



Disposing of the Disposable Lighting Paradigm

A product with a finite service life is not necessarily a bad thing, especially in the constantly evolving world of SSL. That said, the industry must be careful in going down the "disposable" path so as not to cheapen a product's value and so it can implement recyclability plans to make it truly sustainable technology.

Just so we are all on the same page from the ole' get-go, let's get this little rant off to a clean start. Lighting is not a consumer product, lighting is an architectural product. Consumer products are things made to have technological life span of a fruit fly. Architectural products are a component of buildings that last anywhere from seven to 70 years without re-investment of capital for replacement. I admit, the distinction is subtle. Yet, there is a significant faction in the SSL community that is convinced that the transformation from conventional sources to LEDs means that we embrace turning lighting product into i-products. That we will churn through luminaires in faddish waves as new generations of hot new product blow into town. It all sounds great and is supported by investors salivating at the possibility of replacing the ubiquitous \$1.00 lamp with entire luminaires, perfectly planned for obsolescence. This is the wild west concept of maximizing profits through continual rounds of upgrades and retrofits. Today the A19, MR16 and PAR30—tomorrow every luminaire in the building.

Since this cat is out of the bag, I can reveal a little industry secret. This is not a new idea

at all. Most anyone with active gray matter in the lighting industry has been frustrated by the fact that as long as there are lamps to pop in sockets, luminaires tend to stay in service too long. As a product designer with a few gray hairs in the muzzle, I will even admit to authoring a few products I wished would simply vanish from sight. We're also all guilty of building 75-year products that get tossed in less than 10. Nothing is quite as disturbing as seeing a dumpster full of prideful over-engineered excellence. SSL is actually the opportunity we have all been thinking of—products with a finite service life.

But is this real? Or, in the press to advance an exciting new technology are we just making excuses for short cutting the engineering effort required to make robust product? We all know that to support the disposable paradigm, recycling is critical—yet there remains a monumental chasm between this understanding and real action. If recycling were already in place to take care of the waste from technology past its expiration date, the entire argument against fluorescent lamps would be moot as we would already be capturing mercury in stride. The infrastructure needed to capture the waste of whole SSL fixtures is significant. Lamps are dumb simple things, while complete electronic luminaires are not. Add to this the proliferation of lead in low-grade retrofits and we have a real dilemma boiling. Anyone who has that growing pile of old computers, CRT monitors, TVs, VCRs, dead cell phones and PDAs knows, finding proper places to dispose of these items is not universally available. Now, add to that pile every light fixture in your house and office every seven to 10 years...

I suggest that we get real, or risk getting lost. If we are indeed heading toward disposable luminaires, then we'd best have a clear idea of

the implications. Disposable inevitably leads to an expectation of lower cost, and less interest in investment grade quality. When a luminaire's life is beyond question, values of quality, performance, and unique features are all considerable. With disposable product, these once profitable values-added are less compelling. Who's going to want solid stainless steel if the product is trash in 72 months? Why bother with glass—plastic will work just fine for the short term. Are we truly ready to relegate SSL technology to the free cell phone value equation?

To be truly sustainable, recycling should be the fifth or sixth iteration of a product's life, not the second by design. Certainly, the consumer electronics model of one-use-to-trash is a poor fit here, so what might be a better solution? The auto industry actively recycles autos through successive steps of used car ownership, founded on robust replacement and maintenance infrastructures—could this work here? Computers are frequently re-purposed and/or upgraded through replacement of modules—memory and even processors—isn't this a better approach than throwing the case out just because the motherboard inside is past her prime? Seems that in the vast imaginations of creators of all things solid-of-state, might there be a more enlightened approach to disposing of photon-generating components while retaining the hard goods to serve for generations? Let's not lose sight of where we are—the real world—where the punishment for getting it wrong is as serious as the need to get it right. ●

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