

# General Technology Trends & the Speed of Obsolescence

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Everything is moving faster. Technological advances are making devices that we used to amortize over five to ten years, virtually obsolete as soon as we take them off of the store shelf! Devices like projectors have gone from film, to video, to HD in what seems like the blink of an eye. There is a growing concern in all areas of technology that we will be unable to sustain many technology dependent show designs into the future due to equipment obsolescence.

More and more we are basing shows on highly technologically based devices. Projection, large screen, specialized display devices, media servers, high-end (multi-core) computers and specialized graphics cards which used to be prohibitively expensive, are now both commonplace and ubiquitous. As we continue to push the envelope with customized guest experiences, virtual characters and real-time rendered interactive graphics, it necessitates that we take advantage of the higher-end hardware and devices to realize these cutting-edge shows.

While we openly embrace the new technology, we must realize and plan that at the same time technology is advancing, that the increasing rate of advancing technology is directly and inversely proportional to the rate of technological obsolescence, and that devices are going to continue to increasingly have shorter and shorter useful lifetimes prior to being deemed obsolete. Replacement is typically not a simple matter of removing one device and simply replacing it with a suitable replacement. Often times there is substantial redesign of a system necessary to accommodate the “new” replacement device. That redesign is often extremely expensive and often unplanned.

So what can we do to mitigate the effects of this ever increasing burden to theme park maintenance and sustainment efforts? First of all, it should be understood that these obsolescence issues are a part of doing business in this technology based industry, and that the obsolescence of these devices is inevitable. It should be UNDERSTOOD from the inception of the project that replacement and maintenance upgrades are NOT optional, but rather a MANDATORY part of using these newer technologies. In the same way that projector and lighting lamps and gels are assumed to be expendables that will have to be replaced as part of the operating costs; these new projectors, large screen displays and media servers can only be expected to have a finite lifetime, at the end of which, it must be assumed that these devices will be replaced and that this is simply part of the operating costs. A financial plan should be in place to anticipate the service and replacement of these devices at a reasonable future interval from the very beginning.

How do we pick the numbers? Who is to say what the useful “lifespan” of a given technology is or should be? This is going to have to be evaluated on a case by case basis. Daily duty cycle for something that is in a showcase venue in a high-traffic permanent installation in Las Vegas may well see 24-hour-a-day use, as opposed to something installed in a smaller hotel convention hall that may only see ten hours a week of usage. Additional factors including the operating environment, thermal extremes, dust, humidity and other environmental factors may play a significant role in the life expectancy of a given high technology asset. Regardless of other

factors that potentially affect device lifespan; it should be assumed for most display technology that more than three years of continuous service should probably be the outside limit of life expectancy, at which point, it should be assumed that the device will be obsolete. The devices themselves will most likely outlive this anticipated lifespan; however, at that point, it will be unlikely that the devices will still be available as production items. Expectations beyond this point are no longer realistic and in the future it is quite probable that this obsolescence factor will grow even shorter.

The good news is that every advance in technology seems to improve the image quality of the displays. Another piece of good news is that as the technology grows in popularity, and consequently in production quantities, that the costs come down and make the technology more affordable. The down side is that physical footprints seem to be shrinking, or at the very least, to be inconsistent with previous models. So replacement with updated technology often requires redesign of physical mounting, not to mention upgrading media delivery and media to higher resolution capability. So, in the future, in an attempt to “future-proof”, it may be in our best interests to originate program material in higher resolution than we need and down-res to generate show media.

One of the biggest downsides to all of this fancy display technology becoming so commonplace is that the “wow” factor is not what it used to be. If everyone has a sixty inch plasma display in their living room, then that display technology, in and of itself, is nothing special anymore. It just means that we REALLY need to concentrate on providing content and stories that knock people’s socks off... but that is a subject for another discussion.

The bottom line is that the obsolescence and upgrade of these devices needs to be a part of the initial design process. The upgrade and replacement of any high technology device due to obsolescence is not something that may happen; it will happen. It needs to be planned for and not dealt with as if it is a maintenance surprise. Thinking in this way will help us to adjust to the changing way that we do business and to be better prepared for change that is inevitable.