

# ■ Don't Forget the "Digital Plumbing"

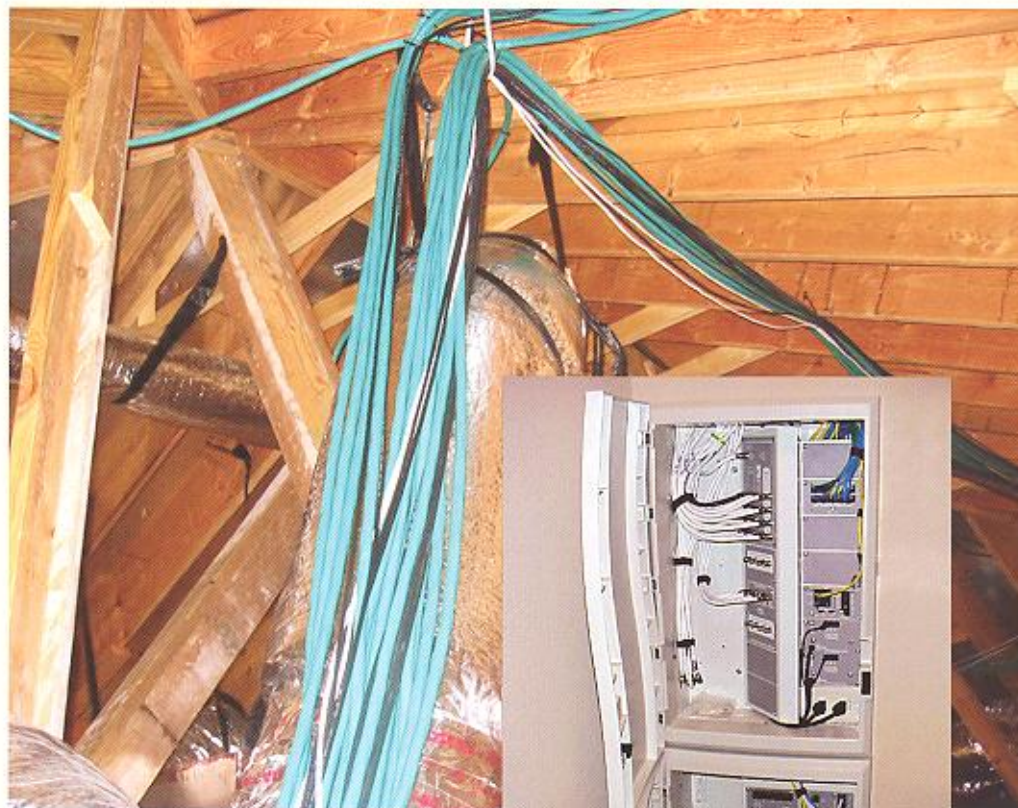
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While I am not quite sure who coined the phrase "digital plumbing," I do know that there isn't another phrase that more accurately depicts the true meaning of non-electrical home wiring. For years we have been avoiding the inevitable, thinking we will be prepared to adapt in the future. Well...the future is here. so start adapting.

## WHAT IS DIGITAL PLUMBING?

Digital plumbing is the installation of wire in a home that facilitates communications between the residents, the home and the outside world. Like traditional plumbing and electrical systems, digital plumbing takes a feed from the outside and runs it to a central point inside the house for distribution. It's from this central junction point that other rooms in the home are connected to share the feed from the outside. Other rooms, such as a home theatre or family room with an entertainment system can serve as a stand-alone sub-distribution center for that particular area. With the right connectivity this area can be integrated back into the main distribution for the home, which will share all of the audio, video, data, and information throughout the house. The primary objective is to create a web of wiring that will allow for seamless integration of any system that the owners adopt, now or in the future. Central distribution points in the home can be called a racks, head ends, distribution centers or structured wiring



cans. There are four key classifications when it comes to home wiring. They are telecom, video distribution, audio distribution and home theatre, and finally, safety/security with home control. While each of these areas represents an individual subsystem that will function independently of the others, it is in the integration of all these systems, accomplished through wiring that will prepare a home for the future.

## TELECOM

Telecom is the fusion of telephone and data communications and embodies how the residents communicate with the inside and outside world. In the home, a data network can be set up so multiple computers can share the same printer, programs, files and most importantly, a common high speed broadband connection to the internet. Dial up Internet is going away according to a Goldman Sachs/Synovate estimate that states by the year 2008 households will with broadband connectivity to the

internet will be almost 70 million while the number of homes with dialup connections will decrease from 48 to 25 million. Given the advent of internet video and music downloading, gaming (PC, XBOX, PS2), and a general need to have multiple computers on the web at the same time, it's not long before data lines will be demanded as a standard feature in new homes. The good news is, that when wired correctly, telephone and data use the same type of wire. When it comes to telecom wiring materials at a minimum Category 5, (CAT5) or CAT5e (enhanced CAT5 for faster speeds,) should be used. CAT6 is a higher quality line rated for faster data speeds and is even better for this application. Other solutions such as CAT3, two pair telephone line and 66

punch blocks are not compatible with current data standards and should not be used. These materials make it impossible for homeowners to reallocate a telephone line for a data line in the future.

## **HOME VIDEO DISTRIBUTION**

Video services enter the home through Cable or Satellite TV provider lines and travel to the main distribution center. From this point the signal is sent throughout the house to all rooms wired for video. An advantage available to homeowners when the video is run to a central distribution point is a process called modulation. A homeowner is able, through modulation, to send video from one room to all rooms wired for video on a predetermined channel. This means that a DVD located in a main viewing area, when played, could play on channel 71 throughout the entire house. Given the need for a telephone connection near many video devices, (satellite TV, TiVo, ect.) it is a good idea to have a phone jack in the same wall plate as the video drop. This will alleviate the need for homeowners to stretch a telephone cord from one side of the room to the other. The typical wire used for mass video distribution is RG-6 Coaxial cable. A higher grade RG-6 Quad is available as a premium product, but is not necessary in all applications. Video can also be distributed over composite, component, and DVI cables. These cables however are typically reserved for shorter runs in the home theatre and for wiring high end TV's in individual rooms. Older video wiring solutions such as RG-59 should no longer be used for any video other than non-modulated security camera video signals.

## **WHOLE HOME AUDIO DISTRIBUTION AND HOME THEATRE**

The ability to create and change the audio atmosphere with the touch of a button is possible with the right wiring. Whole home audio revolves around the desire to have different audio sources available and controllable indifferent zones around the house. The internal distribution point for home audio is referred to as the head-end and will be located where the homeowner expects to locate the home audio equipment. The wiring used from the head-end to the keypad controllers and speakers

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