

EnergyWatch



November 2016

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

We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction. Bill Gates

Something to Think About... The King is Dead, Long Live the King -

Also published in this month's Electrical Wholesaling magazine:

<http://ewweb.com/commentary/speaking-out-12-tips-reinventing-your-lighting-business>

“Some distributors are already out of business, they just don't know it yet”, emphatically warned my good friend Chris Brown when he first penned Illumigeddon. <http://energywatchnews.com/some-distributors-are-already-out-of-business-they-just-dont-know-it-yet-by-chris-brown-ceo-wiedenbach-brown-illumigeddon/> May I go one step further and even more emphatically state, “every single traditional lighting business will go out of business.....it's just a matter of time and it will happen faster than most would like.” Do you really want to be the last man standing? Remember the movie “The Last of the Mohicans”? Well, that did not end well...

To my friends and cohorts that run successful businesses and are in the market everyday fighting the good fight. You are the doers. You compete in a very competitive marketplace and have my deepest respect. My goal is not to tell you how to run your businesses but rather to contribute to your strategic thinking going forward. I offer my thinking to provide you with some encouraging guidelines in order to disrupt your existing business model for success in disruptive times...

1. Milk your traditional lighting business as long as you can but know that the end is near. <http://energywatchnews.com/what-do-we-do-with-a-problem-child-by-bill-attardi/>
2. Create a new disruptive lighting business model or acquire one....a separate business. If lighting is not about illumination anymore, then it must be about something else, so call it something else..... (GE calls theirs Current, Powered by GE, headquartered in Boston..... maybe they know something else).
3. Consider a disruptive business model that can satisfy the basic turn-key needs of your customers..... they want smart buildings:
 - Project management from the audit to ongoing monitoring of the result
 - Supply of the most advanced electronic technologies, not just lighting
 - Installation & maintenance – as technologies change so does your value proposition



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4. Don't put traditional people in charge – hire those that are not hampered by the good ole days: *it ain't your grandfather's lighting business anymore*. You do not need those that want to justify what they did but rather, leaders that demand taking an uncharted and maybe alien direction.
5. Hire Millennials, those that understand the transition to Smart Lighting and more importantly to Intelligent Lighting...systems approach and they can work your social media activities as well. Millennials are disruptive tech adopters—they grew up with a phone in one hand and a tablet on their laps and are proficient in the use of disruptive innovations. Most are technologically enabled in unprecedented ways. Tap into the Millennial World...
6. Customer mining – dig deep into your existing customer files and determine what they buy and how they buy from you. Remember, every single one of your customers will upgrade to SSL systems. Either you will sell them or your competitors will.
7. Dominate small niche markets first. A big fish in small pond strategy that seems to work with high-tech companies. <http://energywatchnews.com/big-fish-in-small-pond-strategy-by-bill-attardi/> The old traditional strategies that worked well in the past will certainly not work going forward. Serve those niche markets you know best. You cannot be all things to all people when change at this magnitude happens.
8. Create a new business development department to continue to look at the disruptive innovations that will continue to evolve and change course when necessary.
9. Put someone in charge of Content Marketing – the core of effective communications these days. Even traditional marketing disciplines are changing.....remember the four (4) Ps, well now it's the four (4) Cs:
 - Product Customer wants
 - Place Convenience to buy
 - Promotion Communications
 - Price Cost to satisfy
10. Focus on social media and email marketing as a means to enhance CRM (Customer Relationship Management).....keep your business fresh in minds of your customers and entice them to reconnect with your new business model. Content is fire. Social media is gasoline.
11. Lighting as a Service (LaaS) – stay plugged in to your customer's lighting / data service needs on an ongoing basis and charge accordingly. Look for news way to service your customers and service the hell out of everything you sell.

LED EnergyWatch...

1. **Where Are the Best Areas for Lighting Rebates?** - Customers with multiple locations, nationwide distributors and contractors all want to focus on those regions with the highest rebates. Unfortunately it's not an easy question to answer because rebates can vary so much.

- ☀ The 3 States with the Highest Populations Have the Worst Rebates
- ☀ Generous Northeastern Rebates but With a Catch
- ☀ Midwest & Northwest Offer Strong Incentives but Many Variations
- ☀ Areas Where Funding Goes Quicker Than Anticipated
- ☀ The Type of Product Makes a Big Difference

Overall, your best option is to thoroughly research your utilities' rebate programs to find the most profitable opportunities available to you. <http://www.briteswitch.com/news/bestrebateareas.html>



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2. ***DOE Announces Funding Opportunity for Solid-State Lighting R&D*** - Under this funding opportunity (DE-FOA-0001613, “Solid-State Lighting Advanced Technology R&D—2017”), a total of up to \$10 million in funding is directed toward all three existing DOE SSL R&D program areas:
- *Core Technology Research*—Applied research aiming to demonstrate scientific principles, technical application, and application benefits, and encompassing scientific efforts that focus on new knowledge or understanding of the subject under study, with specific application to SSL.
 - *Product Development* —The development of commercially viable, state-of-the-art SSL materials, devices, or luminaires using concepts from basic and applied research.
 - *U.S. Manufacturing* —Research to develop advanced manufacturing approaches to reduce the cost of SSL sources and luminaires and improve product consistency and quality, with the additional benefit of supporting the development of U.S. based manufacturing.
- DOE will select up to 10 projects. Concept papers are due by November 14, 2016, and full applications are due by January 10, 2017. For more information: <https://eere-exchange.energy.gov/>
3. ***DOE New CALiPER Snapshot Report on Outdoor Area Lighting*** - Covers area/roadway luminaires, parking garage luminaires, and canopy luminaires. Outdoor area lighting is a major contributor to nationwide energy use, and the market segment has been an important player in the transition to solid-state lighting. LED outdoor area lighting has been a substantial component of the LED Lighting Facts® database since its inception, consistently being one of the categories with the most products. As of August 29, 2016, area/roadway products alone comprised 15% of the database, with the other two product categories featured in the report comprising approximately 4%. Download the findings: <http://energy.gov/eere/ssl/downloads/snapshot-outdoor-area-lighting>
4. ***Contractor Skills Shortage to Put Brake on Connected Lighting*** - A looming skills shortage could derail the revolution in connected lighting – unless action is taken to train a generation of contractors. PLUS: Customer who spent \$150 million on lighting says pace of technological development is 'overwhelming'. This video post by LUX asserts that a looming skills shortage could threaten widespread adoption of connected lighting. <https://www.youtube.com/watch?v=-sstk17qrvs>
5. ***LIFX Keeps Cutting Prices, and Adds a Smart Bulb that Lets Security Cameras See More*** - The Redwood City, CA-based company yesterday cut the price of its Color 1000 color-changing and its tunable White 900 and White 800 LED lamps to \$39.99, \$24.99 and \$19.99, respectively. Meanwhile, the new LIFX+ makes it easier than ever to spot the prowler on your premises. It has all the features of the LIFX Color 1000 lamp — including 16 million tunable color shades — plus one key ingredient: It includes a channel that emits IR light, brightening up the picture delivered by security cameras and allowing them to see further. The IR capability comes at a premium, as LIFX priced the LIFX+ at \$79.99. <http://www.ledsmagazine.com/>
6. ***Graphene: The next big thing for OLEDs?*** - The new generation OLEDs are using graphene which is a highly conductive material. It is lightweight, transparent and extremely strong. A number of scientists see graphene as the basis for a new generation of electronics. This is mostly due to its power and also the fact that it can be crumpled and bended appeals right away. While researchers continue to develop the first thin, foldable computer, a breakthrough has been made with OLEDs needed to power such a device. And the name is none other than graphene. The lights use graphene as a transparent electrode. <http://bizled.co.in/graphene-the-next-big-thing-for-oleds/>



7. **Researchers Test “DarkLight” Communication** - Researchers at Dartmouth have developed communication prototype that uses LEDs to transmit data. Unlike conventional Visual Light Communication, however, the LEDs emit light in pulses so quickly that that are invisible to the human eye. Hence, the researchers have dubbed the technology, “Dark Light” communication. They used off the shelf white LEDs in the prototype from Cree, Lumileds, Luminus Devices, and Honeywell. They proposed using very fast light pulses to transmit data at a rate that was so fast that it would be entirely imperceptible to humans. They found that with 500 ns pulses, the light was not perceptively different than the off mode of the luminaire. The researchers were able to efficiently generate and reliably detect ultra-short light pulses using off-the-shelf, low-cost LEDs and photodiodes. <http://www.solidstatelighting.net/researchers-test-darklight-communication/>
8. **LED Bulb Prices Showed Signs of Steadiness in September** - There were two main reasons behind such steadiness. Firstly, global LED market stabilized in a significant manner, and secondly, prices of LED chip remained steady, according to the latest report by LEDinside a division of TrendForce. The global average sales price (ASP) of 40W equivalent LED light bulbs dropped 1.3% in September as compared to August to US\$9.3. On the other hand, the global ASP of 60W equivalent LED light bulbs fell 0.9% monthly to US\$12.7, the report further said. <http://bizled.co.in/>
9. **The IoT revolution is here, but is it safe?** - The Internet of Things (IoT) is the lighting industry’s great white hope as revenues from luminaires start to decline. But as companies rush to get IoT products to market, is cyber security being sacrificed for the sake of a quick buck? At this year’s Lux Live ethical hacker, Ken Munroe of Penetration testing and security services, will give a live demonstration of just how vulnerable connected lighting products are to attack and manipulation. At the start of October hackers unleashed one of the largest internet attacks and they did so by utilizing IoT devices, such as thermostats and smart lights. <http://luxreview.com/article/2016/10/ethical-hacker-to-expose-iot-shortcomings-at-lux-live>
10. **LEDs’ Long Life Expectancy Can Shrink Business for Players** - LED lighting has indeed changed the face of lighting business. Not only do they conserve energy, but also last for a long period of time. However, LED lights long durability factor can actually become a ‘curse’ for companies who produce and sell them, as they can’t make good business from products that require no replacement. In order to put some control over such a situation, companies such as Cree (based in US) and UrbanVolt (based in Ireland), have come up with an innovative solution. They claim that they no longer sell light bulbs but “light”. Although, today, there is a huge market to cater to, but the LED market is shrinking, as with every building or every resident shifting to LED lighting, it is one less customer to cater to. So in the next five to 10 years LED business will boom, but after that it will start shrinking, unless the players find out innovative ways to cater to. <http://bizled.co.in/leds-long-life-expectancy-can-shrink-business-for-players/>
11. **ANSI Accredited Standards Committee C78 Stabilizes ANSI C78.381** - American National Standard for Electric Lamps—Method for the Designation of Glow Lamps. NEMA’s Lighting Systems Division, as secretariat of ANSI’s ASC C78 for Electric Lamps, is looking for industry experts in the User and General Interest categories to participate in standards development activities. Contact NEMA at nemalighting@nema.org if you are interested. Please indicate your interest category and your area of expertise. <http://lists.nema.org/t/31115/294699/2688/1/>



12. Five Major Trends in Indoor LED Luminaires by Craig DiLouie - Strategies Unlimited has forecasted that by 2022, LED luminaires will achieve a 60 percent share of global luminaire shipments. In the U.S., three major manufacturers of indoor LED luminaires say LED already constitutes a majority of their indoor luminaire sales. Jerry Mix, Imran Ahmad and Martin Werr identified five key trends in indoor luminaires that reflect innovation and are driving category growth.

- 1) LED luminaires are getting sleeker.
- 2) LED sources and optics have become integrated.
- 3) Lighting is increasingly customizable.
- 4) Good controllability is broadening application of lighting controls.
- 5) Luminaires now offer ability to tune shade of white light.

<http://www.lightnowblog.com/2016/10/five-major-trends-in-indoor-led-luminaires/>

13. Space Station Gets LED Lighting to Improve Astronaut's Sleep - The circadian rhythms in space are way different than Earth. While the sun rises and sets in 24-hour cycle in Earth, in space the sun rises and sets every 90 minutes. This destroys the settled circadian rhythms, which consequently leads to disruption of sleep patterns. Following the research, Harvard University scientists and NASA's Johnson Space Centre are sending LED-based circadian lighting to the ISS. The tuneable LED lights have three basic settings include pre-sleep setting to prompt sleepiness when it is time to rest, general vision for most of the day and circadian phase shifting/acute alerting to get a boost when necessary. NASA is investing \$11.4 million to get all fluorescent lights on ISS to be changed to LED lights. <http://bizled.co.in/space-station-gets-led-lighting-to-improve-astronauts-sleep/>

14. Human-Centric Lighting Set to Drastically Improve Workplace and Individual Performance - Scientific studies over the last 20 years have proven that light's spectral content and its intensity do indeed impact the human circadian rhythm. Blue-enriched white light, for instance, can play both a villainous and a virtuous role. Too much blue at night can undermine sleep, because blue frequencies suppress the sleep-inducing hormone melatonin. Those same blue frequencies, however, play a stimulating role during the daytime - when we tend to need it - because they excite a pigment called melanopsin that resides in the eye's non-visual photoreceptors and send signals to the brain where they stir up the body's master clock. That clock controls a number of physiological clocks including the circadian one. This new knowledge comes along at a perfect technological juncture, as the modern emergence of LED lighting with its solid-state, digital nature opens the possibility of tuning light wavelengths and intensity to facilitate human performance. <http://www.ledsmagazine.com/>

15. Ikea Makes Grab for Affordable Smart Lighting Market - Ikea, the flat-pack furniture giant, has announced that it is to release an affordable range of smart luminaires that can be controlled wirelessly using a remote control. Although the smart lighting market has been growing, it is still often confined only too expensive, high end, products. Ikea's TRÅDFRI LED smart luminaires are simple screw-in fixtures that are able to sit in pendant lights and lamps. The plug and play solution features a tiny transmitter that has been installed within the luminaire, which can communicate with a remote control. The remote device is able to control up to ten LED light sources around the house and can adjust lighting levels from a warm yellow glow all the way through to 'full beam' brightness. It will also be possible to control the lights using a smartphone app but this will require a hub, similar to the Philips Hue. The luminaires will be available to buy in stores in April next year. <http://luxreview.com/article/2016/09/ikea-makes-grab-for-affordable-smart-lighting-market->



- 16. Wattstopper® and Lumenetix® Expand Partnership of Advanced Digital Lighting Applications -** This agreement focuses on Lumenetix blanco™ tunable white technology, a subset of Lumenetix's araya(5) platform, which enables lighting fixture manufacturers and specifiers to address new market demands for high precision dimming and human centric lighting (HCL) systems. The lighting industry is entering the next phase of LED innovation, moving beyond just energy efficiency and ease of control to new light functionality. Color control, circadian rhythm, and task tuning are emerging as specification requirements with growing opportunities in healthcare, higher education, retail, and residential. The integration of expanded Lumenetix blanco solutions with Wattstopper Digital Lighting Management (DLM) and Architectural Dimming platforms and products, will offer the most robust digital lighting system available. 10/14 PRNewswire
- 17. Philips Hue Becomes Google Home Debut Partner -** Philips Lighting, a global leader in lighting, announced that the Philips Hue connected lighting system is a debut partner with Google's new voice activated speaker, Google Home. The speaker is powered by the Google assistant that answers your questions and helps you get things done. Customers in the US will be able to use Google Home to control their lights. This integration makes Philips Hue the first connected lighting system that can be used with all of the leading smart home platforms. Not only can you switch your Philips Hue lights on/off using Google Home but you can also dim them, and select your desired light color to create the right ambiance in your home. <http://www.ledinside.com/>
- 18. A Look Into Cree's Past -** LED lighting and component manufacturer, Cree saw its stock price surge from \$25 in October 2011 to close to \$70 in October 2013. However, the company's stock price has been downhill since then and it stands close to \$25 at present. Currently, the company's stock price is trading close to its book value. In this analysis, we discuss the key reasons that drove Cree's stock price higher and then the reasons that contributed to a decline in the stock price post 2013. LED lighting and component manufacturer, Cree saw its stock price surge from \$25 in October 2011 to close to \$70 in October 2013. However, the company's stock price has been downhill since then and it stands close to \$25 at present. Currently, the company's stock price is trading close to its book value. In this analysis, we discuss the key reasons that drove Cree's stock price higher and then the reasons that contributed to a decline in the stock price post 2013. <http://www.forbes.com/>
- 19. Eaton and CIMCON Lighting Collaborate to Bring Connected, Smart City Solutions to the Market -** The collaboration combines Eaton's broad range of outdoor light-emitting diode (LED) luminaires with CIMCON's intelligent, wireless controls, sensors and software to bring powerful connected lighting solutions for smart cities. The connected lighting solution features a 7-pin ANSI C136.41 compatible "plug-and-play" or luminaire-integrated wireless controller, providing intelligent ON/OFF switching, dimming control, GPS capabilities, utility-grade power metering, analog and digital sensor capabilities and real-time status and health monitoring of lighting fixtures compatible with multiple networks. CIMCON's web-based central management and controls software offers an intuitive, interactive Google Maps view of all lights in a system, eliminating location errors, improving installation time and allowing maintenance teams to quickly zoom to one fixture and access streetlight status in one click. The software facilitates a complete asset management solution, allowing cities to schedule, diagnose and manage streetlights from anywhere at any time. www.cimconlighting.com and www.eaton.com/lighting



- 20. CLTC Collaborates with UC Davis Medical Center on Best Practices for Healthcare Lighting -** CLTC and the UC Davis Medical Center are working together to identify best practices for healthcare lighting in patient rooms, corridors and support areas. The three key elements of these designs include circadian wellness, dark adaption, and high color rendering capabilities. In collaboration with its manufacturing partners, CLTC researchers are developing and showcasing innovative lighting strategies appropriate for each healthcare space type. Currently, the project is in its prototype phase. Next steps include prototype demonstrations. <http://cltc.ucdavis.edu/>
- 21. The LEDs They Are a-Changin' by Dr Giles Humpston -** LEDs have been around a surprisingly long time. Science project curiosities appeared in the swinging 60's, and then a decade later the first mass-produced and affordable devices became commercially available. Monochrome LEDs are now manufactured in wavelengths that span the deep UV to far infrared, and the power of white LEDs is beginning to resemble an artificial sun. These accomplishments have been achieved by impressive innovations in LED semiconductor physics and optics. However, what has not changed is LED packaging technology. <http://www.ledjournal.com/main/articles/the-leds-they-are-a-changin/>
- 22. DOE Publishes CALiPER Report on the Testing of OLED Luminaires - CALiPER Report 24: Photometric Testing, Laboratory Teardowns, and Accelerated Lifetime Testing of OLED Luminaires,** which is the first CALiPER report evaluating the performance of OLED luminaires based on independent procurement and testing. OLED panels, drivers, and transformers are still in a steep curve of development. Goals are higher efficacy; longer life, before panel replacement on the jobsite is needed; better lumen maintenance over time; even better color quality and wider CCT options; higher-efficiency drivers; and robustness under high temperature, high humidity, and rough handling from shipping and installation. Improvements in these areas could make OLED luminaires more accepted in the architectural marketplace, and adopted as a trusted lighting solution. The findings are available at: <http://energy.gov/eere/ssl/downloads/caliper-report-24-oled-luminaires>
- 23. American Council of Health Replies to AMA's LED Report -** In June 2016, the American Medical Association (AMA) warned against using high-intensity LED streetlights due to its negative impact on sleep and overall health safety. However, the ACH believes that these concerns are puzzling and rather overblown. The AMA report said that blue-rich LED lights cause discomfort and disability and, also reduces visual acuity and safety, leading to concerns and creating a road hazard. In response to this, ACH says that such claims can only be true if all vehicles on the road were a convertible, and the driver was directly exposed to these lights. However, automobile windshields help to filter out glare, particularly at night. Hence, ACH believes that this concern is somewhat unclear. <http://bizled.co.in/american-council-of-health-replies-to-amas-led-report/>
- 24. OLEDs' Obstacles -** Though advancements in the diffuse light source have lagged behind those of LEDs, the technology is becoming more viable for widespread use. Though organic light-emitting diodes, or OLEDs, hold significant potential as a light source with unique application potential, designers will have to continue to wait before the technology is ready for mainstream architectural lighting use. Because of OLEDs' low luminance and diffused output, their applications to date have been limited to signage backlighting, sculptural installations, and conceptual prototypes. The dearth in demand has kept OLED prices high and research and development budgets low as manufacturers focused instead their attention on LEDs and improving the quality and efficacy of those point sources. But OLEDs are attracting growing interest from lighting designers because of their simplicity. http://www.archlighting.com/technology/oleds-obstacles_o



Global LED EnergyWatch...

- 25. Global LED Market to Reach \$71.35 Billion in 2021** - According to the new market research report, “LED Market by Technology”, published by Scalar Market Research, the LED market is expecting an impressive growth at a CAGR of 19.8%. At the estimated growth rate, the LED market is expected to grow from \$28.89 billion in 2016 and reach \$71.35 billion in 2021. The global LED market report offers in-depth analysis about the market size (revenue), market share, major market segments, global geographies, forecast, key players, and premium trends. It also focuses on the key drivers and opportunities in this market. <https://www.scalarmarketresearch.com/>
- 26. Global IR LED Market to Hit US \$792 Million in 2021** - The global IR LED market is likely to expand from US\$300 million in 2016 to US\$792 million in 2021, according to LEDinside’s 2016-2021 Global LED Industry Demand and Supply Database Report. Applications like facial and iris recognition solutions, virtual reality (VR) devices and security surveillance systems will push the market to develop and witness huge revenues. At present, the security surveillance system is one of the most promising application markets for IR LEDs. With more and more people investing in anti-terrorism potentialities and security infrastructures, the demand for night vision surveillance cameras is on the rise. This will help to increase the value of IR LED market as a whole. <http://bizled.co.in/global-ir-led-market-to-hit-us792-million-in-2021/>
- 27. Outdoor LED Display Market to Reach \$22.4 Billion in 2024** - The global outdoor LED display market size rose above \$2.6 billion for 2015 and is projected to post a CAGR of more than 20.1% through 2024, according to Global Market Insights. Key installation advantages for LED displays include features such as portability, power efficacy, high definition resolution, increased brightness, and improved longevity. Global Market Insights predicts that increasing demand for applications including perimeter boards, video walls, and advertising boards will promote outdoor LED display industry trends from 2016 to 2024. Rising demand for wireless connections for billboards and high-resolution signs make them ideal for customized content. Furthermore, installation in areas with heavy pedestrian traffic regions are predicted to play the main role in the expansion of LED display technology. The firm predicts that mobile outdoor commercial displays will also play a key role in this LED technology. In addition, phone kiosks ads, benches, and new rack applications are projected to bring heavy demand for LED display technology. <https://www.gminsights.com/>
- 28. Osram Finalizes Acquisition of Novità Technologies** - Effective Oct. 4, 2016, Osram has successfully completed the acquisition of Novità Technologies, a U.S. manufacturer of automotive LED modules which are used primarily in tail lights, fog lights and daytime running lights. With this move, Osram will further expand its position in the U.S. automotive LED market. The global market for LED modules for front and rear lights is forecast to increase by an average of 20 percent per year by 2020. Novità Technologies is very well positioned in this sector, particularly in the U.S., and is therefore an excellent addition to Osram in terms of both the regional market and the LED automotive portfolio for project and system business. Novità Technologies will be part of Osram’s Specialty Lighting business, which comprises the company’s automotive lighting as well as professional and industrial application activities. <http://www.ledinside.com/>



- 29. Osram Takes Adaptive LED Headlamps to New Level** - LED headlamps have become increasingly popular in the past few years due to styling, durability, and energy efficiency. Even mainstream vehicles often support SSL either for the main headlamp and/or daytime running lights. Still, LEDs offer potential advantages that go way beyond styling. Adaptive designs could essentially eliminate the need for low beams by steering the light in a way that ensures the light does not impact oncoming drivers. The new technology developed by Osram and its partners will create even more flexibility in terms of keeping light out of the eyes of oncoming drivers, and placing the light in places that best allow the driver to see pedestrians and obstacles. The 1024 LED sources are all integrated in what Osram describes as a thumbnail-size chip. The module would adapt continuously based on factors such as weather conditions, speed, traffic, and route. <http://www.ledsmagazine.com/>
- 30. Top 10 Global COB LED Manufacturers in 2015** - The global market for chip-on-board (COB) LEDs will hit US\$ 580 million in 2016, and surpass US\$700 million in 2021, leading to 4% CAGR, according to a report by TrendForce. This figure includes COB products belonging to ceramic and EMC packages as well. COB LEDs are mostly used for commercial lighting applications. However, modern technological advances have enhanced the consistency of high-power COB products. Hence, they have now gradually expanded into a variety of outdoor applications like street lighting and lighting equipment for mining sites. <http://bizled.co.in/top-10-global-cob-led-manufacturers-in-2015/>
- 31. Apple's Wish to Use OLED Displays Puts Pressure on OLED Suppliers** - With Apple Inc. planning to adopt OLED displays for its iPhones in 2017, it will need millions of OLED screens. This puts immense pressure on the Japanese OLED display manufacturers to upgrade their manufacturing capacities to meet the huge demand. The smartphone industry has already shifted from liquid-crystal displays (LCD) to LED, and now it is shifting to OLED displays, as it uses less battery while delivering sharper and brighter images. Smartphones with OLED displays will be more flexible, bendable and with many innovative features. <http://bizled.co.in/apples-wish-to-use-oled-displays-puts-pressure-on-oled-suppliers/>
- 32. Foxconn-Sharp Considering China to Manufacture OLED Panels** - Foxconn and Sharp are in pressure as US-based Apple is keen to adopt OLED displays for its iPhones in 2017. Sharp is one of the companies that Apple is talking to for supply of OLED screens for iPhones. Foxconn-Sharp alliance is, therefore, considering upgrading their OLED production capacity. However, Foxconn is looking for different places where it can produce OLED panels at a lower cost. The Foxconn-Sharp partnership wants to invest US\$1.92 billion to mass produce OLED panels. <http://bizled.co.in/foxconn-sharp-considering-china-to-manufacture-oled-panels/>
- 33. Malmö School Introduces Human Centric Lighting** - An experimental human centric lighting scheme has been installed at Lindeborgskolan school in Malmö, Sweden, aimed at improving pupil performance. The human centric system replaced a fluorescent lighting scheme, a change which pupils claim has improved their concentration, making them feel more alert throughout the school day. The scheme offers a slowly changing light variation, from a warmer light in the morning, which gradually becomes bluer and more intense as the day goes on. Teachers are able to change the colour intensity of the lighting to create a calming or a stimulating atmosphere when necessary. You can find out more about the Malmö project by watching the video below. <https://www.youtube.com/watch?v=ITma72RsXtU>



- 34. Philips Turbocharges the LED Bulb, Claiming Huge Efficiency Breakthrough with Dubai** - The new Philips Dubai Lamp delivers 200 lm/W, making it the first commercially available lamp to break the 200-lm/W barrier. Philips and Dubai plan to begin distributing several different models later this year, rated at notably low wattage ratings of 1W as a 25W incandescent candle replacement with an E14 fitting, 2W as a 40W standard incandescent E27 replacement, and 3W as a 60W incandescent E27 replacement. The two entities plan to distribute the new line in the UAE city later this year, with the possibility of marketing them in other countries. <http://www.ledsmagazine.com/>
- 35. Philips Said to Be in Talks to Sell Lumileds Unit to Apollo** - Royal Philips NV is in talks to sell its Lumileds lighting-components division to Apollo Global Management LLC after scrapping a plan to sell the business for \$2.8 billion earlier this year amid regulatory concerns. Apollo is the likeliest buyer after other private equity firms dropped out of talks. The Amsterdam-based company is aiming to reach a deal by the end of October, Philips Chief Executive Officer Frans van Houten said he's likely to get less for Lumileds now than the original price. Analysts at ING Groep NV estimate Lumileds's total value at \$2 billion, before expenses, a discount to the previous sale's price. <https://www.bloomberg.com/>
- 36. Qualcomm to Acquire NXP** - Qualcomm will commence a tender offer to acquire all of the issued and outstanding common shares of NXP for \$110.00 per share in cash, representing a total enterprise value of approximately \$47 billion. NXP is a leader in high-performance, mixed-signal semiconductor electronics, with innovative products and solutions and leadership positions in automotive, broad-based microcontrollers, secure identification, network processing and RF power. As a leading semiconductor solutions supplier to the automotive industry, NXP also has leading positions in automotive infotainment, networking and safety systems, with solutions designed into 14 of the top 15 infotainment customers in 2016. NXP has a broad customer base, serving more than 25,000 customers through its direct sales channel and global network of distribution channel partners. The combined company is expected to have annual revenues of more than \$30 billion. <http://media.nxp.com/>
- 37. German Government Puts Chinese Consortium Acquisition of Osram's LEDVANCE on Hold** - German magazine WirtschaftsWoche recently reported that IDG and lighting partner Forest Lighting (also known as MLS) proposed acquisition of Osram for US \$439.58 million has been delayed over financial issues. According to the magazine this could delay the business transaction for another three to four months before it would be cleared by German authorities. <http://www.reuters.com/article/us-osram-licht-m-a-idUSKCN12R1PW>
- 38. Gooee Teams with Chinese LED Lighting Manufacturer Leedarson to Extend Its IoT Reach** - Smart lighting startup Gooee has entered a wide-ranging partnership with a leading Chinese contract manufacturer of LED bulbs and luminaires in a deal that could extend Gooee's own reach as an OEM vendor of chipsets and as a cloud computing provider. The agreement with Xiamen-based Leedarson Lighting calls for Leedarson to manufacture the Gooee engine, which is a set of chips that lighting vendors embed in their lights and luminaires to connect them with the Internet of Things (IoT). Leedarson could also use Gooee technology for lighting customers that have not signed up directly with Gooee. The two companies already have some OEM and design customers in common, including GE, Osram, Ikea, and others. <http://www.ledsmagazine.com/>



LED Technology Watch...

39. Ushio America Introduces the New Uphoria™ 3 LED PAR Lamps - PAR20, PAR30, PAR30LN and PAR38 Models with 90+ CRI. These LED PAR lamps combine the classic styling of traditional PAR lamps with the advanced technology of LEDs and custom designed optics. The dimmable Uphoria 3 LED PAR lamps are designed to replicate the shape and light output of halogen PAR lamps, but offer serious energy-saving benefits. These LED 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. They have a special thermal design that maintains proper thermal management of the LEDs, are ENERGY STAR® certified with a 5-year warranty. <http://www.ushio.com/>



40. Foreverlamp RS Series Bright Just Got Brighter - The recently released 1000W Metal Halide Replacement Lamp RS Series is NOW available in **52,000 lumens!**

- RS-1-KWD-MHO
- 5000K / +83 CRI
- 52,000 Lumens
- 460W / 112 Lm/W
- Saves 530W per socket
- \$2407 accumulated savings over 30K hours

<http://foreverlamp.com/products/led-retrofit-lamps/rs-series/>



41. Acuity Adds Wireless Capabilities to Its Digital Lighting Controls - Acuity Brands has extended its nLight digital lighting control system with a kit that adds wireless control capabilities. The new nLightAIR platform includes luminaires equipped with Acuity eldoLED LED drivers, a battery powered wall switch and an app called Clairity. The kit is available across different Acuity lines, including Lithonia and Peerless. It includes sensors that detect motion, daylight and temperature. The Clairity app lets users set responses to different occupancy and daylight conditions, and to program in lighting sequences. It works on both Apple iOS7 and Google Android devices. The system includes two different radio channels, one at 900 MHz and the other being Bluetooth Low Energy (BLE), a 2.4-GHz communication technology. <http://www.acuitybrands.com/products/controls/nlightair>



42. ConTech Introduces Super CPL LED Pendant - The SCPL is available in three wattage/lumen packages: 120W/12,000lm, 170W/15,000lm, and 200W/18,000lm with excellent fixture-to-fixture color consistency within a 3-step MacAdam Ellipse. The decorative design simplifies installation with a thin ceiling canopy and a compact driver housing/heat sink. A collection of shade options, in both 16" and 22" acrylic or aluminum, provide varied distributions and design looks. It requires a large amount of space to illuminate, like an indoor shopping mall or grocery store for example. Available in four color temperatures ranging from 2700k to 4000k, the SCPL is also available for dimming and non-dimming applications. For more information: www.contechlighting.com



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National Energy Watch...



43. Bill Brown to Receive the Louis B. Marks Award - Bill Brown Sales (BBS) is proud to announce that its founder, Bill Brown, will be presented with the Louis B. Marks Award, by the Illuminating Engineering Society (IES) in recognition of exceptional service to the Society of a non-technical nature. Mr. Brown joined IES in 1961 and has enthusiastically served as a leader, mentor, ambassador, promoter, and friend to many. The award ceremonies will be held at the annual Illumination Awards Dinner held on October 23, 2016, in Orlando, Florida.

44. IoT Poised to Alter Supply Chain - Internet of things is a broad term for a network of connected devices that can automatically communicate with one another. The applications of this new technology are still in the early stages for distribution, but experts expect rapid growth in the next few years. This article examines some of the opportunities and challenges IoT introduces for the supply chain. This article includes:

- Connecting the supply chain
- IoT opportunities for distributors & manufacturers
- Concerns about IoT

<http://www.mdm.com/articles/35943-iot-poised-to-alter-supply-chain?v=preview>

45. ANSI Accredited Standards Committee C78 Revises ANSI C78.81-2016 - American National Standard for Electric Lamps—Double-Capped Fluorescent Lamps—Dimensional and Electrical Characteristics sets forth the physical and electrical characteristics of the principal types of fluorescent lamps intended for application on conventional line frequency circuits and electronic high-frequency circuits. NEMA announced specifications for the lamp itself and the interactive features of the lamp and ballast are given. Only double-based lamps of the regular linear shape are included. This revision added a T5 Method of Measurement reference for clarity and many data sheet numbers were corrected high frequency (HF) programmed-start open circuit starting voltages also were added for the various T8 data sheets containing HF requirements.

<http://lists.nema.org/t/31036/294699/1161/1/>

46. NALMCO Newest Certification- CLCP - The lighting industry is undergoing massive change due to growing demand for intelligent LED lighting systems and controls. LED lighting, which promises high operating cost savings, is ideally paired with intelligent lighting controls, which promise additional savings and flexibility. Accelerating demand for these technologies is transforming workspaces while reducing costs. Growing demand for lighting controls is creating an education gap among lighting service providers unfamiliar with aspects of the technology. Misapplication and improper installation can result in poor performance, user complaints and lower than expected energy savings. The electrical industry has responded with a series of initiatives, including a new Certified Lighting Controls Professional (CLCP) designation developed by the interNational Association of Lighting Management Companies (NALMCO). This whitepaper advises commercial building owners and managers that accelerating demand for LED lighting and lighting controls, particularly intelligent controls, is creating an education gap. Certification is an important qualification demonstrating proficiency in vendors performing lighting upgrades. <http://www.nalmco.org/>



NALMCO lighting
controls certification v



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- 47. NEMA Standard Promotes Uniformity for Occupancy Motion Sensors** - NEMA WD 7-2011 (R2016) *Occupancy Motion Sensors Standard* promotes uniformity in the use and application of occupancy motion sensors used in lighting control systems, HVAC, and other devices. This standard explains field of view and coverage characteristics relevant to vacancy and occupancy sensors using passive infrared, ultrasonic, or microwave technology. NEMA re-released it without changes, reaffirming the document's technical relevance to today's wireless device industry. Available in hard copy for \$44 or as an electronic download at no cost at <http://lists.nema.org/t/31209/294699/2695/1/>
- 48. Lighting Controls Association Updates Energy Codes Online Course** - EE203: Lighting and Commercial Energy Codes, Part 2: ASHRAE/IES 90.1-2013 and IECC 2015. Complying with a Department of Energy mandate, a growing number of states are adopting commercial building energy codes at least as stringent as ASHRAE/IES 90.1-2013 and the 2015 International Energy Conservation Code (IECC). EE203, Part 2 provides a lighting controls compliance roadmap. The course identifies all sections of the energy standards, describes the requirements, and provides decision trees to simplify understanding and compliance and is accredited. <http://aboutlightingcontrols.org/EducationExpress/>
- 49. NEMA Publishes New White Paper on How to Reduce Energy Consumption in Commercial Buildings** - NEMA WD ARCP 1-2016 *Automatic Receptacle Control to Meet ASHRAE 90.1-2010 and California (CA) Title 24* explains the controlled receptacle requirement now appearing within non-residential energy codes, as well as a summary of typical application settings. Standards now require that at least 50 percent of all receptacles in designated spaces of a building be controllable, i.e., automatically able to turn themselves off and on as needed. This paper covers commercial buildings such as retail and office spaces, institutional, educational, and lodging/hospitality. It pertains to new construction and renovation/remodeling work where building permits and subsequent certificates of occupancy are required. <https://www.nema.org/>
- 50. THE TOP 5 ELECTRICAL CONTRACTORS** - <http://ecmweb.com/>
- 1 Quanta Services Houston \$5,299,000,000
 - 2 EMCOR Group, Inc. Norwalk, Conn. \$1,378,619,934
 - 3 Rosendin Electric San Jose, Calif. \$1,088,954,816
 - 4 MYR Group, Inc. Rolling Meadows, Ill. \$1,062,000,000
 - 5 Pike Electric Mount Airy, N.C. \$870,000,000
- 51. LED to Change Nighttime View of Niagara Falls** - A multi-million-dollar project to redevelop the lighting of one of the world's most famous landmarks, Niagara Falls, is getting underway in upstate New York. Since the late 1990's the Falls have been lit with 21 Xenon spotlights, 18 placed on a nearly century old illumination tower and three more secured on the rocky Niagara Gorge. The retro, search-light-style, lighting will be replaced by 12,600 LED lights installed on top of Table Rock, which skirts the Falls and is home to a visitor center. The new sources will provide twice as much illumination as the aging fixtures that they are replacing. The current Xenon fixtures have to be replaced every 1,900 hours, however the new fittings will last for twenty years and longer, drastically reducing maintenance costs. <http://luxreview.com/article/2016/10/led-to-change-nighttime-view-of-niagara-falls->



Monthly Special Feature... *A Live Demonstration of Li-Fi Will Take Place at This Year's Lux Live.*

Li-fi is a phenomenon waiting to happen. In the office of the near-future luminaires won't just provide the light, they will also provide the internet connection.



Instillations of Li-fi in public spaces are spreading thick and fast.

The Paris Metro is the biggest organization to announce that it is planning to install the technology and schools, supermarkets and sports stadiums across the globe have signaled that they are planning to follow suit.

Apple have announced that it is planning to include a li-fi capability in future versions of the iphone, a huge boost, which if it was to happen, would bring the technology into the mainstream and reinvigorate the lighting industry in the process.

Trials are also currently underway with major retailers such as Carrefour and Target using light-based location technology to interact with shoppers' smart phones. The systems under trail at the moment still need a separate connection to the internet via Wi-fi or either 3G or 4G, but adding Li-fi would make the process simpler, quicker and more responsive.

The term Li-fi was coined by Professor Harold Haas of pureLiFi and the technology is bi-directional, unlike visual light communication, or VLC, in which information is broadcast in one direction to devices.

LuxLive is your chance to see the power of the new technology in person. Nikola Serafimovski, of pureLiFi, the company that has developed the technology from birth, will be giving a live demonstration of the technology during the exhibition. He will also expand on the the opportunities for secure, high-bandwidth information delivery that the technology offers.

The live Li-fi demonstration will take place at 14:00 on Thursday the 24th of November in the IoT Arena at LuxLive. Registration is free and you can find out more at: <http://luxlive.co.uk/>



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