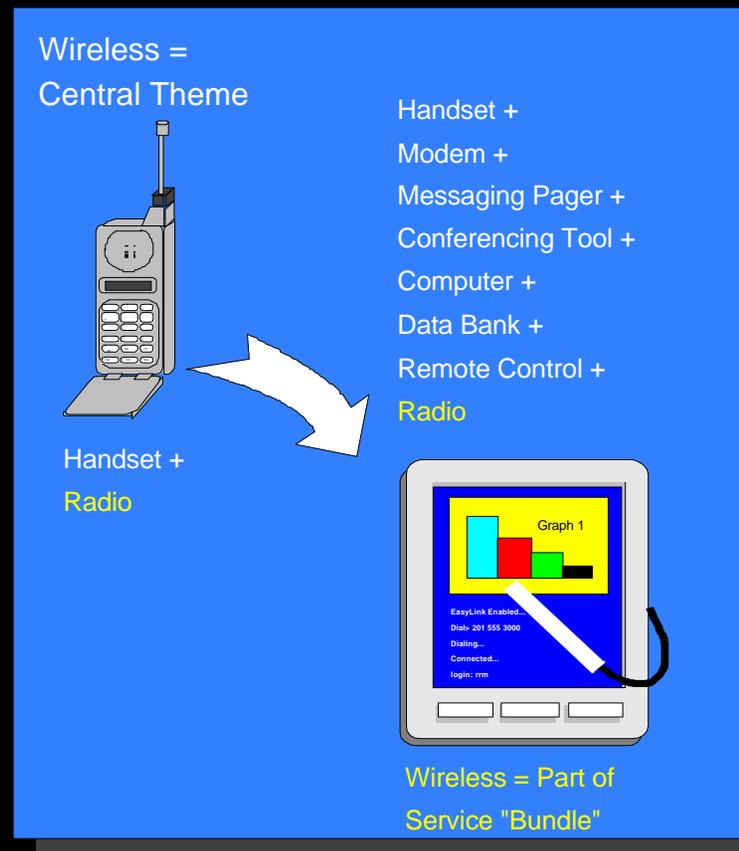


Unified Broadband Communications for outdoor and indoor use is a fusion of key technologies--- Some are developing, others emerging...

The maturity of the various technologies dictates intermediate solutions whose capabilities satisfy the user service value judgment (cost, utility) at a particular point in time.

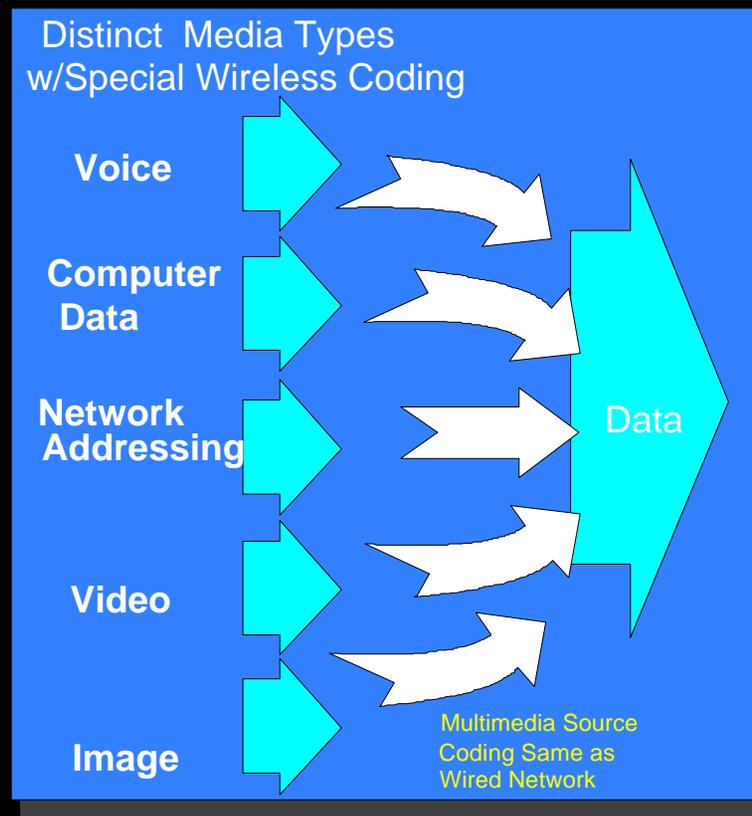
Wireless "Y2K" Megatrends

New system environments and service demands have spurred fundamental architectural and technological progress:



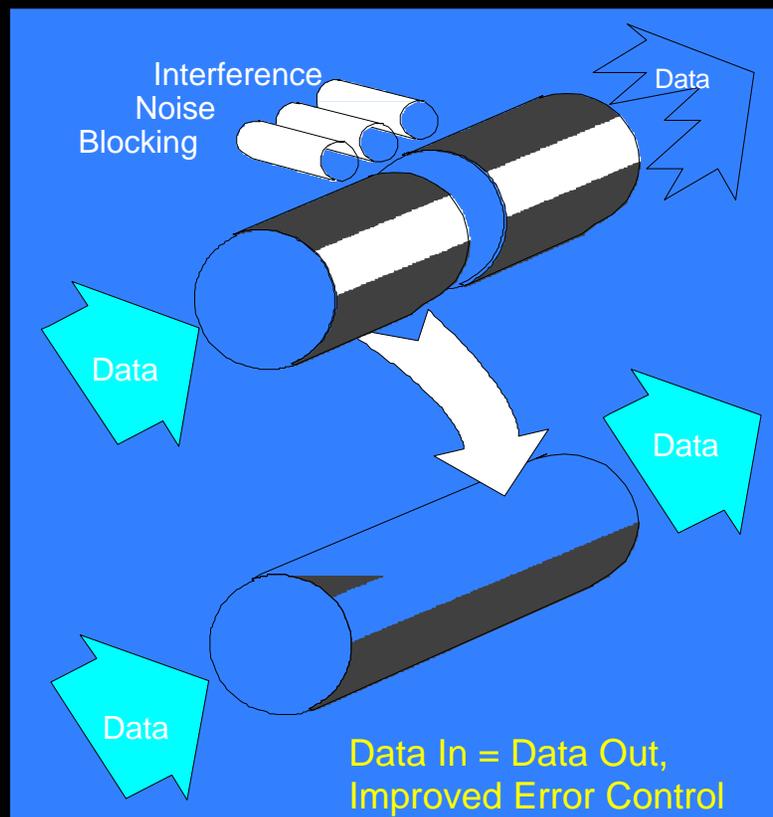
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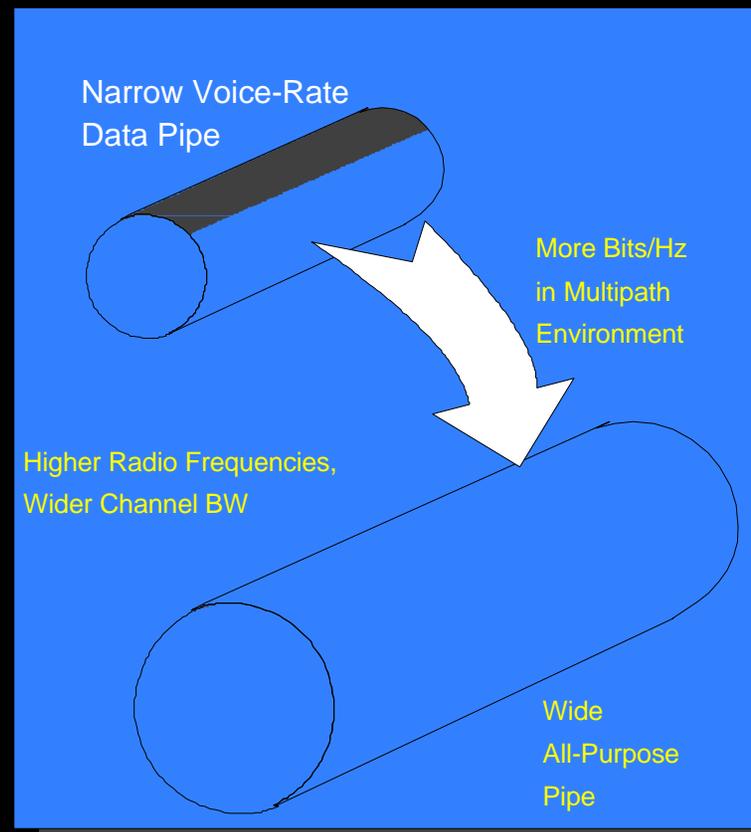
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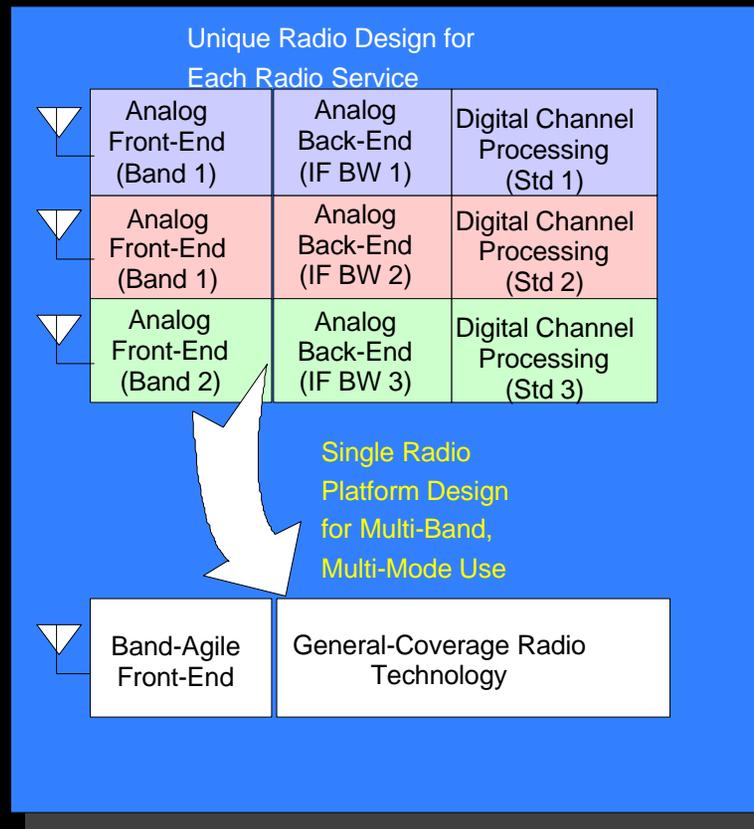
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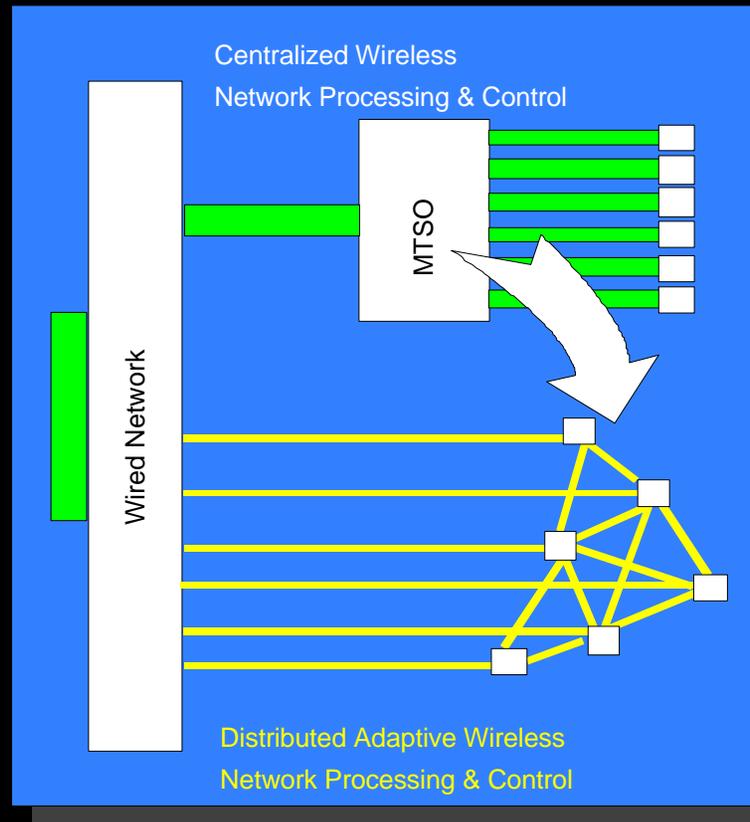
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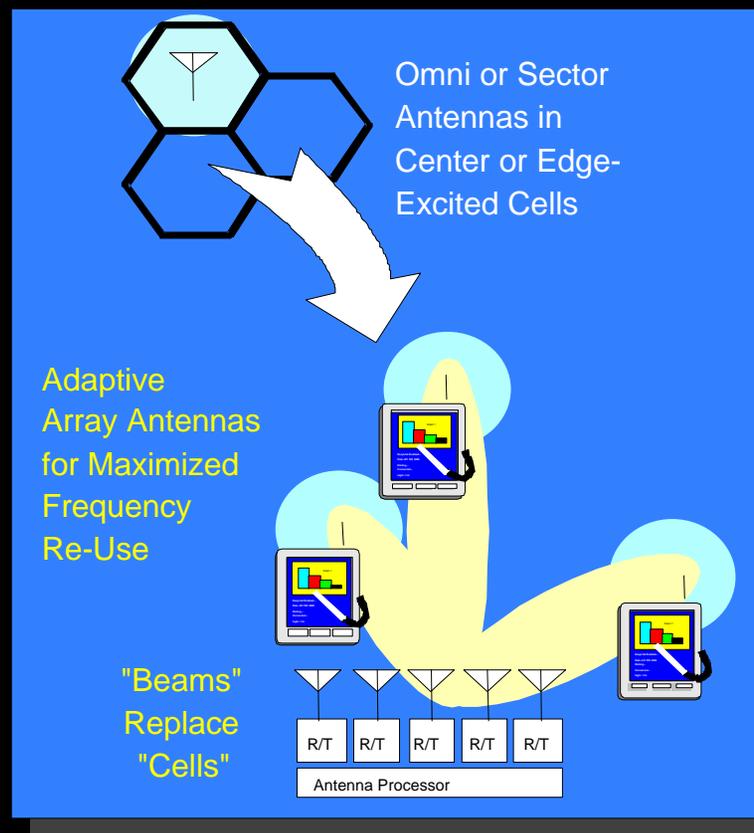
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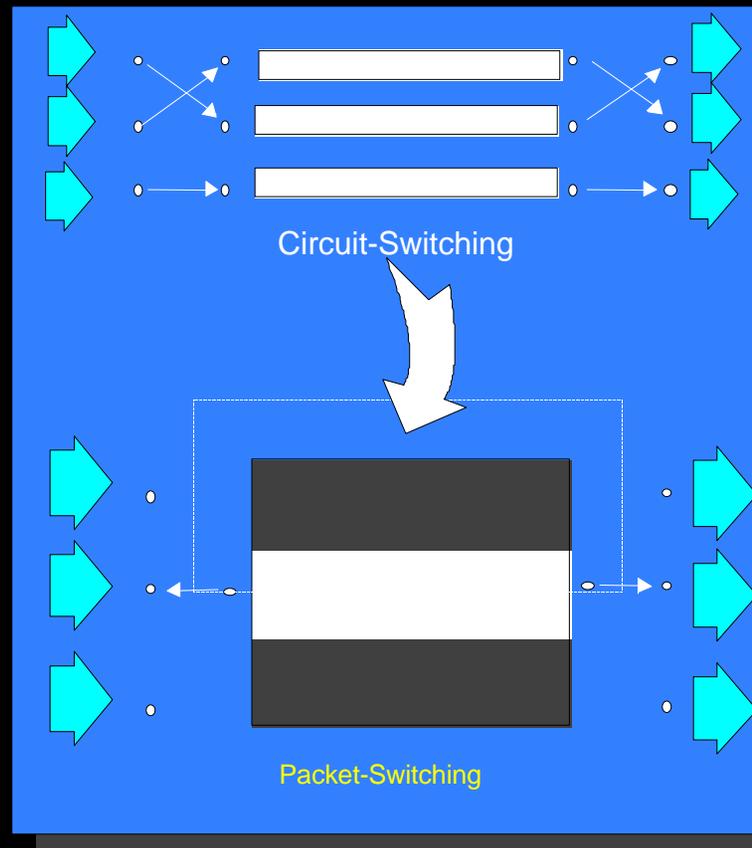
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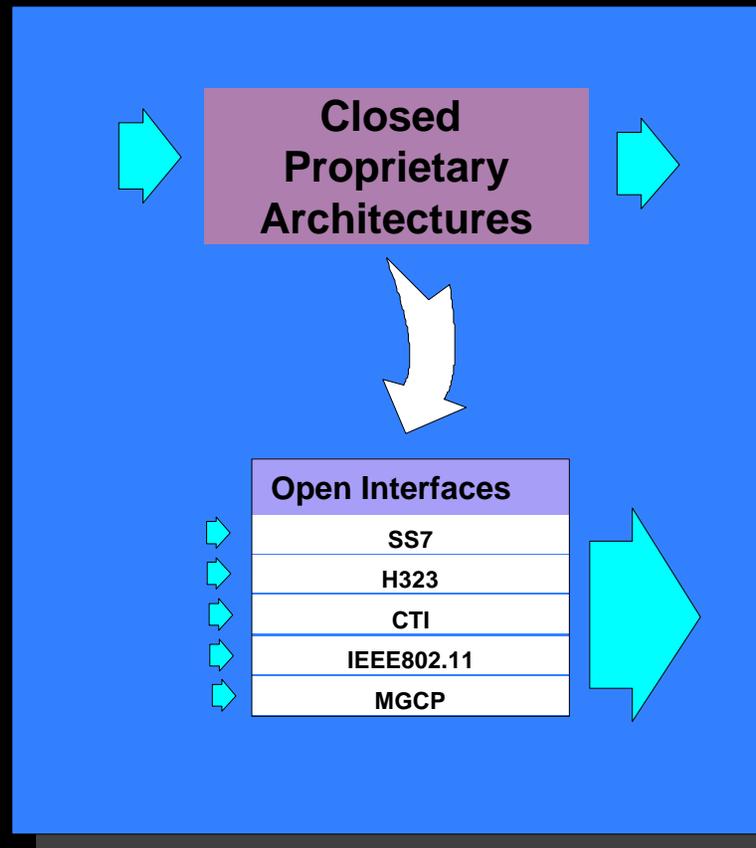
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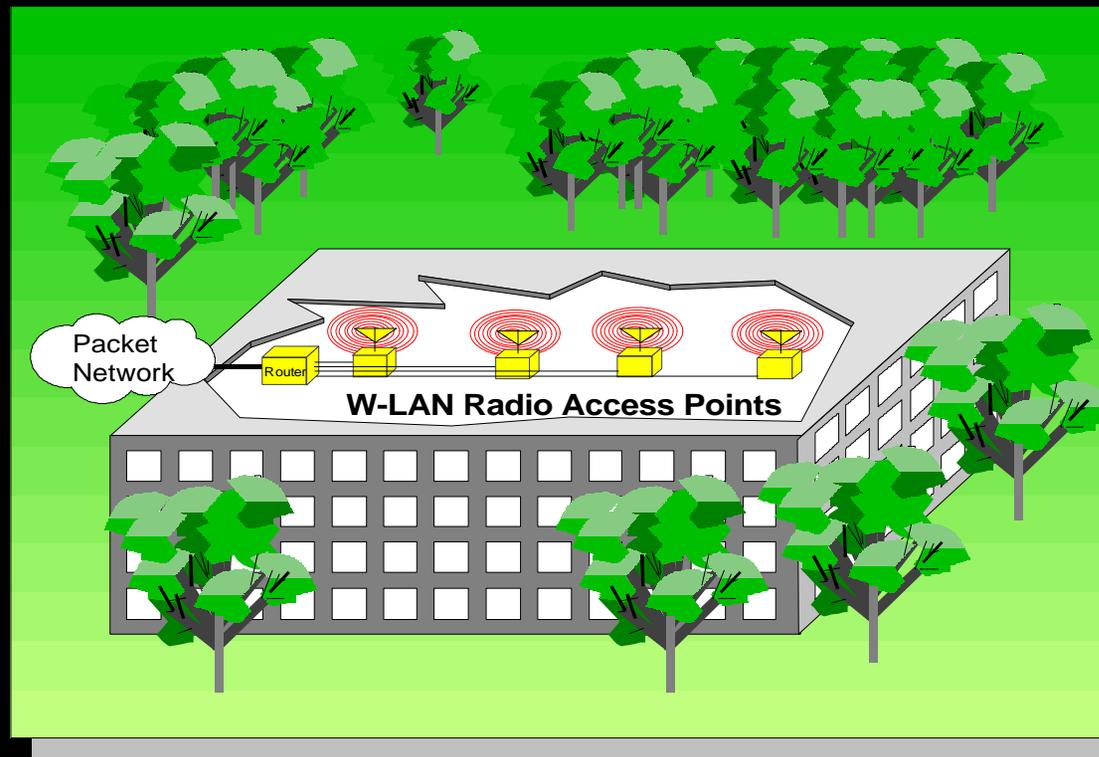
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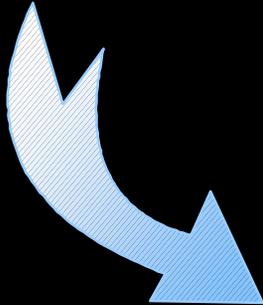
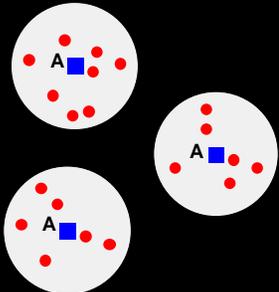


Current Indoor Wireless LANs

Although easy to install, W-LANs provide spot coverage, without the range, reuse, contiguous coverage, and isochronous traffic-handling benefits characteristic of cellular CAs and network architectures.

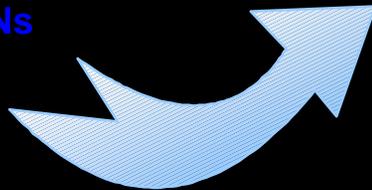


Indoor Wireless LANs Migration



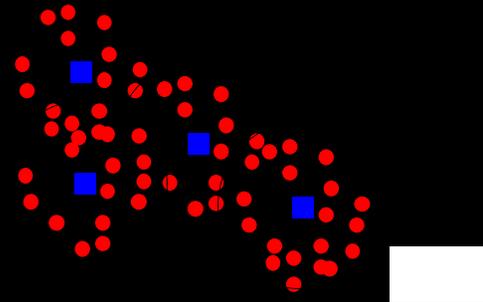
Second-Generation Wireless LANs

InterNet/IntraNet
Ethernet-Compatible Speeds
Multiple RF Bands to operate



IEEE 802.11 Fourth-Generation of Wireless Communications

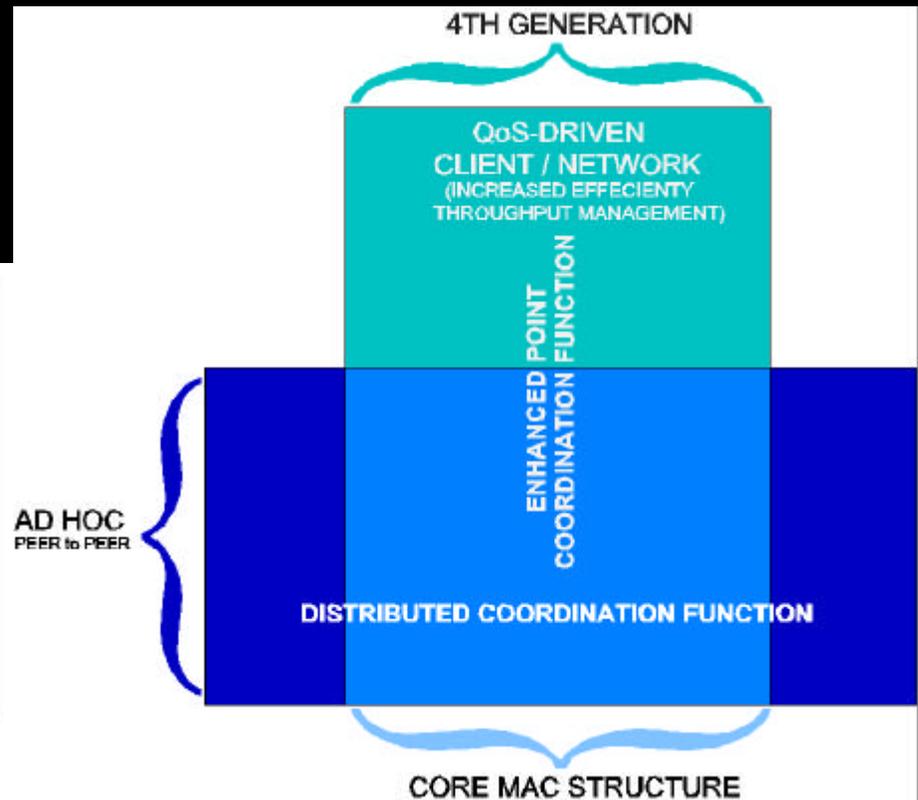
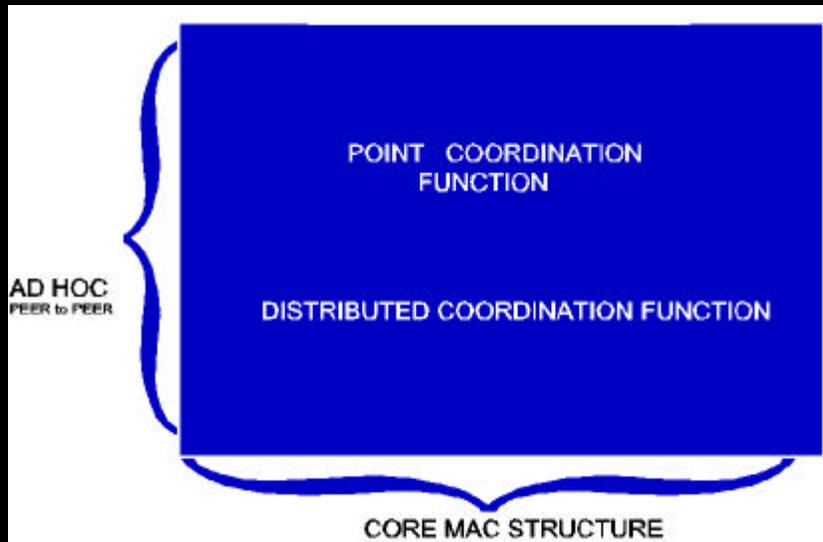
- Larger User Population
- Full Roaming/Handoff Capability
- Contiguous Coverage in Dense Areas
- Wider Area Coverage for Community LANs
- Mobility (Follow-Me Service)
- Mix of Async and Isochronous Traffic
- Higher System Utilization
- Enhanced Security



Third-Generation Wireless Communications

- TDMA
- EDGE
- Wideband CDMA

Enhanced IEEE 802.11 MAC



Ongoing Labs Efforts



The Future.....

Merging of Wired & Wireless



Conclusion

We at AT&T Labs support the IEEE 802.11 study group in their efforts to enhance the Standard with respect to adding extensions to the MAC and move the Standard to a 4th Generation Standard that includes a wireless networking solution.

We encourage the Study Group / Working Group to look at enhancements that provides true network based solutions that will support simultaneous Multimedia, Telephony, Streaming Video, and High Speed Internet / Intranet access with a cellular like CAI and enhanced security.

We are pleased to be a participant in the IEEE 802.11 committee and hope to continue to contribute to and support the efforts of the IEEE 802.11 Standards Committee and this Study Group.



AT&T Labs

