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Lyons' Den

Why Does My Refrigerator Need an ISP?

By Daniel J. Lyons

I'm sure that you've heard it: someday your refrigerator will automatically check the expiration date on your milk and order more over the Internet before it expires. I wonder though, why should my refrigerator need an Internet account? When I buy a house, will I need to check and make sure that I have a domain name lined up and enough IP addresses for all of my appliances? I don't think that connecting our household appliances directly to the Internet is really the answer. If everything is a computer, you end up doing the same things over and over and wasting effort. What we really need is a new concept of how computers and connected appliances can work for us.

It would be silly to have Internet connections for every device in your house. Even if you had an Internet router connected to your

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home network, think of the bandwidth wasted while your Dryer is ordering more Bounty, your refrigerator is ordering more milk and your couch is checking up on the newest upholstery available at Sears. I don't really want to be that connected. Besides, what if you don't want to order Bounty and Milk or upholstery, say you're about to leave on a business trip and are letting things slide until you get back or you're between jobs and have no steady income coming in. We need a central control system to watch out for these things. The last thing we need are appliances that need to be kept up to date on our schedule and financial status.

That said, I also don't think that the concept of intelligent appliances is too far off. The difference is mainly in execution, computers need to evolve into self-contained embedded devices. These self-contained devices would not need to be configured or to have other devices configured for them, they would just need to be plugged in to work. The seeds for this evolution are already present; universal programming languages and data formats like HTML and JPEG allow us to transfer data between many different computer platforms and may represent the first steps

towards an universal data format. The new breed of hot swappable and auto-sensing ports like USB and FireWire allow for a truly plug and play computer and show us that connecting devices does not have to be an educated skill. FireWire has even been freed of the computer. If you have a FireWire camcorder and a FireWire VCR, you will have no problem connecting them together without a computer in sight (or out of sight, for that matter).

Eventually our technologies will converge, not in the form of a multi-function device or a TV/Computer/Footstool, but in a form more akin to your stereo system. All devices will connect via a connection that provides both data and power. Data will come in the form of a standardized format used to communicate between the devices. Look at your VCR, did you need to check and make sure that it was compatible with your TV? The answer is no, all VCRs send out the same signal and all TVs take in the same signal. We need to expand on this concept. You would purchase a Display that has one single purpose, to display data transmitted to it. It won't matter what type of data, a spreadsheet, a TV show, or a video telephone call, they would all come into the Display in the same

format. This data would come from other connected devices; the spreadsheet would come from your spreadsheet program, the TV show would come from a cable box and the telephone call would come from a telephone receiver.

Your Processor (which would contain the CPU and memory of the system and would make the interactive functions happen) could be made by Apple and be running a descendant of the MacOS or it could be made by Dell and running a descendant of Windows, either one would use the same programs and the same peripherals, all speaking in the same standard format. The important part of this is that, no matter how the device does the work it needs to do, it always does it with the same type of input and always results with the same type of output. The choice of operating system would finally become truly dependant upon personal preference and not what everyone else is using or what software is compatible with it.

Another benefit to this approach would be the elimination of the boot process. If everything that an appliance needs is embedded in Flashable ROM (to allow for easy upgrades)

there is no need to wait five minutes for everything to get ready to go. This would also allow us to be more flexible in how we set up our systems. Say you don't want your appliances to be able to order on-line and you don't need a computer in your house. You simply do not buy the Processor unit. If there is no Processor unit, the appliances will have nothing to make their requests of. Since they are all self-contained, they will still work, just without the extra features that they would have if they were connected to a Processor.

Peripherals would be able to sense what other devices are plugged into the system and react accordingly. When you turn on your Display, you would see a list of device-specific icons representing the Data Sources available to you. Depending on the data source's requirements, the system would either begin displaying the data (for cable or other view-only data stream) or search for the nearest active Input Device and wait for user input. Input Devices will have the option of being wireless or hard-linked to the system, wireless being the more popular choice, I would imagine. This would give you the option of carrying your favorite pointing device or keyboard with you. This would also be the most

difficult part of using these embedded computers, making sure that you have the proper Input Device. Clearly, if you open a word processing program, you will need something to input text, just a mouse would not be enough. Even this could be overcome by incorporating an on-screen keyboard like the one in the Palm OS.

Programs would reside on Data Cartridges that can be loaded onto a Storage Unit for easier access or run directly from a Cartridge Reader. No more lengthy installation process or multiple disk swaps just to get a program ready to use. Each family member could have their own Storage Unit with their own private data and programs already loaded and be able to access it anywhere. If your home system includes an Internet connection, you could even connect remotely from work or while traveling.

I like the idea of computers that work for our benefit by design rather than just when properly configured. I have to admit, however, that there is a part of me that hopes it doesn't happen. Since I make my living helping people to use their computers, computers that simply work may land me a job with a paper hat and a drive through. Then again, maybe

that wouldn't be so bad, after all, I do like fresh french-fries.

* What do you think? Tell me in the Lyons' Den Forum! (No registration necessary!)

Talkback

The Lyons' Den

Daniel J. Lyons started with the Mac back in 1989 laying out a High School newspaper on an SE and was immediately hooked.

Now, several computers later, he is hoping to share his thoughts and experiences and maybe even a few gripes with anyone who will listen.

Daniel has worked in several computer labs and built and maintained numerous office networks over the past ten years. He is currently employed as a Technology Manager and has experience with both AppleShare and NT networks.

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