

# EnergyWatch



September 2015

<http://attardimarketing.com/>  
<http://energywatchnews.com/>

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*I never dreamed about success. I worked for it. Estee Lauder*

*I never stopped trying to become qualified for the job. Darwin E. Smith*

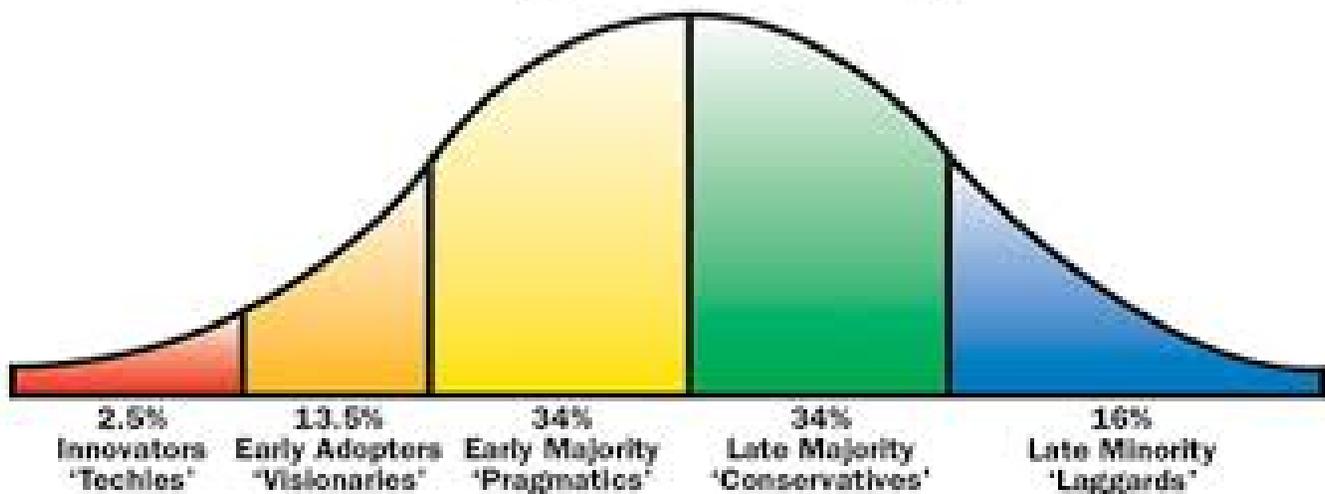
*Leaders don't create more followers, they create more leaders. Tom Peters*

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**Something to Think About...** *Welcome to The Innovation Era -*

<http://energywatchnews.com/welcome-to-the-innovation-era-by-bill-attardi/>

## Technology Adoption Life Cycle



Let me share with you what we are teaching at graduate school these days..... from the 1980s until recently, we talked about being in the Consumer Era. That is, don't make anything until you ask the consumer what they want and then make it. That way you take all the pressure off sales and inventory control isn't about selling off obsolete stock. Then Steve Jobs came along with his disruptive innovation vision. "In the high tech business, you can ask the consumer all day long what they want, and they just

do not know.” He asserts that we are now in the Innovation Era. The consumer has no idea what is possible, what they want, what to even ask. Successful high-tech companies now must do the following:

1. Innovate like crazy – discontinuous innovation. Create an environment within your company to think exponentially and develop the most innovate product commercially feasible
2. Post purchase evaluation – then ask the Innovators and Early Adopters what they liked about the product, what they didn’t like, what they would like to see added, etc. etc. etc.
3. Innovate some more – continuous innovation. This will get you to the Early and Late Majorities that are absolutely necessary for success...

Now we are talking about the Technology Adoption Life Cycle. As the chart indicates, approximately 15% percent of the market will try anything that even suggests high-tech. Those are the Techies and Visionaries.....those are the ones that sleep overnight on the street in Times Square to get the new iPhone. They pursue new high technology products aggressively. They love anything new, anything high-tech, anything that allows them to be first with the newest. Today, 15% of the market is big, full of enthusiasm and vision, and they are the most knowledgeable. They do know what they want and what they like. So ask them. Winning them over is essential if you want to reach the 68% of the market. Be guided accordingly. They are key to opening up any high-tech market segment.

I’m reading a book entitled “Crossing the Chasm” by Geoffrey A. Moore (marketing and selling disruptive products to mainstream customers). His premise is that there is a CHASM between the 15% early market and the mainstream 68% majority markets. A CHASM between being first with the greatest to the majorities that are more practical and want assurances that the product becomes an established standard and is supported effectively. Each group represents a unique psychographic profile.

So what does all of this have to do with lighting, you ask. In my debate with Chris Brown, I contend that we are in a transition. A possible CHASM between the traditional / legendary lighting business and the developing intelligent SSL lighting business. I am now of the opinion that we have crossed the CHASM. In the high-tech innovation era, the process is to move smoothly through the Technology Adoption Life Cycle, maintaining the momentum to make it natural for the next group to want to buy in, even the laggards. In the lighting industry, we are moving through the TALC faster than at any time in our history.

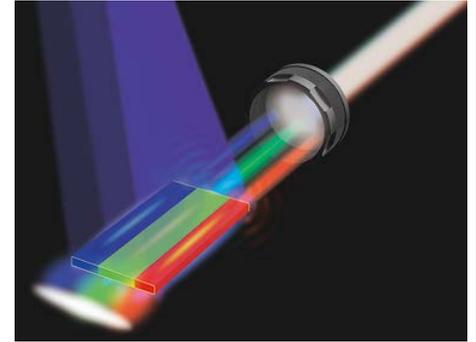
Let me conclude this blog by addressing how this will affect distribution.....old on to your ass Chris. When the practical Early Majority and Late Majority participate in greater numbers in the Smart Lighting Industry and they most certainly will, then lighting distribution will play an important role. Manufacturers will continue to innovate on the high-tech product side allowing the majority markets to get more and more comfortable with the impact it will have in their lives. But what about the service side. Who will satisfy the enormous growing need for the service demand that is always present when it comes to electronics? I assert that it will be the channels of distribution. Those established channels of distribution that adapt to the changing environment and revise their business model to SERVICE the new needs of the Smart Lighting customer. From the book: “The final pieces of the strategy come into play.....across the chasm: distribution and pricing. Distribution is the vehicle that will carry us on our mission, and pricing is its fuel. These two issues are the only two points where marketing decisions come into direct contact with the new mainstream customer. The number-one corporate objective, when crossing the chasm, is to secure a channel into the mainstream market with which the pragmatist customer will be comfortable.” That my friends is the new electrical / lighting distributor...



## LED Energy Watch...

### 1. *ASU Researchers Demonstrate White Lasers that Could Potentially Replace LEDs* -

While lasers were invented in 1960 and are commonly used in many applications, one characteristic of the technology has proven unattainable. No one has been able to create a laser that beams white light. Researchers at Arizona State University have solved the puzzle. They have proven that semiconductor lasers are capable of emitting over the full visible color spectrum, which is necessary to produce a white laser. The researchers have created a novel nanosheet capable of lasing in any visible color, completely tunable from red, green to blue, or any color in between.



[http://www.ledinside.com/news/2015/8/asu\\_researchers\\_demonstrate\\_white\\_lasers\\_that\\_could\\_potentially\\_replace\\_leds](http://www.ledinside.com/news/2015/8/asu_researchers_demonstrate_white_lasers_that_could_potentially_replace_leds)

### 2. *Guidelines for Using the ENERGY STAR® Most Efficient Mark* - For important correspondence from the U.S. EPA concerning the recognition criteria for ENERGY STAR Most Efficient 2016.

[https://www.energystar.gov/ia/partners/downloads/Most\\_Efficient\\_Guidelines.pdf?7aa8-2c93](https://www.energystar.gov/ia/partners/downloads/Most_Efficient_Guidelines.pdf?7aa8-2c93)

On the ENERGY STAR web page, you will find the draft recognition criteria documents for the twelve eligible product categories and the EPA cover memo. EPA will hold a stakeholder webinar on **Tuesday, August 25 from 1:00 PM to 3:00 PM Eastern Time** to discuss the proposed 2016 recognition criteria. Register here: <https://attendee.gotowebinar.com/register/6059392456040062465>

### 3. *Navy Replacing Fluorescent Tubes on Land with TLEDs* - The effort is part of the Navy's commitment to energy efficiency on land, according to a CNIC press release. The Navy is installing T-LED lighting at its installations around the world, including administrative buildings, parking garages, street lights, and athletic facilities. The Navy has been changing light bulbs to LED-based bulbs in its fleet of ships for some time. In December the Navy ordered \$6 million worth of LED retrofit tubes for the planned installations. <http://www.solidstatelightingdesign.com/navy-replacing-fluorescent-tubes-on-land-with-tleds/>

### 4. *Checking Air Quality, Rerouting Traffic... Streetlights Aren't Just for Lighting Anymore* -

Lighting has gone digital with the advent of LEDs, and with that, streetlights are starting to double up not only as light sources, but also as information technology do-it-all that will help cities monitor and control everything from traffic to air quality to crowds and noise. Local authorities will use data collected by the lights to decide when to grit roads, locate parking spaces for stressed-out motorists, reroute cars and trucks as necessary, and much, much more. The possibilities are as endless as the imagination. One city even wants to use them to monitor the bird population.

<http://www.luxreview.com/article/2015/08/streetlights-and-the-new-enlightenment>

### 5. *NEMA Publishes ANSI C78.377-2015* - American National Standard for Electric Lamps—Specifications for the Chromaticity of Solid State Lighting (SSL) Products. This standard specifies the range of white light recommended for general lighting with solid-state products to ensure high-quality white light. It categorizes chromaticity so that accurate descriptions of the white light can be communicated effectively to consumers. In this revision, the specifications for nominal correlated color temperature values of 2200 K and 2500 K have been added. [www.NEMA.org](http://www.NEMA.org)



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6. **DOE Publishes GATEWAY Report on Successful LED Wall Washer Retrofit** - The U.S. Department of Energy has released a report in which maintenance and energy costs were significantly reduced while retaining the quality of light when LED modules replaced 87 halogen lamps in existing wall washers at the University of Maryland's Clarice Smith Performing Arts Center. The project began with mockups in the spring of 2014, with final installation completed in March 2015. The primary goals were to maintain the visual appearance of the space while reducing maintenance costs, with energy savings considered an additional benefit. The full report can be downloaded at <http://energy.gov/eere/ssl/gateway-demonstration-indoor-projects>
7. **DOE Announces FY 2016 SBIR/STTR Funding Opportunity** - DOE seeks applicants for grants directed toward FY16 Phase I projects. Topics for this funding opportunity can be found at <http://science.energy.gov/sbir/funding-opportunities> and include LED and OLED lighting. Two different webinars to review the SBIR/STTR programs, application, and award process as it relates to this announcement are tentatively scheduled for August 21 and August 28, although those dates could change; interested parties should check the website for finalized dates and registration links.
8. **Philips L Prize Winner Completes 40,000 Hours of Testing** - When the L Prize in the 60W replacement lamp category was awarded in August 2011 to Philips, samples of the winning product had already survived more than 8,000 hours of accelerated long-term testing. A selection of 31 of those lamps passed the 40,000-hour point of continuous operation in July 2015. The average lumen maintenance was 95.6%, with no failures. At that rate it would take an average of 194,765 hours of operation for the lamps to reach 70% lumen maintenance (L<sub>70</sub>), if no other failure modes came into play before then. The average chromaticity change was 0.00093 – a minuscule difference indicating that there was no detectable color shift, and that the light emitted today is indistinguishable from the light emitted four years ago. These results show that well-designed LED integral lamps can operate very reliably over long periods of time, with excellent lumen and chromaticity maintenance. [http://www.lightingprize.org/news\\_testing\\_hours.stm](http://www.lightingprize.org/news_testing_hours.stm)
9. **Researchers Create Light-Emitting Device That Flashes 90 Billion Times Per Second** - The device could be a way to greatly speed up data transmission in computers. Things like smartphone batteries currently power transistors by flipping electronics on and off billions of times per second. However, if microchips were able to use photons instead of electrons, computers might be able to operate a lot faster. Researchers at Duke University, however, are getting closer to creating this kind of a light source. A team from the Pratt School of Engineering was able to push semiconductor quantum dots to emit light at over 90 gigahertz. <http://www.techtimes.com/articles/72296/20150727/researchers-create-light-emitting-device-flashes-90-billion-times-per.htm>
10. **IKEA to Only Sell LED Bulbs and Luminaires** - IKEA announced today that as of September 1, 2015, all IKEA stores will only sell LED bulbs and lighting to enable customers to live a more sustainable life at home. This bold move was announced in 2012 and IKEA is pleased it has met its commitment. Since 2013, IKEA U.S. customers have purchased 7.6 million LED bulbs. IKEA makes the switch affordable by offering the LEDARE E26 2-pack of 400 lumen/40 watt LED bulbs and a 600 lumen/60W dimmable bulb for \$4.49 and a 1000 lumen/75W dimmable bulb for \$10.99. IKEA LED bulbs are mostly all dimmable in all shapes and sizes, and all with high quality. <http://www.luxreview.com>



- 11. Reuters Breaks Down Go Scale Capital's Loan for Acquiring Lumileds** - Reuters recently broke Go Scale Capital's US \$1.93 billion loan to acquire Lumileds and former Philips automotive lighting business. The loan will mostly be used to merge with the \$2.8 billion financing to acquire 80% of Lumileds shares. The Bank of China is the only leading bank, book runner and underwriter that has loaned \$1.61 billion to Lumileds. Exim Bank of China lent US \$120 million, Bank of Communications and Rabobobank have respectively loaned \$75 million, while Bank of America Merrill Lynch has loaned \$ 50 million. Bank of China is also the agent bank. The loan agreement was signed on July 29, 2015. <http://www.ledinside.com>
- 12. GE Issues HID, Incandescent, Fluorescent & Induction Luminaire Discontinuation Notice – Effective January 1, 2016** - EXCLUSIVE from <http://www.edisonreport.net> GE has issued an internal memo announcing the discontinuation of HID, Incandescent, Fluorescent & Induction Luminaires due to falling demand for traditional lighting products and the accelerated adoption of solid state lighting. GE Lighting will no longer be creating new, custom non-LED luminaire configurations. These undocumented catalog numbers will no longer be allowed on quotes or orders. GE Lighting continues to focus on LED and intelligent lighting technologies, investing in the future of advanced lighting controls and energy efficient LED luminaries.
- 13. NCTU Researchers Develop Bendable LEDs that Matches OLED** - Researchers from National Chiao Tung University, Taiwan have created highly flexible, efficient white LEDs with potential use in wearable displays and non-flat surfaces, such as curved and flexible television screens. While the design itself is new, the LED was completely fabricated from pre-existing technologies, allowing others to easily replicate and build on the platform. Future work includes reducing the LED device's thickness, as well as increasing its functional lifetime and energy efficiency. [http://www.ledinside.com/news/2015/8/nctu\\_researchers\\_develop\\_bendable\\_leds\\_matching\\_oled](http://www.ledinside.com/news/2015/8/nctu_researchers_develop_bendable_leds_matching_oled)
- 14. LEDcation 10 Call for Speakers** - We seek presentation for all LED related topics and invite industry professionals to share their knowledge and experiences for LEDucation 10, held March 3rd and 4th, 2016 at Sheraton NY Times Square Hotel. LEDucation 10 will continue to focus on industry critical topics including Controls, Code and Emerging Technologies as well as Project Construction and the beauty of Design. Please use our online form at [www.LEducation.org](http://www.LEducation.org) to submit your proposal for LEDucation 10.
- 15. Osram Sylvania Recalls Nearly 50,000 T8 LED Tubes Due to Burn Hazard** - Lamps can overheat and melt, posing a burn hazard. This recall involves SubstiTUBE IS T8 LED lamps. The recalled lamps are white, cylindrical in shape and measure 48 inches long and 1 inch in diameter. "OSRAM SubstiTUBE® IS LED T8" is printed on a silver label affixed to the end of lamps. The model number 73312-1 or 73315-1 only also appears on the label beneath the statement "Compatible LED T8 for use with instant start T8 electronic ballasts." <http://www.sylvania.com/en-us/about/legal/recall/Pages/SubstiTUBE-IS-T8-LED-Recall.aspx>
- 16. Great Primer on LED Lighting** - Magnitude Lighting Converters has a link on their website <http://www.magnitudeinc.com/led-basics-infographic/> that includes a terrific and lengthy infographic describing how LED lighting works, concluding with detail about the difference between constant current and constant voltage operation. <http://www.lightnowblog.com/2015/08/great-primer-on-led-lighting/>



- 17. U.S. DOE Inaugural Connected Lighting Systems Meeting November 16, 2015 • Portland, Oregon** - Will gather top experts from the lighting, semiconductor, and IT industries to share perspectives and lay the groundwork for government/industry collaboration. Join DOE and top experts for a full day of informative sessions and open dialogue with technologists outside your traditional circles. Tom Herbst, CTO, Internet of Things Solutions at Cisco is the keynote speaker. <http://energy.gov/eere/ssl/connected-lighting-systems-meeting>
- 18. Can LED Lighting Companies Innovate Together for the Greater Good? By Nicola Trevett** - In 1987 the world of telephony saw something akin to a miracle. All over Europe, as well as in the US and Japan, companies, universities and research institutions were rushing to develop their own technical standards for the emerging mobile phone market. A self-defeating competitive mess loomed, just as earlier the videotape format war between Sony and JVC had hampered growth in that market for a decade. Then Europe came up with the first agreed GSM technical specification. All the leading players in Europe lined up behind it, and five years later Nokia launched the first commercial GSM digital mobile phone. The mobile revolution was born. This is the kind of thing the proponents of open innovation would like to see happen in LED lighting. <http://www.luxreview.com/article/2015/08/can-led-lighting-companies-innovative-together-for-the-greater-good->
- 19. Light Pollution as Seen from Space Appears Worse with LED Streetlights than HPS** - Photos before and after LED streetlight installation from the International Space Station (ISS) show increased light pollution from LED-based street lights in Milan, Italy. LED streetlights have been installed or announced for installation in several large cities as well as smaller cities throughout the world. LED street lights actually make light pollution — such as sky glow — *significantly worse*, as they emit more blue and green light than the high-pressure sodium lights that they typically replace. <http://astronomynow.com/2015/08/12/iss-astronaut-pictures-of-earth-used-for-light-pollution-studies/>
- 20. This Toll Point on a Busy Florida Expressway Now Has Colorful LED Light** - For the one million motorists who drive the Miami Dade Expressway (MDX) every year, the journey is getting easier. The MDX authority has been installing open toll gantries that automatically read car license plates and passes, so drivers don't have to stop or wait in line to pay a toll with the help of fixtures from Iluminarc, installed by Barbizon Lighting Company. The gantry and pylon structure spans ten lanes of the 15-mile State Route 836. <http://www.luxreview.com>



**21. The 10 Biggest Trends Transforming Workplace Lighting** - LUX recently posted an article identifying the top 10 trends transforming workplace lighting:

- |                                     |                               |
|-------------------------------------|-------------------------------|
| 1. Upgrades that pay for themselves | 6. Power to the people        |
| 2. Controls                         | 7. Wellbeing and productivity |
| 3. From T5 to LED                   | 8. Monitoring                 |
| 4. The end of the louver?           | 9. Beyond light (Li-Fi)       |
| 5. Adapting to new working patterns | 10. Internet of Things (IoT)  |

<http://www.luxreview.com/article/2015/06/the-10-big-trends-transforming-workplace-lighting>



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## Global LED EnergyWatch...(new feature)

**22. Tunnel Experts to Gather to Assess Standards and Innovation** - Road tunnel lighting experts are set to gather in Barcelona in October for a special conference on balancing standards and innovation in the sector. The conference – organised by Lux in conjunction with the Metropolitan Area of Barcelona authority - will also focus on key topics such as specifications and design for LED retrofits, system compatibility and longevity, central management and monitoring systems, driver visual needs and fatigue and the impact of LED headlight. [www.tunnellingconference.com](http://www.tunnellingconference.com)



**23. Why are Chinese LED Manufacturers Acquiring Large Int'l Manufacturers Less Profitable Businesses?** - Chinese LED enterprises are spending a fortune in acquiring foreign manufacturers in 2015. A couple of examples include Shenzhen Kaifa Technology (Kaifa) recent acquisition of U.S. LED manufacturer Bridgelux, Shanghai Felio Acoustics interest in Osram's distribution channels, and Go Scale Capital's acquisition of Philips Lumileds. Why has there been an increase in international mergers? What are manufacturers' motives? Check out: <http://www.ledinside.com/news/2015/8/why-are-chinese-led-manufacturers-acquiring-large-intl-manufacturers-less-profitable-businesses>

**24. Audi Debuts Organic LED Lights at Frankfurt** - It seems that just about every car offers some sort of exterior LED lighting these days, and the trick laser headlights are already on the roads in Europe, but Audi is getting ready to debut an even more advanced lighting technology this fall at the Frankfurt Motor Show. As the self-proclaimed "leading brand in automotive lighting technology," Audi will show off its Matrix OLED (organic light emitting diode) lights on a yet-to-be-named concept vehicle, and Audi has released a brief teaser video for the new lights. <http://www.topspeed.com/cars/car-news/audi-debuts-organic-led-lights-at-frankfurt-video-ar170661.html>

**25. Three Turkish Airports Go LED** - Three of Turkey's biggest airports have gone LED in a major upgrade that aims to make big savings on maintenance and energy costs. The LED project covers Atatürk Airport in Istanbul – the busiest in the country and one of the busiest in the world – as well as Esenboga Airport in Ankara and Adnan Menderes Airport in Izmir, the country's fourth and fifth busiest respectively. LED downlights, floodlights and car park lanterns have been supplied by Turkish manufacturer Vestel – best known for making TVs and washing machines, and now a growing provider of LED lighting. <http://www.luxreview.com/article/2015/08/three-turkish-airports-go-led>

**26. India Plans Massive Overhaul of 1 Billion Lights to LEDs within 3 Years** - Previous reports from India were mostly focused on the country's policy of overhauling of 27.5 million streetlights with LEDs within three years. Recent reports suggest the lighting upgrades will be far more comprehensive. This high volume target would make manufacturers increase LED bulb production capacity that would eventually bring down retail prices. India's central government is expected to also provide financial support <http://www.ledinside.com/news/2015/8/india-plans-massive-overhaul-of-1b-lights-to-leds-within-3-years>



**27. Norway Upgrades Lighting in Hundreds of Tunnels** - Norway's roads authority is upgrading the lights in 200 tunnels across the country, as part of a \$500 million, four-year improvement programme. As well as brand new lighting with much more sophisticated control, the tunnels will get better ventilation, new cabling, improved fire protection and better emergency communications. Norway has 1,100 road tunnels – including the world's longest: the 15-mile Laerdal Tunnel – and a further 50 under construction. Some of its tunnels use unconventional lighting, including the Laerdal Tunnel, which has decorative lighting designed to mimic a sunrise in a series of open 'caves' along its length (pictured above). It is thought that decorative, varied and unexpected lighting effects can help to keep drivers alert.



<http://www.luxreview.com/article/2015/08/norway-upgrades-lighting-in-hundreds-of-tunnels>

**28. Transport for London Revamps the Bright Lights of the UK Capital** - Transport for London (TfL) is in the throes of an ambitious project to upgrade more than 56,000 lights and to install a central management system for the roadways' lighting network. The UK-based governmental body is in the midst of a major, municipal, outdoor solid-state lighting (SSL) project focused on the streets of the UK capital city. The TfL Streetlighting Energy Efficiency Programme is a \$16.4 million project. The scope of the project includes work across over 9,000 miles of roads, controlled by 34 highway authorities, multiple London boroughs, and five contractors used for installation and engineering works. To date, around 24,000 high-power LED street lamps have been installed.

<http://www.ledsmagazine.com>

**29. Paris Metro Considers Transmitting Internet Via the Lights** - The Paris Metro and commuter train service is doubling up on a quarter of a million new LED lights by using them to transmit the internet to commuters' computers, phones and tablets via an emerging technology known as Li-Fi, considered by many as superior to Wi-Fi. Gil Riemenschneider has been the project manager on the \$12 million scheme to replace all of the 250,000 lights with LEDs at the 302 Metro stations and the 66 RER commuter train stations. That project, funded by the French government's RATP public transport group, is on target for completion by the middle of next year. Proponents of Li-Fi say that it will add enormous capacity to wireless communications, because the visible light spectrum is 10,000 times larger than the radio frequency spectrum that Wi-Fi uses. <http://www.luxreview.com>



**30. Auckland New Zealand Rolls Out Massive LED Streetlight Upgrade** - It is replacing 44,000 HPS street lights with energy efficient LED luminaires. Auckland Transport owns more than 100,000 street lights, approximately one third of the country's total lighting stock. Phase one of the contracts focuses mainly on residential roads which comprise approximately 40% of the regions street lighting network. The rest of the conversion to LEDs will potentially follow in four to five years. This hugely favors LED as a light source and already this year, according to new research, the market share of LED for street lighting worldwide exceeds 50%. <http://www.luxreview.com>



**31. Europe's Largest Stadium Waves with LED Lighting** - FC Bayern Munich is kicking off the new season in spectacular style: Philips, along with the German soccer champions, presented a new LED facade lighting at the Allianz Arena for the first time. The entire innovative Philips system can be controlled digitally and is capable of reproducing 16 million colors. This makes Allianz Arena, the 'Star of the South', Europe's largest and Germany's first stadium, to feature a dynamic lighting moods across its entire facade. More than 300,000 LED lights – over an impressive surface area of 26,000 square meters – make the stadium facade's inflatable outer membrane shine brilliantly. <http://www.tedmag.com>



**32. Halogen Bulbs - Global Strategic Business Report 2015** - Halogen is the most widely used lighting technology in the automotive sector. The features of low purchase- and replacement-costs and easy availability made halogen lamps the preferred auto lighting option over the years. Xenon/HID and LED lighting represent the other two chief lighting options. Despite being the widely used lighting type, halogen has been facing decline in demand since the past few years due to the rapidly rising popularity of LED lightings for automotive applications. The research report announced by Global Industry Analysts Inc., provides a comprehensive review of market trends, product launches, mergers, acquisitions and other strategic industry activities. The report provides market estimates and projections in US dollars for major geographic markets. [http://www.researchandmarkets.com/publication/mn8qktb/halogen\\_bulbs\\_global\\_strategic](http://www.researchandmarkets.com/publication/mn8qktb/halogen_bulbs_global_strategic)

**33. Global Lighting Technologies White Paper** - Light Guide Technology Enables Uniform and Bi-Directional Distribution from LEDs in General Lighting Applications. Fixture manufacturers have sought a solution for use in suspended light fixtures that will allow the light to be distributed upward, for indirect illumination, as well as downward, for direct illumination. The most common request has been for a semi-Lambertian distribution in the downward direction with low glare while achieving a bat-wing type distribution in the upward direction. This allows for the room below the light to be evenly illuminated, while the upward light illuminates the walls and surfaces to the sides of the fixture, creating an indirect illumination. This has now been accomplished by designing the individual light extraction features used within the light guide to control light in multiple directions. By changing the angle of these features, light can be directed substantially in the direction and area requested by the fixture manufacturer. <http://www.glthome.com/>

**34. SIL Europe Co-Locates With Luxlive In London For 2015** - The sixth annual Strategies in Light (SIL) Europe conference, which has been held in Munich for the past three years, will take place at the ExCeL London Exhibition and Convention Center on Nov. 17–19, 2015. Realizing the strong opportunity for synergy between the two events, PennWell made the decision to co-locate them in 2015. Over the past several years, LuxLive has come to be recognized as one of the premier lighting tradeshows in Europe, attracting over 7,000 visitors in 2014. While LuxLive focuses on the end-user, specifier, and design end of the lighting industry, SIL Europe is aimed at addressing the interests of those associated with the manufacturing, development, and application of solid-state lighting (SSL) technology. [http://www.sileurope.com/sil\\_worldwide\\_events.html](http://www.sileurope.com/sil_worldwide_events.html)



## LED Technology Watch...

### 35. Simkar's RG2 Reflect-a-Bay Second Generation High Bay

**Lighting** - Building on the success of one of its core flagship offerings, Simkar has redesigned the luminaire from the ground up and the result is the Reflect-a-Bay (RG2). In addition to its performance increase, the RG2 now features unique spring-latch mechanisms for nearly instantaneous fixture access, drastically decreasing installation and servicing times. Also offered with this unique feature are lenses and wire guards, which can also be used in conjunction with each other. Simkar's RG2, available in both fluorescent and LED, offers a lumen range from 10,000 to 45,000 lumens with the expected energy savings over HID of up to 58%. A range of mounting and sensor options is also available to further increase application flexibility and energy savings. To find out more, please visit [www.simkar.com/rg2](http://www.simkar.com/rg2)



### 36. Civilight North America Introduces Eight New Energy Star Certified

**Commercial Series LED Lamps** – Available now, eight new LED lamps that are now registered on the ENERGY STAR® list of certified products. The eight new models, including BR and omni-directional A19 LED lamps, are aggressively priced with eligible rebates of up to \$10. The six- and nine-watt Commercial Series omni-directional lamps replace 40- and 60-watt incandescent lamps and is an addition to the company's A19 LED lamp portfolio, which already includes the Architectural Series with an industry leading CRI of 97 and the Professional Series that delivers a competitive 90 CRI. The Commercial BR30 and BR40 LED lamps are game changers. Designed to replace 65- and 75-watt incandescent BR lamps using just 12- and 14-watts. <http://www.civilight-na.com/>



### 37. Ushio America Introduces the New Uphoria™ 2 LED PAR Lamps -

These LED PAR20, PAR30, PAR30LN and PAR38 Models combine the classic styling of traditional PAR lamps with the advanced technology of LEDs and custom designed optics. This provides a light-weight, energy saving, dimmable LED lamp with the form, fit and function of a traditional halogen PAR lamp. These wet-location rated PAR lamps utilize tightly-binned, high color rendering LEDs and an advanced optical design with multi-faceted reflectors for superior beam control and reduced glare. Uphoria 2 LED PAR lamps also have a special thermal design that allows air to flow around the inside and outside of lamp and over the heat sink to maintain proper thermal management of the LEDs. This maintains a quality light output while ensuring long life.



[http://www.ushio.com/files/PR/Uphoria2LEDPAR\\_PR.pdf](http://www.ushio.com/files/PR/Uphoria2LEDPAR_PR.pdf)

38. **Green Creative TITANIUM LED SERIES 4.0 A21 3-way Lamp** - Designed and engineered for demanding commercial applications. This lamp meets the new ENERGY STAR V1.1 requirements for omnidirectional lamps by emitting 330° of evenly diffused light. With just 5.5W, 10.5W and 17W, this lamp emits warm white light in 3 defined lumen outputs. Its industry leading 94 LPW average efficacy is more than 40% higher than CFLs. Simply install in your existing fixture and turn ON the savings. <http://gc-lighting.com>



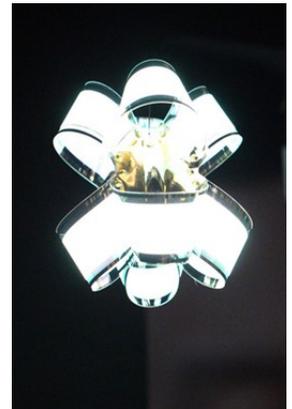
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**39. Schröder to Demonstrate Smart LED Light Pole at Frankfurt Exhibition** - Schröder has announced the preview of the LED-centric Shuffle smart-lighting pole that will be demonstrated at the New Mobility World exhibit that will be held in conjunction with the International Motor Show scheduled for Sept. 17–27, 2015 in Frankfurt, Germany. In addition to functional illumination, the pole will include a light ring intended for emergency signaling. Video cameras, enabled with night-vision capabilities, will offer safety and security-oriented functionality. An audio system and speakers will enable broadcasts of content ranging from music to public service announcements. A Wi-Fi access point will offer public broadband Internet connections. And the lighting control system and wireless network will minimize energy usage and backhaul the service to a wired infrastructure. Schröder even envisions including a charger for electric vehicles. <http://www.ledsmagazine.com>



**40. Universal Display Corp. Showcases OLED Loop Lamp** - The new Loop Lamp prototype, demonstrate how OLEDs offer flexibility, transparency, thinness and manufacturability on plastic for unbreakable displays and luminaires. The Loop Lamp is comprised of paper-thin, flexible, shatterproof OLED lighting ‘ribbon’ panels designed into a unique concept chandelier. It is cool to touch and offers a high CRI that can closely mimic natural sunlight. Manufactured using Universal Display’s single layer UniversalBARRIER® encapsulation technology, the plastic based OLED panels resist exposure to moisture and oxygen, are lightweight and can bend in all directions. The Loop Lamp represents one of many concepts in the application of flexible OLED lighting solutions in home décor, architectural design, art and sculpture. <http://www.udcoled.com/>



**41. The Prudential Lighting P4000 Gets A New (Way More Playful) Shape** - Their best-seller for four decades has been reconfigured and has a playful new donut shape called O. To add to the fun factor, this new ring of light can be surface mounted or suspended by straight aircraft cables with top-swivel stems. And it’s available in 14 Premium Colors with no set-up fee. Manufacturing in Los Angeles since 1955, Prudential Lighting continues to create a wide range of fixtures, from elegant pendants to innovative LED luminaires, while collaborating with designers in realizing their visions for architectural lighting environments. To find out more: <http://www.prulite.com/>



**42. Hubbell Industrial Lighting Introduces New Food Processing LED Highbay** - Hubbell Lighting launched a sealed, high-output food processing LED highbay—Hubbell Industrial Lighting’s FPH Series. The well-sealed FPH Series highbay is capable of replacing 400W metal halide highbays on a one-for-one basis. The fixture provides up to 24,000 lumens with a total of 220W and has four non-glass lens options: sag, drop, conical drop and flat acrylic lens. Because food processing facilities have extreme environments, the product is built to withstand temperatures ranging from -40°C to 40°C. The new cast aluminum LED fixture has a smooth exterior with no exposed fasteners, making it perfect for the most demanding food processing environments. <http://www.hubbellindustrial.com>.



## National Energy Watch...

- 43. LIGHTFAIR® International 2016 Call for Speakers** - The LFI® 2016 Call for Speakers is now open in a global invitation seeking responses from top lighting and design practitioners looking to participate in the world's largest annual architectural and commercial lighting trade show and conference in San Diego April 24 – 28, 2016. Experts are invited to submit proposals that share how elements such as: inspiration, applications research, methodology and technology and tools contribute to the overall integrated design process. Submit at: <http://www.lightfair.com/lightfair/V40/index.cvn?id=10301>
- 44. LIGHTFAIR® International 2017 Will Take Place in Philadelphia** - LFI® returns to Philadelphia's Pennsylvania Convention Center in 2017 for its 28th-annual staging May 7—11, according to Jeffrey L. Portman, Sr., vice chairman, president and chief operating officer of LFI managing partner AmericasMart® Atlanta. LFI's 2017 return to Philadelphia will follow its 2016 showing in San Diego at the San Diego Convention Center, the event's newest west-coast venue. LFI's San Diego event will run April 24—28, 2016. <http://www.lightfair.com/lightfair/V40/>
- 45. New Business Models and Solutions Through Circular Lighting** - Philips is applying circular economy principles in its business models and end-to-end value chains based on the conviction that companies that solve the problem of resource constraints will have a competitive advantage. Applying these principles to indoor lighting at Bruynzeel, Philips supported its client to transition towards sustainable lighting, where the emphasis is less on “ownership” and more on “use”. Philips remains the owner of the luminaires and lamps, and Bruynzeel is the user who will pay a fixed fee for its indoor lighting solution over the coming years. This means that not only is the product circular, but the business model itself is also based on circular economy principles. Responsibility for management, maintenance and innovation lies with Philips. <http://nr.news-republic.com/Web/ArticleWeb.aspx?regionid=1&articleid=45324431> The circular economy aims to eradicate waste systematically throughout the life cycles and uses of products and their components. Watch the video at: <https://www.youtube.com/watch?v=zCRKvDyyHmI>
- 46. NEMA Reaffirms ANSI C78.1452-2004** - American National Standard for Electric Lamps—Projection Lamps—Vocabulary. This standard provides definitions for a wide range of terms used in the design, manufacturing, and application of photographic lamps. It serves as a common reference for all ANSI lamp standards in the C78.1400 series, thus reducing the number of terms that need to be defined in individual standards. It includes standards and specifications for electric lamps of all types, including the electrical values necessary for limitations in operation, regulation, and starting of the lamps, as well as standards and specifications for starters for fluorescent lamps. <http://www.nema.org/Standards/Pages/American-National-Standard-for-Electric-Lamps-Projection-Lamps-Vocabulary.aspx>
- 47. NEMA Reaffirms ANSI C78.20-2003** - American National Standard for Electric Lamps—A, G, PS, and Similar Shapes with E26 Medium Screw Bases. This standard sets forth physical and electrical characteristics of the group of incandescent lamps that have A, G, PS, and similar bulb shapes with E26 single- and double-contact medium screw bases, including the reduced-wattage versions. Last reaffirmed in 2007, this standard was developed by the ANSI Accredited Standards Committee for Electric Lamps. Download at no charge: <http://www.nema.org>



- 48. NEMA Publishes ANSI C82.77-5-2015** - American National Standard for Lighting Equipment— Voltage Surge Requirements. This new standard specifies voltage surge limits and testing requirements for lighting equipment. ANSI C82.77-5 was developed by the ANSI Accredited Standards Committee for Electric Ballasts, and covers lighting equipment used for general illumination that is typically found in residential, commercial, and industrial applications. <http://www.nema.org>
- 49. Prepare for the Lighting Certification (LC) Exam through the IES** - If you've been contemplating getting lighting certified, the IES is offering a course that can help prepare you for the LC Exam, administered on November 7, 2015 by the National Council on Qualifications for the Lighting Professions (NCQLP). To participate in the IES course, you'll need to act quickly! **Registration closes September 7, 2015.** To learn more about the IES LC Study Group: <http://www.ies.org/pdf/education/2015-ies-lc-study-group-information-general-1.pdf>
- 50. HID Lamp Indexes Decline During First Quarter 2015** - Sodium vapor lamp shipments fell 11.5% on a seasonally adjusted basis compared to the same period last year. Shipments of mercury vapor lamps retreated by 18.4% year-over-year (y/y). Although the index for metal halide lamps registered a modest year-over-year increase of 1.2%, shipments were still below the level during calendar year 2014. Sodium vapor lamps gave back 2.4 percentage points, decreasing to a share of 30.1%, while mercury vapor lamps declined marginally to 3.5%. The market share of metal halide lamps increased to a new high level in the series, at 66.5% for the quarter. <http://www.nema.org>
- 51. IES Publishes New Method for Evaluating Color Rendition TM-30-15** – While CRI enjoys widespread use, its limitations are well recognized, and the need for a viable alternative is increased by the proliferation of SSL, which offers tremendous scope for spectral engineering and optimization. TM-30-15 addresses many of the CRI's limitations, providing more information with greater accuracy. With two main numerical parameters and other visualization tools for better understanding the rendition of specific hues, it provides a more complete characterization of color rendition than a fidelity metric alone can. DOE will host two 90-minute webinars on TM-30-15 next month: one on September 15 that covers the basics, the development process, and the ongoing steps toward widespread adoption; and a follow-up on September 22 that focuses on the math and color science underlying the calculation engine, the derivation of the new set of 99 color evaluation samples, and why the improvements are important. Both webinars start at 1:00 p.m. EDT. To register: <http://energy.gov/eere/ssl/events/webinar-understanding-and-applying-tm-30-15>
- 52. 7 Energy-Saving Lighting Control Strategies** - Based on some original source material provided by Lutron Electronics Co., Inc.
- |                                | <b>Potential savings:</b>                           |
|--------------------------------|---|
| 1) Daylight Harvesting         | 25% to 60% lighting load                            |
| 2) Demand Response             | 30% to 50% lighting load during peak demand periods |
| 3) High-End Tuning             | 10% to 30% lighting load                            |
| 4) HVAC Integration            | 5% to 15% HVAC load                                 |
| 5) Occupancy / Vacancy Sensing | 20% to 60% lighting load                            |
| 6) Personal Dimming Control    | 10% to 20% lighting load                            |
| 7) Scheduling                  | 10% to 20% lighting load                            |
- <http://ecmweb.com/>

## City & State EnergyWatch...

**53. *Cities Make Headway in Reducing Energy Use*** - Charlotte, N.C., is one example of a city that's found a way to both reduce energy use and measure the impact. The city recently implemented a public-private partnership between Verizon, Duke Energy and business and civic leaders of Charlotte called Envision Charlotte. The partnership's first initiative placed shadow meters in the basements of more than 60 large buildings in the commercial center. The meters allow them to gather real-time energy data, beam it to the cloud, aggregate it, and then beam it back down to kiosks located in the buildings. The kiosks allow the public to track energy use right along with city officials. <http://www.energycentral.com>

**54. *Musco Illuminates Statue of Liberty with LED Lighting System*** - The Statue of Liberty, an icon of freedom for nearly 130 years, now shines like never before. Musco developed a custom-designed LED lighting solution using precise optics to highlight all the aesthetic details of the monument while reducing the amount of light projected into the night sky. The new permanent system will provide twice the brightness level while reducing energy consumption by 62 percent when compared to the prior metal halide lights. The Statue of Liberty National Monument joins many other famed landmarks that also feature customized lighting systems by Musco, including the Washington Monument, the Mount Rushmore National Memorial, the White House and the Flight 93 National Memorial. <http://musco.com/news/statueliberty.html>



**55. *Energy-Efficient Solutions Help Carnegie Hall Secure LEED Silver Certification*** - Making it one of the oldest and most notable buildings to achieve such distinction. The nearly 125-year old iconic New York City music venue achieved this milestone in part through a close collaboration with Siemens, which was enlisted as one of Carnegie Hall's technology partners to modernize almost 165,000 square feet of non-performance space. The certification came to fruition following the fall 2014 completion of Carnegie Hall's Studio Towers Renovation Project (STRP), an infrastructure upgrade for two towers originally added atop the famed concert hall at the end of the 19th century. A central focus of this comprehensive renovation was the addition of the new 60,000 square foot Resnick Education Wing, located on the Hall's upper floors, as well as the refurbishment of the Hall's backstage areas. <http://www.tedmag.com>

**56. *Michigan Cities Gearing Up for Fight with Utilities Over LED Streetlights*** - A battle is over the rate DTE Energy will charge municipalities to operate LED streetlights. At least one municipal official is calling for cities to take over their streetlights altogether. The issue is part of a larger rate case, DTE's first in four years. The utility is seeking increased rates to cover the cost of environmental compliance and new generation capacity. A decision is expected in the fall. Buried within that case is a proposed increase for operating municipal LED streetlights, with a concurrent reduction in rates charged for less-efficient high-pressure sodium fixtures. <http://midwestenergynews.com>



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**Monthly Special Feature...** Here are the numbers, the analysis is obvious.  
As I said in the beginning, *Welcome to The Innovation Era*, we have crossed the CHASM:

Lamps in order of 2014 sales volume:

<u>dollars millions</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
LED	137	338	600	1100
Fluorescent	789	819	815	740
CFL	589	659	660	610
Halogen	273	274	350	475
Incandescent	578	505	480	375
HID	355	336	315	280
<b>Total</b>	<b>\$2,721</b>	<b>\$2,931</b>	<b>\$3,220</b>	<b>\$3,580</b>

<u>units millions</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Incandescent	1316	1130	1030	690
Fluorescent	476	400	405	385
CFL	242	410	360	355
Halogen	121	127	186	360
LED	11	23	40	105
HID	29	27	26	23
<b>Total</b>	<b>2195</b>	<b>2117</b>	<b>2047</b>	<b>1918</b>

Top three 4 foot fluorescent lamp sales:

<u>millions</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
<b>T12</b>				
Units	61	67	79	74
Dollars	99	130	140	155
AUP	\$ 1.62	\$ 1.94	\$ 1.77	\$ 2.09

<b>T8</b>				
Units	272	230	245	230
Dollars	370	400	395	350
AUP	\$ 1.36	\$ 1.74	\$ 1.61	\$ 1.52

<b>T5</b>				
Units	37	34	37	34
Dollars	124	122	125	110
AUP	\$ 3.35	\$ 3.59	\$ 3.38	\$ 3.24

A breakdown of LED lamp and fixture sales in 2013 and 2014 next month....stay tuned



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