EnergyWatch

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That's the trouble with you Americans, you expect only good to happen and are disappointed when it doesn't; the rest of the world expects only bad to happen and they are never disappointed.

Svetlana Kirilenko on the Soprano's

Something to Think About… *Business Model Disruption -* Let me start with a quote

from Jack Welch: *If the rate of change on the outside is greater than the rate of change on the inside, the end is near.* Disruptive change can do that to your business and can be a disaster to a successful traditional business. Change is just not good for a successful business unless your core business model is strategically receptive to disruptive innovation. Not many are…especially, I might add, in a traditional lighting industry. It just was not necessary to change in the past. Those starting new ventures or new players, certainly some major mega-game changers in lighting for the first time, are looking to disrupt an established industry like lighting.

If lighting is not just about illumination anymore, then your business model is just not about vending lighting products anymore. So what is it about? We are moving from traditional lighting to smart lighting to intelligent lighting at a rate of change never seen before. We have lived through the many lighting product evolutions before and the same players have always dominated. SSL is just another incremental product improvement…right? But it may be a very disruptive innovation since it has the potential over time to replace every single lighting system commercially available. But, it's only affecting the lighting business you say… Well, maybe not…

Let's agree that the SSL digital technologies are still concerned with quality of light, energy efficiency, and long-life and it will always be thus. Smart Lighting, however, will not only allow consumers to manipulate the timing, intensity, and quality of light but it will internally interact and track and react and adapt to the users' living and working patterns. That's change, disruptive change. As I said, it's not just about illumination anymore. What is it all about Alfie?

- ☼ **Light levels**
- ☼ **Optics – photometrics**
- ☼ **Energy monitoring**
- ☼ **Control capabilities**
- ☼ **Daylight harvesting**
- ☼ **Automatic dimming**
- ☼ **Occupancy Sensors**
- ☼ **Atmospherics**
- ☼ **Color temperature**
- ☼ **Color tuning**
- ☼ **CRI / TM-30**
- ☼ **Emergency**
- ☼ **Security**
- ☼ **Grow lights**
- ☼ **Circadian rhythm**
- ☼ **Productivity**

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Our business is changing your future…

Intelligent Lighting goes even further: it could be the core connector to every device you own (IoE). It has its own apps, embedded devices programmed to research the space, the ability to transmit sensitive information, wireless protocol implementations, web services, backend infrastructure and stuff we are just hearing about:

- ☼ **IoT / IoE / PoE / Li-Fi / VLC**
- ☼ **Networking platforms**
- ☼ **Interactive connectors**
- ☼ **Embedded controls**
- ☼ **Automatic energy monitoring**
- ☼ **Mobile wireless communications**
- ☼ **Demand Response**
- ☼ **Automated Demand Response**
- ☼ **Facial recognition**

- ☼ **Plug & Play**
- ☼ **Integrated security monitoring**
- ☼ **Web services**
- ☼ **Research the space**
- ☼ **Compatibility protocols**
- ☼ **Locator systems**
- ☼ **Business processes**
- ☼ **Timing & intensity of light**
- ☼ **BIG DATA**

Be careful, new entrants can thrive in such a disruptive changing environment. Traditional business models will not. Stay tuned as I plan to provide some positive guidelines to disrupt your business model for success in disruptive times…

LED EnergyWatch…

1. *LED Bulbs Have Turned into Multi-Functional Gadgets -* With fast advancements in LED technology, a simple LED bulb is no longer just a source of lighting—it has become a multi-functional gadget that can connect with the web, influence human behavior, work with sensors and much more. At present, the lighting industry has shifted from the traditional filament lighting to electronic systems. This has opened up numerous opportunities to develop smart and connected lighting systems. Today's LED lighting systems can be embedded withsmoke detectors, heat sensors, cameras, speakers, etc. However, all such additional facilities come with a price. http://bizled.co.in/led-bulbs-have-turned-into-multi-functional-gadgets/

2. *DOE Publishes New Forecast of Energy Savings from LED Lighting - Energy Savings Forecast of Solid-State Lighting in General Illumination Applications*, which models the adoption of LEDs in the U.S. general-lighting market, along with associated energy savings, based on the full potential DOE has determined to be technically feasible over time. The new report uses an updated 2016 U.S. lighting-market model and extends the forecast period to 2035 from the 2030 limit that was used in previous editions. Among the findings: By 2035, LED lamps and luminaires to comprise 86% of installed stock across all categories (compared to only 6% in 2015). For a closer look at the findings, download the full report at: http://energy.gov/eere/ssl/ssl-forecast-report

3. *DOE New GATEWAY Report on Tunable Lighting in a Senior-Care Facility -*The installation took place at the ACC Care Center and was conducted by the Sacramento Municipal Utility District (SMUD), which invited GATEWAY to document the performance of the new lighting systems. Two of the primary goals identified by SMUD and ACC were to learn more about how tunable-white lighting affects the sleep patterns, nighttime safety, and other behaviors of the residents; and to better equip the staff to provide excellent care by improving the quality of lighting relative to the incumbent system. The staff of the senior-care facility documented important health-related benefits that may have been attributable, at least in part, to the lighting changes. http://energy.gov/eere/ssl/downloads/tuning-light-senior-care

4. ***Verizon Acquires IoT Startup Sensity Systems to Make Cities Smarter Through LED Lights -*** Sensity has said that the billions of LEDs that are expected to permeate cities in the near future will enable it to create a "high-speed, sensor-based, multiservice IoT platform." Lighting owners can embed networking technology within their systems, meaning they can introduce a range of sensors for detecting moisture, ambient light, seismic activity, radiation, wind, temperature, air quality, and even parking availability. Today's acquisition news comes as Verizon continues to beat the IoT drum. Last year it launched ThingSpace, a web-based IoT platform for developers, and it also now publishes an annual IoT "State of the Market" report. Last month, it shelled out more than $2 billion to acquire Fleetmatics, a web-based GPS tracking system that enables fleet operators to track a vehicle's fuel usage, location, speed, mileage, and more. http://venturebeat.com/2016/09/12/verizon-acquires-iot-startup-sensity-systems-to-make-cities-smarter-through-led-lights/

5. ***Is Apple Developing Micro-LED Technology for Its Products? -*** The industry is ripe with rumors that Apple is developing micro-LEDs. According to industry insiders, in 2015, Apple had opened a secret laboratory in northern Taiwan to develop "thinner, lighter, brighter and more energy-efficient displays for future iOS devices" which the company plans to use in advanced versions of LCDs in its iPhones, iPads, Macs and other devices. Micro-LED displays are of higher resolution, and improves the color gamut of displays. It also increases brightness and makes the product thinner. Micro-LED panels do not require backlighting like LCD panels, and all these features can cut down manufacturing costs. However, it is still expensive to mass produce. http://bizled.co.in/is-apple-developing-micro-led-technology-for-its-products/

6. ***Five Ways Apple's Home App Will Change the Way You Light Your House -*** HomeKit, Apple's original answer to the smart-home revolution was a humble platform that ran behind the scenes on your handset, acting as a base for third-party smart-home apps. This lack of a unified approach was not popular, but Apple is looking to make amends. The company has just released Home, which will run in conjunction with iOS 10 and features all the plethora of smart-apps that were managed by HomeKit, homogenized and streamlined into one. Here are five ways that Apple's Home will change the way you light your house. http://luxreview.com/
    1) Home features a single user interface
    2) Home puts Siri front row centre in smart-home control
    3) You can share lighting control with somebody else
    4) You can control your lighting through your Apple television
    5) Home can interconnect HomeKit gadgets

7. ***The Real Low-Carbon Economy 'Disruptor' by William Atkinson -*** When people think of the low-carbon economy and the multiple technologies in place that are fueling the growth of green, it is likely that most of them would point to wind and solar as the two most significant and influential drivers of the trend. Not so, according to a new report from Goldman Sachs, "The New Energy Landscape: The Future of Clean Energy." Their pick: LEDs, which they identify as "one of the fastest technology shifts in human history." "With almost three billion lamps sold globally, LEDs will this year be on par with CFLs at 28 percent of the global lighting market, up from 1 percent of global lamp sales in 2010," the report states. By 2020, according to Goldman Sachs, LEDs will make up 69 percent of lighting sales, and almost 100 percent by 2025, up from almost nothing in 2010. http://www.ecmag.com/section/lighting/real-low-carbon-economy-disruptor

8. ***Target's IoT Reality Check: "It's Less Than Awesome"-*** "While we strongly believe that one day the IoT industry will change everything about how we live (even inside our bodies) — it's still early," noted Gene Han, Target's vice president of consumer Internet of Things. Among the reasons why consumers aren't flocking to the concept: While the universe of things that can link together is as wide as the imagination, the things don't all necessarily talk well to each other. Han did not single out lighting. But with the LED industry positioning the IoT and all of its smart lighting potential as a primary driver of revenue in a world where bulbs will last decades and thus rob the industry of continual replacement sales, his cautionary words should remind the lighting industry of the importance of inter-compatibility with other devices and systems. A set of smart LED bulbs that are intended to trigger action in, say, a home heating system or a home security alarm won't serve their purposes if the systems fail to communicate. http://www.ledsmagazine.com

9. ***DOE 2016 SSL Technology Development Workshop –*** Denver, CO November 16–17, 2016. Agenda Spotlight — The Rise of TLEDs: What Have We Learned? Linear LED lamps, or TLEDs, are now 6.9% of the market and growing in popularity, particularly in retrofit applications. Now that we have large-scale installations that have been in service for an extended period of time, has their performance equaled their hype? How does the market transformation community treat them? How do today's TLEDs stack up against earlier generations? This panel will share perspectives from a retrofit contractor, an electric utility, and a manufacturer — who will explore technology issues and questions that need answers. http://energy.gov/eere/ssl/2016-ssl-technology-development-workshop

10. ***US Navy Turns to Li-Fi to Tackle Russian Hacking -*** Ships will be able to transmit data with a beam of light from a common LED. The light is then received by a photodiode, which is able to decode the information. The technology, when used at sea, is in many ways similar to old navy equipment such as the Aldis lamp, which has been used to send Morse code messages via flashing light for over a hundred years. Li-fi technology has tested well at distances of up to one mile and it is believed that it could easily be used at a range of twelve nautical miles after further research. The technology is attracting increasing levels of attention as the internet service it provides has been proven to be faster than wi-fi. It is also, many experts believe, much more secure than wi-fi too. http://luxreview.com/article/2016/08/us-navy-turns-to-li-fi-to-tackle-russian-hacking

11. ***IoT Emerge Takes an In-Depth and Real-World Approach to the Internet of Things -*** Nov. 2-4 at McCormick Place in Chicago. Produced by the IoT Institute, join us at IoT Emerge in Chicago for keynotes, sessions, workshops, live demonstrations, hands-on training, peer-to-peer networking and more focused on Industrial IoT, Smart Cities and IoT Engineering. IoT Emerge provides insight into how IoT innovators are reorienting their thinking and successfully addressing organizational readiness, leveraging data analytics, instituting security best practices, architecting dynamic infrastructure, and developing sensor-based networks. http://www.iotemerge.com/iot16/Public/Enter.aspx

12. ***Eaton and NuLEDs Collaborate to Make Smart, Connected Lighting a Reality -*** Eaton recently announced a collaboration with NuLEDs™, Inc. aimed at making buildings smarter and seamlessly securely connected. The two companies will go to market with a joint product offering including Eaton's complete portfolio of PoE-enabled light-emitting diode (LED) luminaires and NuLEDs' drivers, software, sensors and keypads. The collaboration has already been active in delivering several projects with Eaton's PoE-enabled Metalux Encounter™ luminaire featuring WaveStream™ LED technology and NuLEDs' Single Packet Illumination Control Environment solution. http://www.cooperindustries.com/content/public/en/lighting.html?wtredirect=www.eaton.com/lighting

13. ***Qualcomm Partners with Current, Powered by GE at its San Diego Smart Campus -*** The Qualcomm Smart Campus in San Diego is upping its IQ with the addition of smart, digital sensing technology. As part of the deployment, Current's sensors will detect and analyze building occupancy levels to help control lighting and HVAC in real time, with the goal of driving down energy costs in the locations where they are used. Air-quality sensors for temperature, humidity and CO_2 will work in concert with ventilation systems to enable optimal temperature and environmental conditions based on building occupancy, with the goal of enhancing the comfort and productivity of occupants. In order to support Qualcomm Intelligent Solutions' continued efforts to gain more intelligence and further increase efficiencies on its Smart Campus, edge intelligence gateways powered by Qualcomm® Snapdragon™ processors will support the collection of critical data, while normalizing and filtering for various sensors in real time. These edge intelligence gateways will also promote seamless communications between various enterprise assets such as lighting, water, energy and HVAC. http://www.ledinside.com/

14. ***GE Acquires Two Additive Manufacturing Firms for $1.4b -*** GE announced plans to acquire two suppliers of additive manufacturing equipment, Arcam AB and SLM Solutions Group AG for $1.4 billion. Both companies will report into David Joyce, President & CEO of GE Aviation. Joyce will lead the growth of these businesses in the additive manufacturing equipment and services industry. In addition, he will lead the integration effort and the GE Store initiative to drive additive manufacturing applications across GE. Additive manufacturing (also called 3D printing) involves taking digital designs from computer aided design (CAD) software, and laying horizontal cross-sections to manufacture the part. http://www.tedmag.com/News/manufacturer-news/GE-Acquires-Two-Additive-Manufacturing-Firms-for-1-4B.aspx

15. ***Osram Strengthens Flexibility with New Smart Lighting Business Fluxunit -*** To encourage innovative internal and external ideas, Osram has created a captive business accelerator called Fluxunit. In taking this step, Osram has set up a flexible company unit outside its established structures that will promote new and disruptive business ideas. At the same time, Fluxunit will serve as the central point of contact for external and internal start-ups. The creation of Fluxunit marks another major step on Osram's way to becoming a focused high-tech company that is committed to seizing the opportunities offered by semiconductor-based and digital technologies. Fluxunit will promote the development and implementation of innovative ideas that extend beyond the traditional business of the lighting company. http://www.solidstatelightingdesign.com

16. ***Meet 'Alexa' Amazon's New Device That Can Control Your Home Lighting -*** The Amazon Echo will feature a voice control capability that will allow you to turn off your lights and adjust your central heating with the sound of your voice. The Echo is a smart-speaker that responds to the name 'Alexa'. Amazon has announced a partnership with Hive, the smart-home platform developed by British Gas. The Echo will be compatible with Hive Lights and Hive Active Heating. Philips Hue will also be compatible with the Echo, meaning you will be able to adjust the strength of your light fixtures using your own voice. As well as the Echo, Amazon are also launching the cheaper second generation Echo Dot mini-speaker, which features an even more nimble 'Alexa', which can trigger pre-set home lighting scenes. This means that you will also be able to voice-activate colour changing as well as dimming your lighting. http://luxreview.com/

17. *Advanced Control for Outdoor Lighting by Craig Dilouie -* Traditionally, outdoor lighting was automatically turned ON and OFF at the circuit level by an astronomical time switch or photosensor. Energy codes are now promoting power reduction during dusk-to-dawn lighting operation. Coupled with advances in wireless communication and intelligent control, the result is dramatic changes in how outdoor lighting is controlled. Twenty-four states currently have a commercial building energy code in place at least as stringent as ASHRAE.90.1-2010/2013 and the 2012/2015 International Energy Conservation Code (IECC). As digital devices, LEDs are inherently compatible with intelligent lighting controls.
http://lightingcontrolsassociation.org/content/whitepapers/advanced-control-for-outdoor-lighting/

18. *LED A-Line Lamp Shipments Decrease in Second Quarter of 2016 While Still Maintaining Year-Over-Year Growth -* LED A-line lamp shipments posted a 21.2 quarter-over-quarter decrease in the second quarter of 2016 compared to last quarter, but still continue year-over-year growth increasing 40.6 percent. Meanwhile, halogen A-line lamps shipments show virtually no year-over-year growth at 0.2 percent, but after a decrease in the first quarter see a 14.5 percent increase this quarter compared to last. Incandescent A-line lamps in 2016Q2 posted both an 8.8 percent year-over-year increase and a 44.8 percent quarter-over-quarter increase. CFL shipments dropped 55.3 percent compared to last year and 16.3 percent compared to last quarter. LED A-line lamps comprised 20.7 percent of the consumer lamp market in 2016Q2. Halogen A-line lamps accounted for half of all consumer lamp shipments in 2016Q2, at 50.7 percent, CFLs captured a 15.9 percent share, and incandescent A-lines a 12.7 percent share. Incandescent A-line lamps largely consist of 15W and 25W incandescent lamps. www.nema.org

19. *TM-30 BASICS with Michael Royer of PNNL -* IES TM-30-15 is a new system of several related measures and graphics that can be used together to effectively evaluate and communicate a light source's color rendering properties. The development of the method involved synthesizing multiple related research efforts and combining ideas into a single, cohesive system of objective information that can be used to aid decision-making processes, such as finding the preferred light source for a given application or evaluating the tradeoffs between efficacy and color rendering. TM-30 remedies flaws and limitations of the widely used CRI method, while providing complementary and more detailed information. The increased availability of data to characterize color rendering can benefit specifiers, manufacturers, and researchers alike, although transitioning from the familiarity and simplicity of CRI will take considerable effort. https://www.youtube.com/watch?v=FusjTFYQb6Q

20. *Human-Centric Lighting Illuminates the Possibilities for Wellbeing by Mark Halper -* Scientists have come to a firmer understanding of how the spectral content and intensity of light can alter biological processes. Many studies have shown a connection, for instance, between blue-rich white light and the suppression of the sleep-promoting hormone melatonin, leading to many warnings about using LED-lit gadgets and computer screens, or even general illumination LEDs, at night. Conversely, recent research has shown that blue wavelengths can excite a pigment called melanopsin that resides in the eye's non-visual photoreceptors and sends stimulating signals to the body's master clock that resides in the brain. With such impressive science, it seems that lighting is on the cusp of a new human-centric era, in which we can use the same light we use for general illumination to encourage physiological effects such as sleep and stimulation. http://www.ledsmagazine.com/

Global LED EnergyWatch…

21. ***LED Lamps Are Good Choice to Replace Phased Out Halogen Lamps -*** The European Union's (EU) decision to phase out high voltage reflector tungsten halogen lamps from September 1, 2016 has directly affected the lamp producers and dealers, as the ban has stopped these lamps from been circulated in the market. Consumers can, however, continue using the lamps till the old stocks last. In order to overcome this inefficient light source ban, consumers can replace such halogen lights with energy and cost-efficient LED lamps. The banned lamps have GU10, E27 or E14 bases. 75% of consumers are unaware of halogen phase out. http://bizled.co.in/led-lamps-are-good-choice-to-replace-phased-out-halogen-lamps/

22. ***GE Lighting to Exit Asia, Latin America; Announces New 'Incubation Lab' -*** A move that's connected to the company's recent decision to drop traditional lighting technologies and focus entirely on LEDs. It also plans to open an incubation lab that will hunt for new ways to use LEDs to create "connected home" technologies. The core of the lab will be based at GE Lighting's headquarters in East Cleveland. Those capabilities pushed General Electric to move GE Lighting's commercial LED business into a new energy-focused business unit called Current. The new unit is based in Boston, though many of its employees work in East Cleveland. That move left GE Lighting with the traditional lighting business and the consumer LED business. http://www.crainscleveland.com

23. ***Global Market for Connected LED Lighting Has Huge Potential -*** A lighting system that can be controlled with the help of a central management system is what we know as connected lighting and can be used for outdoor as well as indoor lighting. Connected outdoor LED lighting is likely to grow at a CAGR of 52% from 2014 to 2022. As demand for LED luminaires rises, consumers want to have value for their money while they invest in these advanced lighting systems. Many end users are, therefore, going beyond the conventional lighting systems, and using more advanced technologies like monitoring lighting data, tracking lighting assets, and assessing the way lighting equipment function, etc. http://bizled.co.in/global-market-for-connected-led-lighting-has-huge-potential/

24. ***LED Lighting Can Help Grow Local Food Anywhere in the World -*** Can you imagine growing wheat indoors, or local Asian food in the US or Europe? This has been made possible by LED lighting. Application of LED lighting in crop growth proves that the science of growing crops has indeed come a far and innovative way. The state-of-the-art GrowWise Center in the Netherlands use LED lighting to create solutions for optimum plant growth. The GrowWise Center researchers provide customized LED lighting solutions for food growers to grow healthy and quality food indoors, and that too, year round, like leafy vegetables, strawberries and evens herbs and crops. The researchers are working on projects to find solutions to grow wheat and potatoes indoors. http://bizled.co.in/led-lighting-can-help-grow-local-food-anywhere-in-the-world/

25. ***Global OLED Market DataPack - 2016 Edition -*** The Industry DataPack provides a unique mix of market information, analysis and estimates based on quantitative and qualitative research. The market figures and industry dynamics are given in order to determine the overall market potential and help the client in gaining a stronger foothold in the marketplace. It presents a reliable assessment of the industry including key industry metrics, regional market analysis, market trends and growth drivers. It also explores the competitive landscape of the respective market with focus on major players. http://www.marketreportsonline.com/500291.html
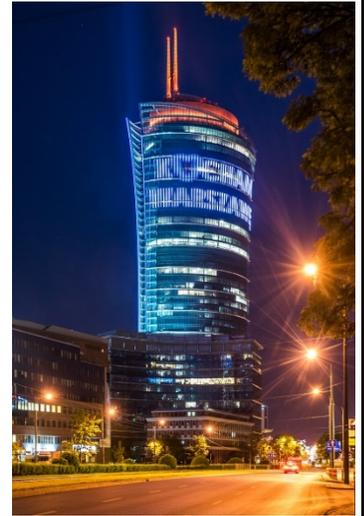
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26. ***Top Chinese LED Chip and Package Manufacturers Raise Prices -*** Chinese LED manufacturers MLS, Kinglight and other manufacturers all raised their product prices in March 2016. Another wave of price hikes occurred in May, when San'an Opto and Taiwanese LED manufacturer Epistar increased prices. Recent market rumors point towards another round of price upticks. RGB LED prices will be raised by 5% as of Sept. 1, 2016, due to changes in rising raw material costs. However, package manufacturers specializing in lighting applications did not announce price hikes yet. http://www.ledinside.com/news/2016/8/top_chinese_led_chip_and_package_manufacturers_raise_prices

27. ***Lighting to Guide Shoppers Around Huge Singapore Mall -*** Visible light communication (VLC) is being installed in the gargantuan CapitaLand Mall in Singapore to help shoppers find their favorite stores amid a labyrinth of aisles and corridors. VLC uses different frequencies emitting from light fixtures dotted around a building, which can then be located using a smartphone and utilised to guide someone through a complicated indoor space. The technology utilizes Philips' fixtures, which have been used to the same purpose in smaller supermarkets in Dubai and Lille. The indoor way-finding service is not ever-present and users have to log into an app and activate a smart phone camera to be able to use the technology. http://luxreview.com/article/2016/09/smart-lighting-to-guide-shoppers-around-huge-singapore-mall-

28. ***With Incandescent Bulb Ban in China, Sale of LED Replacements Surges -*** The incandescent bulb ban in China will be effective from September 30, 2016. Following the ban, incandescent bulbs with 15W or more power cannot be sold or imported in China from October 1, 2016. The reduced LED lighting prices in China have increased the market penetration rate. This has resulted in increased LED replacements for incandescent bulbs across the nation. The global LED lighting industry is projected to hit $30.5 billion by 2016. Reports point out that incandescent bulb ban is on the verge of an important period, which will surge LED replacements for incandescent bulbs in China by 2016. http://bizled.co.in/with-incandescent-bulb-ban-in-china-sale-of-led-replacements-surges/

29. ***NamPower to Install 1M LED Lightbulbs to Reduce Power Consumption in Windhoek -*** State-owned Namibian power utility NamPower in southern Africa has embarked on the installation of one-million LED lightbulbs to replace power-intensive incandescent lightbulbs as part of a project aimed at cutting down household power consumption in the capital Windhoek. The company is investing US $9.59 million to slash energy consumption and ease demand pressures on the national power grid. The 1 million incandescent bulb replacement project to be rolled out in homes will be completely for free, and the lights have longer duration and use up less electricity, while emitting about the same light intensity. http://www.engineeringnews.co.za/

30. ***LEDinside Forecasts Value of Global UV LED Market to Reach US$166 Million in 2016 -*** In 2016, UV LED technology has been rapidly expanding into various application markets including curing, sterilization and purification equipment. The total value of the UV LED market worldwide is estimated to grow from US$166 million in 2016 to US$555 million in 2021 at compound annual growth rate (CAGR) of 27%, according to the *2016~2021 Global LED Industry Demand and Supply Database Report* by LEDinside, a division of TrendForce. Most UV LED products that are on the market fall under two major segments within the UV light spectrum: UV-A (320~400nm in wavelength) and UV-C (under 280nm in wavelength). Presently, the main source of UV-A LED demand comes from the curing market. http://www.ledinside.com/intelligence/purchase_mi#gold

31. *Warsaw Spire Illuminates Polish Capital with 80,000 New LED Lights* - With over 88,000 LED light points installed on the 220-meter tall skyscraper, it is the largest installation of Philips Color Kinetics technology in Central Eastern Europe. The entire façade is bathed in dynamic LED lighting and also incorporates two LED installations consisting of 80,000 individually controllable Philips iColor Flex light points. The LED installations are installed between the building's façade panels at a height of 160 meters. The content displayed on the LED installations is visible within a radius of several kilometers from any place in Warsaw. As a welcoming gesture to the citizens of Warsaw the Warsaw Spire lit the skyline of Warsaw with a huge 'I love Warsaw' message during the construction of the skyscraper.
http://www.ledinside.com/lighting/2016/9/warsaw_spire_illuminates_polish_capital_with_new_led_lighting

32. *Philips & Turntoo Selling Light as a Service* - Architect Thomas Rau of RAUArchitects worked with Philips to purchase light as a service. The end result was a bespoke 'pay-per-lux' intelligent lighting system to fit the requirements of the space, at a manageable price. Philips retain control over the items they produce, enabling better maintenance, reconditioning and recovery. A collaborative project between Philips and Turntoo is a showcase for the pioneering 'Pay-per-lux' model. Through this method, manufacturers can retain greater control over the items they product and the embodied energy and materials, thus enabling better maintenance, reconditioning and recovery. Customers benefit too, as they only pay for the service they require and use, and often receive a better service as the manufacturer has a greater interest in providing a product that lasts.
https://www.ellenmacarthurfoundation.org/case-studies/selling-light-as-a-service

33. *Philips Adds Huawei as an IoT Partner for Hue Smart Bulbs* - Philips Lighting expanded its Internet of Things (IoT) universe for the home, making its Hue smart bulbs compatible with an IoT system provided by Chinese information technology networking giant Huawei. By combining forces, users can control Hue smart lamps using Huawei's OceanConnect system. They can also program Hue lights to respond to or prompt actions in other things around the house controlled by OceanConnect. But in order to do so, users will have to find a service provider such as a telecoms company. That's because Huawei positions OceanConnect as a service offering for telcos and ISPs to resell. In the IoT, scores of billions of devices are expected to tie into the Internet and talk to one another in a manner that makes them more useful and efficient, and that helps gather reams of useful data. The Philips-Huawei alliance is the latest example of an IT company pairing up with a lighting company to chase smart lighting opportunities. http://www.ledsmagazine.com/

34. *Over 51.5 Million Indian Households Have LED Bulbs* - The Indian government's LED initiative, known as Unnat Jyoti by Affordable LEDs (UJALA), has successfully distributed more than 154.5 million LED bulbs across rural and urban regions of the nation. Following the distribution, more than 51.5 million households in India have LED bulbs, thus paving the way for energy efficiency and cost efficiency. Under the UJALA scheme, the Indian government seeks to achieve its goal of replacing 770 million traditional bulbs with LEDs across the nation. It is the world's largest LED scheme for the residential sector. http://bizled.co.in/over-51-5-million-indian-households-have-led-bulbs/

35. ***LED Streetlights Reach Chennai Suburb -*** At a time when India is planning to emerge as the LED capital, not only major cities are installing LED street lighting, the small towns and suburbs are also switching over to LED street lighting. In August 2016, Chief Minister J Jayalalithaa had announced a mega project to replace the existing street lamps of the State with LED lights to reduce government expenses. In the first phase, 10 city Corporations, 19 Municipalities in Tirupur zone and 18 Municipalities in Thanjavur zone will get LED lamps. Also this year, Dindingul Corporation and the remaining Municipalities will be equipped with LED lamps. http://bizled.co.in/

36. ***Navigant Research Outdoor Lighting Systems -*** As outdoor lighting technologies become more efficient and less expensive, more and more owners are investing in lighting upgrades. While the use of lighting controls is also on the rise, there is less standardization around the technologies. Many different network technologies and control protocols are competing against each other. This Navigant Research report examines the global market for outdoor lighting and controls in roadways and highways, city parks and public areas, sports parks, commercial site lighting, outdoor parking lots, and university and college campuses. The study provides an analysis of the market issues, technological developments, and regional trends surrounding outdoor lighting systems. Global market forecasts for luminaire and lamp unit shipments and revenue, segmented by lamp type, product type, application area, and region, extend through 2025. The forecast also includes lighting controls unit shipments and revenue for motion sensors, photocells, intelligent controls, and controls software. http://www.navigantresearch.com/research/outdoor-lighting-systems

LED TechnologyWatch…

37. ***A.L.P.'S Reflek® Brand Introduces New, Cost Effective, Low Profile, and Adaptable Reflectors -*** The new AL16 and AL22 high bay reflectors, made of spun, anodized aluminum expands high bay reflector series with aluminum options. These cost efficient reflectors feature a flat top so that they can adapt to most LED Pod fixtures without the need for expensive collars. For enhanced optical performance, AL16 and AL22 reflectors are shallower than traditional reflectors, allowing for higher beam angles. They are suited for a variety of challenging LED fixture applications, including hot, harsh and dirty environments. Developed in conjunction with the reflector experts from A.L.P. LexaLite®, the AL16 and AL22 are designed to accept LexaLite brand bottom lenses, clamp bands, and accessories, as well as accommodate fixture openings up to 10 inches.
http://www.alplighting.com/productdetail-317-Reflectors-High-Bay-AL16

38. ***A.L.P. Introduces the Sentry Elite™ Durable Vapor Tight LED Fixture Kit for Harsh Environments -*** The design of this LED gasketed enclosure kit capitalizes on decades of expertise that A.L.P. gained as a market leader in vapor tight fixture kits. As a result, Sentry Elite includes the advanced updates and innovative features that customers demand, and the harshest applications require. Designed for easy assembly and installation, Sentry Elite is

engineered for durability as a professional grade product. It is available in 2' and 4' lengths suitable not only for new construction but to replace legacy fluorescent fixtures. It combines a slim, low profile design and cost-effective gear tray format to create a contemporary look and overall value. Features and enhancements, such as a 5VA rated housing, multiple lens choices, and captive latches promote versatility and energy efficiency as well as ease of installation and maintenance. http://www.alplighting.com/products.php

39. ***Arrow Electronics Microchip 8-bit and 32-bit MCUs are Both Designed for Modern IoT -***
Designers of modern IoT applications now must contend with calls for increasingly complex functionality, including rich interaction and display, varied input options, and faster performance and responsiveness. Similarly, IoT applications are calling for more rugged solutions, like sensor based measurement designs, that have self-health assessment capabilities, can handle internal data, and can overall better stand on their own for long periods of time while communicating with a central hub through a variety of channels. Microchip 8-bit and 32-bit MCUs both have unique advantages and optimized capabilities. With the addition of Microchip Core Independent Peripherals that add functionality and offload processes, these chips bring economy and performance to IoT. Find out which MCU is right for you. https://www.arrow.com/en/products/search?q=Microchip8-bitand32-bitMCUs
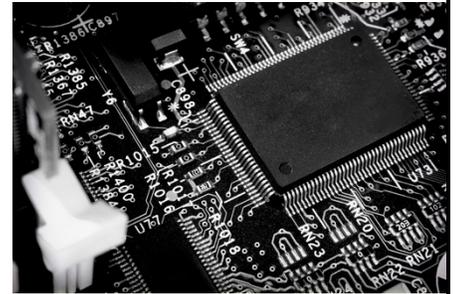
40. ***Orion Launches ISON Class Gen III High Bay, Highest Performing LED High Bay Fixture -***
Orion Energy Systems have eclipsed the 200 lumens per watt (LPW) barrier with the third generation ISO class LED high bay fixture (HBIF3) that now delivers over 214 LPW. The third generation ISO class high bay is the highest performing LED high bay fixture in the industry and increases the performance gap over any of Orion's competition. When replacing legacy HID products, the savings can be up to 83%. When replacing fluorescent products, the savings can be up to 66%. Orion products are manufactured in Orion's state-of-the-art American manufacturing facility in Manitowoc, Wisconsin.
http://www.orionlighting.com/?s=ISON+Class+Gen+III+High+Bay+

41. ***Terralux New DRVH LED Retrofit Kit for HID Commercial Downlights -*** The DRVH is an easy to-install, high output LED upgrade for 8 to 12 commercial downlights that utilize vertically mounted CFL or HID bulbs. The DRVH is a high output retrofit kit, designed to replace up to a 175 watt HID lamp inside existing downlights. It's the perfect solution for high ceilings, atriums, and canopies such as those found in airports, convention centers, shopping malls and office buildings. Installation is quick and easy because the DRVH is a self-contained retrofit kit that re-uses the original downlight fixture, less the old ballast and bulb. All models are ENERGY STAR certified as Luminaire Retrofit Kits, which qualifies them for lucrative utility rebates. www.terralux.com

National EnergyWatch…

42. *LCA Publishes K-12 Classroom Application Guide* - The Lighting Controls Association has published a basic guide to applying lighting controls to K-12 classrooms. Energy codes are driving more detailed control solutions. New learning technology and guidelines such as CHPS are driving demand for greater flexibility and teacher control. This guide describes common requirements and provides a series of scenarios demonstrating successful application of lighting controls. http://lightingcontrolsassociation.org/wp-content/uploads/2016/09/LCA_K-12_application_guide.pdf
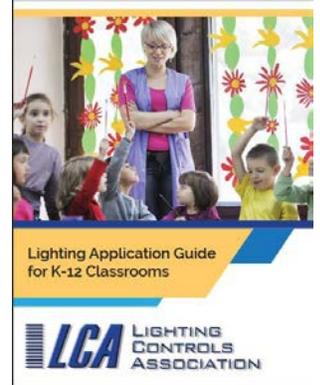
43. *A Comparison of On-demand vs. Service Plan Electrical System Maintenance Programs by Denis Koch* – Schneider Electric Executive Summary: Most organizations have gaps in their electrical infrastructure maintenance practices. As a result, Total Cost of Ownership (TCO) of equipment may rise as instances of downtime increase. Maintenance is performed to prevent faults from occurring. Network operators and plant managers are concerned with safety, security, operations, and equipment lifetime. This white paper provides guidance for improving equipment reliability and for extending electrical equipment operational life span. http://static.schneiderelectric.us/docs/Electrical%20Distribution/Services/Maintenance%20and%20Testing/1910DB1405.pdf

44. *The 10 Top-Selling Plug-In Vehicles in the U.S.* - Sales of plug-in electric vehicles have increased dramatically over the past five years — growing from just 17,731 in 2011 to 113,869 in 2015.
Total 2015 Unit Sales:
  #1: Tesla Model S 26,200
  #2: Nissan LEAF 17,269
  #3: Chevrolet Volt 15,393
  #4: BMW i3 11,004
  #5: Ford Fusion Energi 9,750
  #6: Ford C-MAX Energi 7,591
  #7: Volkswagen e-Golf 4,232
  #8: Toyota Prius Plug-in 4,191
  #9: Fiat 500E 3,477
  #10: Chevrolet Spark 2,629
  http://ecmweb.com/electrical-testing/10-top-selling-plug-vehicles-us

45. *Wattstopper.com Moves to New Legrand Site* - Wattstopper has migrated its branding to more closely align with its parent company, Legrand, North America. As part of this effort, the Wattstopper website,wattstopper.com, along with all its content, has been incorporated into the newly redesigned Legrand.us website. This move elevates the visibility and presence of Wattstopper products within the Legrand portfolio. The Wattstopper website transition coincides with a complete redesign of the Legrand website. Wattstopper's new homepage, http://www.legrand.us/wattstopper has all the information and links to products and resources such as cut-sheets, brochures, and other important news and documentation.

46. ***Acuity Joins AD's Electrical Division Effective Jan. 1 -*** Ed Crawford, AD's President of the Electrical Division added in the release, "As a long-time supporter of AD Canada, Acuity Brands has consistently demonstrated the ability to outperform the category and drive significant innovation and volume growth. At AD, we are proud to be affiliated with such an outstanding company and excited to extend this partnership to our U.S. Electrical Division members." http://electricalmarketing.com/

City & State EnergyWatch…

47. ***Cree Named Cleveland Browns Official Lighting Partner -*** Cree has been named the exclusive Official Lighting Partner of the Cleveland Browns. Cree and the Browns have partnered to continue to deliver a better fan experience with recent lighting improvements made to the Cree branded gate at FirstEnergy Stadium. This season, fans will enjoy a better lighting experience with new Cree® LED lighting installed throughout the gate, as well as a new escalator wrap that gives fans bright ideas for saving with LED lighting while having fun on game-day. http://cree.com/

48. ***Xcel Rolls Out LED Fixtures in City Lights in Minnesota -*** Xcel Energy this week begins installing more energy efficient LED fixtures in 90,000 company-owned streetlights in nearly 350 communities throughout the Twin Cities and in Minnesota from high-pressure sodium. Xcel's changeover in Minnesota is part of a broader LED conversion of a total of 300,000 streetlights in all eight states that Xcel serves. The switch is complete in North Dakota and Wisconsin, and underway in South Dakota, Michigan, Colorado, Texas and New Mexico. Xcel Energy crews carry out the installation, and the utility pays for all costs associated with the retrofits, including removal and salvage of old lights and placement of the new fixtures. http://www.startribune.com

49. ***Fremont, CA: 14,000-Plus Streetlights Will Be Subbed with LEDs -*** City officials say the conversion will start late this month or early October, and the bulk of work will be done by the end of the year. In all, 14,279 streetlights and 710 park lights will have their HPS lamp fixtures replaced by longer lasting LEDs. The city says the LED fixtures of main road streetlights will produce a neutral white light. In residential areas, a slightly warmer tone of white light will be installed to avoid disturbing residents. Estimated to cost $8,377,044 with rebates, the city intends to take out a low-interest, 10-year loan. The LEDs are expected to last 20 years. http://www.eastbaytimes.com/2016/09/13/fremont-14000-plus-streetlights-will-be-subbed-with-leds/

50. ***City of LA and Philips Lighting Pilot New Pathway to Smart City Utilizing Connected Street Lighting Infrastructure -*** Philips Lighting has announced that the City of Los Angeles is embarking on a new pilot project to expand its smart city capabilities designed to help improve public safety and support city services for residents, visitors and local businesses. By leveraging the ubiquity and scale of LA's existing connected street lighting infrastructure, Philips Lighting is deploying new technology and Internet of Things (IoT) functionality. This includes sensors mounted on the street poles and software that acquire data, analyze the information, and share insights for more transparent city operations and drive new programs with relevant partners. http://www.ledjournal.com/

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Monthly Special Feature… *LED Vendors Find Difficulty in Coping with New Trends -*
http://bizled.co.in/led-vendors-find-difficulty-in-coping-with-new-trends/

The technological advancements of LED lighting are not only changing the face of the global lighting industry, but also posing challenges to the traditional manufacturers as well as the new entrants. There is simply no doubt that the LED lighting revolution has opened up huge business opportunities for all the stalk holders of the lighting industry, but at the same time, it poses certain challenges, making the road tougher, competitive and riskier for the vendors to do business in the LED lighting industry. With challenges like lack of standards, entry of several new manufacturers, shorter product cycles, uncertain product quality, etc, manufacturers are finding it tough to do business.

Over the years, the LED lighting manufacturers did business comfortably by producing high volumes of standardized products with long product cycles, which they promoted the most to lure buyers. Now, with hundreds of new players entering the industry, a wave of innovation has taken place, which turned the LED lighting industry into a fast-moving field. Moreover, a number of low standard products have also entered the field. In short, innovations and rapid developments in the LED industry further contributed in making business all the more complex and difficult for the manufacturers. The manufacturers are keeping an eye on the major trends that are emerging fast.

Short product cycles
With fast emerging technologies, product cycles have reduced to one to two years, and in some cases even shorter. Hence, the established companies are looking into new product business. As they administer their global supply chain very cautiously, they continue to provide the right products at the right time.

Emerging markets
Besides the growth of the LED lighting industry, other developments are also taking place simultaneously, such as color tuning/tunable-white lighting, intelligent lighting control, circadian lighting, Internet of Things (IoT), wireless connectivity, and many more. All these trends are pushing the manufacturers to innovate and join hands with high-tech companies.

By adopting to the new changes, the companies are positioning themselves to prosper in today's increasingly dynamic market. They are constantly innovating and trying to meet the customers' requirements.

Need to stay informed
Several new lighting products enter and vanish from the market every year. All stalk holders of the LED lighting industry should be aware of of all such products and learn about the companies that manufacture them. New LED capabilities need to be explored.

Lighting practitioners and consumers need to learn about the manufacturers they want to do business with. A number of newcomers have entered the lighting market, representing innovation and competition, and risks at the same time. Both, the traditional and new lighting manufactures need to navigate the changes and make their own strategies to do business profitably in the industry.

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