



UL SCIENCE

DELIVERING SAFETY, SECURITY AND SUSTAINABILITY

2015 ANNUAL REPORT

A LETTER FROM KEITH WILLIAMS:

Progress is all around us, and technology is the world's change agent, offering hope for solving humanity's greatest challenges.

From next-generation robotics to advances in additive manufacturing, the promise of new and emerging technologies is far-reaching.

New technologies can pose risks, however. To enable these innovations to reach markets and benefit humanity, we must address those risks with scientific acumen that keeps pace with the innovators.

That's where UL comes in.

Our investments in science lead the way in addressing potential commercial product risks, from safety to security and from performance to environmental impacts. Through our work, we enable innovators to find marketplace acceptance for their products and solutions.

As our single greatest competitive differentiator, Science leads the way for both us and our key stakeholders.

HOW DID OUR SCIENCE ADVANCE UL IN THE MARKETPLACE IN 2015?

Our Science led new research initiatives to increase understanding of the risk of chemical exposure from furniture and other products as well as the impact of 3D printing on indoor air quality. With our Science, we are examining how ventilation impacts fire patterns and damage to electrical systems in homes utilizing modern construction practices, and developing new scientific methods for predicting the performance and reliability of photovoltaic module materials.

Our Science led to new standards for the power bank industry and products using lithium button – or coin cell – batteries, filling existing gaps in the marketplace. Likewise, when the hoverboard industry faced setbacks, our Science led with a new set of requirements that have been recognized by the U.S. Consumer Product Safety Commission.

Our Science led the opening of new laboratories and training centers around the world, including a new printed wiring board performance testing laboratory in Taipei; a new additive manufacturing center in Singapore and training center in Louisville, Ky.; a new state-of-the-art laboratory in Brea, Calif., for testing lighting products; two new combustion performance laboratories in Newton, Iowa, and Toronto; and a wireless laboratory in Suwon, Korea.

Our Science led to new services for our clients, from a program to teach insurers how to evaluate property-related risks and exposures to the development of new testing and certification services for the building envelope and the launch of new sustainability advisory services. Moreover, we introduced new compliance services for the wearable technology industry.

Our Science led us as we formed new partnerships with other organizations to help solve the challenges our clients face. We partnered with First Data to help U.S. merchants meet an EMV adoption deadline and with the Building Research Establishment (BRE) to simplify the path to creating accurate environmental product declarations. We collaborated with Synopsys to test equipment for digital security vulnerabilities and with the University of California, San Diego, to develop and define requirements for sustainable energy production and use. Finally, we invested in start-up 3DSIM to advance simulation technology for additive manufacturing.

As a mission-driven organization, we bring our Science to the communities where we work through many corporate social responsibility initiatives, such as Safety Smart®, a global educational program designed to improve children's awareness and understanding of safety, health and environmental issues. Through a combination of public-private partnerships, we reached more than 80 million people with Safety Smart messages and initiatives in 2015.

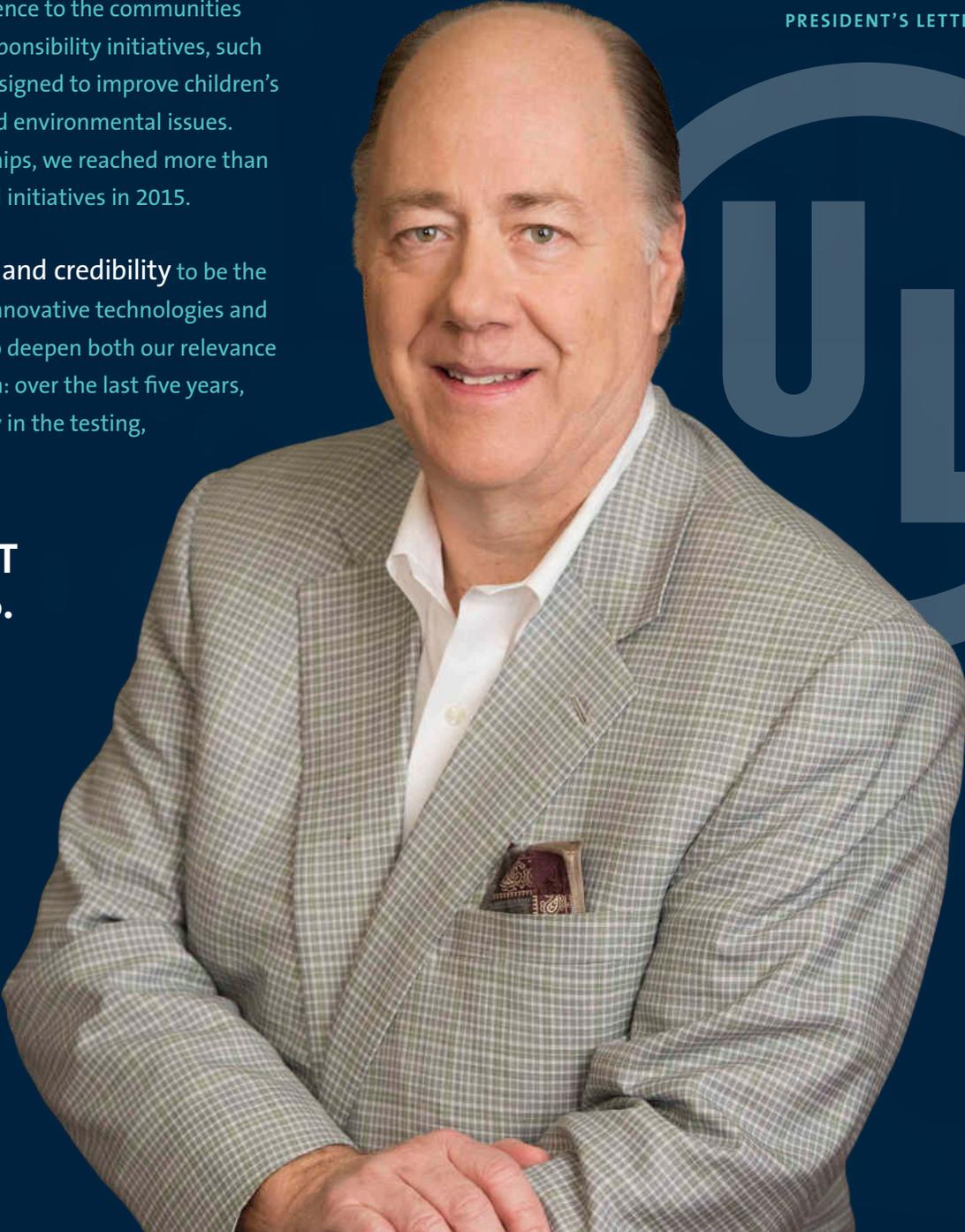
Our Science has given us the technical skill and credibility to be the source of knowledge for our key stakeholders on innovative technologies and tough problems. In 2015, our Science allowed us to deepen both our relevance and our clients' loyalty. And the market has spoken: over the last five years, we are the second fastest-growing major company in the testing, inspection and certification (TIC) industry.

OUR SCIENCE LED US IN 2015, AND IT WILL CONTINUE TO LEAD US IN 2016.

I hope that you will enjoy reading more details in our annual report about how UL Science is leading the way in addressing the safety, security and sustainability challenges faced by our clients and the world today.

KEITH WILLIAMS

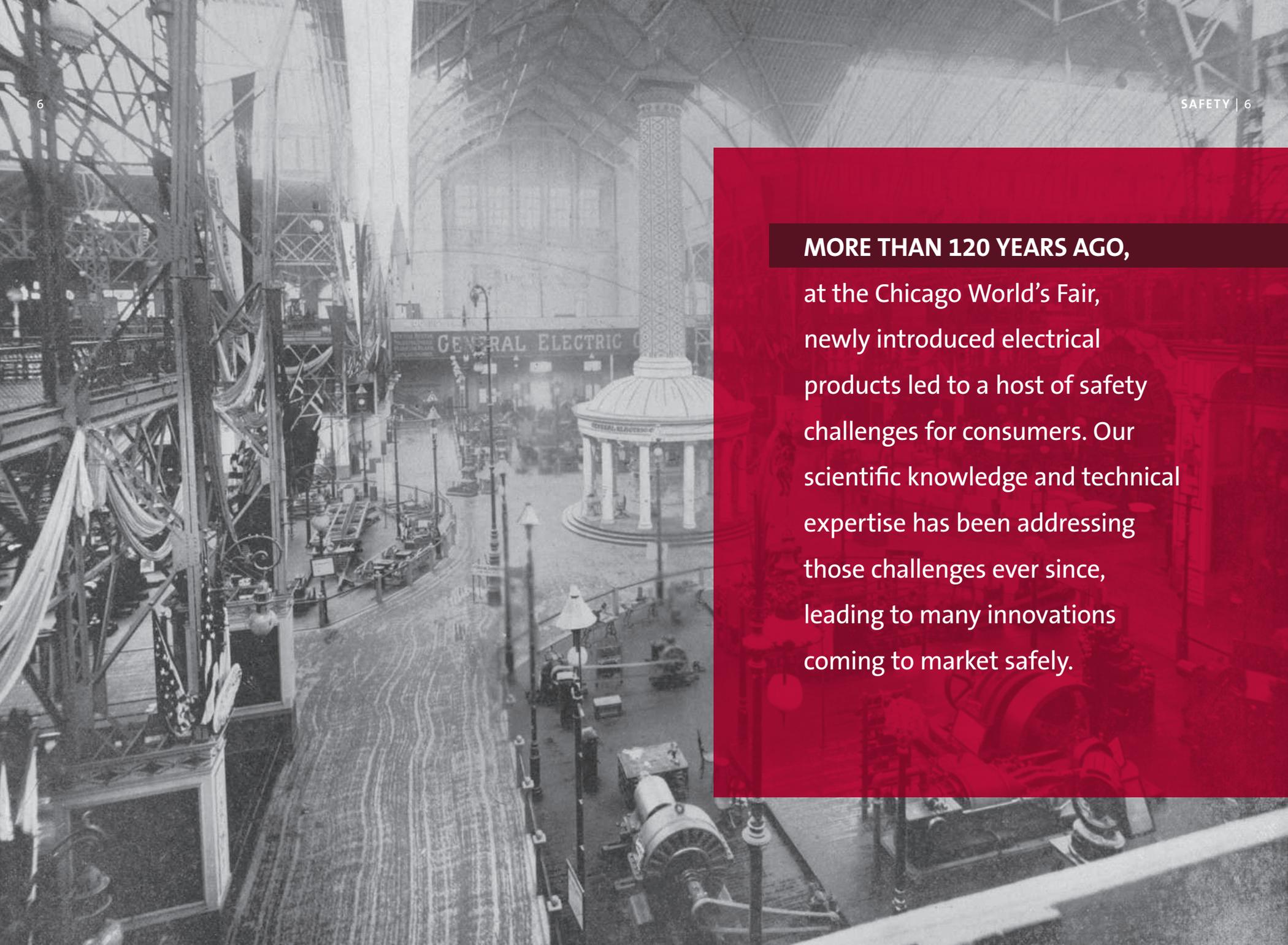
President and Chief Executive Officer and Trustee



SAFETY

**UL SCIENCE
DELIVERS ON
NEW-TECH
SAFETY
CHALLENGES**





MORE THAN 120 YEARS AGO,

at the Chicago World's Fair, newly introduced electrical products led to a host of safety challenges for consumers. Our scientific knowledge and technical expertise has been addressing those challenges ever since, leading to many innovations coming to market safely.



TODAY, our company is addressing a new set of safety challenges brought about by major leaps in innovation. Our lives are enriched by the constant stream of new technologies, from 3D printers and wearable devices to sustainable energy and smart cities.

Safety, however, is more critical than ever as these new technologies bring more and faster changes and challenges to societies than we've ever known before.

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The following are a few examples of our work addressing our clients' safety challenges.

In 2015, the hoverboard industry faced a major safety challenge as online videos and news reports about hoverboards catching fire raised concerns among consumers. Drawing upon a decade of lithium-ion battery research, we developed UL 2272, *Outline of Investigation for Electrical Systems for Self-Balancing Scooters*, in just eight weeks. This set of voluntary requirements for hoverboards enables manufacturers to offer this fun innovation without putting consumers at risk. The U.S. Consumer Product Safety Commission has urged all hoverboard manufacturers, importers and retailers to comply with our requirements.





At the 2015 Hong Kong Electronics Fair, we introduced UL 2056, *Outline of Investigation for Safety of Power Banks*, as the first dedicated standard for the power bank industry, along with supporting testing and certification services. This new standard filled a global gap in safety standards for power banks, and it will help safeguard consumers against harm and property damage while helping to protect manufacturers from the risk of expensive recalls and damaged reputations.



*We also introduced new services
for key industries:*

In 2015, we brought to market new testing and certification services to help determine the ability of building exteriors to withstand heat, air and water impacts. These evaluation services provide building owners, contractors, consultants and architects with critical information needed to assess building performance and risk and give manufacturers' confidence that their products will meet building design, building code and product certification requirements.



*Fenestration
impact testing at
UL's Northbrook
campus.*





Moreover, we launched a comprehensive set of services for wearables manufacturers at the 2015 Consumer Electronics Show, including customized product validation, advisory, interoperability testing and global market access services. Through these services, we are helping manufacturers satisfy regulatory concerns and consumer desire for safer, high-quality wearables.



Additive manufacturing/3D printing has been another major investment area for us. While additive manufacturing/3D printing offers the promise of more localized and personalized production, it must yield parts and products that meet design requirements. In 2015, we introduced a four-part series of online trainings for different skill levels and opened hands-on training facilities in Louisville, Ky., and Singapore. Our focus on education will help prepare additive manufacturing workforces to produce parts, products and materials; establish safety systems; identify hazards from materials and machines; and manufacture parts with safety built into their designs.



As part of our public safety mission, we forged collaborative relationships among global lithium-ion battery experts at a safety summit in Beijing in November 2015. This UL-hosted event deepened the dialogue about lithium-ion battery incidents, technology, applications, standards and test methods among 80 attendees representing manufacturers, academia, testing and standards organizations, and end users.

In addition, we continued investing in our brand protection services aimed at stopping counterfeiters and enhancing public safety. We applied our knowledge and experience to advancing safety by advocating for manufacturers, law enforcement and government regulators; identifying counterfeit products and taking action to remove potentially dangerous products from the marketplace; helping stakeholders stop counterfeiting, assess and migrate hazards, and implement corrective actions; and analyzing data and systemic issues that drive updates to UL Standards and improvements in our own certification process.



Finally, our safety science continued to attract new research funding. Through the SunShot Initiative, the U.S. Department of Energy awarded us funding to develop new scientific methods for predicting the performance and reliability of photovoltaic module materials.



Likewise, the National Institute of Justice announced a grant to our Firefighter Safety Research Institute for examining how ventilation impacts fire patterns and damage to electrical systems in homes utilizing modern construction practices. The findings will be used to update fire investigation training programs and reference materials.



IN THE COMING YEAR,

we look forward to continuing to put our knowledge and expertise to work solving the world's new and emerging safety problems and turning them into marketplace opportunities for our clients.

SECURITY

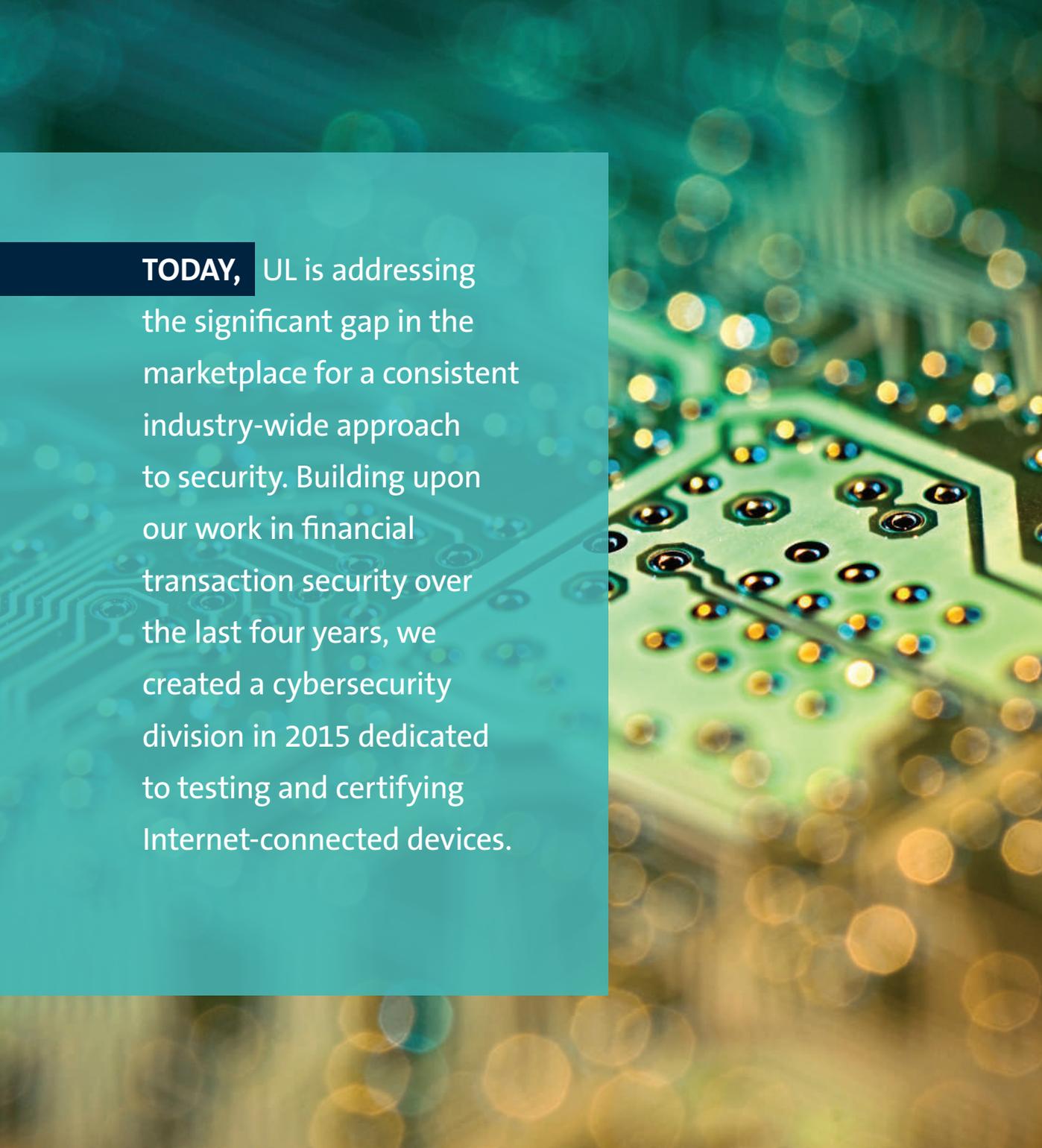
UL CLOSES THE GAP IN TODAY'S SECURITY CHALLENGES



IN THE LAST TWO DECADES,

people and products have become highly interconnected, leading to leaps in efficiencies, economic growth and personal empowerment. The Internet of Things (IoT) and the emergence of smart cities are the latest innovations in the connected trend.

However, this connectivity has also left people and things vulnerable to criminal opportunists. As the volume of connected devices surges to as many as an estimated 50 billion by 2020, industry analyst IDC believes up to 66 percent of networked devices will suffer an IoT security breach.



TODAY, UL is addressing the significant gap in the marketplace for a consistent industry-wide approach to security. Building upon our work in financial transaction security over the last four years, we created a cybersecurity division in 2015 dedicated to testing and certifying Internet-connected devices.

Our new cybersecurity division provides clients with trusted support for assessing security risks, enabling them to focus on product innovation. In addition, purchasers of products can mitigate their risks by sourcing secure products assessed by UL.

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The following are a few examples of our work addressing our clients' security challenges.



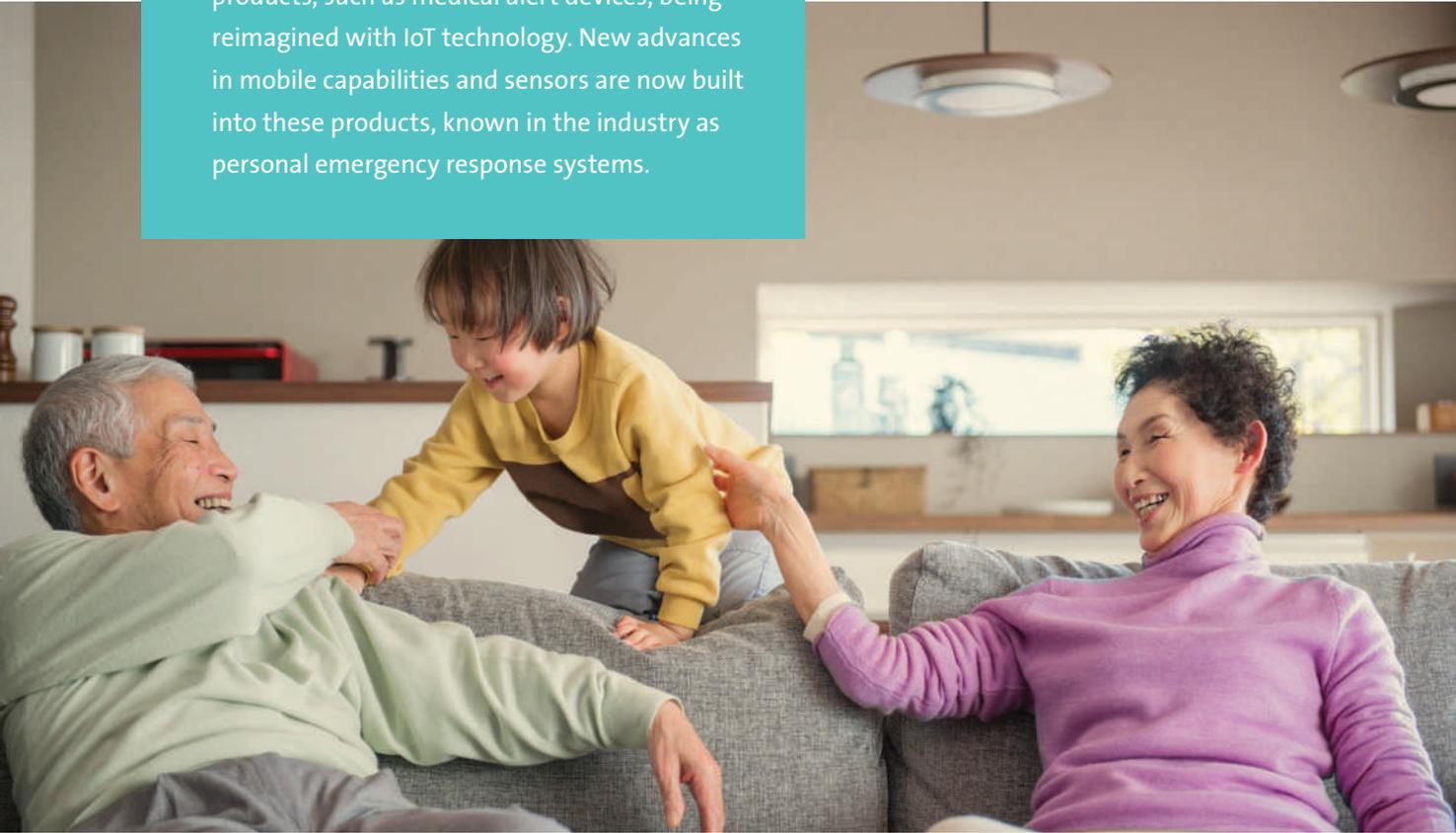
On Oct. 1, 2015, liability for credit card fraud in the United States shifted from card issuers to merchants not using chip-and-PIN readers. As this important change approached, we stepped in to help many mid- and large-sized merchants transition their point-of-sale systems to accept the required chip-card technology. Our team, having facilitated many similar transitions in Europe and around the world, accelerated the migration for our clients through the use of our centralized certification management platforms and accredited testing tools coupled with our training and testing services.



Increasingly, cities around the world are becoming “smart” by combining traditional physical infrastructure with technology systems to realize many benefits, from energy savings to reductions in traffic. Street lights generally lead this transition to smart infrastructure. However, increasing street light infrastructure connectivity brings new risks from opportunists.

To combat smart city cybersecurity risks, we are working with the National Electrical Manufacturers Association to modify existing urban standards and develop new standards for the connectivity and interoperability of street lights. We are also developing safety and security standards for Internet-connected street light poles that serve as wireless networking access points, enabling citizens and city managers to enjoy ubiquitous connectivity.

Finally, we are seeing many longstanding products, such as medical alert devices, being reimagined with IoT technology. New advances in mobile capabilities and sensors are now built into these products, known in the industry as personal emergency response systems.



With 90 percent of adults 50 and older planning to “age in place” in their homes instead of in nursing homes, these connected medical alert systems can help seniors maintain their independence safely. However, these systems also leave users more vulnerable, as the devices transmit sensitive information over wireless connections.

We are helping manufacturers with security features for this new generation of medical alert devices. For our clients, we conduct an analysis to determine whether an outside source can disrupt the operation of the system and that measures have been taken to secure the device and help keep consumer data private.

IN THE COMING YEAR,

we look forward to continuing to put our knowledge and expertise to work in closing the gap in today’s security and enabling our clients to continue turning their innovations into marketplace opportunities.

SUSTAINABILITY

**UL ADVANCES
HUMAN
HEALTH AND
HELPS LESSEN
ENVIRONMENTAL
IMPACTS**



More than 140,000 chemicals are used in commercial products today, and many of them emit volatile organic compounds, or VOCs. As a consequence, sustainability is more relevant each day with the creation of new chemicals and the associated health and environmental impacts.

Through new scientific research, we are learning about the effects of these chemicals on human health and the environment. According to the U.S. Environmental Protection Agency, long-term exposure to indoor air with airborne particles can contribute to chronic afflictions, such as heart disease, cancer and respiratory ailments.

Moreover, some aspects of green building construction can hamper a building's air quality. Tightly sealing a building envelope for efficient heating and cooling can increase the concentration of indoor airborne toxins. Out of concerns for these impacts, more green building requirements around the world incorporate indoor air quality measures.

At the same time, increasingly aware consumers are demanding low-emitting products from retailers, posing challenges to product manufacturers. To assist those manufacturers in addressing the increasing interest in low-emitting products, we test the chemical emissions levels of a wide range of products found in homes and offices. Manufacturers who want to demonstrate that their products are low emitting can pursue our UL GREENGUARD Certification, providing buyers with confidence in their choice of products.

In 2015, we helped industry improve its understanding of these sustainability challenges and expanded our capabilities.

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The following are a few examples of our work addressing our clients' sustainability challenges.

In a partnership with Emory University, we launched a research initiative to increase scientific understanding of the risk of chemical exposure from furniture and some electronic products. When the research is completed by the end of 2016, the outcomes from the study will be used to evaluate potential ways of reducing exposure to chemicals of concern by changing manufacturing processes or using safer alternatives while also maintaining flammability protection.



Moreover, we began a study on the impact of 3D printing on indoor air quality. The research, conducted in collaboration with Georgia Institute of Technology and Emory University's Rollins School of Public Health, will scientifically characterize chemical and particle emissions from 3D printing technologies and evaluate

their potential impact on human health. We will continue to invest in independent human health research to provide consumers, manufacturers and policymakers with a greater scientific understanding for identifying and reducing potential health hazards.

At its 2015 user group meetings in New York, Tokyo and Dublin, Ireland, The Weracs, a UL division, unveiled two new offerings in its line of automated hazard communications and chemical data management services. The offerings help to streamline real-time access to regulatory compliance data and improve supply chain transparency for chemical product manufacturers and their suppliers.



In 2015, we also created the UL Integrated Health & Safety Institute in collaboration with the American College of Occupational and Environmental Medicine (ACOEM). The institute's mission is to advance the integration of health and safety programs within companies around the world. The first of its kind, this not-for-profit institute for the private sector was launched at the ASSE Safety 2015 Professional Development Conference & Exposition.

Given increasing levels of chronic conditions and an aging workforce in many countries, we are taking a unified approach to health and safety in developing new strategies for managing population health. Working with ACOEM, we will provide members and partners of the institute with research, advisory and standards support, and educational solutions.



Tapping into our longstanding expertise in lighting, we hosted the “Full of Light Experience” event in April 2015 in Milan, Italy, to bring attention to human-centric lighting, an emerging approach that recognizes how light affects people’s short- and long-term alertness, sleep, mood, visual acuity, perception, productivity and general well-being. Dozens of professionals from lighting technologists and manufacturers, to architects and designers, gathered at the event to explore this next generation of lighting.





Finally, in collaboration with the North American Association for Environmental Education (NAAEE), we recognized five nonprofit organizations for their work inspiring a passion for science, technology, engineering and math (STEM) and environmental education in school children.

In 2015, through our UL Innovative Education Award, we provided grant funding to several key STEM and environmental innovators, including DiscoverE's Future City Competition, Cafeteria Culture – Arts and Action Cafeteria Waste Reduction program, The Women in Natural Sciences program at Drexel University's Academy of Natural Science, The Trent Aboriginal Cultural Knowledge and Science Program, and The University of Idaho McCall Outdoor Science School. Beyond funding, UL employees are supporting these nonprofits with expertise, resources and volunteer hours to help expand their reach and impact.



IN THE COMING YEAR,

we look forward to continuing to apply our knowledge and expertise to help our clients in their work solving the world's sustainability problems.

GROWTH + EXPANSION

**UL GROWS TO
MEET SPEED OF
CHANGE TODAY**



The speed of change continues unabated for our clients and stakeholders. The key drivers of this change are economic modernization in countries around the world coupled with an accelerated pace of innovation.

As a result of this dynamic environment, we are continuing to diversify our business to enhance our relevance to our clients and better meet the needs of a more complex world.

In 2015, we completed three important acquisitions to help our clients meet the new challenges of digital security and interoperability.

- 1 The National Analysis Center (NAC), recognized as the standard for mobile phone, automotive infotainment and mobile accessory interoperability and usability testing, joined us in July 2015. As the number of Internet-connected devices grows, we will be able to assist our clients through the NAC's service portfolio of interoperability, performance and compatibility testing services.
- 2 We also welcomed Acquirer Systems, a market leader in testing software and tools for validation of complex payment environments, in November 2015. We purchased Acquirer Systems to offer a complete set of test tools and simulators to the payment industry.
- 3 And finally, InfoGard, a market leader in accredited security assurance services for the payment sector and federally mandated information technology (IT) security products, joined the UL family in December 2015. We acquired InfoGard because it enables capacity expansion in North America for our payment security business, adds technical capability in health IT and biometric secure authentication, and deepens our federal expertise.





In addition, we continued to expand our geographical presence to support multinational clients in local markets.

- 4 For the first time in our history, we established an office to serve the African market. Located in a suburb of Johannesburg, the office opened in May 2015.
- 5 We also opened a new office in Mumbai, India, in July 2015. It is home to 35 professionals who coordinate with teams at UL's three in-country research centers in Gurgaon, Manesar and Bangalore. Given its location in India's business capital, the office allows greater access for clients in India to meet face-to-face with UL engineers and to learn about local testing and regulatory requirements.

As part of our expansion strategy, we opened five new laboratories this year for testing and certification, including:

- 6 In April 2015, a wireless laboratory for electromagnetic compatibility and transaction security testing in Suwon, Korea
- 7 In July 2015, a photometric and performance testing center in Brea, Calif., for testing lighting products to fulfill global energy-efficiency programs
- 8 In October 2015, a printed wiring board performance testing laboratory in Taipei for product performance testing and authentication
- 9 In November 2015, two combustion performance laboratories in
- 10 Newton, Iowa, and Toronto for testing appliances and equipment

IN THE COMING YEAR,

we will continue to acquire new technical capabilities, reach into new markets and open new facilities to meet the needs of our clients today and tomorrow.

KEY EVENTS

**UL SHARES OUR
KNOWLEDGE
ON THE
GLOBAL STAGE**



As part of our public mission, we have always sought to share our scientific knowledge and understanding of the global marketplace. By partnering with key stakeholders in government, industry and academia, we are joining the cause to solve the challenges of the 21st century.



At the 2015 China Development Forum in Beijing in March, UL CEO Keith Williams spoke about energy savings, emissions reductions and air pollution control to an audience of global business executives, leaders of international organizations, and renowned scholars and researchers.



In April 2015, UL Ventures President Weifang Zhou joined a U.S. Presidential Trade Mission in China to explore ways for the U.S. and China to advance development of affordable clean energy technologies and build environmentally conscious smart cities. U.S. Secretary of

Commerce Penny Pritzker and U.S. Department of Energy Deputy Secretary Dr. Elizabeth Sherwood-Randall led a delegation of 25 American companies to Beijing, Shanghai and Guangzhou.



Keith Williams also contributed his perspective to the "Safer Cities: Security and Vulnerability" panel at the first Chicago Forum on Global Cities. The May 2015 event hosted global city leaders in the areas of business, education, arts and culture, and civics for a multidisciplinary discussion.



In cooperation with INTERPOL, we supported the 9th International Law Enforcement Intellectual Property Crime Conference providing opportunities to learn about and discuss operational best practices, case studies and methodologies to combat transnational organized IP crime. In Buenos Aires, Argentina, the conference organizers and speakers, including Keith Williams, addressed the growing danger of intellectual property theft exacerbated by the Internet of Things and outlined emerging crime trends and enforcement strategies.

UL Chief Legal and Commercial Officer Terry Brady joined private and public sector leaders at the November 2015 APEC CEO Summit in Manila, Philippines. In participating on the “Innovation and Entrepreneurship: The New Frontier” panel,

he shared his perspective on how technology can help developing regions bypass a level of development, how technological innovation is driving growth globally and the importance of the rise of mobile computing.



Finally, in 2015, Keith Williams was elected chairman of the US-ASEAN Business Council, leading its membership in its mission to remove barriers to trade and investment as well as highlight the value of U.S.-ASEAN economic ties to policymakers and business leaders.

Each of these global forums provided us with an opportunity to fulfill our mission of promoting safe living and working environments, and we look forward to again contributing to these forums, and others, in 2016.

ul.com

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