HomePlug & Service Providers
Defining the platform for high-value services in the home

Combining Internet access with in-home networking seems logical, especially when sharing that Internet connection between several computers. But what lies <u>beyond</u> Internet sharing?
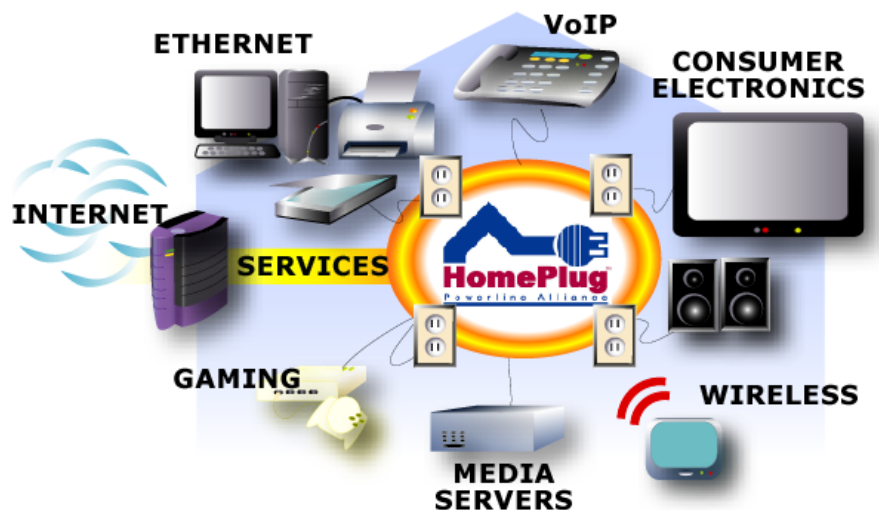
The explosive growth of the Internet and the availability of affordable broadband services have had a pleasant side effect: an increased demand for networks within homes. The markets for both in-home and to-the-home networks have been growing by leaps and bounds during the past decade; growth in one market has brought about growth in the other.

These two industries are siblings in the "digital home family". As the family grows, new ways of using both in-home and to-the-home connections are being developed – and service providers are seeing new opportunities to serve their customers.

Service provider companies have recently teamed up with the HomePlug Powerline Alliance to discuss strategies for deploying new services in the home beyond Internet access. Once they are commonplace, these novel services will someday redefine all service-based businesses.

These services, such as digital entertainment and gaming, and value-added services such as energy management and appliance control, hold tremendous value for consumers, but wide deployment of such services depends on the development of a standards- based universe of products and services. A solution based on HomePlug-certified products, greatly accelerates the realization of the vision.

Service providers have universally found HomePlug-certified products to be secure, dependable, and easy-to-install, while offering reliable and consistent coverage throughout the home. Installing a device on a HomePlug network is as easy as plugging it in. The installer can leave their heavy tools in the toolbox; sharing a device – such as a cable modem – no longer requires drilling holes in walls and floors.

The Last Mile Meets the Last Few Feet

It is well known that service providers, such as HomePlug members Comcast and Earthlink, provide residential connections to the Internet.

However, there is a new option in the offerings of service providers. Going beyond delivering the Internet to your front door, they are offering networking throughout your home. Some offer home networking devices for a small monthly fee. For example, in addition to monthly Internet access, service providers can offer HomePlug units, so that you can easily share the Internet connection throughout your home.

A glimpse into the near future shows a network flexibility that will give consumers many more services and choices. Since HomePlug products create a backbone network within the home, new services can be offered throughout the house… everything from Internet radio to online gaming. Some service providers offer more innovative services such as remote management and support of the home network, so that homeowners no longer have to be their own system administrator.

The HomePlug-based backbone powerline network when bridged to a wireless technology even enables the use of low-power wireless devices such as PDAs and wearable electronics, since wireless coverage is available anywhere it plugs into the HomePlug backbone.

Why is HomePlug technology a worthy backbone for all these services? HomePlug has proven its ability to provide high-reliability, high-bandwidth coverage throughout the home

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including built-in QoS (Quality of Service). QoS allows services to be assigned a "priority level" that is based on the criticality of the data.

With QoS, audio and video play smoothly, even while other lower-priority applications are using the network. Service providers have spent considerable time developing architectures that allow service flows to be either prioritized or reserved, ensuring that the customer's experience is maintained during network load fluctuations. Most widely deployed networks do not currently support QoS.

All of these efforts are focused on making home networks as easy to use as possible, while also creating a platform within the home to realize new services.

An Overview of New Services

Hosts of new services are in the planning stages. Over the next few years, expect to see these offerings from your service provider, many built on HomePlug-based home networks:

The "Triple Play": Internet, Voice, and Video
Many consumers currently purchase telephone service, internet service, and video services from different companies. By delivering a broadband connection to homes, service providers are looking to build on their abilities to deliver all three of the most widely available services.

♦ Voice-over IP or "Internet Telephony" is being offered by many service providers today, including companies that also supply traditional telephone service.

♦ Video, delivered via your broadband connection is also being implemented, providing high-quality entertainment on a pay-per-view or pay-to-download basis.

Additional services enabled by the presence of a manageable home network include some of the following:

♦ **Secure Communications**
Worried about whether your network is being accessed from the outside? Nervous about viruses? Your service provider offers firewall and virus protection for a small monthly fee.

♦ **Whole-House Spam Filtering**
Service providers know the sources of spam better than anyone. Services are now being implemented that can protect your entire family from unwanted e-mails.

♦ **Parental Controls**
Due to the controls offered by service providers, parents will be relieved to know that they can allow their children to access the Internet without fear of stumbling upon a questionable site, or downloading an inappropriate file.

♦ **Content-on-Demand**
Do you want all the up-to-the-minute sports scores waiting for you when you get home? Top News? Stock quotes? How about the latest album from your favorite artist or the most recent high-definition film from your favorite movie star? You can set up a running list of the content you want, and display it on the device you specify. Many analysts are predicting that there will be growth in special-interest subscription services such Sports, Movies and Television, and even video communications services.

♦ **Home Security**
Keep your peace of mind by knowing that your home and the people inside it are safe. Security video and audio can be delivered to you wherever you have an Internet connection. And your service provider can allow secure access to you – and only you – from anywhere in the world. HomePlug can aid freedom of placement and ease of installation of cameras and detectors.

♦ **Remote Network Management**
Is your network up-to-date? Are all the devices on it communicating at peak efficiency? Do they all have the latest firmware? Service providers can manage your home network for you, so you can sit back and enjoy it, without the worry of sitting up all night with a manual.

♦ **Home Management**
Spending too much on the heating bills? Concerned about energy use? Your service provider can work with you to help manage the energy use in your home by monitoring the items of your concern and alerting you to any incidents beyond your comfort level.

A change is also occurring in user perception. With over 30 million households having a high-speed Internet connection, many users are becoming familiar with the idea of retrieving streaming video content from the Internet. Soon, users will get accustomed to the idea of watching streamed video on a television in their living room, rather than on a computer screen in the home office. HomePlug AV technology will help make this happen quickly![1]

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[1] HomePlug AV will enable distribution of data and multi-stream entertainment throughout the home, including High Definition television (HDTV) and Standard Definition television (SDTV), and is designed to co-exist with the current HomePlug technology.

The New Face of the Services Business

No longer content to be thought of Internet-access or telephony companies, service providers are enablers for literally any type of service-providing business. HomePlug-certified products help to create the platform within the home, so that these services may be realized.

There are many businesses that currently operate in the professional services sector, such as health care and finance. By teaming with service providers, these businesses will realize the opportunity to extend their reach directly into the home by using the systems and products that are already installed. These traditional service-based industries will begin to adopt business models that leverage their fundamental service-based competencies, and catapult them into the information age.

These residential services involve coupling an activity-based service with network access & control and administration functions. Service providers intend to manage, control, protect, and even sometimes act as a third-party billing agent, for services provided by traditional companies. In this way, both existing service sector businesses and new, information-era start-ups will emerge to constitute the unpredictably large value segment of the residential services market. The following example shows how this might happen.

Example: Home Health Care
A local health care provider can extend their market into the residence with new information-era service offerings by partnering with service providers.

Obviously, a hospital's competency is in health care delivery. Service providers may offer a universally compatible communications platform both to the home, and within the home using HomePlug products. By using HomePlug-certified products like an addressable and

remotely managed bedside video monitoring camera, or a customized patient-diagnostic device, service providers could assist hospitals in monitoring patients at home, improving compliance and effectiveness of care.

The business scenario for this residential service, and the limitless possibilities for others like it, can exist once the underlying market tiers have been developed: broadband service to the home, and reliable and addressable HomePlug devices within the home. There are also collaborative industry efforts, such as the OSGi, that are already underway and will help to make these applications a reality.

A Network Designed from the Ground Up for In-Home Services

HomePlug-certified products offer a standardized approach for the proliferation of new services throughout the home.

Because HomePlug was designed from the ground up to be a technology used in homes, long-term market forces were examined before the specification was written, including digital entertainment and IP-based services of all kinds. This is why HomePlug technology is set to provide the bandwidth necessary for delivering High-Definition digital entertainment throughout homes, and the QoS, reliability, and security for new services that have only recently been available.

In a short while, service providers will offer a cache of services directly into the homes of the customers who want them. All made possible by your local service provider and the HomePlug Powerline Alliance.