Brainstorm: Holiday Wish List

Edited by Jason Lomberg


As the holidays approach, what product or technology is on your wish list?

Keith Curtis, Microchip Technology, www.microchip.com [1]


When I was asked this question, I thought about which technologies would be fun to play with and which technology limits were the most annoying. In the end, I decided to go with a more personal wish. I would love to get a pair of small, VGA glasses for my laptop that actually works as advertised.

One of my fondest dreams is to be sitting on an airplane, flying over the Atlantic, developing code for a small embedded application. The problem with this dream is that a laptop computer does not fit between me and the seat in front of me. Airline seats just are not built for guys like me, so the only way this will work is to keep the laptop in my bag and use a small keyboard on the fold-down tray—along with a pair of VGA glasses that will show me a full-size screen.

I have tried some of the small, video-resolution glasses, and they do show a passable image; but I have yet to see any SVGA-resolution glasses that produce an image equivalent to an actual monitor. The day I find such a device, I will be a happy engineer who will never complain about overseas travel, again. Just think of it, 8-10 hours of uninterrupted code writing, with no conference calls, no interrupts and no meetings— guaranteed. Now, that would be sweet!

Lindsay Powell, 3M, www.mmm.com [2]

Christmas? It’s that time of year already? With the economy as it is, I think smart buys are key, by which I am thinking add-ons that make stuff I already have work better.

Case in point, I recently bought an iPhone. What I’d like Santa Jobs to bring me this year is the Flash player that’s absent from mobile OS X (so I can see the streaming media webinars that are blocked from my work machine on the company network). I’d also like to see a ‘copy and paste’ button. Add in these tweaks and the iPhone is the ideal handheld Internet enabled communications device.

Since Apple did not launch a sub-$500 laptop this year, I recently bought a sleek white Acer Aspire One UMPC running Linux (I stuck an Apple logo on the case so it looks like the younger brother to my iBook). I’d like a six cell battery for it since the three cell gives me less than two hours to work on the plane – Austin to Chicago O’Hare is 2 hours 45 minutes one way. Preferably a pack that wraps under the UMPC, not one that sticks out of the rear. With that, I wish all ECN Readers a Merry Christmas and a Happy New Year.

Paul Semenza, DisplaySearch, www.displaysearch.com [3]


This year, my holiday wish list includes Optoma's "Pico" pocket projector. The company has managed to fit a video projector into a package less than 5 cubic inches (77 cc) in volume, and weighing 4 oz (114 g) with battery, or just about the same size and weight as an iPod Classic. With this device, you can show videos or still images from any device with a/v out, including portable media players, digital video and still cameras, smartphones, and portable game players.

Battery-powered pocket projectors have been under development for years, using various forms of liquid crystal- and MEMS- (micro-electromenchanical system) based microdisplays, combined with some form of solid-state light source. This device uses a 0.17 inch DLP chip from TI and an LED (light emitting diode) lamp, which is quoted at 20,000 hours of lifetime. After years of stumbling into pitch-black demonstration booths at trade shows to look at images coming from a small device connected to a huge box behind a curtain, it is great to that someone has managed to engineer everything into a truly pocket-sized device.

Of course, given the engineering challenges, there are some downsides:

• The 480 x 320 pixel display is far from HD; in fact it is the same format as the 3.5 inch iPod Touch/iPhone displays, so as the image is expanded onto the wall or a friend's back, the resolution will degrade.
• At all of 9 lumens, this projector is only suitable for dark environments.
• And at a $430 list price, you are going to pay nearly $50 for each of those precious lumens, as opposed to $0.50 for a 3-5 lb projector with 5 times as many

pixels.

But looking back at most disruptive technologies, they start out as sub-optimal approaches to unmet needs. It will be interesting to see if there will be devices with twice the number of pixels, five times the brightness, and half the price available within five years. For now, Optoma has made a good start.

John Carbone, Express Logic, www.rtos.com [4]

Embedded software developers today face increasingly difficult challenges bringing new, feature-laden products to market quickly. The features that make the products attractive to consumers demand additional development and debugging to assure they work as expected. This year, it would be great to get system-level debugging tools that help us wrestle with the complex issues in today's electronic products.

Traditionally, debugging tools enabled developers to step through individual pieces of code and examine memory and registers at each step. Unfortunately, they required the system to stop each time data needed to be gathered. They also stopped short of illuminating system behavior as a whole. To bring today's complex products to market faster, additional tools need to pick up where traditional debuggers leave off.

Developers hope to find such tools under their tree this year — tools like run-mode debuggers, system event trace analysis, profiling, and performance metrics measurement tools. Such tools shed light on system operation as a whole, enabling developers to track down unintended behavior and to optimize system performance. Run-mode debuggers examine memory and registers for one application thread while the rest of the system continues to run.

They also set thread-specific breakpoints that only stop a particular thread, or a specified set of threads, when hit. System event trace tools depict application and system events in a timeline, as if it were a "software logic analyzer." Not only does it graphically display system behavior and expose thread interaction and context

switches, it also can be used to gather performance metrics and to produce an overall system profile. Tools like these would be a welcome present this holiday season.

Bruce Berkoff, LCD TV Association, www.lcdtvassociation.org [5]

Along with many other consumers, I would like many more energy efficient, "green" products such as a "Green TV" logo'd LCD TV. LCD TVs already consume the least energy to build, use and dispose of among major TV types, but there is still a need to make them even better in the future and have a lighter ‘carbon footprint’ on the Earth by having the best logistical impact, the most recyclable subcomponents, and the highest possible energy efficiencies overall, automatically. This involves the use of less heavy metals, ambient light sensors and even smarter electronics and LED edgelights over time, with spatial and content-based dimming and thus even more energy savings in the future, as well as many other incremental improvements (and more consumer value like IPTV software and applications).

The LCD TV Association works with major TV vendors to implement and promote energy savings and earth beneficial clean technologies, starting with an ambient light sensor, which will automatically lower the set brightness in a dark room by decreasing power to the backlight—thus saving energy and actually reducing potential eyestrain as well. This can reduce power consumption by at least 30%-60%.

The current standard for measuring TV power consumption was developed by the International Electrotechnical Commission (IEC) in 2002—measuring only CRT-based TVs. In 2006 a team was asked to update the standard with power measurements

for LCD, plasma, and microdisplay rear-projection TVs – as well as non-commercialized technologies such as OLED and SED. They concluded that TV power was very dependent on the input signal and that each of the present and future technologies would respond to the input signal in a very non-linear way. When this work was started, the feeling was that dark images – those with low average picture level (APL) – would favor plasma TVs, since a plasma pixel draws significant power only when it's lit.

Most LCD-TVs of the time had backlights that were always on, so power consumption was relatively constant with APL, but maximum consumption was less than for plasma, so high APL was felt to favor LCD. Now, increasing numbers of LCD-TVs have dynamic backlight control (or dynamic contrast control), so they too, consume less power with low-APL content. And more sophisticated forms of dynamic backlight control are on the way, which will save even more power with low-APL content.

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