

## Home Networking

Several recent studies suggest that the number of households with some form of home networking will grow at an annual growth rate in the high double digits over the next few years. Why are so many homes installing a network? The two biggest reasons are the rapid expansion of broadband and the growth of video games.

### Driving Forces

With high speed Internet access of various forms starting as low as \$30 to \$40 per month now available for most households, the broadband industry is beginning to emerge from an explosive growth phase. Coupled with this is the increasing tendency of families to own multiple PCs, such as a computer for the parents and one for the kids, or perhaps a laptop for a student. Over the long term it makes little sense to order several broadband connections when families can just as easily share one connection. Sharing a connection also generally provides a measure of security, with the *router* blocking access to the local computers from the Internet.

The second major factor we see is the growth of video games, both console and computer based. Nowadays games actually drive the computer hardware market, with modern games requiring huge amounts of graphical and CPU power and disk space to handle the increasingly advanced 3D graphics. Furthermore, almost every new game includes some sort of network

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## Case Study: HotRooms.com

This issue we would like to focus on a solution ITS recently implemented for one of our clients. Hotel Reservation Management has a subdivision which is a discount hotel reservation service offering great rates to travelers needing accommodations in the Chicagoland area. When they first established their hotrooms.com web site seven years ago, the site contained information for a relatively small number of hotels, with an online form customers could use to submit a request for a reservation for a particular hotel. Changes could be easily made to hotel information and prices as needed by Hot Rooms staff.

### Challenges Arise

As the business grew, more hotels were added and the online system gradually became unwieldy. As many as 50 hotels wanted to modify rates on a daily basis, or offering specials to fill up the hotel on slow days. In its existing format, availability information was not visible online, causing delays and some dissatisfaction with the reservation process. Hot Rooms staff spent significant amounts of time following up on reservation requests for hotels which had changed rates or limited availability for selected days due to city-wide conventions or events. Hot Rooms estimated they spent several hours per day calling potential guests and hotels to be sure customers were getting the best price for the desired dates. Because the process was cumbersome and could not take place in real-time, a significant number of the initial reservation requests did not turn into actual reservations, translating directly into lost business.

### Analysis

Working with ITS, Hot Rooms identified several key features of a new web site. For example, HRM already had a custom database program on their network for tracking room availability and pricing for use by their telephone representatives. This information needed to be available online for customers to access directly, as close to real-time as possible. However, HRM did not want to allow access into their network from the Internet. Restrictions such as minimum stays needed to be visible as well, so customers would not request pricing which was unavailable to them. Hotels that were unavailable for certain dates would be hidden from customers' view. Except for the reservation process, HRM was satisfied with the overall design of their site, and liked that their staff could maintain most of the site's content in house.

### Solution

In a relatively short time, ITS implemented a solution which allows customers to input a date range and see exactly which hotels are available, as well as prices for those dates. Since Hot Rooms was already entering this data in their offline database, ITS was able to leverage this effort by writing a program to upload all this data to the web site on demand. Request information is encrypted and stored online for later processing by reservation specialists, who receive an e-mail notification for each request. Upon completing a transaction, customers automatically receive an e-mail confirmation including dates and pricing, eliminating the need for follow-up calls. In addition, ITS was

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Case Study: *HotRooms.com*  
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able to implement and test this solution without a large scale redesign of the site, providing for a seamless transition to the new system for Hot Rooms customers.

## Results

Positive results were immediately apparent. In January 2003, the first full month after implementation, the number of online reservations increased by 100% over January 2002. Hot Rooms has actually been able to handle significantly more online reservations in the first half of 2003, with less staff. Customer satisfaction has also increased dramatically since current availability and pricing is visible online before a reservation request is made. From July 2002 to December 2002 the number of visitors to the site had actually been steadily decreasing, but jumped about 25% in January 2003. Even better, it has remained relatively constant since then, even increasing slightly. During this same period the average number of pages viewed per visitor had also decreased steadily, only to jump by almost 40% in January 2003. This number has also increased a bit since then. Together, this activity indicates customers are not only returning to the site but staying at the site longer. Since HRM is saving several work hours per day, it is able to handle more reservations with less staff, paying for the project in a short amount of time.

## Conclusions

Proper analysis is a critical component of any programming project, whether discussing web sites or traditional application software. Working together, ITS and HRM identified the problem areas of the old site and the cost savings of implementing the new plan, allowing HRM management to make an informed decision on what steps to take. ITS then implemented the new system, integrating it into the existing site. The resulting solution is a success for ITS, HRM, and its customers.

# Trends

## Wireless Monitors

One recent development in the display industry has been the advent of the "wireless monitor." While on the surface this sounds like an incredible achievement, underneath we find the name is mildly misleading, even though the product is a valid one.

The wireless displays on the market today tie in to the ability of Windows XP Professional to support remote access to the computer through its Remote Desktop feature. The monitor actually is a device that connects wirelessly to a regular PC using Remote Desktop, essentially no different than accessing the host PC from across the Internet.

Current implementations are intended more for use in an unwired setting, for instance a conference room, where a staff member can quickly set up a wireless monitor and connect to his or desktop PC, without actually disconnecting, moving, and

reconnecting the PC hardware. A touch screen lets an individual use the device without need for a mouse. A "virtual keyboard" program allows for typing on screen with the stylus, and a regular keyboard and mouse can be attached as well. In addition some models allow the use of a larger external monitor for shared viewing.

Such flexibility makes this product a great fit for presentations, group meetings, Internet access for a conference, and many other applications. Since the user is actually operating a PC on the company network, any software program may be used.

While wireless data streams cannot yet support monitor-quality video signals, this type of product is a very neat entry into a niche market. Currently retailing for around \$1,000, they are an elegant alternative to conference room clutter.

# Humor

## You've Been On The Computer Too Long...

by unknown

When asked about a bus schedule, you wonder if it is 16 or 32 bits.

When you are counting objects, you count, "0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D..."

When your wife says "If you don't turn off that machine and come to bed, then I am going to divorce you!" and you chastise her for omitting the "else" clause.

When you are reading a book and look for the scroll bar to scroll to the next page.

When you pick up the phone and start dialing an IP number.

When you get in the elevator and double-click the button for the floor you want.

When you hit the wrong key on the elevator keypad and feel frustrated

when you find no "undo" key.

When you not only check your e-mail more often than your paper mail, but you remember your network address faster than your postal one.

When your computers have a higher street value than your car.

When your SO kisses you on the neck and the first thing you think is "Uh oh, priority interrupt!"

When you try to bring a window to the front of something, then you realize that "something" is a Post-It™ note on your screen.

When you pick up a root beer and read the label as "High Res," not "Hires."

When you go to balance your checkbook and discover that you have been doing the math in octal.

# Tips

## Sorting A Spreadsheet

Everyone knows that spreadsheets are good at handling numbers. However they are also good for tabulating data. One use might be to track data points over different time periods, for example.

Let us assume for a minute that we have a spreadsheet containing a daily expense amount. Using Excel's built in functions we can quickly find the average or sum of these numbers, but what if we wanted to find out how many days we spent over \$100? One easy way is to let Excel sort the data for us.

Using Excel's capability for data handling, we can have Excel do all the work, and maintain the data relationships. In other words, Excel is smart enough to keep each row's data together when sorting.

To experiment, open a blank spreadsheet. In cells A1 and B1 enter *column1* and *column2*. In cells A2-A5

enter *a*, *b*, *c*, and *d*, and in cells B2-B5 enter *1*, *2*, *3*, and *1*. Now select these ten cells, and click the *Data/Sort...* menu item. Excel recognizes your column headers, and prompts you for how you wish to sort the data. Note also how you can sort on multiple columns at once.

To limit the data displayed, you can force Excel to hide certain rows. For instance, click *Data/Filter/AutoFilter*. Excel creates pulldowns for each column. In Column2, select *Custom...* where you can pick *is greater than or equal to 2*. The rows containing "a" and "d" disappear. Use the pulldown again to select *All* to display all rows.

Excel does save the current state the spreadsheet when saving the file, so if you wanted the original sort order or filters, be sure to save the file as a different name, or copy the data to a different tab in the workbook before manipulating it.

## Q & A

**After the recent severe storms we had to power off some equipment to reset it. Can we avoid this?**

Absolutely. Electronic devices rarely care about blackouts, however problems can occur as the power falls off, or as it comes back on. Ever notice how the lights flicker when power is restored? That is the voltage fluctuating as the entire grid comes online at once. This creates a brownout situation which in the extreme can be highly damaging to equipment. At the other end, sometimes devices only require a simple power down to reset them, however this still results in downtime. Switches, cable/DSL modems, and the like seem to be more susceptible, probably because they are frequently left on 24x7 and not turned off during storms.

The fix is to use a UPS that provides voltage regulation. APC for instance

recently released two new models with longer battery runtimes and lower prices, which even include ethernet and modem/DSL protection.

**Can I connect non-PC devices such as my iMac or game console to a DSL or cable modem?**

Yes, one of the nice things about the Internet is that it was designed to be completely platform-independent. This means any shared connection can be used for any device capable of Internet communication, whether it uses MacOS, Unix, Windows, or any other system. Game consoles like Xbox and PlayStation 2 can also connect to the Internet, with the required hardware.

Experts predict that in the future there will be anywhere from dozens to hundreds of devices within each home which are Internet-ready, facilitating home automation.

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or Internet play to allow multiple users to play with or against each other. "Gamers" frequently organize "LAN parties" where friends get together simply to play video games over a local area network.

Likewise, game console manufacturers like Microsoft and Sony have attempted to enter this arena by providing Internet play on their Xbox and PlayStation 2 products. Game developers are starting to leverage this, for example with team games such as various sports and combat titles.

## Implementation

One challenge to home networking is the lack of structured wiring in houses. Even today many new houses lack data wiring, and since houses strongly favor solid ceilings over ceiling tiles, adding wiring can be difficult.

Fortunately the networking industry has solved that problem as well. As we have discussed in previous issues, wireless network usage has really taken off. Supporting this assertion is industry giant Cisco's recent acquisition of Linksys, a company which specializes in the small business and home networking arena, where Cisco has no brand presence.

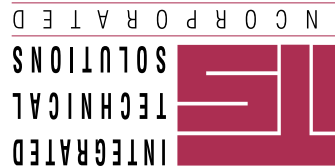
With the proper security, wireless connectivity can be a great addition to any home, allowing families and friends to share their Internet connection as well as data files and a shared printer.

## Opportunities

Speakeasy, a longtime ITS broadband partner, pounced on this trend, actively encouraging users to share their Speakeasy DSL connection with neighbors. In fact Speakeasy will allow the account holder to set pricing, and handle all billing, providing a 50% credit back each month for each additional user. Subscribers gain access to Speakeasy services such as e-mail accounts.

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