

Remote from Reality: The Out-of-Box Home Experience

You cannot even begin to imagine the pain of achieving high-definition pleasure

by Aaron Marcus, who often contemplates the 18 or more remotes that now populate his home/office environment, wondering if he can remember the on/off positions in each.

Stepping into the Unknown and Unexpected

A recent national radio news broadcast in the USA announced that what most American men wanted as a year-end holiday gift was a giant, high-definition television with appropriate accoutrements, presumably for watching and recording sports events. Although I don't exactly qualify for all the attributes of this demographic group, I decided it was the appropriate time to increase my expertise in the area of home consumer electronics and explore in greater detail the user experience (including user-interface) issues of home-media systems. I got more, and less, than I paid for and expected. Let me recount the acquiring of this user experience. Please excuse the more personal style of this column's comments; I feel like an "embedded reporter" on the frontline of the home-consumer-electronics battlefield.

I decided to set up a non-PC-based home media system as a research tool for examining the details of purchase, out-of-box, set-up, and maintenance experience for the home consumer, in addition to details of user-interface design for viewing and recording media. Although I was not a viewer of cable/satellite television (I barely have time for such browsing given many other tasks and deadlines, like this column's), and I did not yet own a video hard-drive recording device, I felt it was my "professional obligation" to become as typical a consumer of video and audio media as possible under the circumstances, in order to understand better what consumers were experiencing, and to look especially at the user-interface and information-visualization issues.

First, I began researching likely equipment on the Web, in print, and at local electronics stores. *Wired*, magazine published an excellent review of some 250 products, including high-definition televisions, recording devices, etc., in late 2004, just in time for the end-of-year purchasing frenzy. Based primarily on *Wired's* recommendations and some actual viewing of large-screen displays at Costco, I had decided on a Samsung 51" (diagonal) high-definition display. I had decided that space did not require a flat, wall-mounted or standing plasma display or liquid-crystal display (LCD). I could get a larger screen for less expense using a digital light-processor (DLP) rear-projection device. Trying to cross-compare the attributes of devices and to examine detailed technical specifications was mind numbing, and exceedingly frustrating. Detailed specifications of key factors, like brightness contrast-ratios of screens, spatial resolution, and price were not often in the same place at manufacturers Websites, were not often listed in recommended lists in printed publications, and key attributes were missing from cross-comparison lists. Just dealing with one piece of equipment, the primary viewing device, was challenging enough. Imagine the mental exhaustion having to cross-compare three or four related devices, such as home recording-systems, also. The poor, pitiable consumer is

left with much cross-referencing activity to do, and there is, to my knowledge, no stand-out winner of comparison Websites or other tools to assist.

At another store, Good Guys, I was persuaded by a knowledgeable sales person to abandon my previous choice and select a Mitsubishi 62" device, which was a behemoth. One of the primary and unique benefits seemed to be an all-purpose device master remote-control unit, to which all other devices could be connected. Even *Wired* admitted this was a powerful, positive feature, although complex. I decided to take a deep breath and plunge into the unknown abyss of high-definition and home media centers. I could not imagine what it was going to do to my schedule, my mental health, and my life in general.

For one thing, after all other reviewing and analysis, I had to spend four hours in a sales showroom with numerous sound systems and video displays pounding out sound and blasting my eyeballs with high-definition movies and canned displays. By the end of the final sales rituals, I had a painful, splitting headache. I thought this was not a good sign.

The next stage was delivery. The vendor promised a four hour window, and, surprisingly, the delivery crew kept to their schedule. The main device, the television, required two people to lift it. A world had come to an end for me: a lifelong expectation, that, if I needed to move a television from one location to another, even from one corner of the room to another, I could do it myself. From now on, I would have to hire a moving crew. This device, this monarch with its attendant princes and princesses, is larger in square front-face footage than the refrigerator, and weighs almost as much. It is curiously interesting that the storage device for food and food for thought, or at least entertainment, are such two giant home appliances, the center of the kitchen and the center of the living room or home media room.

Now came the out-of-box and set-up experience. Here is what finally had to be connected in the central viewing "pod," the home living-room or home theater-room, and elsewhere in the house:

-- The big kahuna: a 62" Mitsubishi DLP rear-projection high-definition television

-- The supporting characters:

Samsung DVD player

 Mitsubishi High-definition VHS recorder with built in NTSC tuner

 Direct-TV satellite signal decoder plus Tivo with 250 gig drive

Additional 2 Direct-TV satellite signal decoders for two other rooms

 Terq Satellite dish on the roof

-- The system already had:

 Sony Surround-sound analogue AM/FM receiver and AV hub

 Sony VHS recorder with built in NTSC tuner

 Sony CD-ROM player with 6-CD changer

 Sony Audio tape player with two decks for copying

 27" Sony TV now being used in master-bedroom with satellite decoder

 19" Philips TV being used in a home-office with satellite decoder

I was amazed that the sales representative had to pay three four-hour visits to my home in order to connect and set up all of this equipment, which was part of

the purchase price. Twelve Hours. I could have flown from California to New York and back in that time. He, too, had a family that waited for him, and I learned some personal details about his family history and home situation. I had not realized that when one buys a device like these giant systems, that one actually inherits two new family members: the television, and the sales/set-up person. When I related this experience to my son and fiancé, who were to be marrying soon, my future daughter-in-law kindly asked if I wanted to invite him to the wedding!

At last, after many hours of dedicated, persevering effort by the sales representative, not only with wiring, but going through all of the set-up screens of all of the devices, the main system was more or less ready to test with regular antenna ("off-air") signals. I had noticed and appreciated that the 20 or so set-up screens for the Mitsubishi Net Command, featured much seemingly clear English text to guide the user in every step, using what some would hyperbolically call wizards. In general, the Mitsubishi NetCommand master control system was impressive. It featured intelligible English sentences that guided the user through the necessary steps. Nevertheless, the terminology of inputs and outputs, of acronyms, of unexplained technical terms, and the overall daunting complexity makes me marvel that the average "couch-potato" user could cope with this massive, monolithic user experience.

Unfortunately, the expert sales person, had little incentive or time to guide me through all of these screens, skipping over entry of Zip codes that assist in positioning the satellite dish antenna properly, for example, and I was left to look back through them at another time. I estimate, had I needed to do this set-up all by myself, that it would have taken approximately 1.5 times to twice as long to accomplish than the 12 hours he spent.

I clearly gave up early and let the sales rep click his way through the set-up. I tried to understand and take notes of what he was doing. The wires in back of the cabinets looked like some Rube Goldberg folly, and I wondered if I ever would be able to replace or adjust them without requiring technical help should some unit require replacement. I was amazed and appreciative that this sales person devoted so much time and energy to helping me. I could not have made it through set-up without him.

I sat and contemplated the 18 or more remotes (see Figure) that are now going to be active in the house to run all TVs, radios, DVD players, VCR players, etc. Many of these frequently are upside down as I vainly try to switch channels in the dark. I realize that almost all of them, even TiVo's, are hard to recognize in the hand merely by the shape of the general object, some surface treatment, or button clusters.

Even before the DirectTV satellite dish and decoder installer scheduled another, separate visit, I examined some of my new companions. In addition to the devices themselves, I am confronted with the following:

- 7 new remote controls, one of which claims to be able to take over most of the others.
- At least four new on-screen menu systems, all different in content, style, navigation, even terminology.

- 225 Buttons on these controls, approximately, many of them redundant, some of them unique, most in different physical locations, and some with different shapes and labels, even coming from the same manufacturer.
- 300 pages of new user manuals, in addition to the previous ones, including just one "User Guide" document from DirectTV that is 176 pages in length. What can be happening with typical home consumers? Are they reading these manuals? I would guess not.

The sales representative spent many hours programming the universal control of the Mitsubishi, which claims to take over most of the control of most of the other systems. The procedure required at times painstaking, annoying, double entries into the system for each button of each remote not registered with the master system in order to "learn" the "foreign" remote. Having done this once for all of the other devices, the master Mitsubishi system failed to register the DVD player because it was an "Other" system (Samsung). Confronted with going through this ritual for a second demanding time, the dealer sales representative urged me to replace the Samsung DVD player with a less expensive but equally capable Mitsubishi DVD player "in the family," which registers automatically. In the end, we kept the Samsung, and he had to go through the process a second time.

Despite all of this effort, several weeks later, the master remote seems to have failed to "catch on" and the other devices turn off and on at the wrong times, seemingly randomly at times. Consequently, I have to have at least four remotes in front of me to make sure that all systems operate properly. For example, a tape recorder set to record an off-air video must be in a power-off state to operate properly; if it is accidentally left on, the desired programs will not be recorded. It is very easy to not notice that the universal remote has failed to turn off that device when various devices are put to sleep when the system closes down.

Much time has been spent just to get to this point in systems set-up and operation. In terms of time, I estimate the following:

Purchasing the system required:

- 4 Hours at least studying product literature.
- 5 hours spending time in show rooms.

Installing the system has required:

- 2 Hours for removing the old TV and preparing the wires and space for the big new system.
- 4 Hours with a first visit of the sales rep bringing the DVD, High-D VCR, and the DirectTV and TiVo units and doing initial wiring of those devices.
- 1 Hour of waiting for in the 4 hour delivery window for the arrival of the giant tv, including asking the installers to hide the box so my neighbors don't see, because I am a little embarrassed by this whole adventure, and watching the installers connect the TV, DVD, and HD VCR the AV sound system.

- 4 Hours with a second visit of the sales rep to complete the wiring and set up of the master control system, which proved impossible to compete, and seemed to require a replacement of the DVD because there is a conflict of input/output connections and an over-needs quality connection for digital surround sound that is currently not used on the DVD.
- 4 Hours, for final visit of sales rep to complete the installation and checking of all audio and visual components and controls.
- 2-6 hours estimated for reading any of the instruction manuals in detail.

I was impressed by some of the high-definition off-air channels that I received even before the 120 DirectTV channels were installed. I now had to choose from about 25 channels. I did not even realize that a local PBS channel broadcasts five additional channels, including four additional HD channels with alternate programming. Even to view the regular channels now requires me to view the channel listing (graciously supplied by Mitsubishi technology) that shows what all the recognized channels are and what they are showing. Unfortunately, scrolling quickly through this list is not like the experience using a computer; it is slow and cumbersome for line-by-line scrolling and page-by-page shifting. The list itself does not actually scroll but page-shifts, as do many other such lists, making it sometimes confusing to pick the right stations. The numbers are in ascending order downward and cannot be changed to descending. In my experience generally, the navigation techniques familiar to most PC users are clumsily adapted to home-consumer use if at all.

Also confusing to the consumer are likely to be all of formats available for viewing high and standard definition images, including 480-line interlaced images both analogue and digital, and varieties of high-definition screens. The Mitsubishi manual shows a page with 16 different video display formats that may be encountered. Is the average consumer expected to distinguish, account for, maintain, and decide among these frequently? I am also startled by the distorted wide-screen expansions of some TV formats that take the outer left and right edges of the video image and artificially expand them to fill the space, causing people on the screen to look like they are suffering from rare forms of elephantitis, as one side of their bodies balloons in size to twice the normal width. What were they thinking?

When the satellite dish installer arrived, he had to spend 13 hours trying to get the dish aligned properly and then connecting the three decoders in three different locations in the building. Alas, only well into this process did he reveal the existence of something called "diplexers" which can combine and uncombined off-air and satellite signals within one co-axial cable, making it unnecessary to install additional wiring to two distant locations within the house. I myself had to make three emergency runs to local electronics stores before acquiring enough of the right kinds of devices.

Two weeks into this process as I write this compendium of woes, the two secondary televisions still do not get the proper satellite signals, and future visits must be scheduled. Most disconcerting was the fact that the local electronics store that sold me the DirectTV system had contracted with another company to supervise installation, which had contracted with at least one other local company

to actually do the installation. This necessitated calling at least four different entities to complain about improper service or poor service, or to ask technical questions. One of the companies even refused to tell me where in California it was located according "to company policy," apparently because of some "immediately hostile" customers." This did not bode well for an over-all good customer experience on my part.

As I have begun to explore the various remote-control-based on-screen user interfaces of DirecTV, Mitsubishi, Philips, Samsung, Sony, Tivo, and others, I am struck by how lacking many are in many of the basic features of usability to which computer users have become accustomed. Lists must be scrolled in tedious ways. Customization is complex, but possible in some situations. Terminology among the vendors differs. Even DirecTV is accessed through two different kinds of remotes because of two different business partners involved (TiVo and RCA).

In some cases, when viewing lists of choices, the numerical buttons no longer work to simply pick stations, as one might wish to at any time. The varieties of local channels are not available through the satellite system, which therefore requires my still using the off-air access, which in turn requires device switching, which in turn requires different screen guides, and, in my situation, different remotes. Off-air channel changes of the Mitsubishi are quite slow, seeming to take about a half-second to a second to switch from one channel to another. Gone are the days of rapidly twisting a dial to see what's on (although one can, I admit, sample-view nine different channels simultaneously in addition to one being viewed via a special picture-in-picture function).

I am amazed that my mind, though numbed by this experience, can remember some of the key buttons that enable me to keep my sanity. Perhaps out of dire necessity, I have remembered, almost unconsciously, a few key controls for channel, volume, jumping back to previous station, etc. Most annoying is the fact that DirecTV itself does not make alphabetical lists of channel providers easily available or even available at all. On its own Website, the vast number of stations appears in one list only in numerical order, making it almost impossible to keep track of favorite brands of channels, like Turner or HBO. Instead, the consumer is required to remember anonymous, ad-hoc numbers when looking for contents.

Life has become exceedingly complex. Maybe it will seem less enervating after a month of use with all the connections in place and 120 channels safely categorized and scheduled. I worry about the precious, and no doubt expensive, Xenon bulbs that must be cooled by a fan and how much they will cost when they eventually fail. I begin to long nostalgically for my little 13-inch Sony desktop television, now relegated to my basement workbench, which was my faithful desktop companion since 1968 and is still going strong. Already I notice my habits are changing. With 19 movies playing simultaneously, and the ability to record at will, I feel almost burdened by all of the options requiring further decision-making, but I also drop in and out of movies, leaving them in an instant if scenes, scripts, actors and actresses, or scenery become uninteresting. They will be around again. How different from the precious "movie-palace" of the last century (which survives in some theatres today), which made the movie viewers' experience an occasion for dressing up in fine clothes and marveling at the Egyptian-style décor of half-columns, hieroglyphics, and starry ceilings.

Now, I am drawn more and more to want to customize my viewing and look at varieties of simultaneous content lists to decide what to watch and when, what to

record and when. Alas, many of the manufacturers do a modest job, at best, of information visualization, especially for the large quantity of media metadata that needs to be communicated, by which viewers might sort their possible choices or preferences. Given the large displays and the high definition, the space seems underused for typographic tabular display.

Life is short, choices are many. A vague feeling of helplessness and slight depression balances against the pleasure of viewing a movie with a fine visual experience and occasional high-quality content of movies and television programs. I face a world of complex, possibly undependable, expensive, partially unproven and clearly partially still unfriendly technology. Heaven help the user who chooses to experience today's home media centers. I have to admit, however, that having lived a short while with high-definition viewing of imagery, going backwards would seem a sensory deprivation; the high definition is eventually addictive. Perhaps in the future, things will be better. Maybe PC-based systems will help. Some reviewers of early entries are expressing their doubts.

Home Consumer Electronics and the CHI Community

This bleak report actually has a bright side. There is a tremendous opportunity for user-interface designers to improve the user experience of many/most of the manufacturers. With only a few outstanding success stories, like TiVo or Bose, there is ample room for improvement. We are witnessing a wild and wooly Western scenario of development of isolated, unintegrated systems. Although Jakob Nielsen has called the TiVo pause button the most beautiful pause button he has ever seen, the challenge is not isolated bits of beauty, but overall systems integration in an environment that is almost impossible control. If manufacturers won't share key specification data (as Apple for example keeps to itself), then others won't be able to co-relate access, and users will be left with tedious work-arounds, including the above-mentioned painful manual entry of button codes for devices.

The challenges are considerable and daunting.

One head of the USA design office of a Japanese manufacturer commented a few months ago that the head office people in Japan felt they knew their territory, were very busy, could not take time off for even a one-day tutorial, and did not feel they needed outside help. This reminds me of some vehicle user-interface management of major automobile manufacturers in Europe who felt they understood all of the issues perfectly and did not need outside help, thank you. I beg to differ.

Another major US manufacturer labored intensively for a more than a year to develop a standardized user-interface guidelines document that, in the end, almost no one used. The document is now several years out of date. With staff turnover almost complete, there are few, mostly long-standing engineers, who actually know the heritage of design issues, design decisions, and corporate standards, not the user-interface design staff who are tasked to come up with new concepts, new solutions.

We are entering a realm of massive change in home media systems, and more evolution, even revolution, is coming from Japan, with local digital broadcasting, for example, or the use of the Web in conjunction with media delivery. All of this

change challenges user-interface designers and analysts to get into mix of stakeholders to defend and support users to make sure their user experience is less miserable than mine was.

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