

EnergyWatch



April 2017

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If you're not humble, it's hard to be coached. If you can't be coached, it's hard to get better.
Jay Wright, Head Basketball Coach at Villanova

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 Past, the Present and the Future -

This is an attempt to pull together an understanding of the transition taking place from the Traditional Lighting industry (the Past), to the Smart Lighting industry (the Present) to the Intelligent Lighting industry (the Future).

As an unabashed sports nut (can the Cubbies do it again?), let me ask, is there any business more traditional than baseball? Much like the lighting business, I might add. For over 100 years, both traditional businesses changed very reluctantly. Three traditional umpires confirmed who was in charge:

- I call 'em like I see 'em
- I call 'em like they are
- They ain't nothin' til I make the call!

Well, times they are a changin and the cause is technology. Now their final call can be challenged and reviewed in slow, very slow motion in NYC, of all places, far away from the actual game. Now the umpire's not-so-final call is outsourced using video technology-based analytics. How did that happen? Well, technology gives this very traditional business the ability to get it right. That's what happened. Took baseball a little longer to get there but there they are and they are not going back to the good ole days.

The traditional lighting industry has always wanted to get it right. Quality of light, energy efficiency and long life have been the focus over the past to get it right. We are an industry made up of independent companies, yet very interdependent. On the manufacturing side: luminaire, lamp, ballast, controls, accessories companies are interdependent; on the supply chain side: agents, specifiers, designers, contractors, distributors, utilities are all interdependent to bring the best lighting system to market. They have to work together.....we call that cooperative innovation. And it produced a bright industry (sorry



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about that) that experienced many sustainable innovations (a continuous replacement of old products to new better products) that improved the Edison's incandescent light bulb over its history. That's the Past...

I contend that we are now in the Smart Lighting business, the Present. Just like the changes taking place in baseball, lighting is in a transition to get it right and it is SSL technology that's driving the bus. It's still all about quality of light but for the first time since the Edison bulb, it's disruptive innovation (a discontinuous market shift from the few to the many). Think about it: every single light source commercially available will be replaced with a SSL system and we are talking about a \$300+ billion USA installed base. Not to worry, getting it right is hard and it will take time but the stars are aligned – SSL is here to stay. The Smart Lighting industry is now, the present, allowing us to manipulate the timing / intensity / tuning of light leading to tracking / reacting / adapting to the users' living and working patterns. Lighting will always be concerned about quality of light but energy efficiency and long life is off the table. We have the latter with the new technologies. So let's focus on quality of light and getting it right...

Still waiting to see how we did in 2016....

Now let's look at the Future: the Intelligent Lighting industry.....IT CAN THINK! Lighting has the potential to be the core connector to every device you own. It's just not about light anymore. It's about IoT / IoE / PoE / VLC / Li-Fi / VoIP / SAE / LaaS and much much more.....and that's just the tip of the iceberg. What's under the surface of the water is mind boggling. The real game changer is Big Lighting vs. Big Networking. Or will it be cooperative innovation again? Time will tell but it is clear, we are on a pathway to connected information using light! WOW! IT companies see a real opportunity to reshape the lighting industry and they want a piece. Maybe even dominate...don't look back, they may be gaining on you.

Simply put, our customers will want Intelligent Lighting when they understand the benefits and there will be many. Intelligent Lighting is about the ability to easily interface with other systems to deliver additional value; it is key to our success in an overall vibrant digital ecosystem. Connected lighting systems can interface with many other building verticals, all leading to things like intelligent productive workspaces, innovative applications and services, digital marketing platforms, human centric lighting, healthcare – circadian rhythm cycles, plug-and-play interactions, integrated security (installed cameras for facial recognition), home and office automation, intelligent networks – secure / reliable, and much much more.

One last point.....let me talk about the WHOLE PRODUCT CONCEPT. My view is we are not just selling light anymore. We are all becoming lighting / data integrators: selling Innovations + Solutions + Services. It's the best of times. What do you think.....and how about the supply chain: what does lighting distribution need to do to stay in the game?

<http://energywatchnews.com/the-past-the-present-and-the-future-by-bill-attardi/>



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LED Energy Watch...

1. ***AT&T and Current, Powered by GE, Team Up for IoT*** - Two companies with extensive history in infrastructure and communications technology are teaming up to help accelerate the digital era of urban development. AT&T and Current, powered by GE, have announced an exclusive agreement to connect cities across the United States and Mexico to the Internet of Things (IoT). Together, the companies will unlock a realm of possibilities to improve the way cities operate, communicate and meet the needs of citizens. Since launching its Smart Cities organization in 2015, AT&T has been using its resources and IoT expertise to create impactful solutions for cities. With its smart cities framework as the foundation, for the past year AT&T has been helping cities develop and implement a holistic smart cities strategy to address their current and future needs. By introducing GE's Predix-powered IoT platform, AT&T can use outdoor LED lighting in a city to create a digital infrastructure that helps address issues like traffic flow and parking optimization, gunshot detection on city streets, air quality monitoring and weather emergency alerts. 2/27 PRNewswire
2. ***Power-Over-Ethernet and LED Lighting Match Perfectly*** - PoE is a technology used in wired Ethernet local area networks (LANs) that delivers power over the same cable that delivers the Ethernet data. This reduces the number of cables that must be laid to install a network and power the devices connected to it. It also makes it easier to maintain and adjust the access ports on the network to meet changing requirements than with traditional wiring. The PoE standard was originally developed to meet the needs of IT services and is appropriate for a wide range of network connected devices including IP telephony, IP security cameras, wireless access points, modems, switches, and other networked products. <http://bizled.co.in/power-over-ethernet-and-led-lighting-match-perfectly/>
3. ***Philips Taps Microsoft as Part of Indoor-Positioning Partnering Push, Adds Bluetooth to the Mix*** With location-based services still stuck on the launchpad, the company's new "Location Lab" reaches out to data and app developers. In two moves to jump-start the stalled indoor-positioning business, Philips Lighting said it has rounded up IT companies including Microsoft and SAP to develop compelling data-linked uses that might actually attract customers. And in an underlying wireless technology change, Philips quietly revealed that it is now embracing radio-based Bluetooth in addition to the visible light communication (VLC) that it has long preferred. Indoor positioning — also known as location-based services — transmits signals to smartphones in order to guide and engage people around buildings such as retail stores and offices. Lighting companies want to use ceiling luminaires to send the signals. <http://www.ledsmagazine.com/>
4. ***Connected Streetlight Makes Lost Signal a Thing of the Past*** - With mobile phone traffic expected to grow nine times over by the year 2022, mobile operators are struggling to keep up with the levels of broadband coverage required. Unto the breach steps a new smart lightpole, which offers network coverage, acting in concert to increase a city's overall 4G network coverage. 'Street lighting has the potential to become a ubiquitous, high-performing wireless network that is essential for any city's digital transformation. Think of it as digital real estate that can be rented out.' Christoph Herzig, head of venture at Philips Lighting concluded. In addition to broadband network services, the light poles can accommodate other equipment for a wide range of Internet of Things (IoT) applications. This allows cities and network providers to provide smart, advanced capabilities that go beyond illumination, including sensors. <http://luxreview.com/>



5. ***How Is Lighting Changing How We Watch Sports?*** From the Super Bowl, to the football pitch, to the speedway, lighting is being used to improve the sporting experience. This week we ask how is lighting changing the way we watch sports? <https://www.youtube.com/watch?v=Y2HKW9RdkoM>
6. ***How LED Lighting Can Transform USA*** - Only 10% of USA's streetlights have been converted from the traditional sodium lights to LED lights in the past few years, despite the fact that LED lights can save up to 50% more energy than the sodium lights. The District of Columbia has 71,000 streetlights; San Diego will upgrade 14,000 light fixtures to LED luminaires. The Department of Energy (DoE) estimates that if the whole country converts to LED lights from sodium lights over the next two decades, it could save up to \$120 billion over that period. Cities across Asia and Europe are already switching to LED lighting to save energy as well as maintenance costs. The Central Planning Agency of China is also discussing its LED conversion program for the whole country. <http://bizled.co.in/how-led-lighting-can-transform-usa/>
7. ***Lighting Control Rebates Going Strong*** - The simplest and most popular type of incentive remains the prescriptive rebate, typically targeted to existing buildings. This type of rebate identifies a list of technologies and products that are found to provide suitable performance while saving energy. After installation, the customer receives a rebate check. In 2016, commercial lighting rebates covered 79% of the United States, according to BriteSwitch, a record since the rebate processing company began measuring rebate coverage nine years ago. Many rebate programs began to focus more heavily on LED products, a trend that is continuing in 2017. New rebates are being added as the DesignLights Consortium (DLC) adds new categories. As an example, many more rebates for LED mogul-base lamps intended to replace HID lamps, and LED lamps intended to replace compact fluorescent and U-bend lamps, have become available. The top lighting rebates are LED replacement lamps, LED downlights, LED accent lights (trackheads) and LED high-bays. <http://lightingcontrolsassociation.org/2017/03/20/lighting-control-rebates-going-strong-2/>
8. ***Retail Lighting Trends by Craig DiLouie*** - According to the U.S. Department of Energy (DOE), more than 600,000 retail buildings are currently operating in the United States, representing more than 11.3 billion sq.ft. As one of the largest markets for lighting, retail applications have distinctive needs. Retail lighting varies depending on the type of store, owner/brand goals, and merchandise being displayed. Generally, the retail market may be delineated between big box and boutique. Big-box stores typically prioritize energy efficiency, maintenance, uniformity of light levels, and low installed cost. Boutique applications typically prioritize color quality, visual comfort and setting a desired look. Both are typically concerned with using focal lighting to accent and promote key merchandise. <http://www.lightnowblog.com/2017/03/retail-lighting-trends/>
9. ***LEDs Are Set to Change Horticulture by Increasing Yields*** - The color of LED light can be used not only to assist the growth of plants, but it can also be used to improve their year-round taste and quality and potentially increase their nutritional value. Not only this, but growing fruits and vegetables under LED light makes them less vulnerable to the threats of climate change. It is no wonder then, that interest in the role LEDs can play in farming is growing. The ability to change the color of LED light is crucial. 90 per cent of plant genes are regulated by light. So, by changing the light spectrum, it is possible to change how a plant grows, how fast it develops and its morphology. It is also possible to change the flavor, the aroma, the antioxidant content and, potentially, the amount of vitamins produced by a plant. <http://luxreview.com/>



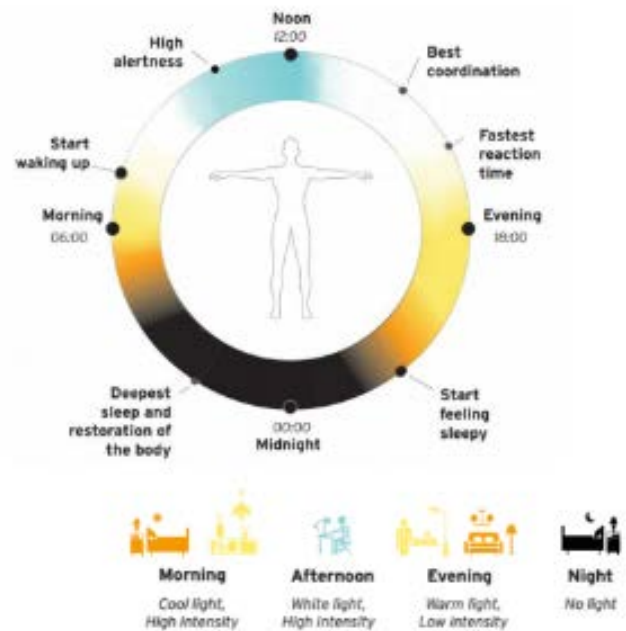
- 10. IBM: Cognitive Buildings** - Cognitive buildings are the next generation of sustainable building systems as they automatically integrate, analyze and learn from the vast amount of IoT generated data within a building and its environment. As a result, the building itself becomes an assistant and strives to improve user satisfaction, driving down costs and enabling new innovative collaborative services. The development of cognitive buildings is made possible by the recent advancement and convergence of multiple technologies including lighting.
https://www.enocean.com/fileadmin/redaktion/pdf/perpetuum/en_2017_01/index.html#18
- 11. New DOE Caliper Snapshot Report on LED Troffers and Troffer Retrofit Kits** - Troffers are a staple of the lighting industry, providing economical ambient lighting in offices, schools, and commercial spaces. They come in a variety of form factors, typically 2×4, 2×2, and 1×4, and have traditionally utilized a variety of optical systems, such as lensed or louvered, to meet different needs or to simply provide a different appearance. This CALiPER Snapshot report includes data for both troffer luminaires and troffer retrofit kits. Notably, troffer retrofit kits may or may not reuse the existing luminaire's optical system (e.g., lens), which will affect the performance of the complete system. A product using the existing luminaire's optical system will have a lower efficacy than when it is tested by itself. This introduces a confounding factor when making comparisons using aggregate data in the LED Lighting Facts database. https://energy.gov/sites/prod/files/2016/12/f34/snapshot2016_troffers.pdf
- 12. DOE Report on PoE Connected Lighting Systems** - The new report provides a brief background on the development of the various PoE technologies, ranging from standards-based to proprietary, and illustrates the convergence of PoE power sourcing capabilities and LED luminaire power requirement. It then classifies PoE system devices in relationship to how they're used in systems — introducing clarifying terminology as needed — and briefly describes different PoE system architectures implemented by various lighting manufacturers. A discussion of existing standards and specifications that address energy reporting is provided, and existing test setups and methods germane to characterizing PoE system energy reporting performance are reviewed.
<https://energy.gov/eere/ssl/downloads/poe-lighting-system-energy-reporting-study>
- 13. Universal University Offers Sign and Outdoor Solutions Course** - This course provides an overview of the outdoor lighting market, discusses the magnetic to electronic conversion, offers comprehensive product solutions, discusses common applications and provides resources for additional information. Included are installation example videos, information about LED options, and other solutions. Universal University currently offers nine educational courses covering a variety of topics related to lighting solutions and LED replacement options. The courses are shared via BlueVolt, an easy-to-use online education interface. <https://go.bluevolt.com/unvlt/Home>
- 14. Leviton Launches Voice, Hubless Controls** - Leviton announced today the release of a groundbreaking "hubless" home automation solution, Decora Smart™ with Wi-Fi Technology, offering remote access, app-based scheduling and voice control. The new product family simplifies home lighting control from anywhere by automating interior and exterior lights using the free My Leviton app. The devices can also be connected to Amazon Echo, Dot, Tap or Alexa-embedded products, like the Nucleus touchscreen intercom, to provide voice control through commands such as "Alexa, turn living room lamp to 33%." The Decora Smart with Wi-Fi Technology product family includes both 600W and 1000W in-wall dimmers and 15 Amp switches that are all multi-way capable, as well as plug-in outlets and plug-in dimmers. Leviton devices are connected to a home's Wi-Fi network as well as to Amazon Alexa-enabled products via the My Leviton app. 3/15 PRNewswire/



Global LED EnergyWatch...

15. Joint Position Paper by LightingEurope and the IALD on Human Centric Lighting - With the aim to understand human-centric LED lighting and to guide a smoother proliferation of the technology, LightingEurope and the International Association of Lighting Designers (IALD) have issued a joint paper in which they defined the benefits, technologies, and potential applications. The position paper aims to make the way for smoother deployment of the technology that is becoming popular with more and more transition to LED lighting. The paper also makes it easy to choose companies that are leveraging human-centric lighting products in the market. The benefits differ per application area: Visual benefits include: good visibility, visual comfort, safety, orientation; Biological benefits include: alertness, concentration, cognitive performance, stable sleep-wake cycle; Emotional benefits include: improved mood, energize, relaxation, impulse control.

[http://www.lightingeurope.org/uploads/files/LightingEurope_and_IALD_Position_Paper_on_Human_Centric_Lighting - February 2017.pdf](http://www.lightingeurope.org/uploads/files/LightingEurope_and_IALD_Position_Paper_on_Human_Centric_Lighting_-_February_2017.pdf)



16. Human-Centric Lighting Reduces Drug Reliance at Danish Psychiatric Hospital - Doctors, nurses, therapists report a calming effect from the Chromaviso circadian lighting system. Professional staff at a Danish psychiatric hospital have administered fewer drugs and noticed a marked reduction in patient outbursts and disturbances following the installation of a human-centric lighting (HCL) system that tunes brightness and color temperatures to a pattern conducive with daytime stimulation and nighttime rest. Aabenraa Psychiatric Hospital installed the Ergonomic Circadian Lighting system, from Aarhus, Denmark-based Chromaviso, in September 2015. HCL such as Chromaviso's allows for blue-enriched light during the day, modulating toward ambers at night, mimicking the day/night pattern of the Sun and thus helping patients to maintain a circadian balance, which in turn promotes health and restfulness. <http://www.ledsmagazine.com/>

17. Global Unit Shipments of OLED Luminaires to Reach 300,000 in 2025 - A new report from Navigant Research analyzes the global market for OLED lighting in residential and commercial buildings, with forecasts for unit shipments and revenue, segmented by vertical, product type, construction type, and region, through 2025. According to the new report, global unit shipments of OLED luminaires are expected to grow from an estimated 150,000 in 2016 to nearly 300,000 in 2025. Since mid-2015, OLED prices have been falling at a pace that is reminiscent of LED pricing trends. While OLEDs are not expected to ever beat LEDs in terms of price in the general market, price declines do signal that OLEDs will reach a low enough point that the benefits they offer in lighting quality and design aesthetic will make for a reasonable choice between the two. www.navigantresearch.com



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- 18. Samsung Signs MoU with Chinese LED Giant ETi** - Chinese LED manufacturer, Elec-Tech International (H.K) Co, Ltd, recently signed a MoU with South Korea's Samsung Electronics in Shenzhen, China. ETi sells most of its products, including LED panel lights, downlights, and LED tubes, to North America. In addition, it is also dedicated to developing outdoor lighting products such as LED high bay lighting fixtures. By signing a MoU, Samsung will be able to leverage ETi's technology and market share. On the other hand, ETi will benefit from Samsung LED's brand strength and patent protection. Jointly they can continue to develop innovative LED lighting products and solutions that are in line with global trend. LEDinside estimates that by collaborating with Chinese LED giant, Samsung will probably play a different but still important role in global LED component market and LED lighting market.
http://www.ledinside.com/news/2017/3/samsung_signs_mou_with_chinese_led_giant_eti
- 19. First Luminaire with Integrated Li-Fi Revealed** - Pioneering Scottish company, pureLiFi, has unveiled an integrated Li-Fi luminaire at the Mobile World Congress in Barcelona, but the dreaded dongle remains. The company is eager to ditch the inconvenient Li-Fi enabled USB dongle, which currently plays a key role as the middleman between a Li-Fi enabled luminaire and a computer. The dongle, which the company plans to at least shrink in the short term, is fitted with a photoreceptor that is capable of receiving a signal from a Li-Fi fitting. It also features an infrared transmitter that tosses data back to the light. The new luminaire places all the necessary Li-Fi components in a black ring that lies flat against the ceiling and is designed to circle an LED light. It is able to support between eight to 16 users at once, and deliver data at rates of 45 megabits per second.
<http://luxreview.com/article/2017/03/first-luminaire-with-integrated-li-fi-revealed>
- 20. LEDinside Projects Huge Market Growth for Optical Sensors Used in Iris/Facial Recognition** - The respective additions of 3D Sensing and iris recognition into the next-generation iPhone devices and Samsung Galaxy S8 will generate a new wave of demand for IR (infrared) LEDs used in optical sensors. LEDinside, a division of TrendForce, has recently published its 2017 IR LED/IR Laser and Optical Sensor Market Report. In the report, LEDinside states that that the global market scale of IR LED and IR laser components used in iris and facial recognition solutions will grow from US\$145 million in 2017 to US\$827 million in 2025. The CAGR in the forecast period is estimated at 24%. Currently, the smartphone and the automotive markets are the two major application markets for IR LED, which has also appeared in a wide range of solutions related to areas such as security surveillance, iris/facial recognition, photoplethymography, time of flight 3D scanning, structured light 3D scanning and advanced driver assistance systems (ADAS). <http://www.ledinside.com/>
- 21. LEDs Prompt Rising Military Tensions in Disputed Kashmir** - Tensions in Kashmir are rising thanks to a conspiracy theory, spreading like wildfire, that government supplied LED luminaires are equipped with 'spy sensors', which betray the location of militants to the Indian government. Kashmir, which lies on the borders of India, Pakistan and China, is one of the world's most militarized areas. In response to the rumor mill Kashmiris have begun smashing the luminaires in the street and have started looking for alternatives. The Jammu and Kashmir government, which is part of the Indian state, has denied that the LEDs play any role other than illumination, and are instead part of an India-wide scheme to get more people using LED luminaires in the home. 'We're told that within minutes of militants having switched on the lights in the house where they had taken refuge, the army storm the hideout. <http://luxreview.com/>



- 22. Vertuoz by ENGIE Becomes a Promoter of the EnOcean Alliance** - The EnOcean Alliance and Vertuoz by ENGIE join forces to develop intelligent building solutions and build bridges towards a global network in the Internet of Things. Through the partnership with the French energy giant, the ecosystem of the EnOcean Alliance continues to grow and promotes the standardization of intelligent building solutions for the Internet of Things. Vertuoz by ENGIE is now a key player in the EnOcean Alliance, actively supporting the further development of EnOcean energy harvesting wireless standard for energy-efficient building solutions. As an EnOcean Alliance promoter, Vertuoz contributes with its expertise in the field of monitoring and optimizing the energy efficiency of buildings to the broad ecosystem of the EnOcean Alliance. <https://www.enocean-alliance.org/>
- 23. Researchers Prove That a Hard Drive's LED Light Can be Used to Covertly Leak Data** - The seemingly harmless blinking lights on servers and desktop PCs may give away secrets if a hacker can hijack them with malware. Researchers in Israel have come up with an innovative hack that turns a computer's LED light into a signaling system that shows passwords and other sensitive data. The researchers found that with malware, they could control the LED light to emit binary signals by flashing on and off. That flickering could send out a maximum of 4,000 bits per second or enough to leak out passwords, encryption keys and files, according to their [paper](#). It's likely no one would notice anything wrong. <http://www.pcworld.com/>
- 24. Smart Street Lighting Products Getting Ready for Global Standard** - The TALQ Consortium, developers of the global standard interface for smart outdoor lighting networks, have just released the formal beta version of the entire TALQ Test Suite for its members. With this test tool companies can now start testing their smart lighting solutions for multi-vendor interoperability. The Test Suite will allow first products to be TALQ certified later this year – ensuring interoperability without the expense and delay of plug fests. Furthermore the tool enables the Consortium to work on extending the TALQ Standard to other smart city applications. <http://www.ledinside.com/>
- 25. Power-Short Zambia Launches Switch to 100 Percent LED Bulbs** - Zambia is attempting to convert the nation to LED lightbulbs to help plug crippling power shortages that have hit mining and agriculture and imposed daily rationing on parts of the country. The state-owned Zambia Electricity Supply Corporation (ZESCO) is planning to distribute 5 million free LED bulbs by June in exchange for conventional ones, at a cost of \$20 million. The aim is to replace every incandescent bulb in the country. So far, 3 million of the low-energy bulbs have been bought for \$5 million. Providing the bulbs free of charge is key to driving the switchover in a country where about 65 percent of the population live on less than \$1.90 a day. <http://www.reuters.com/>
- 26. IKEA Enters the Smart Lighting Fray** - IKEA's new Trådfri line starts as low as \$18.70 in the UK for a single remote-controlled bulb that can dim or brighten via a stylish IKEA handheld “steering wheel.” Unlike more sophisticated smart bulbs, the bulb does not change color temperatures — let alone color. A \$36 version of the same bulb includes three different warmth settings. Neither bulb connects to the Internet or responds to smartphone apps. The limited functionality might hook consumers on smart lighting, which has remained a niche market as consumers balk at much higher price tags for fancier systems. The IKEA entry-level bulbs fit existing sockets and do not require any other expenditure. The company will begin selling Trådfri in the UK, US, and continental Europe in April. <http://www.ledsmagazine.com/articles/2017/03/ikea-enters-the-smart-lighting-fray.html>

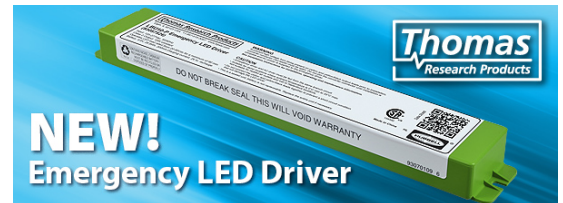


LED Technology Watch...

1. **TCP's LED T8 Tubes** - An LED compatible replacement for linear fixtures with instant start ballasts. Our T8 LED tubes (or DirecT8 LEDs) provide greater than 40 percent in energy savings. They have a long life - 50,000 hours, and get no delays in turning on and off. Our LED T8 tubes are available in a plastic, food service rated, shatter proof option and an affordable glass tube. The DirecT8 LED line features a 2', 3' and 4' option with a five year warranty. <http://www.tcpi.com/business/products/lamps/led-t8s>



27. **TRP New Emergency LED Driver** - Thomas Research Products' new LBU10-P Emergency LED Driver offers you an emergency backup solution for LED luminaires at a competitive cost. Effective emergency egress solutions is a concern for many LED lighting OEMs now. The new Emergency LED Driver provides constant 10W of emergency lighting for at least 90 minutes. Distinct from other battery packs, this ensures a constant illumination level during the entire emergency egress time. The unit includes a solid state charger to maintain the long life Nickel-Cadmium battery at full charge. When utility power is interrupted, the automatic transfer circuit switches to emergency mode to keep the LED load illuminated. When power is restored, the unit automatically returns to charging mode. <http://trpssl.com/emergency.html>



28. **Green Creative RETROFIT KIT 2X4' 30W HE** - This ELEVATE SERIES TROFFER RETROFIT KIT 2X4' 30W HE has been designed and engineered for demanding commercial applications and runs on universal voltage 120-277V. This troffer retrofit kit features exceptional 143 LPW efficacy and offers high performance lighting distribution with a low glare lens. This fixture also features easy installation and is compatible with 0-10V dimmers. Simply install this retrofit solution in your current troffer or louver and turn ON the savings. <http://gc-lighting.com/>



29. **New Crestron Zūm Makes It Simple to Design, Set Up, and Manage**

Lighting Control in Any Space - All the essential "building block" devices (wireless dimmers, switches, sensors, etc.) needed for dimming and automation are thoughtfully engineered to work together wirelessly. Setup only requires a few taps on a keypad, dimmer, or mobile app. Scaling from standalone systems to centralized building-wide control and network management is literally a snap. The Zūm Network Bridge simply snaps onto the Zūm Load Controller to add remote setup, daylighting, time clock scheduling, temporary overrides, and other advanced capabilities. With just a few devices, Zūm gives lighting designers everything they need for complete lighting control in almost any space.

<http://www.crestron.com/>



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30. Douglas Lighting Controls Unveils Dialog Room Controller 2 -

Douglas Lighting Controls, a member of the Panasonic family of companies, has introduced the Dialog® Room Controller 2 for light and receptacle control of offices, classrooms, and other defined spaces. The stand-alone system is factory configured with wall station switches, occupancy and daylight sensors that connect to the controller through a low-voltage power and data network. The Dialog Room Controller 2 is modeled after the award-winning Dialog® Room Controller, which has four circuits, four dimming channels and an optional two circuit UL 924 expansion pack. Douglas' newest version offers a simplified, value engineered model that features Plug 'N Control functionality for up to two separate 20A loads and two independent 0-10V dimming channels. This patent-pending room controller offers a cost-effective lighting control option with proven reliability. It has a lightweight enclosure and is easy to install. http://www.douglaslightingcontrols.com/products/dialog_room_controller



31. Eaton Launches Curved Wavestream LED and Luxwire Technologies -

Eaton announces the launch of the Neo-Ray Covera and Converge architectural suspended product families featuring its new next generation curved WaveStream light-emitting diode (LED) technology. Combining a contemporary and minimalist design with advanced optical performance and connected lighting capabilities, the two pendant families also introduce Eaton's LuxWire technology, allowing the luminaires to suspend effortlessly in space without large, unsightly power cables. Eaton's patented WaveStream LED technology features laser-precise AccuAim optics arranged in exacting patterns to provide unparalleled brightness control, while delivering optimal distributions tailored to each fixture and application. The advanced LuxWire technology delivers low-voltage power to the luminaires through the same aircraft cables from which it's suspended, allowing drivers and bulky power cords to be placed above the ceiling. http://www.eaton.com/Eaton/OurCompany/NewsEvents/NewsReleases/PCT_3082908



32. Cree's High Power LED Delivers Unmatched Efficacy & Lumen Density - Cree, Inc. introduces the XLamp XHP70.2 LED, the second generation of the highest output Extreme High Power LED, which delivers up to 9 percent more lumens and 18 percent higher lumens-per-watt (LPW) than the first generation XHP70 LED. The XHP70.2 LED provides up to 58 percent higher lumen density than the closest competitor LED of the same size, enabling smaller luminaires and better optical control for high-lumen lighting applications than ever before. The XHP70.2 LED features the same 7.0 mm x 7.0 mm footprint as the previous generation and provides an easy drop-in upgrade for customers with existing XHP70 designs. In addition to light output and efficacy enhancements, the XHP70.2 LED improves optical uniformity through secondary optics, enabling lighting manufacturers to deliver better lighting performance. http://www.cree.com/xlamp/xhp70_2



National Energy Watch...

- 33. *Rexel Energy Solutions is “Energizing the ESCO World”*** - Rexel Energy Solutions, formerly Munro Distributing Company, has recently unveiled a national team of lighting & controls experts to support ESCOs across the country. With a team built to support Energy Efficiency Providers from specification and quotation through post-construction support, Rexel Energy Solutions is focused on improving their customer’s cash flow and reducing their construction expense. Rexel Energy Solutions has implemented this initiative to expand their ESCO support infrastructure beyond their existing geography for stronger national coverage of ESCO customers. Along with this expansion, they’ve recently rebranded, launching a redesigned website and a new tagline - “Energizing the ESCO World.” As their tagline implies, RES has strengthened its suite of capabilities, and its team of lighting experts, exclusively around providing tailored solutions to ESCOs. www.rexelenergy.com
- 34. *These Smart Street Lights Don't Use Their Own Brains to Adjust to the Weather*** - A Minneapolis suburb that is trialing tunable-white LED street lights has now equipped them to automatically adjust brightness and color temperatures based on weather conditions. So that must mean the town added sensors that can help detect rain, fog, clouds, dust, and the like, right? Wrong! While the lights at White Bear Lake contain other types of sensors such as photocells that note daylight and darkness, they do not house a single chip dedicated to weather detection or forecasting. Rather, controls company Echelon Corp. feeds the lights with weather information provided by partner IBM, the computer giant that in 2015 acquired a large chunk of The Weather Company in an important buttressing of IBM's Watson Internet of Things (IoT) strategy. The lights know that a blizzard is raging not because any onboard circuits have directly detected it, but because the IBM Watson system has informed them. Once notified, the Echelon Lumewave system takes appropriate action. According to Echelon, the town can pre-program the lights to, for instance, deliver brighter and warmer colors during a snowstorm in order to minimize glare. Or they can deliver bluer colors during a thunderstorm to enhance visibility and alertness. <http://www.ledsmagazine.com/>
- 35. *City in Kansas to Convert All Street Lights to LED Models*** - The future of Prairie Village, a city in Johnson County, Kansas, may look even brighter later this year. The Prairie Village City Council recently approved the plan to purchase 1,736 new LED street lights from Philips Lighting that will be installed citywide. Back in 2010, the city began testing out the more energy-efficient LED street lights as part of a pilot program conducted by Kansas City Power and Light Company (KCP&L). Since then, approximately 300 of the standard high pressure sodium (HSP) lights have been replaced with LED fixtures. 3/24 AP
- 36. *Jacksonville Abandons IoT Project Citing ‘Other Priorities’*** - Florida’s most populous city, opted to ditch a pilot installation by GE that was set to involve equipping some of its street lights with chips and sensors that would eventually do everything from improving lighting controls and efficiency to detecting free parking spaces for motorists. The lights would also be able to alert the public about hurricanes, weather events that are common in Florida. It is not clear exactly what discouraged Jacksonville from proceeding and the spokesperson declined to elaborate when asked if costs or operability stymied the project. It is possible that Jacksonville authorities were concerned with things like data protection, data ownership, privacy, and security issues associated with IoT projects, which are sometimes prone to hacking. <http://luxreview.com/article/2017/03/major-us-city-abandons-iot-project-citing-other-priorities->



Monthly Special Feature...

Automotive LED Market Demand Drives the World's LED Market Value in 2017-2021 -

Benefiting from the steady LED market price and the rapid growth of the automotive lighting field, automotive LED value will reach \$2.817 billion (+14.8% YoY) in 2017, as LEDinside forecasts. Relatively speaking, the compound annual growth rate of the whole LED industry is only 3% from 2015 to 2021. The LED mainstream applications include mobile phone, medium and large panel backlight, which will gradually decrease due to the development of OLED. Although LED lighting has become the largest application in LED industry, the growth of overall production value slows down due to the saturated penetration rate and a multitude of competitors. But LED manufacturers have invested in automotive lighting as well as fine pitch displays, so the market is still growing and developing.

LEDinside analyzes automotive market growth momentum:

1. Chinese Car Market Continues to Develop.

Due to the impact of uncertain international political plate and the pessimistic psychological expectations for the economy trends, the overall car sales only slightly increased in 2016. However, from the individual regions, passenger vehicle sales declined in North America, and oil production reduction did not stimulate the sales of new vehicles. Because of the uncertainty caused by British independence, the market demand pulled back in Europe. But the Asian market performed well. The first-tier cities in China launched the Limited Purchasing Order, but affected by domestic industry upgrading, the growth speed was worse than the past.

2. LED Penetration Rate on Headlights and Fog lights improves.

The headlight and fog light market is still the main high-power LED growth source. With high brightness, high technology barrier and low penetration base, the LED penetration rate of headlights and fog lights is estimated to be 12% and 16% respectively now. The compound annual growth rate of production value in 2015-2020 will reach 18% and 15%. In car applications, the first two rankings hold the unlimited potentials for development.

3. Product design enhances automotive LED market demand.

The import proportion of light guide plate into RCL is improved, which increases the LED number in RCL products. Vehicles become more intelligent, have more multimedia functions and intelligent rearview mirror is installed, which can avoid blind corners and improve driving safety. In the next two years, they will be likely to become the standard equipment of vehicles and stimulate the usage of vehicle camera and panel. In the next five years, the vehicle panel will still get the most rapid growth in vehicle applications. And in 2021 the production value is estimated to reach \$173 million (2016~2021 CAGR:26%).

4. Insurance Market Improves Aftermarket Quality.

As the American insurance market gets more requirements for the supply diversification, the dominance of CAPA has been gradually broken. NSF also gradually improves the penetration in the American market, making the aftermarket more popular. And the cost control requirements are gradually reflected in the supply chain. <http://www.ledinside.com/>



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