



Home Networking - The Complete Solution

Introduction & Vision

What is Home Networking?

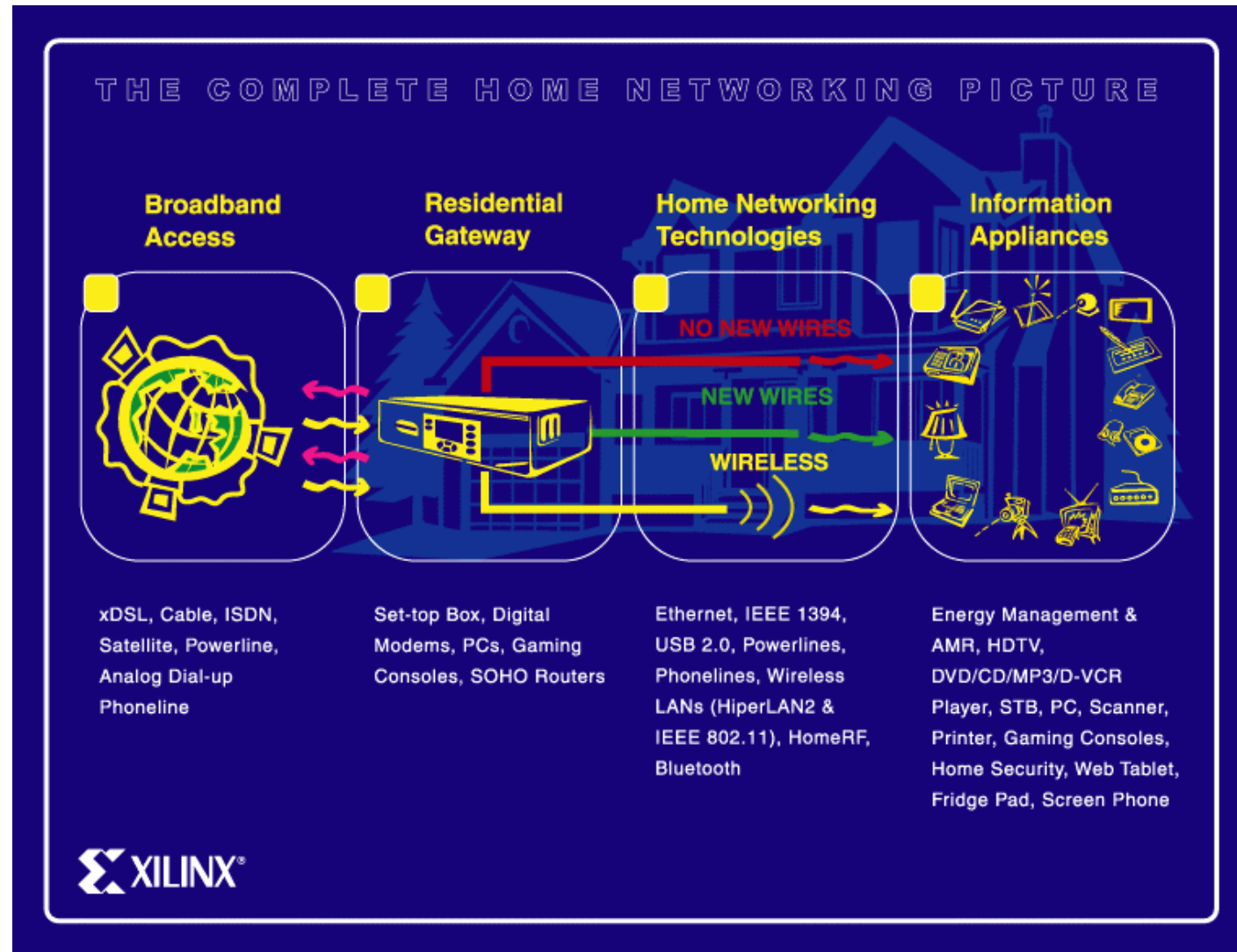
- ◆ The distribution of information (Audio, Video, & Data) around the home and their interface with attached devices and external services
- ◆ The interconnection and interoperation of
 - Home appliances
 - Entertainment devices
 - PC hardware
 - Telecommunication devices
 - Security, lighting and environmental control systems

Its All About Convergence

Goal of Home Networking

- ◆ Provide the ability to access information, entertainment and communicate anywhere, anytime
 - Bring the Internet to the hands of the consumer
 - Interconnect people in data, voice and video
 - Enables users to communicate & share data
 - Bring interconnectivity to intelligent devices
 - Always on, anytime, anywhere access to the home network

Four Aspects to Home Networking



Market Requirements and Solutions Available

	Market Requirements	Solutions Available
Broadband Access	High Speed Access for Data, Voice and Video, Always on, Simultaneous Up-link & Down-link Communication, Support Simultaneous and Multi-User Access	xDSL, Cable, Powerline, Satellite, Mobile/Wireless
Residential Gateway	Provides Access into the Home, Remote Management Access Platform, Bridging between Different Networks, Firewall and Security, E-Services Capabilities	Open System Gateway initiative (OSGI), Jini, UPnP, HAVi, DVI
Home Networking Technologies	Low Cost, Speed, Mobility, Quality of Service, Security, Reliability, Ubiquity, Ease of Use	No new wires (Phonelines, Powerlines), New wires (Ethernet, 1394, USB2.0, Optic Fiber), Wireless (HomeRF, Bluetooth, Wireless LAN)
Information Application Networks	Digital electronics with advanced computational capabilities that add more value and convenience when networked	Digital TV, HDTV, set-top box, internet screen phones, digital VCR, gaming consoles, MP3 players, cordless phones, security systems, utility meters, PCs, web pads & terminals, PDAs, digital cameras, auto PCs etc.

Residential Gateway

The Key Ingredient For Home Networking

- ◆ RGs provide integration of different broadband access types & different home networking solutions
 - Broadband access: xDSL & cable modems
 - Each modem offers an Ethernet port for connecting one computer
 - Increasing number of households have multiple computers
 - Tech-savvy users may install Ethernet hub and pull Cat5 cabling to each computer
 - Most users will not find this a viable option due to installation obstacles or cost
 - Home networking solutions: HomePNA, HomePlug, HomeRF, Wireless LANs, IEEE 1394

Key Information Appliances

- ◆ Digital TV
- ◆ Set-Top box
- ◆ Internet screen phones
- ◆ Interactive DVD players, Digital VCR
- ◆ Gaming devices
- ◆ MP3 players/audio Devices
- ◆ Cordless phones
- ◆ Security systems
- ◆ Utility meters
- ◆ PCs (desktop & notebook)
- ◆ Web (kitchen) pads
- ◆ Web/Email terminals
- ◆ PDAs (personal digital assistant)
- ◆ Digital Cameras
- ◆ Emerging technologies
 - Auto PCs

Home Networking Technologies

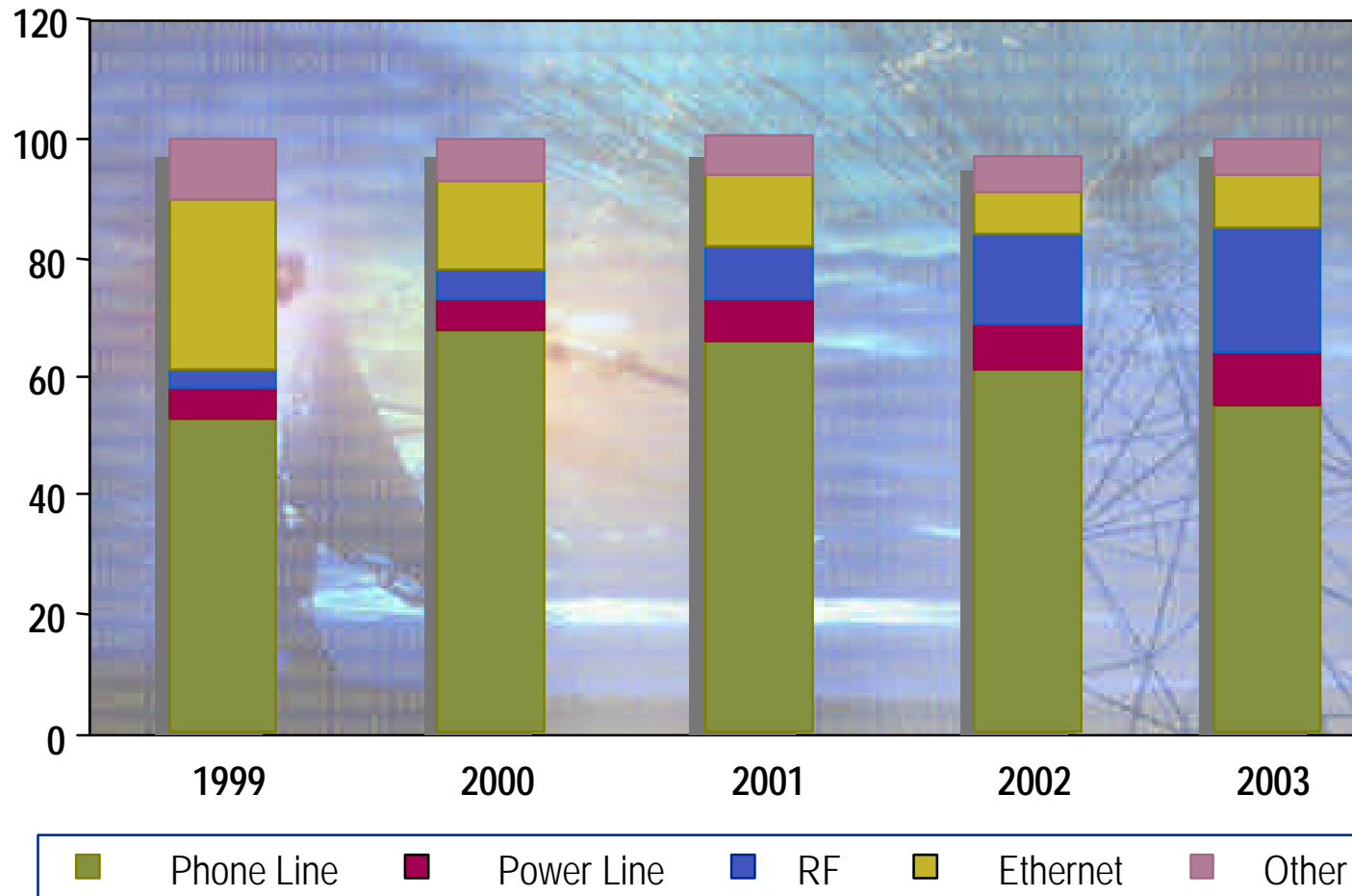


Different Applications Require Different Data Rates

Service	Description	Rate (bps)	Rate (bps)	Rate (bps)	Rate (bps)
Telephony	1 to 6 lines at 64 kbps with guaranteed bandwidth	64k	128k	256k	384k
Video Conference	1 to 2 streams at 384 kbps	-	384k	768k	768k
Data	www, ftp, asynchronous traffic	1M	1M	3M	5M+
IP Streaming	Multiple video and audio streams (10 kbps to 3 Mbps)	128k	3M	6M	6M
DTV	MPEG2 SDTV or HDTV (2–19.4 Mbps)	-	-	6M	30M+
Internal Traffic	Printer/file sharing, gaming, intercom, video monitor, DVD, digital audio, etc.	250k	500k	2M	6M
TOTAL	Estimate of Home network capacity	2M	6M	20M	50M+

Source: CableLabs

Market Acceptance



Courtesy: Dataquest



Courtesy: Dataquest

