One Screen To Rule Them All?

SIZE IT UP

Envision a future in which the situation determines the interface and bandwidth delivered. **BY JON "MADDOG" HALL**

The feeling in the computing industry lately is that smart cell phones will replace the desktop, notebook, and netbook markets, with all of the real computing being done "in the cloud" and only the resulting display being done by the smartphone or thin client.

I am a Star Trek fan, and I have often considered the way in which Star Trek writers developed concepts around computers. I envied the idea that people could talk to computers, and even today, I chuckle over a scene in a Star Trek movie when Scotty (thrown into his distant past) is presented with a mouse and keyboard and says, "How quaint." Often, I review in my mind how the Star Trek actors interacted with their computers.

The simplest interaction was usually tapping the communication badge and asking a simple question: "Computer: What is the distance to the nearest Federation Outpost?"

The computer would then respond with a simple answer: "You are 15 light-years from the nearest outpost and will get there in 10 minutes at warp factor seven."

A simple question, a simple answer. (Dyed-in-the-wool Trekkies, forgive me if I did not give the right calculations here.)

Now picture yourself walking in the corridor with Captain Janeway at your side. You tap your communicator badge and again ask a simple question: "Computer: What are the results of my last medical exam?"

The computer responds with a simple answer: "You have 37 sexual diseases, and 15 of them are alien."

After slinking to your cabin, you ask in your personal computer log whether any of those are treatable. A more complex series of questions and answers might ensue.
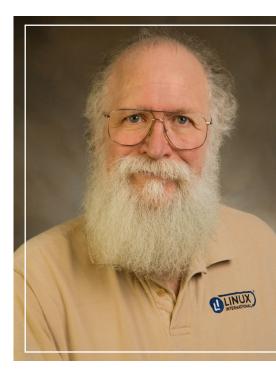
The bridge, engineering, navigation, and sick bay were all "workstations." Although Dr. "Bones" McCoy would do simple medicine on the bridge, for complex treatments, the first thing he would say was, "Beam us to sickbay." Various crew members would do simple navigation on the bridge (of course), but Seven of Nine would go to the Navigation Room to utilize all of the charts, large screens, and special tools available there to do "real navigation." And, although engineering had an emergency bridge, the main bridge was normally where most of the control decisions were made. "Workstations" had special tools and interfaces that helped the crew do their jobs more efficiently.

Now I'd like to go back to the concept of the "smart" cell phone being the only interface.

I find it hard to believe that the same people who like 42-inch LCDs are telling me (and several of them are) that someday they will utilize one VERY small screen. Granted, LED projectors already are being built into phones that can project a 60-inch diagonal image onto a surface, and you could add a regular keyboard and mouse to it to make a complete computer. But, will this wee beastie have the horsepower to drive the one or two additional displays that people seem to need?

A second consideration is the matter of bandwidth. Already in some places in large cities, people cannot make 3G calls and have to revert to 2G systems because too many people are downloading videos and music to their cell phones. Although many people will call me a naysayer, I make the observation that people tend to use all of the wireless bandwidth they are given and want more.

Like oil, there is only so much wireless bandwidth to go around, and as more and more people use the available spec-trum, it gets squeezed more and more. Yes, we can throttle the usage, but is this the only answer?

The solution usually given is creating smaller and smaller cells that are shared by fewer people, allowing higher per-person throughput, but I think the real answer also requires more intelligence in how we use the bandwidth to give the customers the greatest amount of functionality depending on the situation. Achieving this might require more computational power or more graphic power on the client end as well as on the server end. Does it make sense to deliver HD bandwidth for immediate play on a cell phone screen?

My vision of the future has applications being written to supply the information needed when it is needed. Programs should be written to recognize the situation that the user is in and use progressive methods to give them the right interface and bandwidth. I am unlikely to plan my entire three-week vacation on the screen of my cell phone. For that, I would like as much screenage as possible, perhaps with surround sound to put me in the mood for the tropics. But after my airline flight is canceled and I am running through the airport looking to schedule the next flight from where I am to where I want to be, I am willing to use my "communicator" to say simply:

"Computer: What is the next airplane to get me home?" ■