CABA 30 YEARS

CABA Public Research Library (Updated: March 26, 2021)

The following reports are available to through the CABA Public Research Library:

(IS-2017-296) Enterprise Streaming Technology Spending Trends-2017
This report was prepared in June 2017 by Wainhouse Research and presents the input from CEOs regarding the use, deployment, and perceptions of technology platforms and services for corporate streaming video and webcasting. Topics covered include an in-depth analysis of organizations' budget allocation for streaming video technology solutions in 2017, and a comparison of organizations' 2017 budget for streaming video relative to 2016. The report is useful for business executives, IT professionals, and video streaming technology manufacturers and distributors.

(IS-2017-295) Using Intelligent Efficiency to Collect and Analyze Nonenergy Benefits
Information This report was prepared in June 2017 by the American Council for an Energy-Efficient Economy and deals with the use of information and communication technologies (ICT) to track, analyze, and quantify information related to non-energy benefits (NEBs) and addresses potential applications. Topics covered include a working definition of NEBs, uses of NEBs, current practices and collection and analysis of NEBs, use of in "Intelligent Efficiency" technologies ("IE"/ICT) to save energy and track and quantify NEBs, energy efficiency programs, deployment challenges, and policy considerations. The report is useful for policy makers, business executives, and technology professionals.

(IS-2017-294) Augmented Reality for the Industrial Enterprise: A Hands-On Introduction to Rapid AR Development
This report was prepared in May 2017 by Thingworx and deals with the application of augmented reality (AR) to industrial enterprise. Topics covered include business justification for using (AR), creators and use cases, key technologies for building an AR experience, best strategy for AR growth, and the future of AR. The report is useful for executives and technology professionals intending to leverage AR for business growth.

(IS-2017-293) Blocked: Why Some Companies Restrict Data Access to Reduce Competition
and How Open APIs Can Help
This report was prepared in November 2017 by the Centre for Data Innovation and deals with unfair use of market power by some companies in real estate, financial services, and airline industries to limit third parties accessing certain data, thereby hurting competition, innovation, and consumers. Topics covered include examples of unfair practices in real estate, financial services, and airline industries, and recommended use of open application programming interfaces (APIs) to achieve increased market transparency. The report is useful for policy makers, executives, IT professionals, and consumers.

(IS-2017-292) Impact of Crosstalk from Non-Standard Links on IEEE 802.3bz
This report was prepared in October 2017 by NBASE-T Alliance and deals with the non- standard operating modes in products advertising IEEE 802.3bz performance. Topics covered include the importance and history of alien crosstalk management in BASE-T Ethernet (including NBASE-T/IEEE 802.3bz), the impact of alien crosstalk interference from non- standard devices, and recommendations for using devices with standard-compliant transmit power and power spectral densities to maintain good performance in BASE-T networks. The report is useful for engineers, technologists, and IT professionals.

(IS-2017-291) NBASE-T 2.5G/5G Ethernet Technology Basis for the IEEE 802.3bz Standard
This report was prepared in December 2016 by NBASE-T Alliance and presents the basis for introducing

the IEEE 802.3bz communication standard. Topics covered include key challenges facing 1000BASE-T Ethernet, speed and throughput bottleneck in legacy systems, bridging the communication standards gap through collaboration, and an overview of NBASE-T Alliance and the standards. The report is useful for engineers, technologists, and IT professionals.

(IS-2017-290) GLOBAL BUSINESS CONFIDENCE REPORT 4th Quarter 2017
This report was prepared in October 2017 by the International Trade Council and provides important insights into the current state of the global economy by country and sector based on a global survey of 1689 C-Level executives. Topics covered include responses by sector and industry, business confidence, upcoming challenges, organizational growth, and government impact. The report is useful for business executives, policy-makers, and legislators.

(IS-2017-289) The 2017 State New Economy Index: Benchmarking Economic Transformation in the States This report was prepared in November 2017 by the Information Technology & Innovation Foundation and deals with the capacity assessment of the U.S. to successfully navigate an economy driven by technological innovation. Topics covered include the degree to which state economies are knowledge based, globalized, entrepreneurial, IT-driven, and innovation-based, the overarching strategic issues facing states, the role of large and small businesses in driving growth, and innovative models to spur workforce training and technology commercialization. The report is useful for policy makers, business leaders, and IT professionals.

(IS-2017-288) Discovering, Defining and Framing New Smart Systems and Services Growth Opportunities This report was prepared in May 2017 by Harbor Research and describes with how strategic business designers and developers should think about identifying and developing new smart systems and services growth opportunities. Topics covered include and overview of smart systems, framing smart systems growth opportunities, smart connected models, and framework for identifying opportunities. The report is useful for business and technology leaders.

(IS-2017-287) EMV and NFC: Complementary Technologies Enabling Secure Contactless Payments This report was prepared in November 2015 by Smart Card Alliance and clarifies how EMV ("Europay, MasterCard, and Visa") chip payment and NFC ("Near-Field Communication") technologies are used together to enable secure payments. Topics covered include key terms and definitions, current adoption in the U.S., provisioning and use, and considerations for contactless payment implementation. The report is useful for computer engineers, technologist, security professionals, and merchants.

(IS-2017-286) Coexistence and Interoperability in a mixed vendor PLC environment
This report was prepared in January 2017 by Home Grid Forum and defines the meaning of coexistence and interoperability within the power line communication context. The topics covered include detailed definition of coexistence and interoperability, backward compatibility, and associated chip sets and protocols. The report is useful for powerline communication engineers and technologists.

(IS-2017-285) Building confidence: Facing the Cybersecurity Conundrum
This report was prepared in November 2016 by Accenture and deals with the cybersecurity breaches and strategies to improve cybersecurity across the enterprise. Topics covered include organizations' misplaced confidence in security, defining cybersecurity success, security testing, innovation, protecting the organization from the inside, employee engagement in security, security leadership from the top, and learning from past security breaches. The report is useful for cybersecurity professionals, business leaders, and employees.

(IS-2017-284) Niagara Framework Guide Specification
This report was prepared in June 2017 by Tridium and deals with a device connectivity, management, and control framework ("Niagara"). Topics covered include an overview and scope of the framework, middleware, and management level requirements. The report is useful for consultants, building contractors, developers, end users, middleware specialists, and system integrators.

(IS-2017-283) Evaluation Roadmap: How to Choose the Right Smart Building Solution
This report was prepared in May 2017 by Switch Automation and deals with the application of the Intelligent Property Design Framework by Bruce Duyshart to achieve scalable smart building solutions. Topics covered include strategy, site review, research, ideation, platform scaling, documentation, implementation, building, testing, support, and a questionnaire for customer input. The report is useful for building owners and facility managers, as well as providers of smart technology solutions.

(IS-2017-282) Meeting Customer Expectations with Video-on-Demand
This report was prepared in March 2017 by Innovative Systems and deals with rising popularity for Video on Demand (VoD) among consumers. Topics covered include different types of VoD (subscription, transactional, free), a case study of successful VoD deployment, and how VoD providers can meet the challenge of over-the- top service. The report is useful for leaders of media and telecom companies.

(IS-2017-281) Bridging the Funding Gap: An Enterprise Perspective Post-Session Report
This report was prepared in June 2017 by GLOBE Series & The Delphi Group and includes perspectives from several CEOs of cleantech companies, who attended the Globe Capital 2017 Summit, on raising capital for development, demonstration, and deployment. Topics covered include key takeaways on data strategy, government financing, cleantech export opportunities, and procurement. The report is useful for leaders of new cleantech companies.

(IS-2017-280) Assessment of solid -state lighting, Phase two
This report was prepared in January 2017 by the National Academies of Sciences, Engineering, Medicine and deals with the commercialization, technology development , and manufacturing of solid-state lighting (SSL). Topics covered include an introduction to lighting and electricity consumption in the U.S., public policy and development of new lighting technologies, assessment of LED and OLED technologies, SSL applications, and manufacturing. The report is useful for lighting professionals, manufacturers, and organizations planning to invest in SSL solutions.

(IS-2017-279) Schneider Electric Facilities Management Survey
This report was prepared in November 2017 by Schneider Electric and presents the findings from a survey of decision makers in facilities management and maintenance across the USA. Topics covered include electricity expenditures, maintenance practices, familiarity with analytics, barriers for big data solutions, energy management systems, predictive risk, connected services, data storage, information flow, access control, internet of things, capital budgets, and service vendor identification. The report is useful for building owners and facilities managers.

(IS-2017-278) Saudi Arabia HVAC-R Market Outlook 2021
ThiS report was prepared in October 2016 by TechSci Research and presents a five year outlook of Saudi Arabia's market in heating, ventilation, air conditioning, and refrigeration (HVAC-R).
Topics covered include an overview of key HVAC-R projects, market outlook (thermal insulation, district cooling, refrigeration), HVAC-R market size, share, and forecast by value and region, and sustainability / energy saving. The report is useful for government officials, city planners, and business intending to participate in Saudi Arabia's HVAC-R market.

(IS-2017-277) Integrating Energy and Facility Management
This report was prepared in June 2017 by Enovity and describes how businesses are integrating energy and facilities management, along with and the resulting benefits. Topics covered include the current state of energy and facilities management in the U.S., the benefits of an integrated approach, organizational risks from to a siloed. approach, and the four steps to integrating energy and facilities management. The report is useful for executives of energy firms.

(IS-2017-276) India Solar Market - September 2017
This report was prepared in June 2017 by Mercom Communications and deals with the market drivers and challenges in India's solar market. Topics covered include current solar market installations, policy drivers, improved bidding guidelines, rising Chinese module prices, market leaderboard, solar imports, exports, and anti- dumping, renewables, financing and consolidation, project development by state, and solar

installations forecast. The report is useful for solar energy companies and manufacturers/exporters of solar energy equipment.

(IS-2017-275) As-a-Service for Customer Service: Optimizing for New Utility Customer Demands
This report was prepared in May 2017 by Zpryme and Hanson Technologies and covers how utility companies are addressing customer service. Topics covered include new customer demands and response from utilities, description of business process as a service (BPaaS), application of BPaaS to customer service, and recommendations for improved customer care. The report is useful for leaders and managers of utility companies responsible for improving customer service.

(IS-2017-274) The State of Utilities in Smart Cities and Energy Innovation
This report was prepared in June 2017 by Zpryme and deals with the participation of utilities in building smarter and more innovative communities. Topics covered include the role of utilities in implementing smart city strategy / technologies and supporting/driving energy innovation in their communities. The report is useful for leaders of utility companies and city/community planners.

(IS-2017-273) How Facility Data Drives Performance and Investments
This report was prepared in March 2017 by Dude Solutions and deals with the use of data and business intelligence for efficient operation of facilities along with the associated constraints. Topics covered include growing demand for facilities data, obstacles to accessing the data, type of data needed, using data, improving equipment performance, keys to success, and acting on improvement opportunities. The report is useful for building owners, managers, and directors of facility operations.

(IS-2017-272) Building a People-Centered Workplace: A Winning Approach to Putting Your Employees First This report was prepared in June 2017 by Comfy and covers the steps needed to ensure that employee workplaces are aligned to what people actually want. Topics covered include office choice and control, employee feedback, actionable insights and informed decisions, continuous improvement, and a blueprint for success. The report is useful for company executives, interior design professionals, and facilities managers in charge of workplace design.

(IS-2017-271) PJM capacity performance is here: Don't believe the myths
This report was prepared in October 2017 by CPower Energy Management and examines the history of "traditional" demand response program in PJM (a regional energy transmission company), the January storms that sank those programs, and what capacity performance is-- and isn't. Topics covered include a review of three significant myths: the decline of cleared demand response in the reliability pricing model; new requirements and penalties make it too difficult to participate; and the move to 100% capacity performance means that PJM is moving away from demand response. The report is useful for electric utility companies and government agencies overseeing energy planning and distribution.

(IS-2017-270) Making a Difference: Strategies for Successful Low-Income Energy Efficiency Programs
This report was prepared in October 2017 by American Council for an Energy-Efficient Economy and dealsenergy efficiency programs that deliver deep savings for low-income customers. Topics covered include customer participation, deep savings opportunities for customers, summary of energy efficiency programs, strategies of successful programs, and coordination of state policies and agencies. The report is useful for energy consumers, energy utility companies, and policy makers.

(IS-2017-269) The energy transition: How innovation is driving change
This report was prepared in September 2017 by the World Energy Council and provides an overview of energy innovation initiatives around the globe. Topics covered include policy and regulation, digital innovation, technology and decarbonisation, and new business models. The report is useful for government officials, energy utility leaders, and startup companies charged with supporting and implementing innovative solutions in the energy sector.

(IS-2017-268) CRE // Tech Mid-Year Report
This report was prepared in October 2017 by CRE // Tech deals with the analysis of employment, funding, and overall development of the commercial real estate technology sector from 2013 to June 2017. Topics

covered include value chain analysis of total employees, funding, companies founded year- over-year, venture capital deal volume, pre-money valuation, and summary of new CRE technology companies. The report is useful for startups, investors, commercial real estate professionals, and thought-leaders.

(IS-2017-267) Recent Developments in Energy Efficiency Evaluation, Measurement, and Verification
This report was prepared in October 2017 by the American Council for an Energy-Efficient Economy and deals with the importance of evaluation, measurement, and verification (EM&V) in energysystems. Topics covered include the states that exhibit policy and institutional leadership, deemed savings and technical reference manuals (TRMs), common practice baselines (CPBs), and advanced metering-based M&V enabled by greater data availability and improved data analytics, specific case studies, and major challenges facing the EM&V field. The report is useful for utility leaders engaged in the planning, development, and deployment of energy efficiency utility system resources.

(IS-2017-266) Reimagining the electric utility - Operational excellence in a digital world More than 60 participants from 16 countries and four continents gathered in May 2017 in Rome, Italy, for PwC's roundtable on delivering operational excellence in a digital world. The range of business models is expanding with corresponding implications for business alignment, core capabilities and profitability. But utilities' current business capabilities are often not sufficient to handle the new challenges and opportunities facing the industry. This paper discusses digital business strategy and delivery.

(IS-2017-265) Plug-in Electric Vehicle Sales Forecast Through 2025 and the Charging Infrastructure Required The Edison Electric Institute (EEI) and the Institute for Electric Innovation (IEI) developed a plug-in electric vehicle (PEV) sales forecast through 2025, including both plug-in hybrid electric vehicles and battery electric vehicles, and identified the associated charging equipment infrastructure needs.
This paper identifies both the scope and scale of charging infrastructure needed to support PEVs and the different approaches to infrastructure build-out.

(IS-2017-264) Low-Income Energy Efficiency Programs: A Baseline Assessment of Programs Serving the 51 Largest Cities
This paper summarizes the findings of a baseline assessment of the electric and natural gas ratepayer-funded energy efficiency programs specifically targeting low-income households in the 51 largest metropolitan statistical areas (MSAs) in the United States. Many programs have room to provide additional best practice measures, such as water efficiency and appliance upgrades. The study provides a foundational overview of low-income energy efficiency programs across thecountry.

(IS-2017-263) Advancing Batteries to Enhance the Electric Grid Chapter One: Front-of-Meter Applications
Energy storage is the only technology that can bank generated electricity and dispatch it later when needed. As intermittent generation continues to be added to the grid, fast and flexible resources such as batteries are increasingly needed to balance wind and solar's variable output. With their unique physical and operational characteristics, batteries directly connected to the transmission and/or distribution systems (front-of-meter) have the potential to cost-effectively increase the electric grid's reliability and resiliency.

(IS-2017-262) Building Smart Cities for Smart Citizens
Smart Cities need Smart Buildings and Homes but they also need citizens engagement. This paper discusses the need to re-evaluate the citizens' role in smart cities - and why now. It provides examples of successful cities' approaches and looks at some of the challenges and hurdles cities face. It provides a glimpse of what's next for citizen-centric smart cities and some tools and best practices that can be used today.

(IS-2017-261) Energy Savings Forecast of Solid-State Lighting in General Illumination Applications
Navigant prepared the seventh iteration of this study forecasting the expected annual lighting energy consumption based on different scenarios: The Current SSL Path scenario estimates the expected future adoption of LEDs based on historical data and the current trajectory for the technology. The DOE SSL Program Goal scenario estimates the potential future adoption of LEDs based on what DOE has determined is technically feasible in the given time frame, but additional efforts and funds would likely be

required.

(IS-2017-260) Smart City In Focus 2017: Smart Governance, Life and Industry
This report is a unique collection of articles and takeaways, drawn from presentations by smart city experts from all over the world. 65 city leaders and technology companies discuss how to advance smart city transformation and move from open data platforms to true data economies.

(IS-2017-259) Smart City Strategies- A Global Review 2017
Cities around the world embrace the idea of becoming a smart city, but struggle with the transformations that it requires. The most beautiful visions and the most intricate plans fall down when they are confronted with the messy reality of living cities. Nonetheless numerous demonstrators have shown how smarter services can make cities better, from digital tools for planning, to intelligent transport systems for faster emergency response.

(IS-2017-258) Clean Edge and Navigant for GridWise Alliance
The Grid Modernization Index (GMI-4) ranks and analyzes all 50 U.S. states and the District of Columbia, based upon the degree to which they are moving toward a modernized electric grid. The grid is changing to accommodate new cost-effective technologies and evolving consumer expectations.

(IS-2017-257) Connected Lighting System Interoperability Study Part 1: Application Programming Interfaces While connected lighting systems (CLS) might enable dramatic improvements in the energy performance of lighting and other energy-intensive systems or services, at this early stage in their development, that potential is limited by significant fragmentation of the underlying technologies and interfaces. The main goal of this series of studies is to discern and document the state of CLS interoperability in this early stage, multi- vendor, multi- technology, and multi-business-model landscape.

(IS-2017-256) IBI GROUP'S TOP 10 Smart City Strategy Success Factors
IBI Group's international involvement in Smart City Strategy development and implementation, allowed them to identify the Top 10 Smart City Strategy Success Factors as the primary factors that contribute to cities and regions achieving their goals through Smart City initiatives. Most cities have strategies for critical infrastructure components like information technology, transportation, utilities, urban planning, as well as broader strategies for economic development and environment.

(IS-2017-255) GutCheck - Connected Home Exploration
With the proliferation of smart technology and the Internet of Things in daily life, consumers have begun to have access to new ways of controlling and monitoring their homes. Smart connected home technology promises benefits including comfort, convenience, economy, and safety. Companies in a variety of industries are experimenting with connected home products and services; however, there is no clear understanding of what types of products and services have the most promise among early options.

(IS-2017-254) How National Governments Can Help Smart Cities Succeed
This paper reports on how national governments should recognize that cities acting alone cannot transition to smart cities as quickly or as effectively as would be desirable. National governments should enact policies that address the key challenges to smart city development that cities are not likely to solve acting on their own. Nations that complement municipal initiatives with support will likely lead in smart city development and more quickly secure the social and economic benefits of smart cities.

(IS-2017-253) High Performance - Making the Buildings-Energy Equation Sustainable
Transformation of the building-energy equation at an affordable price is possible today. The emerging conception of buildings can be reduced to four principles. Buildings should be viewed as: 1. a whole composed of integrated systems and sub-systems; 2. integrated with a larger community of buildings; 3. integrated with electricity generation and distribution systems; 4. performing over a lifecycle within a community lifecycle.

(IS-2017-252) How We Will Play – Consumers, Connected Devices and the Future of Payments
This paper reports on the study on Connected Devices And Payments Preferences. Consumers kept one

and seven day diaries and recorded the answers to the following 3 questions: Which connected devices do consumers own today? How do they use them to pay? How might they consider using them to pay in the future? The study generated more than six million data points and a wealth of information about consumers' connected device ownership.

(IS-2017-251) The Internet of Things: A movement, not a market
This report was prepared in October 2017 by IHS Markit research organization and discusses the significance of the Internet of Things (IoT) and the advantages that IHS Markit can bring to businesses. Topics covered include the importance of IoT, the main pillars of IT, and the IHS Markit advantage. The report is useful for business leaders wanting to learn about the basics of IoT and IHS Markit services.

(IS-2017-250) The Future of Smart Systems and IoT Analytics
This report was prepared in February 2017 by Harbor Research and deals with a new machine data management and analytics platform SkyFoundry. Topics covered include machine intelligence and analytics, current computing paradigms and challenges posed by IoT, SkySpark platform for IoT computing, cyber-physical computing, IoT data and analytics, application of SkySpark for data interpretation, and Project Haystack the "mark-up language" for data. The report is useful for technology managers and executives in charge of deployment and management of smart systems and IoT analytics.

(IS-2017-249) Getting Smarter by the Sector: How 13 Global Industries Use Artificial Intelligence
This report was prepared in October 2017 by TATA Consultancy Services and provides an overview of how artificial intelligence (AI) is applied across diverse global industries. Topics covered include a comparison of AI strategies across industries and specific trends by industry (automotive, banking and financial services, consumer packaged goods, energy, healthcare and life sciences, high tech, industrial manufacturing, insurance, media, entertainment, information services, retail, telecommunications, travel, transportation, hospitality, and utilities. The report is useful for business and technology professionals across diverse industries who are responsible for driving business strategy, innovation, efficiency, growth, and profitability.

(IS-2017-248) Turning data into dollars: Synthesizing business architecture and optimizing operations in the age of digitization
This report was prepared in April 2017 by Upstream Intelligence and provides insights to help energy (oil) companies increase production and efficiency by transitioning from standard data collection to advanced analytics, visualization, and Internet of Things (IoT). Topics covered include an overview of how oil companies spend in 2016 on data and analytics products and services, 2017 investments by oil companies in digital solutions, services and/or products, role of technology to unlock untapped revenue, predictive maintenance using artificial intelligence and automated technologies, landscape of technology solution vendors, efficiency optimization of data integration platform, and organizational and cultural shifts to enhance data usage for decision making. The report is useful for business and technology professionals leading energy companies.

(IS-2017-247) CYBERSMART BUILDINGS: SECURING YOUR INVESTMENTS IN CONNECTIVITY AND AUTOMATION
This report was prepared in February 2017 by partnership of Johns Controls and Booz/Alland/Hamiltion and deals with the importance that cybersecurity plays in large buildings. Topics covered include cybersecurity risks, a call to action at address cybersecurity threats, integrated systems in smart buildings, examples of cyber attacks, role of stakeholders in supporting cybersecurity, and strategies for mitigating cybersecurity risks. The report is useful for building owners, investors, cybersecurity professionals, and vendors of cybersecurity products.

(IS-2017-246) Transforming eHealth into a political and economic advantage
This report was prepared in February 2017 by Polityka Insight and deals with the state of eHealth in the European Union. Topics covered include an overview of eHealth, policy and regulation challenges, benefits measurement (efficiency, cost reduction), profiles of developed and developing countries, and recommendations for advancing eHealth implementation in Europe. The report is useful for government officials responsible for policy and regulations, health care organization, and IT professionals responsible

for implementing eHealth solutions.

(IS-2017-245) From great science to thrilling technology: Europe's future & emerging technology programme This report was prepared in October 2017 by the European Commission and provides an insight to Europe's science and technology research programme (Future & Emerging Technologies "FET"). Topics covered include research frontiers in artificial intelligence, human-computer interaction, robotics, information & modelling, biotechnologies, interdisciplinarity, computer science, green technologies, medical technologies, quantum technologies, neuroscience & the human brain project, nanotechnologies, new materials & graphene, high- performance computing, and combination of art & science as new way of doing research. The report is useful for anyone interested in learning about science and technology research in Europe.

(IS-2017-244) Internet and enterprise productivity: evidence from Latin America
This report was prepared in May 2017 by the Research Institute of Applied Economics in Barcelona and examines the link between the productivity of firms in Latin America and the Internet. Topics covered include firms' adoption of the Internet and their productivity, the intensity of Internet use, and the link between the new technologies and productivity. The report is useful for executive and technology leaders in Latin America charged with productivity improvements, as well as companies providing Internet services.

(IS-2017-243) What doctor? Why AI and robotics will define New Health
This report was prepared in June 2017 by PWC and deals with the emergence and increasing use of artificial intelligence (AI) and robotics in the health ecosystem. Topics covered include artificial intelligence and consumer apps for keeping well, role of AI & robotics (early detection, diagnosis, decision making, treatment, end-of-life care, research, training), investments in health care, general public's (Europe, the Middle East and Africa) interest in AI & robotics, and recommendations for successful implementation. The report is useful for government officials, health care professionals, patients, technology solution providers, and health care decision makers.

(IS-2017-242) Successful Strategies Driving Innovation & Results PROGRESS REPORT 2017
This report was prepared in February 2017 by the U.S. Department of Energy and provides an overview of initiatives from leading US organizations to reduce energy and water waste in buildings and industrial facilities. Topics covered include a summary of accomplishment, goals and solutions, examples by industry sector, and efforts to reduce energy and water costs in federal operations. The report is useful for executives, managers, and employees in all industries who are leading or participating in initiatives for more efficient use of energy and reduction of water waste.

(IS-2017-241) THE STATE OF ENERGY INNOVATION 2017
This report was prepared in February 2017 by Dexma Energy Management and provides global insights about energy innovation. Topics covered include a detailed overview of companies who participated in the research, business and technology challenges that companies are facing, technology trends, and a future outlook on energy efficiency. The report is useful for business and technology leaders interested in advancing the innovation agenda at their organizations.

(IS-2017-240) Why cognitive manufacturing matters in electronics Activating the next generation of production success
This report was prepared in February 2017 by IBM Institute for Business Value and presents survey results of electronics industry executives to understand how the electronics industry is applying cognitive computing to manufacturing. Topics covered include the current state of electronics manufacturing, the next generation of electronics manufacturing, adoption of cognitive manufacturing and its level of maturity, barriers facing cognitive manufacturing, and recommendations for implementation. The report is useful for business and technology leaders in charge of advancing manufacturing capabilities of their organizations.

(IS-2017-239) Securing the Internet of Things: A collaborative and shared responsibility This report was prepared in May 2017 by Online Trust Alliance (OTA) / The Internet Society
(ISOC) and deals with security challenges presented by the Internet of Things. Topics covered include:

the emerging security issues from connecting auto/home/gym/office, collaborative societal responsibility to secure IoT, and a call to action for key stakeholders affected by IoT. The report is useful for the general public, government officials, and members of private and public organizations developing and/or using IoT technology.

(IS-2017-238) Utilities and Electric Vehicles: THE CASE FOR MANAGED CHARGING
This report was prepared in April 2017 by Smart Electric Power Alliance and deals with challenges and recommendations for effectively managing charging of electric vehicles. Topics covered include the benefits of managed charging, charging options, role of utilities, vehicle-grid integration, and an overview of electrical vehicle supply equipment manufacturers. The report is useful for owners of electric vehicles, and business and technology leaders of electrical utilities.

(IS-2017-237) Internet of Things Investment & Corporate Development Report
This report was prepared in May 2017 by Harbor Research and deals with an overview of strategic business moves by leading IoT companies in the US market. Topics covered include: major investments, appointment of key leaders, new partnerships, new technology solutions, private funding, new funds, and least valuable players. The report is useful for the general public, investors, and senior executives in charge of business and technology strategy.

IS-2017-236) Outsmart your video competition with Watson How advances in cognitive awareness promise to redefine video industry economics
This report was prepared in May 2017 by IBM and deals with the business benefits of IBM's Cloud Video platform. The benefits discussed include: higher advertising potential, video personalization, access to faster indexed content, improved transcription and captioning, improved accuracy in compliance monitoring, and highlights in near real-time. The report is useful for CEOs and CTOs of video companies.

(IS-2017-235) G.FAST Enabling the Gigabit Society
This report was prepared in August 2017 by ADTRAN and deals with gigabit broadband communications standard (G.Fast). Topics covered include: deployment examples from US and UK, use and performance copper and coax with fiber for gigabit networks, and potential for future growth of G.Fast. The report is useful for telcom carriers, service providers, and researchers.

(IS-2017-234) FROM HEALTHCARE TO HOMECARE: The critical role of 5G in healthcare transformation
This report was prepared in June 2017 by Ericsson and presents insights from an online survey of 4,500 advanced smartphone/mobile broadband users regarding healthcare. Topics covered include: decentralization of health care from hospitals to homes, centralization of patient data in hospitals, and the importance of G5 to support the increased use and security of wearables and remote treatments. The report is useful for IT professionals working in healthcare, healthcare providers, and telecom providers supporting hospitals and end- users.

(IS-2017-233) Plugging In the Fiber Home: A Technical Paper
This report was prepared in 2016 by All Systems Broadband and deals with the emerging trend of fiber self- installs, and its implication on the physical fiber plant. Topics covered include: survey of the various technologies available to bring fiber to the desktop, safety implications of laser, economics of customer self-installs, transition boxes and their role in providing slack storage as well as safe connectivity, and link verification (in-home versus remote). Different general approaches to indoor Optical Network Terminals (ONTs) along with the practical considerations of each are discussed. The report is useful for the general public planning residential fibre installation and companies providing fibre implementation and maintenance.

IS-2017-232) Envisioning an ICT led approach to the national transformation program for the Kingdom of Saudi Arabia
The report was prepared in December 2016 by International Data Corporation (IDC) and deals with a detailed roadmap to 2030 for Saudi Arabai's national transformation based on information and communications technology (ICT). Topics covered include the opportunities and impact of digitization across health care, entertainment, sports, tourism, supply chain & logistics, the role of private and public

partnerships, ICT skill development, and interviews with key Saudi leaders. The report is useful for citizens, government officials, and private and public ICT companies in Saudi Arabia, as well as external companies planning to do business in Saudi Arabia.

(IS-2017-231) Wireless wearables: The role of Wi-Fi® in enabling digital health
This report was prepared in May 2016 by Wi-Fi alliance and provides an overview of wireless technologies in the digital health ecosystem and focuses on the role of Wi-Fi and associated best practices in enabling the promise of wearable devices in digital healthd. Topics covered include a description of wireless wearables within the digital health ecosystem, typical radio frequency (RF) environments and use cases for wireless wearables, associated challenges and best practices, and relevant and associated Wi-Fi certification programs to deliver the optimal user experience through Wi- Fi connectivity. The report is useful for product developers, infrastructure system integrators, healthcare delivery organizations, and end users.

(IS-2017-230) Clearing a Path to the Cloud: U.S. Regulator Perspectives on Cloud Technologies
This report was prepared in August 2017 by Zpryme and Oracle and deals with ways in which regulators see value in the cloud, both for utilities and for their customers. Topics covered include: why U.S. regulators see benefits in utilities using cloud technologies, how regulators plan to support investment in cloud technologies by utilities, recommendations for furthering regulator support for the cloud, and approaches for utilities to evaluate the best path forward for their own cloud strategies. The report is useful for regulators, CEOs, CFOs, CTOs, and CIOs of utility companies.

(IS-2017-229) MOBILITY REDEFINED: THE UTILITY MOBILE WORKFORCE IN THE CONNECTED GRID
This report was prepared in November 2017 by Zpryme and deals with how a data-rich world with unprecedented connectivity will transform a utility's mobile workforce. Topics covered include a description of the changing utility mobile workforce, the ways IoT and Smart Cities are reshaping the mobile workforce, preparedness of utility mobile workforce, and the ways that utilities can take action today to unleash the potential of their evolving mobile environments. The report is useful for utility CEOs and HR directors responsible for managing mobile employees, and CTOs and CIOs responsible for technology solutions to support employees.

(IS-2017-228) The Impact of the IoT Demystified
This report was prepared in July 2017 by Qorvo and deals with the Internet of Things (IoT). Topics covered include a brief description and history of IoT, challenges, core values, self driving cars, the downside and the "dark side", privacy, integrity, and impact. The report is useful for the general public, consumers, and technology solution providers.

(IS-2017-227) How Facility Data Drives Performance and Investments
This report was completed 2016 by Dude Solutions. This report explores how facility managers understand data and business intelligence and use them to operate their facilities more efficiently, justify their capital and operating budgets, and communicate the value of their work. However, most facility managers find their efforts to produce and analyze data constrained by outdated systems. A Building Operating Management survey was sent out via email to 30,000 subscribers of Building Operating Management (building owners, facility managers) and Facility Maintenance Decisions (maintenance/engineering managers) magazines and documents the increasing urgency of capturing and leveraging good data.

(IS-2017-226) Energy Information Management - Practices and Technology Assessment
This report was completed November 2012 by Frost & Sullivan. This report explores the benefits of energy information management solutions; key challenges, market drivers and restraints; initiatives driving demand; trends and unmet needs; current state; emerging competitive environment; solutions; market life cycle for and selected solutions (BuildingIQ, SCIenergy, EfficiencySMART and SeriousEnergy Manager).

(IS-2017-225) Rise of the Machines: How AI-Driven Personal Assistant Apps Are Shaping Digital Consumer Habits
This report was completed 2017 by Verto Analytics. This report explores how people use AI- driven personal assistant apps to gain a better insight about the future of AI and which apps might have mass market appeal. Many of the biggest technology companies have released personal assistant apps, services, and devices to tap into this emerging market but Google appears to have secured a foothold at the moment.

(IS-2017-224) Moving Forward: Findings and Recommendations from the Consultative Council
This report was completed 2016 by the National Institute of Building Sciences. This report explores the challenges from policies, practices and trends that hinder the achievement of the nation's goals of high-performance buildings and communities. The report examines some of these and offers findings and recommendations on how to overcome them.

IS-2017-223) Corporate Clean Energy Procurement Index: State Leadership & Rankings
This report was completed January 2017 by Andrew Rector, Bryce Yonker, Clint Wilder, Ron Pernick, David Gardiner, Ryan Hokum, Justin Barnes, Rusty Haynes, Blaine Collison and Emily Williams. This report explores the efforts of the Retail Industry Leaders Association (RILA) and Information Technology Industry Council (ITI) and others to boost renewable energy (RE) usage. The commercial and industrial (C&I) buyers account for more than half of all signed wind energy power purchase agreements (PPAs). This report highlights companies such as, Amazon, Facebook, Google, Microsoft, Target, and Walmart, for their efforts to install both onsite and offsite renewables and create jobs.

(IS-2017-222) National BIM Guide for Owners
This report was completed January 2017 by Dan Chancey, Ernie Conrad, Carrie Sturts Dossick, Craig R. Dubler, Johnny Fortune, M. Dennis Knight, John I. Messner, Henry L. Green, Dominique Fernandez, Earle Kennett and Stephanie Stubbs. This report explores the essential requirements for BIM, as well as, options for Owners who wish to go beyond minimum requirements. The report outlines how to develop and implement requirements for the application of Building Information Modeling (BIM) for internal policies and procedures, and explains how to include these requirements in contracts to plan, design, construct and operate buildings.

(IS-2017-221) Maryland Benefits: Examining the Results of EmPOWER Maryland through 2015
This report was completed January 2017 by Brendon Baatz and James Barrett. This report explores the first phase of the EmPOWER Maryland energy efficiency programs that began in 2008 after the passage of the EmPOWER Maryland Energy Efficiency Act. This report reviews the costs and benefits of the first phase from 2008 through 2015.

(IS-2017-220) ISGF White Paper: AMI Rollout Strategy and Cost-Benefit Analysis for India This report was completed July 2016 by Reji Kumar Pillai, Rupendra Bhatnagar and Hem
Thukral. This report explores the roll-out of Advanced Metering Infrastructure (AMI) in India. It looks at key issues such as smart meter standards and specification, testing of smart meters, retrofitting of existing meters, communication technology options, procurement strategy and business models for the AMI roll-out.

(IS-2017-219) Finance Guide for Policy-Makers: Renewable Energy, Green Infrastructure 2016
This report was completed August 2016 by Kirsty Hamilton, Low Carbon Finance Group, Chatham House and Ethan Zindler, Bloomberg New Energy Finance (BNEF). This report explores the need to mobilize substantial private capital flows into climate solutions at the required pace and scale to combat climate change as addressed by the Paris UN Climate Agreement. It provides a factual overview from a finace standpoint – sources of capital, what the capital markets do, how transactions work and sets common finance terms in context.

(IS-2017-218) Utility Innovation Series Report
This report was completed 2016 by Zpryme sponsored by Sensus. This report explores a smart water survey of 85 U.S. water utilities completed by Zpryme and the Smart Water Summit (SWS). Nine out of 10

water utilities have a smart water plan, and many are beginning to embrace smart water technologies, such as AMI and analytics. This survey consisted of 45 questions about smart water initiatives in the U.S. A total of 85 water utilities were involved.

(IS-2017-217) Cybersecurity and the Smart Home Industry Snapshot - How the surge in smart homes may open the doors to opportunities and vulnerabilities for consumers and solution providers
Smart homes are a foundation towards greater Connected Living. But due to challenges such as lack of standards and consistency from suppliers and insufficient steps taken by homeowners to protect themselves, the opportunity for cybercrime grows. This study provides an assessment of why both consumers and industry should address the growing concern cybersecurity and smart homes.

(IS-2017-216) Our Detailed Privacy Blueprint: What All Parties Should Be Doing Right Now to Protect the People and Organizations They Care About
Privacy regulations can shut down most of the benefits of big data, leaving organizations ill- equipped to compete in the global economy. Nowhere is that more true than in the EU. The EU's General Data Protection Regulation

(GDPR), intended to protect the privacy of EU citizens, threatens the viability of business initiatives in the region— all of which depend on data. However these trends can apply across all global markets. This report touches on conditions and factors posing threats to privacy and provides related recommendations relevant across regions and markets.

(IS-2017-215) The New Digital Grid: A snapshot of changing dynamics and communication for the North America power grid
The rapidly changing grid market demands flexibility in the communications infrastructure. This brief on industry trends looks at how the market is defining - and being redefined by - new communication trends and business models. The industry snapshot focuses on key trends, drivers and restraints, and gives a high level market analysis of industry changes to come.

(IS-2017-214) Transformational Shifts in the Buildings Industry
This study outlines the top six transformational trends that will be affecting the buildings industry. From changes in how we work to the emergence of cognitive technologies to new business models, the buildings industry will be shaped in the future by technologies, processes, and innovative new ideas. This study charts out the key trends and challenges that building owners and operators will face in the coming years, some with the potential to create revolutionary opportunities.

(IS-2017-213) Strategic Directions: Smart City/Smart Utility Report
This report has a number of individual articles on the smart city and smart utility movement. Municipalities are starting to understand the power of data and how it can foster and support master planning, and how a roadmap can define, drive and ultimately enable smart city initiatives. Utilities are working to integrate advanced technologies—such as evolving to accommodate distributed energy resources (DER) and improving network connectivity—to determine a successful path forward in a changing landscape.

(IS-2017-212) Pathway to Cutting Energy Use and Carbon Emissions in Half
Based on a 2012 report by ACEEE they established a strategic goal to reduce projected 2050 energy use by 50%. Our analytical approach was to compare the reference case in the 2016 Annual Energy Outlook (2016 AEO), prepared by the Energy Information Administration (EIA), to an energy efficiency case we prepared that estimated the energy savings from 13 packages of energy efficiency measures that include smart buildings.

(IS-2017-211) RGGI and CO2 Emissions Trading Under the Clean Power Plan
The Regional Greenhouse Gas Initiative (RGGI) states have over seven years of experience running a voluntary multi-state program to limit emissions of CO2 through a mass-based, allowance trading program. The states have administered a liquid and efficient market for trading emission allowances and have directed the proceeds from allowance auctions to achieve economic benefits and meet the public policy objectives important to each individual state. In this report, we assess the core issues around

emission-allowance trading that RGGI states could consider during the current program review and identify principles and objectives for program design changes that RGGI states might incorporate given the emerging national context.

(IS-2017-210) Comparative Generation Costs of Utility- Scale and Residential-Scale PV in Xcel Energy Colorado's Service Area
The analysis in this report looks at the Xcel Energy Colorado system in 2019 and compares the per-megawatt hour (MWh) customer supply costs of adding 300 MW of PV panels (measured in W-DC) either in the form of: (1) 60,000 distributed 5-kilowatt residential-scale (rooftop) systems owned or leased by retail customers; or (2) 300MW of utility-scale solar power plants that sell their entire output to Xcel Energy Colorado under long-term purchase power agreements (PPA). Using a Reference Case and five scenarios with varying investment tax credit (ITC), PV cost, inflation, and financing parameters, the study finds that customer generation costs per solar MWh are estimated to be more than twice as high for residential- scale systems than the equivalent amount of utility- scale PV systems.

(IS-2017-209) Safety, operation and performance of grid-connected energy storage systems
This is a comprehensive 106 page guide to energy storage systems with references to all the industry contributors and the standards bodies working on this evolving energy option. Building automations systems are a key component in this energy storage and usage application.

(IS-2017-208) Smart Systems Growth Opportunities: Blockchain
This report was prepared in July 2017 by Harbor Research and deals with Blockchain technology. Topics covered include: overview of industry's shift from Blockchain project pilots to deployment, market challenges and ecosystem dynamics, and key players. The report is useful for business and technology executives responsible for developing and implementing new business and technology strategies.

(IS-2017-207) CIS AND THE CLOUD - AGILITY IN THE NEW UTILITY ERA
This report was prepared in October 2017 by Zpryme and describes how technology and customer trends are shaping Customer Information System (CIS) requirements for utilities, and the role that cloud technologies play in ensuring an agile CIS that can handle the changing marketplace. Topics covered include: customer requirements, role of new technologies in driving CIS, capability of CIS to handle changes in customer requirements and technology, alternatives to traditional CIS platforms, and recommendations. The report is useful for utility CEOs, CTOs, and CIOs responsible for selecting, deploying, and managing a CIS.

(IS-2017-206) Wi-Fi .11AX – What's It All About?
This report was prepared in August 2017 by Qorvo and deals with the Wi-Fi .11AX communication protocol. Topics covered include: performance, range, distributed Wi-Fi, implications for product suppliers and consumers, and a comparison of Wi-Fi 2.4 GHz and 5 GHz. The report is useful for consumers and IT professionals responsible for deployment of Wi-Finetworks.

(IS-2017-205) Use Cases for Software-Defined Broadband Access
This report was prepared in October 2017 by Iskratel and deals with applicability of software- defined broadband with realistic, tangible use cases that provide operators with business differentiation and enable market success. Topics covered include: service- and app-aware access and aggregation, unification of residential, business and backhaul, local-cloud connectivity, and virtual unbundling, wholesale bitstream and open access. The report is useful for IT professionals responsible for design and implementation of Software Defined Networks (broadband).

(IS-2017-204) TOP 10 THINGS TO CONSIDER WHEN DEVELOPING YOUR MANAGED WI-FI PROGRAM
This report was prepared in October 2017 by SecurityCoverage and deals with development of a managed Wi-Fi program. Topics covered include: the current and future state of wireless home networks, managed approaches, in-house technical support, user experience, tools for world- class technical support, network scalability, up-sell opportunities, and ROI. The report is useful for company owners, CFOs, and IT professionals responsible for design and development of Wi-Fi programs.

(IS-2017-203) Ontario Launches the Green Ontario Fund to Help People Save Money and Fight Climate Change This report was prepared in August 2017 by the Ontario's Ministry of the Environment and Climate Change and deals with the Green Ontario Fund - a new not-for-profit provincial agency that will deliver programs and rebates to help reduce energy costs in homes and businesses. Topics covered include: how home and business owners can save money while reducing greenhouse gas pollution, and the GreenOn installation program. The report is useful for home and business owners interested in reducing their energy consumption and operating costs.

(IS-2017-202) ONTARIO'S LONG-TERM ENERGY PLAN 2017 Delivering Fairness and Choice
This report was prepared in August 2017 by the Ontario Ministry of Energy and deals with initiatives taken by Ontario's provincial government to make energy more affordable and to provide Ontario's energy consumers with more choices. Topics covered include energy access and affordability, flexible energy systems, energy innovation, value and performance for customers, energy conservation and efficiency, climate change, response to First Nations, and infrastructure requirements. The report is useful for energy consumers, energy companies, and technology solutionproviders.

(IS-2017-201) Ultra Broadband Strategies: A Look into Technology Choices and Business Models
This report was prepared in October 2017 by Nokia and deals with implementation strategies for ultra broadband communication networks. Topics covered include an overview of technology choices, business case development, and benefits of partnering with Nokia. The report is useful for business owners and IT professionals responsible for design and implementation of broadband communication networks.

(IS-2017-200) BLIND RETAIL CASE STUDY
This report was prepared in February 2017 by EnTouch Controls and presents a case study illustrating how a nationally recognized retailer utilized intelligent building technology to reduce energy consumption by 20% and decrease operating costs. Topics covered include a description of the energy challenge, solution, insights, and the results achieved. The report is useful for retail owners, financial managers, and facility managers responsible for reducing operating costs.

(IS-2017-199) Buildings of the Future: it's time to rethink the bottom line
This report was prepared in October 2017 by Aurecon and deals with a new ROI model for constructing buildings of the future. Topics covered include long-term thinking, the changing nature of construction, and a holistic approach for ROI business case development. The report is useful construction company owners and CFOs striving to improve ROI of building construction projects.

(IS-2017-198) National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework
This report was prepared in August 2017 by the National Institute of Standards and Technology and deals with interdisciplinary nature of the cybersecurity work. Topics covered include how to describe and share information about cybersecurity work and the required knowledge, skills, and abilities (KSAs) by employees to improve organization's cybersecurity capability. Information is also provided on how to identify, recruit, develop, and retain cybersecurity talent. The report is useful for HR and cybersecurity professionals responsible for employee development, planning, training, andeducation.

(IS-2017-197) Playing the Planet Card
This report was prepared in February 2017 by the Shelton Group and deals with how energy- efficient behaviours can be encouraged.

(IS-2017-196) Multisectoral action for a life course approach to healthy ageing: draft global strategy and plan of action on ageing and health
This report was prepared in April 2016 by the World Health Organization and presents a draft global strategy and plan of action for healthy aging. Topics covered include plan's milestones, resources, and strategic objectives (commitment to action, long term care, research, alignment of health systems, age-friendly environments). The report is useful for policy makers, leaders of health organization, health care providers, and general public.

(IS-2017-195) The Milestones of Digital Transformation
This report was prepared in November 2016 by Comarch and deals with digital transformation of telecommunications companies to improve efficiencies and meet market demands. Topics covered include BSS transformation, omnichannel strategy, customer experience, integrated operations, merger / acquisition cost and time-saving strategies, NVF/SDN technology, cloud-native OSS, IoT quality of service, and machine learning. The report is useful for telecommunications CEOs, CTOs, and CIOs responsible for strategic business and technical solutions.

(IS-2017-194) From data deluge to intelligent insights
This report was prepared in August 2017 by IBM and describes the extent to which marketing executives are embracing cognitive technologies. Topics covered include the IBM Watson Customer Engagement platform, the challenges that marketing leaders face and the lessons they can learn from outperforming companies that are using cognitive solutions. The report is useful for company owners, Chief Marketing Officers, and heads of sales.

(IS-2017-193) Mitigating the Risk of Workplace Violence in Health Care Settings
This report was prepared in August 2017 by SIA Health Care Security Interest Group and deals with the causes workplace violence and mitigation strategies in US health care settings.
Topics covered include the root causes of violence, regulations and compliance, security strategies, and institutional and personal vigilance. The report is useful for executives responsible for operating health care organizations, government officials in charge of health care policy, health care workers, and IT professionals responsible for security.

(IS-2017-192) 2016: Year of the Smart Device IoT Adoption Benchmark Report
This report was prepared in June 2017 by PlumChoice and the Z-Wave Alliance and deals with popular smart devices and their consumers. Topics covered include: an overview of smart home devices that are most often purchased, why consumers are purchasing them, and consumer expectations for service and support from brands. The report is useful for smart device manufacturers, retailers, and users.

(IS-2017-191) DISRUPTIVE MODELS OF HEALTHCARE FOR EUROPE
This report was prepared in May 2017 by the Friends of Europe organization and deals with disruptive innovation ideas to overhaul and improve European healthcare. Topics covered include regulatory framework for disruptive innovation, new business models, value networks for change, and seven key recommendations to reform Europe's healthcare systems. The report is useful for government officials, hospital/health centre executives, health professionals, medical technology designers/vendors, and IT professionals.

(IS-2017-190) BROADBAND Additional Stakeholder Input Could Inform FCC Actions to Promote Competition This report was prepared in September 2017 by United States Government Accountability Office (GAO) and deals with the issues facing FCC to promote the competition for broadband provision in the US. Topics covered include views of selected experts' and stakeholders' on factors affecting broadband competition, and how FCC promotes broadband competition and examines consumers' experience. The report is useful for government agencies and elecommunications companies responsible for overseeing, regulating, planning, and deployment of broadband services.

(IS-2017-189) Moving Forward: Findings and Recommendations from the Consultative Council
This report was prepared in June 2017 by the National Institute of Building Sciences and deals with the workforce and water issues facing the construction industry in the US. Topics covered include strategies for the development of skilled work force and water resources to support the building industry. The report is useful for city planners, water utility companies, construction industry professionals, and government officials seeking to understand the challenges facing US building industry and find viable solutions.

(IS-2017-188) Cisco 2017 Annual Cybersecurity Report
This report was prepared in January 2017 by Cisco and deals with growth of the cybersecurity attack surface and various strategies and perspectives to mitigate risk. The topics covered include attacker behavior, defender behavior, perceptions of IT professionals, and value chain security. The report is useful

for company owners, security equipment designers/manufacturers/vendors, IT security professionals, government officials, and general public wanting to remain current with the latest cybersecurity trends.

(IS-2017-187) ENERGY STORAGE IN GRIDS WITH HIGH PENETRATION OF VARIABLE GENERATION
This report was prepared in March 2017 by the Asian Development Banks and deals with the energy storage for the power grid in support of the expected growth in the use of renewable energy. Topics covered include grid energy storage, renewable energy, smart control systems for grid energy storage, grid integration, financial models, and policies. The report is useful for investors, developers, utility planners, power sector policy makers, and readers who wish to understand the role of energy storage in the smart grids of the future.

(IS-2017-186) THE EMERGING INDONESIAN DATA CENTER MARKET AND ENERGY EFFICIENCY OPPORTUNITIES
This report was prepared in April 2017 by the Asian Development Bank and deals with the assessment of the Indonesian data center industry in terms of energy use, energy saving potential, market trends, growth opportunities, and major challenges. Topics covered include an overview of data centres, the emergence of Indonesian data centres, energy saving recommendations, and improvements in energy performance of government data centres. The report is useful for government officials, utilities, and ICT professionals engaged in the development of datacentres.

IS-2017-185) Public ICT Center for Rural Development Inclusiveness, Sustainability, and Impact This report was prepared in August 2017 by the Asian Development Bank and
deals with with the
establishment of an ICT centre in a rural community. Topics covered include a framework to understand the rural ICT centre challenges, program types, customer profile, ICT services provided, sustainability and impact, and recommendations for rural center development. The report is useful for government officials, utilities, and ICT professionals engaged in development of rural centres.

(IS-2017-184) Deep Spatial Pyramid for Person Re-identification
 This report was prepared in 2017 by Disney Research and deals with a new, spatial pyramid- like structure method for image re-identification (the task of finding the same subject across a network of surveillance cameras). Topics covered include an overview of existing work on image re-identification, description and theoretical framework of the proposed method, experimental results from testing the new method, and a comparison of the proposed method with the existing methods for image re- identification. The report is useful for researchers, design engineers, and software developers of image re-identification technology.

(IS-2017-183) More Power to Zigbee® 3.0: The Power of Green Power Wi-Fi, Zigbee and Thread 'unmeshed' This report was prepared in September 2017 by Qorvo organization and deals with the Zigbee 3.0 and its protocol Green Power. Topics covered include Zigbee 3.0, Wi-Fi networks, thread meshing, and advantages of the Zigbee Green Power protocol in network design. The report is useful for technologists and engineers responsible for designing and implementing Zigbee 3.0 based networks.

(IS-2017-182) Cellular in the Workplace Survey, 2017 Connectivity issues are widespread This report was prepared in March 2017 by Zinwave organization and deals with employee
satisfaction regarding indoor cellular phone access in workplaces across the US. Topics covered include: in-building wireless employee experiences, who is likely to complain about poor cellular coverage, poor cell coverage in hospitals and warehouses, and a technology solution to improve indoor cellular service. The report is useful for company owners and IT professional responsible for the quality of cellular service within their organization.

(IS-2017-181) THE INTERNET OF THINGS IN THE POWER SECTOR OPPORTUNITIES IN ASIA AND THE PACIFIC
This report was prepared in August 2017 by the Asian Development Bank and deals with the Internet of Things (IoT) pertaining to the Power Sector. Topics covered include asset performance and management,

operational optimization, customer experience, case studies, challenges, and capacity building. The report is useful for Power utilities and professionals working the Power and IT sectors responsible for innovation and deployment of IoT solutions.

(IS-2017-180) Internet of Things Investment & Corporate Development Report
This report was prepared in August 2017 by Harbor Research and deals with the growth of Internet of Things (IoT) from a corporate perspective. Topics covered include mergers and acquisitions, investments, partnerships, new products, and private funding. The report is useful for owners of new and established technology companies, investors, and IT professionals responsible for deployment of IoT solutions.

(IS-2017-179) 2017 THALES DATA THREAT REPORT Trends in Encryption and Data Security
This report was prepared in October 2017 by 451 Research and deals with the retail market and its data security and encryption characteristics. Topics covered include a comparison of US and global retailers pertaining to data security, specific concerns security professionals have regarding the effectiveness of security tools and compliance mandates, and the security implications associated with new technologies such as Cloud, Big Data, IoT and Containers. The report is useful for retail store owners, data security technology vendors, and IT professional responsible for datasecurity.

(IS-2017-178) Beyond the Big Data Buzz
This report was prepared in February 2017 by Bernard Marr and deals with the importance of big data and how it is disrupting industries throughout the world. Topics covered include the Internet of Things, how business can benefit from big data, and an overview of how major industries (healthcare, retail, manufacturing, finance, education, transportation, agriculture, energy, government, hospitality, professional services, sports) are applying big data. The report is useful for company owners, big data solution providers, and information technology professionals responsible for big data management.

(IS-2017-177) Are You Prepared for a Mobile-First World? 5 Reasons to Get Ready Now
This report was prepared in March 2017 by Emarsys company and deals with key reasons why organizations should adopt a mobile marketing strategy. Topics covered include: mobile usage, mobile sales, customer retention, and customer response rates. The report is useful for organizations who are planning to deploy or enhance their mobile marketing strategy.

(IS-2017-176) Cybersecurity and the IoT— Threats, Best Practices and Lessons Learned
This report was prepared in July 2017 by Tridium Corporation and deals with an overview of Tridium's cybersecurity platform, Niagara 4, and best practices for deployment of a comprehensive cybesecurity strategy. Topics covered include security capabilities of the Niagara 4 platform and specific items to be considered when developing a cybersecurity strategy (device exposure, network security, factory defaults, system patches, ransomware protection, encryption, securing devices and systems, physical security, treat/risk assessment, people/process/technology). The report is useful for company owners and IT professionals in charge of cybersecurity.

(IS-2017-175) The State of Utilities in Smart Cities and Energy Innovation
This report was prepared in June 2017 by Zpryme research and deals with the role of the twenty largest US utility companies (in the largest metropolitan areas) in implementing smart city strategy/technologies and in supporting/driving energy innovation in their communities. Topics covered include: examples of how the largest US utility companies have contribute in to the development of in each of the three areas (smart cities, energy innovation, communities), a review of progress made in each of the three areas, and recommendations on how utilities can engage further in each area. The report is useful for leaders of utility companies and service providers to utility companies.

(IS-2017-174) IN SEARCH OF THE GREATEST UTILITY APPS
This report was prepared in 2017 by Zpryme Research and deals with mobile apps used by customers to interact with their utility companies. Topics covered include: types of utility apps, app features, utility app providers, comparison of good and poor apps based on customer feedback, and recommendations for app development and promotion. The report is useful for consumers and utilities planning to develop new apps or improve existing apps.

(IS-2017-173) Analysis of the North American Data Center Cooling Market Managing the Data Explosion
This report was prepared in 2014 by Frost & Sullivan research company and deals with the analysis of the North American (US & Canada) data center cooling technology market. Topics covered include: market drivers and restraints, forecast and trends, market share, revenues, and competitive analysis, chillers, airside components, high density modules, economizers, evaporation / direct liquid cooling solutions, and modular and containerized data centers. The report is useful for managers and designers of data centres, as well as manufacturers of data centre cooling technologies.

(IS-2017-172) Electrical Standards and Products Guide
This report was prepared in January 2017 by the National Electrical Manufacturers Association (NEMA) organization and deals with electrical products and standards. Topics covered include electrical standards, products, and manufacturers. The report is useful to individuals and organizations across a variety of industries who manufacture, deploy, use, and maintain electrical equipment.

(IS-2017-171) THE COMPLETE PLAYBOOK FOR FINANCING ENERGY EFFICIENCY
This report was prepared in November 2016 by Dexma Energy Management organization and deals with the actionable tips to help companies fund their energy projects. Topics covered include available loans, tax benefits, and subsidies for companies in UK, France, and Italy, European funding for R&D, and other sources for project funding. The report is useful for CEOs and CFOs who are responsible for managing and funding energy projects.

(IS-2017-170) Utility Solar Market Snapshot
 This report was completed July 2017 by the Smart Electric Power Alliance (SEPA). SEPA has surveyed electric utilities each year, since 2007, to track the amount of solar power interconnected to the grid. The report provides critical insights into the U.S.solar market in general, with a particular focus on utility scale development. A full data set is available through SEPA'swebsite.

(IS-2017-169) 2017 State of the Electric Utility Survey
This report was completed July 2017 by PA Consulting for Utility Dive. The report is based on a survey of over 600 utility executives from the U.S. and Canada conducted in January. The top five issues are: physical and cyber grid security; distributed energy policy; rate design reform; aging grid infrastructure; and, reliable integration of renewable and distributed energy resources. This comprehensive report covers a wide range of topics.

(IS-2017-168) Getting it Right: A More Energy Efficient Alberta
This report was completed in 2017 by the Alberta Energy Efficiency Advisory Panel. The report provides; a long- term vision for the goals and outcomes for Energy Efficiency Alberta; first- stage energy efficiency and community energy system programs; and, recommendations for education and outreach initiatives. Included in the appendices is an extensive list of resources, research and comparisons with other jurisdictions.

(IS-2017-167) How to Recognize a Good Energy Saving Measure or Project
This paper was completed in Spring 2016 by Almiranta. This paper looks at various methods for evaluating energy-saving measures and projects in order to understand the pros and cons of each evaluation tool available and to known when to use them. Simple payback, net present value, the impact of term on payback and lifespan, and the implication of grants areexplored.

(IS-2017-166) The Future of IIoT - Smart City, Utility and Telecom Convergence
This report was completed on October 20, 2016 by ZPryme analyst. It provides an overview of the 5G, Industrial Internet of Things (IIoT), and smart city ecosystem. It is based on an online survey comprised of participants from three types of stakeholders: utilities (80), telecom (106), and government (30).

(IS-2017-165) Digitising the Industry - Internet of Things Connecting the Physical, Digital and Virtual Worlds This e-book was edited by Ovidiu Vermesan and Peter Friess in 2016. It provides an overview of the current Internet of Things (IoT) landscape, ranging from R&D priorities to enabling technologies,

mainly based on the related EU funded projects. It is a comprehensive book on IoT in general, with some applications to smart building and smart home.

(IS-2017-164) The World's Top 10 Smart City Projects
This report was completed in 2016 by Smart Cities Summit. It provides a summary of top 10 smart city projects in the world: 6 in North America, 2 in Europe, 1 in Japan, and 1 in Russia.

(IS-2017-163) Safety, operation and performance of grid-connected energy storage systems
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(IS-2017-158) FROM INNOVATION TO IMPLEMENTATION: eHealth in the WHO European Region
The report was prepared in May 2016 by the World Health Organization (WHO) European Region and deals with the status of eHealth in Europe. Topics covered include: 2015 global survey on eHealth by WHO to provide insights on how eHealth is being used, major areas of eHealth development, perceived barriers to adoption, and potential areas of growth. The report is useful for health providers, private and public information technology organizations, and government.

(IS-2017-157) Beyond the Password: The Future of Account Security

The report was prepared in June 2016 by Lawless Research and deals with the state of security of electronic accounts and future trends. Topics covered include: current state of password use to secure electronic accounts, fraud statistics, multi-layer authentication, and behavioral biometrics. The report is useful for IT & Cybersecurity professionals, technology vendors, andgeneral public.

(IS-2017-156) mHealth App Developer Economics 2016: The current status and trends of the mHealth app market The report was prepared in November 2016 by Research2Guidance and deals with an overview of the global mobile app market for mobile health (mHealth). Topics such as mHealth market size, app publisher background, app development tools/APIs/SDKs/senors, performance and revenue of app developers, health insurance companies, and future trends of mHealth app development. The report would be useful to app developers, health care providers, insurance companies, and government organizations.

IS-2017-155) MMC CYBER HANDBOOK 2016 Increasing resilience in the digital economy
The report was prepared in November 2016 by Marsh & McLennan Companies. The report includes extracts, and perspectives from cyber leaders and leading third-party experts covering changes in the external cybersecurity landscape, the developments in cyber risk quantification techniques, and cybersecurity-related HR strategies. The information is useful to a wide-range of companies across all business sectors seeking to understand cyber risks and develop security strategies to address them.

(IS-2017-154) Gigaband Network Development
The report was prepared by Huawei Technologies in December 2016. The report covers strategies for building gigaband networks and is useful for Chief Technology Officers leading large scale network design projects. The topics that are discussed are cable network upgrades, FTTH deployment principles, overcoming geographical obstacles in network design, and development of broadband networks.

(IS-2017-153) The Digital Tipping Point: How do organizations balance the demands for digital and human customer service?
The report was prepared in October 2016 by Verint Systems Inc. The report provides information to business leaders on balancing the digital and human aspects of customer service strategy. The main ideas that are discussed are the tipping point between digital and human engagement strategies, influence on customer behavior, and steps to improve customers journey in a digital world.

(IS-2017-152) Market Guide for IoT Integration
The report was prepared on June 23, 2016 by the Gartner Group. The report identifies system integration as a main challenge in deployment of IoT projects. Recommendations are made to directors of integration, IoT project owners and other IT leaders for successful IoT implementation. A market analysis is presented and includes a summary IT megavendors, OT megavendors and IoT platform specialists.

(IS-2017-151) Automatic Receptacle Control to Meet ASHRAE 90.1-2010 and California Title 24 This white paper was published by NEMA in 2016. The paper describes the
changes that have been made in ASHRAE 90.1 - 2010 and California Title 24 with regards to controlling half of the receptacles in new construction with an automatic shutoff device. This device would be a time-of-day device, occupancy sensor, or a signal from an alarm system or the BAS. Greater energy efficiency will be achieved in buildings with the control of receptacles. Excerpts from the new codes are shown in the paper.

(IS-2017-150) TeleSign Consumer Account Security Report 2016
This report was published by Lawless Research in late 2016. Lawless Research was commissioned by TeleSign to conduct an online survey, filled out by 1,300 adults, on the topic of consumer account security in the United States. Questions related to consumer security practices, consumer security incidents, and companies protecting consumers' online accounts were answered by the respondents and compiled in this report. 31% of respondents value their online worth at over$100,000.

(IS-2017-149) TeleSign Consumer Account Security Report - An International Study of Digital Security Concerns and Practices

This report was published in June 2015 by TeleSign. The report summarizes the findings of a survey of US and UK mobile phone and online account users conducted by Lawless Research. The survey quantified the concerns that consumers have regarding online security and breaches, actions they are taking to protect themselves, the use of single and two-factor authentication methods, and the interest that they have in learning how to protect themselves online.

(IS-2017-148) Broadband Outlook 2016
This report was completed in 2016 by Telecoms.com Intelligence. It outlines some of the key technologies currently affecting the broadband delivery industry. The topics of digital transformation, next generation access (5G and Fibre), and network functions virtualization are explored. Over 600 communications service providers and infrastructure professionals took part in a survey regarding these three topics and the results are analyzed in this report.

(IS-2017-147) The Greatest Energy Story You Haven't Heard
This paper reviews the benefits of energy efficiency programs. Since 1980 the US economy grew by almost 150% while energy consumption increased 26% eliminating the need for constructing more than 300 electric power plants while saving the average household $460 in 2015. This paper recommends additional investments in energy efficiency and policies.

(IS-2017-146) IoT 2020 Business Report - The future of the Internet of Things: From sensor to business sense This brochure from Schneider Electric describes a range of applications and benefits from incorporating Internet of Things (IoT) into products. Circuits within devices will enable connectivity locally and to the cloud for the "speedy delivery of meaningful information at the right time" with improved insights from the data gathered. IoT will benefit energy efficiency, asset optimization, profits, and risk mitigation. Best practices for IoT are presented.

S-2017-145) Choosing video wall technology based on your priorities
This brochure introduces technologies for creating large wall-size displays. The factors that affect the choice of technologies are presented. Some of the options mentioned include a large screen composed of micro tiles, LED tiles, LCD panels, and LED cubes using DLP projectors. The seamlessness of the display and lifetime performance are discussed.

(IS-2017-144) Data Protection and Breach Readiness Guide
The document is a guide for companies to perform a risk assessment on how to handle a data breach while maintaining good relations with customers as stewards of the customers' data. 93% of data breaches in 2015 could have been prevented. The average cost of a breach is $154 per record. Companies are urged to develop a plan "that evaluates data from acquisition through use, storage and destruction" and "Only collect and retain data that has a business purpose."

(IS-2017-143) Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic, and Environmental Benefits
This paper examines the potential saving of about $65 billion per year by 2050 in total electricity consumption through energy efficiency programs for appliances and lighting. The biggest savings will come from water heaters, air conditioners, and clothes driers. Suggestions are proposed for actions such as rule-making by the US Department of Energy. As an example, the average electricity cost for a refrigerator dropped 75% since 1972 while the volume increased and the appliance cost fell.

(IS-2017-142) 2016 U.S. HOUZZ BATHROOM TRENDS STUDY
This market study by Houzz (web site) reports on trends in bathroom renovations. Most of the changes affect fixtures and finishes for walls, floors, and counters. Most of the functional focus in on lighting. About 8% include electronics added to the bathroom. High tech fixtures include toilets (20%), bathtubs (12%), and showers (9%).

(IS-2017-141) Digital customer centricity - A requirement for utilities
This presentation describes how digital data can help utilities migrate from a focus on customer billing to

personalized customer service. Utilities need customer data in order to become customer centric with three facets: convenience, context, and personalization. Utilities are cautioned "to continuously improve and evolve" customer interactions.

(IS-2017-140) Competition and norms: A self-defeating combination?
This paper examines motivations for consumers to conserve electricity and heat. The study was done on students who did not pay directly for these utilities. The prime motivation was feedback and norms (comparison to community standards), rather than competition for a prize. Details of a survey of 89 dormitory residents are presented.

(IS-2017-139) Internet of Things — Savings and Operational Efficiencies for the Industrial/Warehouse Environment
This paper reports on a survey of 213 professionals involved in warehouses and distribution centers about how they think the Internet of Things (IoT) will impact energy usage by their businesses. About 1/4 of those surveyed in medium and large businesses do not know their energy consumption. However, most want to reduce costs. Employee productivity is related to proper lighting andairconditioning.
Most have heard of IoT, think it is coming, but are not planning to adopt.

(IS-2017-138) Dynamic lighting system for the learning environment: performance of elementary students
This article from the Optical Society of America examines the impact of the color spectrum (measured in degrees Kelvin (K)) of classroom lighting on student performance. The key finding is that "three lighting presets–3500 K, 5000 K, and 6500 K–are suggested for easy, standard, and intensive activity, respectively." The detailed methodology of the study isdescribed.

(IS-2017-135) IoT Enabled Smart Buildings Market
Smart buildings are increasingly being enabled by the Internet of Things (IoT) and made functional by the ongoing convergence of operational technology (OT) systems and information technology (IT) systems in buildings. With IoT, a host of new elements such as the cloud, remote access, data sharing and analytics, and connected and shared networks are becoming an intrinsic part of a smart building's operational dynamics, fundamentally changing how buildings are used and operated. This market insight takes a look at the specific trends, challenges and opportunities associated with IoT and SmartBuildings.

(IS-2017-134) Global Virtual Power Plant Market, Forecast to 2022
This research service analyzes the Virtual Power Plant (VPP) market by end users (demand management, power trading), region (North America, Europe, Asia-Pacific, and Rest-of-world), trends, and revenue forecast till 2022. VPP promises significant improvements in grid reliability and resilience and early adoption has taken place in Western Europe and North America. This research service hopes to solve issues around peak power demand and facilitate the adoption of distributed energy resources. This study also discusses key trends and analyzes the implemented business models (supply-side, demand-side, and mixed-asset models) for VPP across the globe.

(IS-2017-133) North American BEMS Market, Forecast to 2021
The Building Energy Management Systems (BEMS) is an exciting market in North America that is poised for healthy growth for the next 5 years. BEMS is primarily driven by the trend of high peak demand charges, customers' commitment towards sustainability, and state incentives for buildings installed with energy management systems. The market will be characterized by increased connectivity, bringing deployment of the Internet of Things (IoT) solutions, data analytics, cloud solutions, and technology-enabled business model innovation. New entrants and emerging participants will change the market dynamics by adopting customer- centric business models. The building energy management systems (BEMS) market has witnessed a healthy growth rate in 2016 and has earned revenue of $822.8 million having grown by 5.1% from 2015. Frost & Sullivan has segmented the market based on solutions offered by participants such as hardware, software and services, and also based on end-user verticals such as industrial, office, retail, hospitality, healthcare, education, government, and utilities.

(IS-2017-132) Winning Solutions and Applications in the Connected Homes Market
This research service takes a detailed look at two of the most dynamic segments of the connected home

and connected living ecosystem, namely connected health and connected security. Security and home monitoring is already one of the core elements of the connected home; and connected health is poised to drive the next wave of growth beyond 2020. For each of these dynamic application areas, this study looks at key trends and growth opportunities, winning business models, and the leading market participants driving the markets forward.

(IS-2017-131) Digital Demands: Exceeding Customers' Ever-Changing Digital Expectations Through Billing This report by Inlet explores new opportunities for innovation and partnerships that enable utilities to readily deliver billing to enhance customer digital experiences. Through two comprehensive surveys— one focused on 3,000 customer responses and one completed by 115 utility representatives—this report explores the evolving digital desires of customers, and how utilities are embracing cost-effective and innovative approaches to exceed the digital experience demandedbycustomers.

(IS-2017-130) New York City's Energy and Water Use 2013 Report
Six years ago, as part of its efforts to cut carbon emissions from New York City's largest source, energy used in buildings, the City of New York launched a groundbreaking initiative to determine how much energy its largest buildings use. This report focuses on the 2013 energy and water usage reported in 2014 in New York City.

(IS-2017-129) Up-tower gearbox repairs in the North American market
This report focuses on two companies at the frontline of up-tower gearbox repairs in the North American market: EDF Renewable Services and Moventas. Also discussed in this report paper are the technological breakthroughs and market trends anticipated in up-tower gearbox repairs over the next fiveyears.

(IS-2017-128) NSCA Electronics Systems Outlook: Winter Edition
This report looks at changes in the United States economy and increase in interest rates and how this impacts the future of the construction market, real estate markets and virtual markets. This NSCA report takes an in-depth look at each of these areas currently, as well as predicts future trends.

(IS-2017-127) In The Matter of International Comparison Requirements Pursuant to the Broadband Data Improvement Act
 This is the International Bureau's fifth International Broadband Data Report. In this Report and its appendices, the Bureau presents a number of data points, including fixed broadband deployment data in the US and the European Union, advertised and actual fixed broadband speeds in 40 countries around the world, and broadband prices (both fixed and mobile plans) across the same40countries.

(IS-2017-126) The Future of the TMT Workplace
This report is the second in a series of reports co-produced by Cushman & Wakefield and Unwork on the future of work, workplace and real estate strategies in different sectors. This report identifies how workplace strategies are adjusting to the threat of digital disruption; how leading players have structured their operations across different geographies; and how workplaces are adapting to accommodate greater convergence and overlap between technology, media and telecoms.

(IS-2017-125) Associations of Cognitive Function Scores with Carbon Dioxide, Ventilation, and Volatile Organic Compound Exposures in Office Workers
This report outlines the findings of study done by Environmental Health Perspectives. In this study, they simulated indoor environmental quality (IEQ) conditions in "Green" and "Conventional" buildings and evaluated the impacts on an objective measure of human performance – higher order cognitive function.

(IS-2017-124) Utilities and Electric Vehicles - The Case for Managed Charging
This report was completed April 2017 by the Smart Electric Power Alliance (SEPA). This report explores the benefits of utility managed EV charging which provides better load management through the reduction of peak load increases, and reduces the overload impacts on transformers and substations. A number of factors are discussed including rate structures, communication/education, protocols, standards, infrastructure and technology. References to additional resources are provided.

(IS-2017-123) Artificial Intelligence and the Internet of Energy
This paper was completed in 2017 by SparkCognition. The paper provides a framework how artificial intelligence (AI) and machine learning (ML) can increase cyber security and provide better data driven decision making. The Internet of Energy (IoE) can be broadly defined as the upgrading and automating of electricity infrastructures, making energy production more clean and efficient, and putting more power in the hands of the consumer. This paper discusses how to apply ML analytics to generation, transmission & distribution, energy trading & Risk Management, and cyber-security in the utilities industry to create the IoE.

(IS-2017-122) North American Data Center Equipment Integration
Prior to the dawn of the data center infrastructure management (DCIM) era, monitoring was conducted manually within a traditional data center, essentially with separate management solutions provided for each type of equipment in the building. Integral to the equipment in the data center is the ability to monitor it on a regular basis and to provide adequate tools for pre- emptive problem solving. Frost & Sullivan 2014.

IS-2017-121) A Customer Perspective of the Present and Future of Physical Security and Building Technologies in the Retail Industry
This study's research objective is to gauge the usage of building technologies and physical security technologies within United States retail chains. The data was collected in August 2011, using a web-based survey. The sample consisted of 182 managers. The study examines technologies including access control systems: keypads, card readers, and analog video surveillance that help minimize threats. Frost & Sullivan, March 2012.

(IS-2017-120) Understanding the Growth Potential within the Building Technologies Market
The main objective of this study was to identify levels of familiarity with 12 building technologies, measure their usage rates and evaluate the impact that one has on the other. Moreover, the following research attempts to determine which building technologies have the highest and the lowest growth potentials, based on the current usage and likelihood of adoption rates. Frost & Sullivan, August 2013.

(IS-2017-119) Energy Information Management—Practices and Technology Assessment The need to collect, analyze, and convert energy data into usable information in order to
improve energy efficiency, decrease the impact on the information, and make better decisions are driving demand for energy information management solutions. This study evaluates the factors impacting this emerging market as well the benefits of these solutions and the challenges the industry is facing. Frost & Sullivan, November 2012.

(IS-2017-118) Smart Homes & REALTORS
The report was prepared in November 2016 by the Center for Realtor Technology Labs (CRT Labs) and includes survey data from 3495 residential realtors in the US regarding smart home technology. The main questions covered by the survey include: realtor's interest in smart home certification, importance of smart home devices and functions to clients, technology issues with smart home devices, smart home devices clients are interested in along with preferences, and familiarity with smart home products. The information in the report is useful for home owners, realtors, and manufacturers of smart home devices.

(IS-2017-117) Implementing the Energy of Buildings Performance Directive 2016
The report was prepared in April 2016 by Concerted Action EPBD and reviews the progress made from 2011 to 2014 on making European buildings more energy efficient. Topics that are covered in detail include energy performance certification, inspection of air conditioning and heating systems, training of energy experts, energy performance requirements for cost-optimal levels, progress towards new Nearly Zero-Energy Buildings, compliance and control issues for inspection, and the effectiveness of support initiatives for the EPBD directive. Individual energy performance reports are included for countries in the European Union.

(IS-2017-116) Domain Industry Data and Canadian Internet Trends: CIRA Internet Factbook 2016
The report was prepared in December 2016 by the Canadian Internet Registration Authority (CIRA) and

covers global and domestic trends in Internet growth and use. In depth information is presented on Canadian's use of the Internet, where .CA ranks in the rapidly-changing domain market, and information about the ever-changing world of digital security. The report is useful for individuals as well as public and private organizations who are currently engaged, or are planning to engage, in the digital economy.

(IS-2017-115) Transactive Energy Application Landscape Scenarios
The paper was prepared in December 2016 by the SGIP industry consortium and presents an analysis of the transactive energy (TE) applications. TE is defined as system of economic and control mechanisms allowing balance of supply and demand across an electrical infrastructure. The report examines the transactive process, business functions, actors in different smart grid (SG) application domains, and time scales. Operational scenarios are presented and enable TE interactions to be explored. The content of the paper is useful to utilities, regulators, and policymakers.

(IS-2017-114) High-Tech Nation: How Technological Innovation Shapes America's 435 Congressional Districts The report was prepared in November 2016 by the Information Technology and Innovation Foundation and examines the innovation economy in 435 U.S. congressional districts, 50 states, plus the District of Columbia. The factors that are examined include exports of high-tech goods and services, workforce education and skills, innovative ideas, and digital infrastructure. The report can be useful to policy makers / government officials and private industry planning to establish a new branch or a new company in the US.

(IS-2017-113) Everything the U.S. Government Is Doing to Help the Private Sector Build the Internet of Things The report was prepared on December 12, 2016 by the Centre for Data Innovation and covers the initiatives by the US government to support the private sector to build the Internet of Things (IoT) economy. The initiatives discussed include technical resources, cybersecurity, regulations, spectrum availability, supporting research and development, and coordination of stakeholders. The report is useful to IoT companies wanting to grow their business and benefit fromgovernmentinitiatives.

(IS-2017-112) Distributed Generation Task Force Recommendation Report
The report was prepared on March 17, 2017 and deals with the benefits to Ontario resulting from the distributed solar industry to move away from the current Feed-in Tariff (FIT) regime and into a net

metering based framework. The benefits include conservation/demand measurement, flexible resourcing, supply-mix diversification of energy sources, and customer engagement. An overview solar energy and net metering is provided. The report is of benefit to the public and private energy companies, as well as energy consumers.

(IS-2017-111) Through the Eyes of Cyber Security Professionals: Annual Research Report (Part II)
The report was completed in December 2016 by Enterprise Strategy Group (ESG) in collaboration with the Information Systems Security Association (ISSA). The report summarizes the of input of cyber security professionals on the state of their profession focusing on strategies, tactics, skills, and challenges. Further information is provided on vulnerability of organizations to cyber attacks, cybersecurity skill shortage, and government's role in cybersecurity.

(IS-2017-110) Securing Smart Airports
The report was completed in December 2016 by the European Union Agency For Network And Information Security. The report deals with strategies to improve the security and resilience of smart airports, including air traffic management. The report is intended for CISOs, CIOs, IT Directors and Head of Operations. The main components covered include cybersecurity of smart airports, assets, threats, risk analysis, good security practices, gap analysis, and recommendations for improvement.

(IS-2017-109) Security of Mobile Payments and Digital Wallets
The report was completed in 2016 by the European Union Agency For Network and Information Security. The report covers mobile payment platforms (Android Pay, Apple Pay, Samsung Pay), potential risks, and security recommendations. Detailed information is provided on risk management and risk mitigation strategies.

(IS-2017-108) The Great Workplace Space Race - How Successful Enterprises are Solving Spatial Challenges
This report was completed in 2016 by iOffice. The report outlines the importance of optimizing workspaces as real estate availability for business expansion continues to be limited. The report discusses how successful enterprises have used space management software to solve spatial availability challenges. The software calculates optimal layout plans, helping companies to realize workspace transformation solutions that are satisfactory for all employees, and are economical, sustainable and promote innovation.

(IS-2017-107) Mastering Building Code Challenges
 This paper was completed in 2016 by Owens Corning and Green Builder Media. It discusses how builders and manufacturers can work together to build high-performance, cost effective homes that exceed building codes. There are several case studies showcasing examples of manufacturers partnering with builders to build quick- selling, low-maintenance, high- performance homes.

IS-2017-106) Scaling Up Smart Meter Operations: Challenges and the Way Forward for UK Energy Utilities This white paper was published by Cognizant in July, 2016. The UK government is replacing 53 million smart electricity and gas meters by 2020. The paper highlights the benefits and challenges that UK utility companies will encounter while attempting to roll out their smart metering infrastructure and services to millions of customers. Recommendations on how to improve business, technical and operational functions are given.

(IS-2017-105) Best Practices for Integrating Mobile into the Access Control Architecture
This white paper was released by HID in October, 2014. The paper suggests several factors that should be considered when choosing a mobile access solution. The solution must work with the latest mobile device technologies and be capable of evolving with the industry, and the user experience must be equal to or better than physical cards for widespread acceptance to be adopted.

(IS-2017-104) Assessing the potential and market uptake of Demand-Side Flexibility in the European energy system
This paper was published by SEDC in July, 2016. The paper suggests indicators that should be used by the EU (Energy Union) to assess and monitor the market uptake and potential of Demand-Side Flexibility. Realistic benchmarks and objectives are also suggested to help track the progress of Demand- Side Flexibility development on the ground.

(IS-2017-103) The 2017 Vision for the Security Industry - Megatrends
This paper was published in December, 2016 by SIA (Security Industry Association) after the SNG (Securing New Ground) conference. The SNG aims to look at future trends that will shape the security industry. The paper presents 10 megatrends, taken from the SNG, for the security industry to absorb and incorporate into planning for the coming year.

(IS-2017-102) Meeting EBA Guidelines for Internet Payment Security with Mobile-Based Authentication
This paper was published by Goode Intelligence in September, 2015. It explores the "implications for Payment Service Providers of European Payment Authentication and Security Guidelines." To help the PSPs choose the right solution that meets the guidelines across a broad range of payment scenarios, mobile-based identity solutions can be used. The mobile phone number, mobile device and the user's mobile activity behavior are three components used to authenticate theuser.

(IS-2017-101) The evolving role of TV and media in consumers' everyday lives
This article was published by Ericsson Consumerlab in November, 2016. They have found that TV and video viewing time has increased due to an increase in mobile viewing, younger viewers spend far less time watching live and linear broadcasts than older viewers do, consumer spending on Video on Demand services has increased in the last few years, and they suggest that future TV and video services will be tailored to suit the wants of Mobile Centrics and ScreenShifters.

(IS-2017-100) Lighting Application Guide for K-12 Classrooms
This application guide was published by the Lighting Controls Association in 2016. The guide outlines various lighting control design strategies for K-12 classrooms. The convenient and flexible lighting control systems enable teachers to establish optimal learning environments with lighting conditions for a wide variety of visual needs in modern classrooms. The lighting system strategies also facilitate the reduction of operating costs through the use of sensors for occupancy detection and daylight-responsive controls.

(IS-2017-99) Pedal to the Metal: Mitigating New Threats Faster with Rapid Intel and Automation
This report was published by MeriTalk on May 14th, 2016. It summarizes the Intelligent solutions that some Federal agencies are using to mitigate and protect against cyber attacks. MeriTalk surveyed 150 Federal security operations employees and found that many agencies are too slow in responding to threats and are not using an automated approach of detection, analyzing, protecting and mitigating threats.

(IS-2017-98) The Future of Internet Video
This eBook provides seven articles discussing the future of internet video. Across these seven articles the main topics addressed are improvements to video quality and improvements to live streaming and buffering.

(IS-2017-97) Energy Efficiency Jobs in America
This white paper provides a comprehensive analysis of energy efficiency employment across all 50 states. A look at what cities provide the most energy efficient jobs, as well as a look into these jobs, are discussed, as well as other relevant findings surrounding this industry.

(IS-2017-96) The Future of Mobile Service Delivery
 In conjunction with F5 Networks, Heavy Reading undertook the task to create a detailed survey designed to provide both a broad and granular view of the state of mobile service delivery. The results and key findings of this survey are outlined in detail in this report.

(IS-2017-95) Pyramid Research Predictions 2016: Global and Regional Outlook in the Information, Communications and Technology Industry
This white paper from Pyramid Research provides predictions for the future of the information, communications and technology (ICT) industry. Themes and predictions are discussed on a global level for the ICT industry and also broken down on a regional level covering Africa, the Middle East, the Americas, Asia Pacific and Europe.

(IS-2017-94) McKinsey on Industrials: A Phoenix Ready to Rise Again?
This report provides a comprehensive assessment of the sector's historical performance and outlook. It begins with an analysis of the overall sector's performance over the past 15 years and closes with the McKinsey perspective on the sector going forward and the strategies Industrials companies can deploy to reignite value creation.

(IS-2017-93) 2016 Cloud Migration Survey: Cloud Migration Challenges and Best Practices
This benchmark survey presents challenges and best practices of companies that have already migrated or are looking to migrate their servers to the cloud. The results presented here are based on responses from 258 IT professionals from around the world, collected through an online survey during January-March 2016.

(IS-2017-92) Guide to the Open Cloud: Current Trends and Open Source Projects
This third annual Guide to the Open Cloud aims to help companies stay informed on the latest open source cloud technologies and trends. The Linux Foundation's cloud experts have curated a list of the most useful, influential, and promising open source projects with which IT managers and practitioners can build, manage, and monitor their current and future mission-critical cloud resources.

(IS-2017-91) The Fraud Report: How Fake Users Are Impacting Business
The purpose of this report is to understand the scope of registration fraud, and how this epidemic is

impacting companies and their users. It offers a glimpse into how companies verify and protect their users, and the damage that can be done when fraudulent users and fake accounts are allowed to exist within a user base.

(IS-2017-90) Smart Hospitals: Security and Resilience for Smart Health Service and Infrastructures
This report looks at the effect of the Internet of Things (IoT) on hospitals, creating what can now be deemed "smart hospitals." Analyzed in this report are the threats made on smart hospitals, which can be both malicious and human error, and the steps hospital executives can take to prevent them.

(IS-2017-89) Strategic Five-Year Technology Investment Plan for Aviation Security
The Transportation Security Administration (TSA) Strategic Five-Year Technology Investment Plan provides relevant background information, describe TSA's framework for technology investment, delineates the current security technology profile as it exists today, and explores technical initiatives and partnerships that will lead to the Airport of the Future.

(IS-2017-88) Amplifying Human Potential Towards Purposeful Artificial Intelligence
Infosys published 2017 guidelines for practical AI applications and implementations for CIOs. The guidelines identify current levels of AI adoption in the enterprise; and offers decision maker perspectives; along with analysis of future market disruption. Fundamentally, the guidelines recommend a holistic view to AI adoption, suggesting how organizations can apply an array of technologies across a wider number of areas, including human resources, along with examining the potential synergies that AI can offer and anticipated ROI benefits.

(IS-2017-87) Today's Workforce vs the Future Workforce Global Report
Penn Schoen Berland conducted workforce surveys across multiple industries between April and May 2016. This report summarized the key findings of advances in communications, smart workplace technologies and emerging lifestyle trends. The outlook determines the future workforce will be mobile, productive and more capable.

(IS-2017-86) The Workplace Advantage - Why the Office Environment is Key to Productivity
Stoddart Review Group interviewed workplace SMEs in 2016 with a focus on productivity, in order to provide insight and an outlook on complex issues. Stoddart's paper provides an evidence-based executive briefing on the role of workplace in the performance and profitability of businesses. To gain competitive advantages, companies must invest financially and intellectually in "people-centric hollistic workplaces". New business models are reliant on different behaviors and they amplify criticality of social infrastructure as a catalyst for collaboration.

(IS-2017-85) ICT Trends vs Technologies 2016
Capita IT Enterprise Services conducted a 2016 online quantitative survey and qualitative interviews with ICT decision makers across multiple industries, with in-depth analysis of key technological trends, including: IoT, wearables, Big Data, AI and robotics, cloud-based solutions, 3D printers, VR, and the digital workplace. The report highlights how businesses perceive the trends and which emerging technologies offer the opportunity to get ahead, and which of them organizations are willing and able to adopt.

(IS-2017-84) Wi-Fi Calling and The Next Generation of Wireless Services
This is a 2016 eBook from the editors of FierceWirelessTech focused on state-of-art Wi-Fi. The topics cover VoLTE interconnection and roaming, and best practices for assuring carrier-grade services and Wi-Fi calling.

(IS-2017-83) Five Essentials of World-Class Creative Operations
This The paper provides a prescription to achieve optimal deliverables in a fast-pace environment by understanding and gaining control of the most essential aspects of creative production, including: (1) file storage, (2) review and approval, (3) collaboration, (4) security and (5) digital rights protection.

(IS-2017-82) Improving Organizational Productivity with Building Automation Systems
This $150,000 USD research project, undertaken by the National Research Council, involved the review and synthesis of a vast body of published work in the fields of business, engineering, and psychology. The results enable organizations to evaluate multiple organizational productivity metrics against benchmarks, and to compare the demonstrated benefits of better buildings strategies to other corporate investments designed to improve these metrics. This project is the first phase of a multi-phase approach to identifying specific mechanisms by which building systems can improve workplace environments and organizational productivity.

(IS-2017-81) New Building Automation Technology Means ROI for Retailers
This is a 2016 Schneider Electric report by Gina Elliott, MBA. The report identifies various cost savings enabled by building automation technologies in retail industries. Retailers operate with thin profit margins while they are one of the largest users of energy. With state-of-the-art building automation systems, it is possible for retail businesses, using leased facilities, to achieve energy cost reductions totalling as much as 30% with additional benefits in operational savings.

(IS-2017-80) Unified Facilities Criteria (UFC) - Cybersecurity of Facility-related Control System
This is a 2016 DoD Unified Facilities Criteria (UFC 4-010-06) published by the Naval Facilities Engineering Command. The document provides requirements for incorporating cybersecurity into the design of facility-related control systems. UFC system provides planning, design, construction, sustainment, restoration, and modernization criteria, which applies to military departments, defense agencies, and DoD field activities. UFC shall be used for all DoD projects and work for other customers where appropriate.

(IS-2017-79) 2016 Smart Built Environment - Resource Guide
This is a 2016 Smart Built Environment Resource Guide published by Gabrielle Stoop. This guide provides readers with quick facts about European green and sustainable building and construction markets, complied by the Commercial Specialist in U.S. Embassies and designed to help readers with international expansion responsibility.

(IS-2017-78) Redefining the Executive View of Facility Management (FM)
This is a 2016 IFMA report by Richard Kadzis. The report identifies the emerging new role of Facility Management (FM) Executives in strategic planning and operations. The changing roles take many forms and ultimately have an effect on the perception of FM by C-Suite executives and industry success in positioning itself as a valued strategic partner to the business beyond facility technical day-to-day operations.

(IS-2017-77) IoT Smart Building Solutions Transform the Workplace
This is a 2016 Forrester Research report by Michele Pelino and Andrew Hewitt. The report discusses IoT-enabled digital transformations as driver for business growth. The report focuses on Infrastructure and Operations executives role in supporting energy efficiency, enhanced employee productivity, and transformed work environments.

(IS-2017-76) Emerging Energy Trends Regulatory Responses to Ontario's Energy Future
This report was completed in December 2016 by Mowat Centre for the Ontario Ministry of Energy. This report explores the role of distributed energy resources (DER) in energy distribution systems. Reviewing a range of international studies on impact of DER, the paper suggests the potentially revolutionary nature of the DERs should be governed through economic regulatory principles in three specific areas: planning, utility regulation/business model, and ratemaking. Applicability to the Ontario market is a particular focus of this report.

(IS-2017-75) Background Report on the Ontario Energy Sector
This report was completed in December 2016 by Mowat Energy for the Ontario Ministry of Energy. This Background Report on the Ontario Energy Sector describes the legal framework under which the Ontario energy market operates, the regulatory environment, the policy context and the relevant history. This comprehensive report enables readers to better understand the complexities of the Ontario energy distribution system.

(IS-2017-74) Energy Innovation Policy: Priorities for the Trump Administration and Congress
This report was completed in December 2016 by Information Technology & Innovation Foundation. This report highlights the need for the United States to invest in energy innovation and infrastructure to secure its competitive economic future. The paper discusses: the need for five types of institutional reform; priority setting and technology missions; and, the importance of funding energy innovation, including proposed

(IS-2017-73) Economic Value of the Integration of Consumption Preferences in Electric System Planning
This report was completed in December, 2016 by the Home/Building/Industry-to- Grid Domain Expert Working Group for SGIP. The emergence of smart grid technologies, improved methods for communicating prices, and greater variability of outputs from energy sources challenges the traditional, regulatory administered, closed system electricity pricing model. This report argues the traditional utility structure needs to incorporate or replicate market-driven price incentives to avoid diminishing the potential benefits of emerging technologies.

(IS-2017-72) The Sustainability of Net Metering
This report was completed in November, 2016 by Meridian Energy Policy for Electric Markets Research Foundation. This paper provides an understanding of how net metering affects the costs and revenues for operating and maintaining rooftop solar photovoltaic systems on the electricity system. Two interactive models were developed that quantified the benefits of displaced marginal costs, reduction of equipment loading, and the impact of increased market penetration.

(IS-2017-71) Towards an Intelligent Power Network with Internet of Things (IoT)
The paper from Clemson University explores the possible impact of device-to-device communications on future power grids. The authors project a future where all devices use the same communications protocol and all cooperate to exchange data locally and with cloud services to improve grid operations and to accommodate distributed energy resources (DER). This paper is very optimistic and concludes, "IoT offers a new era full of opportunities in moving toward the vision of the intelligent power network."

(IS-2017-70) U.S. HOUZZ SMART HOME TRENDS STUDY
Houzz.com and CEDIA (Custom Electronic Design and Installation Association) surveyed almost 1000 people renovating homes. About 45% installed some automation. Preferred systems were security, entertainment, climate control (especially thermostats), and lighting. 25% used voice recognition; 30% used a central controller. Top reasons for not automating were lack of interest, cost, and concerns for loss of privacy.

(IS-2017-69) Considerations for a Multidisciplinary Approach in the Engineering of Trustworthy Secure Systems This report from the U.S. National Institute of Standards and Technology (NIST) is a handbook for measures that can be taken to improve the cyber security of systems. The objective is to design engineering system that can be trusted. Secure systems are defined as having "the freedom from those conditions that can cause loss of assets with unacceptable consequences." A thorough systems engineering approach is presented.

(IS-2017-68) NRC's Executive Summit on the Cities of the Future
Report on NRC on day Executive Summit on the Cities of the Future in Toronto, ON and the advance online inputs received as well as the discussions that took place during the Summit. It is intended as a record of the meeting, to be used by NRC as it moves to the next phase in identifying national R&D opportunities and potential partners to accelerate the development of game-changing technologies that could help transform our cities.

(IS-2017-67) OpenADR 2.0 Demand Response Program Implementation Guide
The target audience for this guide is utilities planning to deploy Demand Response (DR) programs that utilize OpenADR 2.0 for communicating DR event related messages between the utility and downstream entities, and the manufacturers of equipment that facilitate that communication exchange. It is assumed that the reader has a basic conceptual understanding of both demand response and OpenADR

2.0 (referred to simply as OpenADR from this point forward).

(IS-2017-66) Boston Community Energy Study
The Boston Community Energy Study explores the potential for local energy generation, district energy and microgrids. The Study is a collaboration between The Mayor's Office of Environment Energy and Open Spaces, the Boston Planning & Development Agency (BPDA), MIT Sustainable Design Lab and MIT Lincoln Laboratory.

(IS-2017-65) Ontario's Five Year Climate Change Action Plan 2016 - 2020
This report was completed in 2016 by the Environment and Climate Change. This report explores Ontario's Five Year Climate Change Action Plan 2016 - 2020 that aims to fight climate
 change in Ontario and its implications. The report details actions that will be taken by the Ontario government and the economic opportunities presented through developing and delivering clean technology solutions and products to the world. The plan addresses issues of energy efficiency and carbon emissions for buildings and aims to set lower carbon standards for buildings. It will invest in supporting the shift to low carbon technologies in buildings and homes and provide incentives for retrofits.

(IS-2017-64) NO MORE WAITING ROOM: THE FUTURE OF THE HEALTHCARE CUSTOMER EXPERIENCE
The paper was completed in November 2016 by West Monroe Partners and deals with key factors that are shaping customer experience in healthcare. Factors such as communication with patients, patients data privacy, and business technology are examined. The growing use of of mobile apps and web portals by patients to access medical information is discussed.

(IS-2017-63) Market Guide for IoT Integration
The paper was published on June 23, 2016 by Gartner Inc. and deals with the integration issues and project requirements within the context of IoT implementation. The IoT integration capabilities across six categories of information technology solutions are assessed: information technology megavendors, operational technology megavendors, IoT platform/edge specialists, integration specialists, API management specialists, system integrators.

(IS-2017-62) Future-proofing the Connected World: 13 Steps to Developing Secure IoT Products
The paper was completed in October 2016 by the Cloud Security Alliance (CSA) and provides a guide that companies should follow to design secure Internet of Things (IoT) products.
Consideration is given to development methodology and environment, desired security features, privacy protection, hardware design, protection of data, security of application and services, protection of logical interfaces, secure updates, authentication, key management, logging, and security reviews.

(IS-2017-61) The Greatest Energy Story You Haven't Heard: How Investing in Energy Efficiency Changed the US Power Sector and Gave Us a Tool to Tackle Climate Change
The paper was completed in August 2016 by the American Council for an Energy Efficient Economy ACEEE and deals with energy efficiencies in the US power sector. The key items that are discussed include the role of energy efficiency in climate control, energy efficiency as a source of electrical power, the benefits of investing in energy efficiency, and the role of policies that support energy efficiency.

(IS-2017-60) Digital transformation in Canadian enterprise: Profound change on the horizon The paper was completed on June 13, 2016 by International Data Corporation (IDC) and deals
with the growth of the digital economy and its impact on the creation of new services, products, and business models. The importance of five interrelated technologies (Cloud Computing, Cybersecurity, Big Data, Hyper-connectivity, Internet of Things) on business model transformation is presented.

(IS-2017-59) IoT 2020 Business Report The future of the Internet of Things: From sensor to business sense The paper was completed in April 2016 by Schneider Electric and deals with five future predictions for the Internet of Things (IoT). The five predictions include use of mobile devices for IoT deployment, leveraging IoT for service improvement and tracking customer behavior, leveraging of site-to-cloud computing platforms, and systems integration. Immediate value of IoT and best practices are also

discussed.

(IS-2017-58) FIVE ESSENTIALS of World-Class Creative Operations
The paper was completed on April 5, 2016 by GlobalEdit and deals with five essential tasks to improve work processes and productivity of organizations. The tasks covered include centralization of assets, simplification of reviews and approvals, streamlining collaboration, security, and protection of digital assets.

(IS-2017-57) From Smart Devices To Smart Systems: The Keys To Catalyzing Smart Home Adoption The report was completed on July 25, 2016 by Harbor Research and deals with
main factors affecting
smart home adoption. Several key concepts are considered including the drivers of adoption (equipment manufacturers, telecom providers, retailers, and other service providers), restraining factors (security, privacy, complexity, lack of integration, poor user experience), ecosystem /supplier trends, and need for collaboration among various stakeholders. The Ayla's Agile IoT platform is introduced as a viable smart home platform.

(IS-2017-56) 2016 Data Protection and Breach Readiness Guide
The report was prepared in May 16, 2016 by Online Trust Alliance and deals with strategies for small and large companies to enhance their data security, adopt responsible privacy practices and be prepared for a data breach incident. The main topics covered include risk assessment, security best practices, data lifecycle, incident response, cyber insurance, notifications, training, testing, budgeting, and regulatory issues.

(IS-2017-55) PYRAMID RESEARCH PREDICTIONS 2016 Global and Regional Outlook in the Information, Communications and Technology Industry
The report was completed in January 2016 by Pyramid Research and deals with global themes and predictions for 2016 in the Information & Communications Technology (ICT) sector. The main global themes reviewed include telecom's service revenue, mobile growth areas, trends for pay-TV subscriptions, next generation networks, service and content convergence, competitiveness of Internet giants (Google, Apple, Facebook, Amazon), network and cloud services, and the Internet of Things. The report also provides specific ICT insights for Africa / Middle East, Americas, Asia Pacific, and Europe.

(IS-2017-54) Strategic Five-Year Technology Investment Plan for Aviation Security
The Transportation Security Administration (TSA) Strategic Five-Year Technology Investment Plan aims to achieve a shared vision among Congressional, Industry, Department of Homeland Security (DHS), and TSA stakeholders to address security technology needs, deploy cutting- edge security capabilities, and increase efficiency and security effectiveness in American aviation security.

(IS-2017-53) The Digital Tipping Point: How do organizations balance the demands for digital and human customer service?
This white paper by Verient seeks to answer the question: How do businesses get the balance right between digital and human customer service? To do this, more than 24,000 respondents across 12 countries were questioned by Opinium Research LLP, a UK-based research agency. Verint additionally polled more than 1,000 businesses as part of the study. The key findings from those polled are analyzed in this white paper.

(IS-2017-52) Wi-Fi Calling and the Next Generation of Wireless Services
In this ebook from FierceWirelessTech, they delve into Wi-Fi calling technology and opportunity, with the goal of highlighting what is and what isn't working in this complex but important sector. This ebook provides a number of different articles on this topic, written by various authors.

(IS-2017-51) Encouraging Market Transformation Through Collaboration on Energy Efficiency Standards: A Federal-Provincial-Territorial Framework
This report was completed August, 2016 following the Energy and Mines Minister's Conference held in Winnipeg, Manitoba. The report outlines the regulatory framework goals and implementation plans for

industrial energy efficiency standards. These standards will encourage market transformation toward generating energy efficient products, while lowering energy and operating costs, and reducing greenhouse gas emissions.

(IS-2017-50) A New Look at Building Value - How building technology, people and processes improve business outcomes and create greater operational value
This white paper was completed in March 2015 by Siemens. It outlines the benefits of data- driven facilities (smart buildings) which are fully connected. The basics behind data-driven facilities, including: a strong BAS, use of big data, smart software, and software platforms, are detailed. Finally, several steps are given for managers to begin turning facilities into buildings with higher operational value, and turning their businesses into organizations with higher valuation.

(IS-2017-49) ICT Facts and Figures 2016
This report was completed June 2016 by the International Telecommunication Union. This report includes several graphs depicting global comparisons for ICT (information and communications technology) coverage and usage data from 2013-2016. These data indicate that while the majority of the world's population live in areas with network coverage, ICT services are not used by more than half of the population. Large differences in affordability, accessibility, broadband quality and speed still hinder usage.

(IS-2017-48) Beyond monoculture: How design eats strategy for breakfast
This paper is a collaboration between Boss Design and Insight and was published in 2016. It argues that corporate strategy and design must go "hand in glove" in order for a corporate strategy or culture to survive. When developing workplace strategies, one needs to understand the the culture of the workplace, which could reject or shift the desired output of the strategy. The link between strategy and design is stronger now than ever since the time and place of working no longer ties employees to employers.

(IS-2017-47) Smart Cities in Europe - The Future of the built environment
This paper was released in 2016 by Osborne and Clarke. Different ways in which built environments can become smarter are discussed, along with things which might prevent them from improving. Two case studies are described where an area of a city was redeveloped to include smart technology, and their successes are outlined. Better use of data is one way to make a building smarter. The collaboration of all parties involved, including investors, real estate companies, construction companies, architects, tech companies, and more, is essential for the built environment to become smarter.

(IS-2017-46) Generation Z/Teen: Digital Explorer
Teenagers between the ages of 13-15, also called "Gen Z teens," are more connected and tech fluent than previous generations. This report looks at the new tech habits of Gen Z teens, their digital preferences, and their receptiveness to digital marketing.

(IS-2017-45) Your Warehouse: A Brighter Future
This report looks at the impact lighting has on warehouses from an operational standpoint. The economics of bad lighting and LED lighting, dangers associated with poor lighting, and the benefits of good lighting are discussed. This report also looks at Graybar's Powersmart Process and the impact of investing in LED bulbs over a ten year period.

(IS-2017-44) Connected Home and Building: Beyond the Hype of Hockey Stick Market Forecasts
This document by IoT Evolution Expo presents several market forecasts for the IoT in a more realistic light as opposed to the "hockey stick" forecasts previously reported. While it appears the paper is a marketing piece for IoT Evolution Expo and IoT Connected Home & Building, it does present market forecast data for subsets of the IoT market such as Apps for Smart Appliances, Smart Appliances, Resource Management, Industrial and consumer Lighting, Facilities Management, Smart Cities, Precision Farming, and Smart Parking.

(IS-2017-43) Examining the Wearables Ecosystem: Roadblocks in Personal Data Interpretation
This document by Argus Insights leverages a survey of consumers using wearable technology to compare satisfaction with the technology versus the applications associated with the technology. Completed in

March of 2016, the key findings are that consumers are more satisfied with the technology than the applications that come with the technology. Technology and applications from Jawbone, Samsung, Nike, Microsoft, Garmin, Lumo Body, and Fitbit are compared.

(IS-2017-42) 10 Hot Consumer Trends 2015
This document from Ericsson lists 10 hot consumer trends for 2015 ranging from the streamed future to children connecting everything. Completed in 2015, it includes research from Ericsson ConsumerLab and includes surveys from up to 23 different countries on what the upcoming trends will be for consumers. Trends also include smart homes, mind sharing, smart citizens, the sharing economy, the digital purse, consumer information, longer lives, and domestic robots.

(IS-2017-41) Shining Rewards The Value of Rooftop Solar Power for Consumers and Society
This report was completed in Summer, 2015 by Environment America and the Frontier Group. This report reviewed 11 net metering studies and found that 8 showed utilities are under-compensating owners of rooftop solar systems. The report provides a cost-benefit analysis including a number of categories. Beyond price, the report claims utilities benefit from a lower need for capacity and environmental compliance investments, and improved grid resilience.

(IS-2017-40) Delta Portfolio, Lighting Case Studies Volume 5, Issue 1: LED Lighting in a Campus Building (Rosetti Hall, Siena College, Loudonville, New York)
This paper was completed in May 2014 by the Delta Lighting Research Centre. This report explores the evaluation of the change of the lighting specification for Siena College's Rosetti Hall in Loudonville, NY from originally specified conventional florescent lighting to light

emitting diodes (LEDs). The project was funded by the New York State Energy Research and Development Authority (NYSERDA) and aimed to create a comfortable visual environment; provide flexible lighting to promote diverse teaching methods and save on energy consumed.

(IS-2017-39) How to get your energy saving projects funded
The report was completed in the Summer of 2016 by the Almiranta Corporation. The report deals with information, tips, and ideas on how to get energy saving projects approved and funded. Several key items for the project's success are discussed including internal stakeholders, risk, development of business case, timeline, return on investment, and financing.

(IS-2017-38) The Power Of Light: How TLEDs Have Been Revolutionizing The U.S. Military Since 2012
The report was completed on June 10, 2016. The group that completed the report is not explicitly stated. The website, www.energyfocus.com, is included in the footer. The report deals with the advantages (energy savings, efficiency, safety, health benefits) of Tubular LEDs (TLEDs) as compared to fluorescent tubes. Retrofit options are also presented along with key factors to consider when specifying TLEDs.

(IS-2017-37) Designing the Future of Connected Systems
The report was completed on June 28, 2016 by Harbor Research company. The report covers a new, highly adaptive real-time signal processing platform that enables universal – systemic – distributed semantic intelligence, control, and automation. Key features of the platform are presented along with the major pre-existing conditions that need to be overcome for a wider deployment of the platform. Examples of n.io's current implementations of the platform are included.

(IS-2017-36) Social Innovation
The report was completed on October 9, 2014 by Frost & Sullivan company. The report deals with mega-trends defining future societies, social innovation opportunities, and areas poised for growth. The top five mega-trends are examined: Urbanisation; Smart is the New Green; Future of Energy; Future of Mobility; and Health, Wellness & Wellbeing. The Social Innovation opportunity is addressed in detail within the context of the five mega-trends.

(IS-2017-35) IOT AND OMNI-CHANNEL RETAILING WILL SAVE BILLIONS FOR RETAILERS

The report was completed on April 8, 2016 by Relayr, an IoT company. The report deals with integration of the transaction channels between retailers and customers. The key factors which are considered include data integration, supply chain optimization, smart shelf technology, and integration with ERR. Relayr's Innovation Acceleration solution (Cloud Service, SDK, Sensor Kit) is presented as a way to integrate all the sales channels.

(IS-2017-34) The Drivers and Benefits of Edge Computing
This paper was published by Schneider Electric in 2016. It explores drivers of edge computing and the various options available. Edge computing helps solve latency and bandwidth challenges by bringing applications closer to the data and users closer to the content.
Computing power and storage is inserted on the edge of the network which decreases transport time and increases data availability. Localized rack systems can be quickly designed and deployed to meet the future Internet of Things application demands.

(IS-2017-33) 2016 Norton Cyber Security Insights Report - Understanding cybercrime and the consequences of constant connectivity
This paper was published in 2016 by Norton by Symantec. It presents data from research conducted by Edelman Intelligence on the topic of cyber-crime and its impact on consumers. Cyber-crimes are increasingly more dangerous but consumers are still complacent to protect their personal information. Many consumers cannot identify a phishing scam. Several other findings are presented with data.

(IS-2017-32) Energy Management: Navigating the headwinds
This study from Deloitte provides insights into the energy marketplace for residential and business perspectives. The report highlights that despite falling energy costs, energy consumption is still a primary focus for the residential market and that 65% of consumers are very concerned about climate change and their carbon footprint, millennials in particular are prepared to pay extra for renewable energy sources. 74 % of business responders indicate that they are requested by their customers to provide more environmentally considerate offerings, with over half attempting to procure electricity from renewable energy sources.

(IS-2017-31) Bridging IT and OT for the Connected Asset Lifecycle Management Era
This research from ABB, Microsoft and Zpryme explores the value of connectivity between information technology (IT) and operations technology (OT) as it relates to utility companies. Approximately 45% of respondents indicated that integration between IT and OT was extremely valuable to their business. The report highlights that improved integrations will enhance the use of real-time and predictive data in assisting the business with its asset management. Asset management is surveyed as an increasing area of importance for utilities and IT-OT will allow them to improve planning of capital investments; correlate the impact of upcoming DER; and also aids with cyber security.

(IS-2017-30) Harbor Research's Internet of Things Trends Report 2016
This report from Harbor Research identifies and explores 18 major trends influencing the
Internet of Things. These trends include the emergence of legislation related to security and data protection; the promise of lower latency and higher bandwidth communication networks with 5G technology; and the exponential growth in the employment of drones which will open up new applications.

(IS-2017-29) Building Information Modeling and Intelligent Green Buildings
This white paper explores Building Information Modeling (BIM) and how its collaborative nature will allow efficiencies from concept through to operations in reducing capital costs and the carbon burden. According to the report, BIM demonstrations highlight that around 20% of costs can be saved during the construction phase. The report explores the different aspects of BIM and describes the relation between BIM and other information management standards. The report also assesses the adoption of BIM across different countries.

(IS-2017-28) Securing Our Future: Closing the Cybersecurity Talent Gap
This paper was published in 2016 by Raytheon Company. It presents findings from a survey conducted by Zogby Analytics on the topic of the long-term talent pool in the cybersecurity industry. Efforts to raise

awareness of careers in cybersecurity are resulting in a well-informed talent pool of youngadults. Females are still behind in awareness and inclination towards cybersecurity careers. Raytheon has several initiatives in place to increase awareness and inclination including female scholarships, competitions and education initiatives.

(IS-2017-27) 2016 Smart Cities Survey Summary Report of Survey Results
This paper was published in 2016 by the Smart Cities Council in collaboration with the ICMA. It presents the results of a survey of U.S. local governments regarding their activities and priorities related to smart-city technologies. Insight into the key motivators and barriers to smart city adoption and improvement are presented according to the surveyed governments.

(IS-2017-26) Smart Water Roundtable 2016
This report was published on August 29th, 2016 collaboratively by ABB and Eco-Business. The report explores the implementation of Smart Water systems in Singapore to improve water supply efficiency and sustainability. These Smart Water systems would utilise a Smart Water Grid to improve the efficiency of water supply to homes and businesses in cities within Singapore.

(IS-2017-25) Printable and Flexible Electronics Enabled Intelligent Buildings
This paper examines how Printable Electronics, an additive manufacturing technology, can play a role to evolve the function and operation of commercial buildings. The paper focuses on the major components of building automation systems, with two purposes: First, it explores how

PE can change building operations and automation systems, enabling improved control, sensors and ultimately better conditions for those inside. Secondly the paper works to assess the degree to which these technologies are ready for development and deployment.

(IS-2017-24) Driving Energy Efficiency & Occupant Comfort through Printable & Flexible Electronics Applications in the Next Generation Connected Home
In this paper, CABA and the Canadian Printable Electronics Industry Association (CPEIA) examines how additive printable electronics manufacturing technology, or PE, can play a role to evolve the function and operation of the connected home.

(IS-2017-23) The Role of Hybrid AC/DC Building Microgrids in Creating a 21st Century Enernet
This white paper examines the alternative of maintaining power in its native DC form from distributed generation and storage sources in a simplified, more flexible, efficient and resilient configuration in the building. This DC power could be aggregated with AC power from the public grid and distributed in the building via a hybrid AC/DC microgrid. The paper also explores the eventual interconnection of building-level microgrids within and between buildings and the public grid to create an energy network. The paper refers to this energy network as the "Enernet," analogous to the network of computers that constitute the Internet. A tiered configuration of private microgrids and public grids in domains akin to the physical network topology of the Internet is proposed. Also discussed are the motivation, need, and status of new standards to support the implementation of such buildings with wide-scale use of private microgrids that would be increasingly based on low voltage (under 1500 Volts (V) DC) direct current.

(IS-2017-22) Project-Haystack
The Internet of Things (IoT) is changing our world, including affecting the way we manage and operate our buildings. Lower cost sensors, more powerful controllers, the "Cloud", smart equipment, and new software applications are enabling new approaches to facility management. Smart devices are creating dramatic increases in the amount and type of data available from our facilities, while new software applications are creating new ways to benefit from that data. Together these advances are driving a fundamental shift in how we manage and operate buildings, enabling us to move from traditional control strategies based on simple feedback loops to data-driven methodologies that inform operators and service providers about the actual performance of building systems in real time.

(IS-2017-21) Cybersecurity in Smart Buildings: Preventing Vulnerability While Increasing Connectivity
This CABA white paper, authored by Frost & Sullivan, postulates that facilities managers should work with

IT personnel to manage the high-tech aspects of building automation systems (BAS) and the cybersecurity concerns that threaten them and, by extension, the rest of the organization. The correct approach is to use a combination of both professions to safeguard the BAS.

IS-2017-20) Improving Organizational Productivity with Building Automation Systems
The worldwide emphasis on energy management and sustainability has stimulated the development of new building automation and IT technology, and the adoption and integration of these systems in smart buildings. The rate of adoption is dramatically increasing, resulting in increasing numbers of organizations housed in smart buildings with advanced building control technology. Beyond resource sustainability, there is growing interest in the potential for buildings to affect the health and well-being of occupants, and the productivity of organizations. This white paper, by the National Research Council Canada, explores how the use of advanced building control technology can improve organizational productivity. It concludes with a call to action to developers, building owners, and tenant organizations to form a real estate movement that realizes the full potential of building to save energy and to be a factor in improving as contributors to corporate performance and environmental sustainability.

(IS-2017-19) High-Quality Multimedia Distribution in Commercial Buildings
This CABA White Paper examines the increasing need for high-quality multimedia in commercial buildings and the options for a distribution infrastructure. The paper notes that building industry has adopted standards for a building data infrastructure that can be extended to multimedia. The paper demonstrates that there is a solution using HDBaseT technology that overcomes the limitations of HDMI, while carrying HDMI signals. The solution is cost-effective and suitable for content-protected audio and video, and can be integrated with a building data network using established installation skills and tools.

(IS-2017-18) Connected Car White Paper
CABA recently published a white paper on the connected car market. An increasing number of vehicles are coming to market with the capability to support communications of various sorts. In 2013 more than one billion sensors were sold to the auto industry, more than doubling the 2009 levels. While tethered and integrated solutions have dominated car connectivity to date, embedded connectivity solutions began appearing in 2014 with the number of such vehicles increasing in 2015 and beyond.

IS-2017-17) On Intelligent Home Offices – A Model and Potential Impacts
The idea of "teleworking" or "telecommuting" or "working from home" is not new. The practice is still not very popular because most organizations lack a policy for "telecommuting." There are two schools of thought fighting against each other related to the implementation of this practice in a broad sense. The main theme of this CABA White Paper suggests that technology is available to let employees, whose work is information-based, work at home for three or four days a week. While many employees are provided with cell and smart phones to

be accessible while they work from anywhere when away from their desks, what is lacking is a cultural acceptance and clearly defined guidelines for telecommuting as part of business activities.

(IS-2017-16) Toward Zero Net Energy (ZNE) Super High-Rise Commercial Buildings

This CABA White Paper examines the driving force for zero net energy buildings, along with examining various definitions and technologies. The paper then presents a concept for a feasible net-zero solution applied to a building cluster consisting of an office building and homes.

(IS-2017-15) The Impact of Cloud Computing on the Development of Intelligent Buildings
This CABA White Paper provides building management decision makers with some perspective on the trend toward cloud delivery of smart building energy management solutions and key hurdles and opportunities around integrating the solutions.

(IS-2017-14) Lighting Application Guide for K-12 Classrooms
This report was completed 2016, by the Lighting Controls Association. This report studies the impact of

lighting control solutions which support learning in the modern classroom while minimizing operating costs. Occupancy sensing, automatic daylight response control (both side lighting and top lighting) and manual control were examined. In compliance with existing energy codes, recommendations are provided.

(IS-2017-13) CMS Retrofit Whitepaper Part 2
This report was completed July 2016, by Wind O&M Canada. As a follow up to a previous report, a further examination of the wind turbine retrofit market for condition-monitoring systems is provided. Market opportunities by generation sizes are provided. Financing options are discussed along with potential savings and ROIs. It is expected the retrofit market will provide new opportunities for CMS installations.

(IS-2017-12) CMS Retrofit Whitepaper Part 1
This report was completed June 2016, by Wind O&M Canada. With an increase in the number of wind turbines requiring maintenance and service, this paper examines the benefits of condition-monitoring systems, installed both as original equipment or as a retrofit. Market opportunities by generation sizes are provided, along with potential savings and ROIs. As costs for CMS continue to decrease, ROIs for smaller turbine installations will improve, particularly in the retrofit market.

(IS-2017-11) The Energy-Water Nexus: Exploring the Stream of Opportunities
This position paper, provided by the American Council for Energy-Efficient Economy outlines the important connection between energy and water. A framework for agency collaboration along with a blue print on how water efficiency can be increased is provided. A number of reference reports and documents are listed. The ACEEE also outlines its future area of focus.

(IS-2017-10) Municipal Utility Outlook
A survey of 86 municipal utilities was conducted in Spring 2016 by Zpryme on behalf of Milestone Utility Services. This survey found that budget limitations and business case "ROI" are the most significant challenges for smart grid initiatives. Many utilities are embracing next- generation technologies, particularly AMI, automation/grid optimization, meter data management and data analytics. Information on deployment status, budget amounts and customer engagement tools is provided.

(IS-2017-09) Canada's Natural Gas Opportunity
This publication was completed by the Canadian Gas Association. The report explores the opportunity to reduce emissions and energy costs through the expansion of natural gas infrastructures within communities that are not currently connected in Canada. This natural gas opportunity would provide Canadian homeowners and businesses with an efficient energy choice with lower emissions and lower energy costs. In addition, this initiative contributes to driving energy technology innovation and promoting economic growth within the industry.

(IS-2017-08) E-health and Telemedicine
This report was published on August 12th, 2016 by the U.S. Department of Health and Human Services. It discusses telehealth activities and some of the challenges associated with it. The focus is primarily on how reforms to the delivery system may increase the use and effectiveness of e-health and telemedicine.

(IS-2017-07) Total Cost of Ownership: The Key Metric for Multi-DRM Strategy
This paper was published in 2016 by Frost & Sullivan. It discusses the options that companies have when they plan anti-piracy infrastructure for their over-the-top streaming services. The options of buying a digital rights management (DRM) solution and building a DRM solution are compared. Five factors are outlined for consideration when evaluating the total cost of ownership (TCO) of a DRM solution.
Verimatrix is a DRM solution that can be bought

(IS-2017-06) Testing the theory: demonstration projects and the validation of integrated design protocols for advanced energy retrofits
This paper was published in 2014 in the WIT Transactions on Ecology on The Built Environment, Vol 142 by the University of Pennsylvania. Observations from five small-medium building retrofit projects using the Integrated Design (ID) Advanced Energy Retrofit (AER) Roadmap are detailed. The roadmap's ID

protocols are tested and verified based on the initial results of the five demonstration projects, and the method in which different teams employ the components of the roadmap is discussed.

(IS-2017-04) Networks of 'Things'
This report presents an underlying and foundational science for IoT-based technologies, including sensing, computing, communication, and actuation. The vocabulary and semantics presented in this report can facilitate the communication of IoT-based technologies.

(IS-2017-03) How to Build a Successful Smart City
This is an eBook from the editors of FierceWireless. It provides an introduction to the smart city concept; discusses key aspects of smart cities including models, platforms, key players, policies, and benefits.

(IS-2017-02) Creating a Market for Energy-Efficient Commercial Buildings – How Governments Can Reduce Carbon Emissions by Implementing ENERGY STAR Buildings Program Elements
This is a guide developed based on the ENERGY STAR Buildings program. It can be used by other governments, trade associations, non-profits, consultants, and energy efficiency service companies to create a market-based mechanism for reducing greenhouse gas emissions resulting from energy consumption in buildings.

(IS-2017-01) How Is the Federal Government Using the Internet of Things?
It is a very interesting report that provides a summary of 22 expert interviews on the use of the Internet of Things in the federal government (including Smart Buildings with GSA Link) and identifies key challenges including a lack of leadership, skills, and funding, as well as cumbersome procurement policies and a risk-averse culture.

(IS-2016-97) Encouraging Market Transformation Through Collaboration on Energy Efficiency Standards: A Federal-Provincial-Territorial Framework
This report was completed August 2016, following the Energy and Mines Minister's Conference held in Winnipeg, Manitoba. The report outlines the regulatory framework goals and implementation plans for industrial energy efficiency standards. These standards will encourage market transformation toward generating energy efficient products, while lowering energy and operating costs, and reducing greenhouse gas emissions.

(IS-2016-96) A New Look at Building Value - How building technology, people and processes improve business outcomes and create greater operational value
This white paper was completed in March 2015 by Siemens. It outlines the benefits of data-driven facilities (smart buildings) which are fully connected. The basics behind data-driven facilities, including: a strong BAS, use of big data, smart software, and software platforms, are detailed. Finally, several steps are given for managers to begin turning facilities into buildings with higher operational value, and turning their businesses into organizations with higher valuation.

(IS-2016-95) ICT Facts and Figures 2016
This report was completed June 2016 by the International Telecommunication Union. This report includes several graphs depicting global comparisons for ICT (information and communications technology) coverage and usage data from 2013-2016. These data indicate that while the majority of the world's population live in areas with network coverage, ICT services are not used by more than half of the population. Large differences in affordability, accessibility, broadband quality and speed still hinder usage.

(IS-2016-94) Beyond monoculture: How design eats strategy for breakfast
This paper is a collaboration between Boss Design and Insight, and was published in 2016. It argues that corporate strategy and design must go "hand in glove" in order for a corporate strategy or culture to survive. When developing workplace strategies, one needs to understand the the culture of the workplace, which could reject or shift the desired output of the strategy. The link between strategy and design is stronger now than ever since the time and place of working no longer ties employees to employers.

(IS-2016-93) Smart Cities in Europe - The Future of the built environment

This paper was released in 2016 by Osborne and Clarke. Different ways in which built environments can become smarter are discussed, along with things which might prevent them from improving. Two case studies are described where an area of a city was redeveloped to include smart technology, and their successes are outlined. Better use of data is one way to make a building smarter. The collaboration of all parties involved, including investors, real estate companies, construction companies, architects, tech companies, and more, is essential for the built environment to becomesmarter.

(IS-2016-92) Wireless in Buildings: What Building Professionals Think

CommScope & Coleman Parkes Research report exams the current performance, attitudes and insights of building managers, architects and facilities managers regarding access to In-Building Wireless (IBW) connectivity. The study provides recommendations on how the industry can overcome the connectivity challenges anduncovers the value of IBW connectivity to property owners, managers and tenants.

(IS-2016-91) Winning and Retaining OTT Video Customers

This report explores the differences between online interactive and traditional TV. The paper looks at how to exploit these differences to attract, keep and monetize online video viewers.

(IS-2016-90) Prospects for Premium OTT in the USA

This report exams US emerging premium OTT services - subscription based film and TV services over the Internet. The topics discussed including: What is the 2018 outlook?, What are the prospects for growth, enablers and drivers?, Which categories of OTT service providers are most likely to succeed?

(IS-2016-89) The Study on the Effect of Color Temperature of LED Luminaries on Human Performance and Psychoemotional State

This report was completed September 2015 by Lighting Technologies. This study discusses the effect of different color temperatures of light. Indicators of performance, well-being and mood were measured and compared. Notable differences in performance and relaxation were observed in participants subjected to different color temperatures.

(IS-2016-88) The State of Open Office Research Study

This report was completed Q1 2016 by Haworth. This paper discusses the state of the open office and includes analysis, trends and opportunities for open office concepts. Survey participants include professionals from 20

fields across six continents. Insights, concerns and recommendations on introducing open office concepts are provided.

(IS-2016-87) Enabling the Organic Workspace: Emerging Technologies that Focus on People, Not Just Space

This report was completed Q1 2016 by Haworth. Business success requires quick pivoting to ensure company resources are aligned with business needs. This paper discusses Alternative Work Space programs that combine technology and flexible programs, provided through space planning guidelines linked with employment policies that, together, allowing employees greater selection in where, how, and when to work.

(IS-2016-86) What the Community Solar Customer Wants

This report was completed Q1 2016 by the Shelton Group. This report consists of two surveys, conducted in Dec 2015, of US residential consumers and US business decision makers. Consumers and businesses were polled to identify the audiences for community solar and find out what they want most from a community solar program. Attitudes, purchase intent, financing options and potential market size are reviewed.

(IS-2016-85) Cities Are Ready For 100% Clean Energy

This report was completed Spring, 2016 by the Sierra Club. This report examines ten US cities committed to 100% renewable power. Cities powered by 100% clean energy save taxpayer dollars, help their residents save money, create good jobs, and foster a better quality of life. They are catalysts for a new economy and clean energy future.

(IS-2016-84) The Future of Power Grids - 5 Trends and Their Effect on Utility Communications

This paper by RAD was published in 2016. This paper explores the driving factors behind the tomorrow's utility networks. The five driving factors are: Migration to next-gen comms, Distributed energy and renewables, Automation, remote sensing and intelligent control, Operational technology and IT integration, and finally Cyber security. These factors are closely related to the internet of things, and can be achieved with the help of communication solutions.

(IS-2016-83) Social Innovation and Public Safety: Safer, Smarter Cities through Integrated Intelligence

This report was published in 2015 by Frost and Sullivan. It describes the possible public safety features of Smart Cities, notably, cities that use Hitachi's Visualization Platform to monitor and analyze data and video. Some of the major improvements brought about by integrated intelligence would benefit the response time and effectiveness of first responders, and improve road traffic and safety.

(IS-2016-82) Perfecting 4K Video Delivery - Best Practices to Mitigate Common

This paper was published by Elemental Technologies in 2016. It discusses five of the common pitfalls of 4K video, examines their root causes, and suggests solutions and best practices to mitigate these pitfalls so service providers can continue to offer high quality video. Visual defects are much easier to detect by the consumer in 4K video, therefore it is imperative that providers must offer the best settings that network configurations need for encoding, packaging and delivery.

(IS-2016-81) Demonstration and Evaluation of Lighting Technologies and Applications - Mogul Screw-Base LED Replacement Lamps for High Bay Environments

This report by the Lighting Research Center was published in May 2016. It discusses and compares traditional HID lights with new LED lights for "mogul" sockets. Some of the benefits of the LED replacements include energy savings, maintenance reductions and improved colour characteristics. A case study is described where the light distribution and cost was compared before and after replacement with LED lights.

(IS-2016-80) How Smart Grids Solve the Entire Global Energy Problem

This paper was completed June 2016 by Rethink Technology Research. This paper suggests the transformation of the distribution network will shift to one which embraces much more network-edge generation capacity, and less and less centralized electricity production or storage. Using current technology, examples are provided incorporating Energy Management Systems, demand management, blockchain & distributed generation and transportation, at both a home and city level, creating an interesting vision for the energy and the environment.

(IS-2016-79) Switch On To The Connected Home

This report was completed July 2016 by Deloitte. This survey examined UK consumer opinions on the connected home, identifying the following: consumers are more positive about the internet of things than expected; security, lighting and energy devices are likely areas of growth for the connected home; and, price, perception and replacement cycles are barriers to purchase which vary across age groups.

(IS-2016-78) Smart Home Security Report 2016

This report was completed in 2016 by the prpl Foundation. This survey examined consumer opinions gather in six counties. Key findings include: the smart home is already here with device adoption in certain cases already reaching a tipping point; the smart home is woefully insecure due to users' failure to follow best practices; and, consumers prefer security to usability and are prepared to take more responsibility if it means living in a safer home.

(IS-2016-77) The Current State of the Smart Home A Survey by Bosch and Twitter

This report was completed August, 2016 by Robert Bosch and Twitter. This survey examined consumer opinions gather in six counties. Survey topics included: thoughts on smart homes, current knowledge of known capabilities, desirable features, concerns, connectivity, relevance, and decision influencers. Attitudinal differences between men and women are also provided.

(IS-2016-76) Beyond the Meter - The Potential for a New Customer-Grid Dynamic

This report was completed July, 2016 by the Smart Electric Power Alliance. This report examines the impact and opportunities associated with distributed energy resources (DERs). Utilities are characterizing these resources not as threats, but as potential assets to the physical power grid, and a means to enhance financial sustainability. Power generation, peak demand management and customer engagement through DERs offer a new approach for utilities and customers to look "beyond the meter" in order to manage an increasingly decentralized grid.

(IS-2016-75) The Power of Light: How TLEDs have been revolutionizing the U.S. military since 2012

Tis paper by Energy Focus discusses Tubular Light-Emitting Diodes (TLEDs) and the best practices associated with them. When compared to fluorescent lighting, TLEDs are up to 60% more efficient, and have up to 3 times the lifespan. The four different types of TLEDs are compared and defined. Important characteristics to consider when designers and engineers are specifying TLEDs are given along with the cost, energy and maintenance savings. Finally, the positive safety and health aspects are discussed.

(IS-2016-74) Why You Shouldn't Be Afraid of Implementing Fair Access Policies

This white paper by Incognito Software Systems Inc. was published in February 2016. It discusses what can be done to ensure the future of cable companies. The paper argues that usage-based pricing will allow companies to become more competitive, and increase their average revenue per use. Usage-based pricing would give users access to a variety of options, and allow providers to charge excessive users. Accurate bandwidth measurement, usage notifications, clear enforcement policies along with usage-based pricing could keep companies profitable without alienating customers.

(IS-2016-73) New Foundations - How will the UK real estate sector look in 20 years' time?

This report was completed by KPMG in 2016. It aims to predict the future of the UK real estate industry in the coming 20 years, and suggests some necessary responses that the real estate sector must make to the needs of citizens and companies of the future. Developers are urged to build flexibility into their spaces, as property moves to a service model rather than a space model, tech inside of buildings will be of great importance to the buyer, and there will be a shift in individuals' desires of property ownership to rentals.

(IS-2016-72) Mexico's Mobile Market: Regulatory Changes Set the Stage for Revenue Growth Over the Next Five Years

This paper by Pyramid Research was released in April 2016 and covers the topic of Mexico's growing mobile market. New regulations caused tariffs for Mexican telecom services to go down 12.4% in 2015, while revenue fell by 4.3% over two years. The new regulations, which are bringing about the elimination of roaming and long distance fees, are shaping a North America-wide mobile network. Pyramid Research predicts that Mexico's mobile market will grow very fast over the next 4 years due to 5 key factors.

(IS-2016-71) Green Building Economic Impact Study

This report was completed in 2016 by the U.S. Green Building Council. This study quantifies the economic value creation from green construction and Leadership in Energy and Environmental Design (LEED) building construction in gross domestic product (GDP), jobs, labor earnings, individual states'tax contributions,and environmental indicators at the national and state levels.

(IS-2016-70) akamai's [state of the internet] Q4 2015 report

This report was completed in 2015 by Akamai. This report provides a detailed and comprehensive reference on Internet connection speeds at a state, national, and international level.

(IS-2016-69) World Energy Perspectives 2016

This report was completed in 2016 by the World Energy Council. This report, the second in a series, investigates the risks of the energy-water-food nexus and examines the integrated coordination that is needed for financing resilience. The report methodology is based on contributions from experts in 92 countries. Case studies have been submitted to highlight the impact, obstacles and solutions that countries have taken to manage the impacts of the energy-water-food nexus.

(IS-2016-68) The Feasibility of LED Lighting for Commercial Use

This undergraduate thesis examines the market potential for LEDs in commercial buildings. It contains a lot of useful comparisons of various lighting technologies. Detailed cost analyses are included. The market growth predictions are based on data that are three years old in a market undergoing rapid growth.

(IS-2016-67) Security for the Internet of Things

This paper identifies the primary security concerns that are prevalent in the emerging Internet of Things. It provides an approach for addressing these concerns through an assessment of the security impact on the

customer environment; the application of multi-faceted security control measures; and to ensure that the entire system and its lifecycle are considered during the ongoing management.

(IS-2016-66) Accountability for Climate Action

This paper describes the results of a research study of how businesses are implementing climate change action. The analysis reveals what proportion of businesses have developed a strategy to address climate change and whether the focus is on energy efficiency measures, reduction of emissions, or the adoption of renewable energy sources. It highlights that energy efficiency is the leading approach but describes that supply chain assessment and internal carbon taxing is starting to gain traction.

(IS-2016-65) Succeeding in the changing Business of Things

This report captures the findings from an on-line business forum that explored the evolving business models and offerings that are enabled by the Internet of Things. It highlights key insights proposing that 'Things' need to exhibit cognitive intelligence to provide a stronger relationship with end users; that the complexity of the integrating 'Things' will require an open platform; and that businesses will need to evolve their organization to participate in the Business of Things.

(IS-2016-64) The Economy of Things

This report explores how the Internet of Things (IoT) may trigger transformations within various industries. It uses economic modeling to convey several disruptions including how asset marketplaces can unlock capacity; how credit risk can be digitally managed, and how greater efficiencies can be obtained through the use of IoT technologies.

(IS-2016-63) 2016 Is the Year Smart Home Technology Will be Mainstream

The report addresses the challenges and opportunities of low-income single-family homes Energy Efficiency programs. The report includes survey of the landscape, detail practices that program administrators are using to overcome challenges, strategies to incorporate underutilized technologies and measures into programs to realize greater savings.

(IS-2016-62) Building Better Energy Efficiency Programs for Low-Income Households

The report addresses the challenges and opportunities of low-income single-family homes Energy Efficiency programs. The report includes survey of the landscape, detail practices that program administrators are using to overcome challenges, strategies to incorporate underutilized technologies and measures into programs to realize greater savings.

(IS-2016-61) LED Lighting Sets the New Standard - Improving Sustainability, Performance, and Wellbeing

This paper compares artificial lighting from LED sources to fluorescent lamps. LEDs have a more uniform spectrum closer to sunlight and are more healthful because they emit no ultraviolet light. Also, the materials for LEDs are not dangerous compared to the mercury in Fluorescent lamps.

(IS-2016-60) LIVE 4K ULTRA HD TV - From Demonstration to Service Launch

This paper explores the market for streaming of 4K (3840 x 2160 pixels resolution) live events for TV viewing. The challenges of upgrading set-top boxes for 4K resolution, which doubles the bandwidth compared to current high-definition broadcasting. If the frame rate is also doubled, the total bandwidth requirement is tripled. The challenges of upgrading production, transmission, and decoding equipment are presented.

(IS-2016-59) Video on Demand - How worldwide viewing habits are changing in the evolving media lands

This paper reports on a survey of TV viewers in 61 countries about the sources of their TV content. Two-thirds of viewers use video-on-demand (VoD) with one-quarter of these paying for services such as Hulu and Netflix. One-third of those surveyed are considering canceling cable TV (with a skew toward younger ages). VoD is favored for choice and cost compared to cable TV. Demographic data supporting these statistics are provided.

(IS-2016-58) LED Lighting Sets the New Standard in Schools

This brochure extols the virtues of LED lighting over fluorescent lamps for school lighting. The dangers cited in

fluorescent lamps include mercury exposure if the lamp is broken, ultra-violet radiation leakage that may cause vision problems, and a color spectrum with spikes that may cause dyslexia and a host of other problems. LED lamps are more energy efficient, last longer, and are recyclable.

(IS-2016-57) 2016 Threats Predictions

This paper explores likely connected device vulnerabilities including attacks on integrity, working from home, payments, and wearables. More protection of hardware and firmware is needed as these become targets. Security challenges will be posed by network function virtualization and software-defined networks. Smart phones that control homes will become vectors for attacks. Some thieves will correlate database searches for value.

(IS-2016-56) Elevating the HVACR industry: Promoting exciting careers to diverse prospects can help

This paper examines remedies for filling employment positions in heating and air conditioning. Worker shortages result from poor visibility of the industry, incorrect reputation as low-skill positions, traditional domination by men, lack of ethnic diversity with foreign language skills, and lack of training in requisite skills. 35% of those being trained are second-career adults.

(IS-2016-55) LED Lighting Sets the New Standard in Healthcare

This brochure extols the virtues of LED lighting over fluorescent lamps for hospital lighting. The dangers cited in fluorescent lamps include mercury exposure if the lamp is broken, ultra-violet radiation leakage that may cause vision problems and degrade plastics, and a color spectrum with spikes that may cause dyslexia and psychological problems. LED lamps are more energy efficient, last longer, and are recyclable.

(IS-2016-54) Privacy and Information Sharing

This report from the Pew Research Center examines Americans attitude towards privacy issues in commercial settings. A study conducted by Pew Research, based on a survey of 461 U.S. adults and nine online focus groups of 80 people, found that there are a variety of circumstances under which many Americans would share personal information or permit surveillance in return for getting something of perceived value. Most Americans see privacy issues in commercial settings as "contingent and context-dependent".

(IS-2016-53) LED 101

This report from GE Lighting provides a brief overview of LED lighting technology and its application in commercial settings.

(IS-2016-52) Moving Forward: Findings and Recommendations from the Consultative Council

This report from the National Institute of Building Sciences presents the latest thinking from the building industry on the tools, technologies, resources and policies necessary to achieve the goals established by policymakers, the public and the industry itself. The report focuses on 3 themes: "resilience and a changing climate; aligning government and business to achieve a cost-effective, high-performance built environment; and the buildings-related workforce and productivity".

(IS-2016-51) Financing Energy-Efficiency and Renewable-Energy Projects

This report from the National Institute of Building Sciences examines the current and potential roles of three key equity investing structures (Real Estate Investment Trusts, Master Limited Partnerships, and Yieldcos) in capitalizing the sustainable and energy-efficient development and retrofit of investment-grade commercial buildings and renewable-energy production.

(IS-2016-50) Digital Inclusion and Meaningful Broadband Adoption Initiatives

This report from the Benton Foundation presents findings from a national study of digital inclusion organizations that help low-income individuals and families adopt high-speed Internet service. The goal of this report is to help key stakeholders gain a deeper understanding of how digital inclusion organizations and their community partners can be successful in their efforts to promote meaningful broadband adoption.

(IS-2016-49) Meeting of the Minds 2015

This report from the Urban Age Institute provides an overview of the 2015 "Meeting of the Minds" summit, which brought together 375 industry stakeholders to discuss the innovators and initiatives at the "intersection of urban sustainability and connectedtechnology".

(IS-2016-48) The American Middle Class is Losing Ground

This report from the Pew Research Center examines the changing size, demographic composition and economic fortunes of the American middle class.

(IS-2016-47) Empowering the Edge - Practical Insights on a Decentralized Internet of Things

This paper is the second in a series following Saving the Future of the IoT by IBM in April of 2015. IBM partners with Samsung Electronics to build a proof of concept for Autonomous Decentralized Peer-to-Peer Telemetry (ADEPT). The objective is to test a fully decentralized model for IoT.

(IS-2016-46) Device Democracy - Saving the Future of the Internet of Things

This paper is written by IBM in July 2015 and discusses how the Internet of Things (IoT) is already in trouble by cost, sheer number of devices, and broken business models. It entertains ways that the IoT can be saved through a methodology that IBM calls the blockchain. It closes with attributes of winners and losers in an increasing digital world.

(IS-2016-45) 3rd Annual Grid Modernization Index

This paper was published in January 2016 by the Gridwise Alliance. It is the third annual ranking of states in the U.S. based on implementation of grid modernization measures. It focuses on the electric grid in each state and weights various factors such as state support, customer engagement, and grid operations. It also provides a year over year trending of which states areimproving.

(IS-2016-44) IAB Digital Shopping Report - Guide to Mobile Devices and Holiday Shopping

This report was written in November of 2015 and contains on analysis of US Adults and their usage of various technologies to make retail purchases. The technologies compared include mobile smart phones and tablets. The analysis highlights the best ways to reach consumers of different age groups across devices and media.

(IS-2016-43) Canadian Gas Association Annual Natural Gas Sector Report 2015

This report is done annually by the Canadian Gas Association and details natural gas use, demand, and consumption for the 2015 calendar year. It compares natural gas usage to oil as a result of differing prices in the market over the course of 2015. It also discusses reserves and storage of natural gas in the Canadian marketplace.

(IS-2016-42) Industrial Internet Insights Report

This report presents results from a survey on Industrial Internet and Big Data conducted by GE and Accenture in China, France, Germany, India, South Africa, UK, and USA, covering 9 industrial sectors: Aviation, Wind, Power Generation, Power Distribution, Oil and Gas, Rail, Manufacturing, Mining, and Healthcare.

(IS-2016-41) DataTrends - Energy Use

This is a series of data trends prepared by US EPA on energy use in bank branches, courthouses, distribution centers, residence halls/dormitories, financial offices, hospitals, hotels, K-12 schools, medical offices, non-refrigerated warehouses, offices, retail stores, senior care communities, supermarkets, wastewater treatment plants, and worshipfacilities.

(IS-2016-40) Results from an Expert Roundtable on Utilization of Public-Private Partnerships to Promote High-Performance Public Buildings in the United States

It reports results from an expert roundtable organized by the National Institute of Building Sciences (NIBS) and Royal Institution of Chartered Surveyors (RICS) on the utilization of Public-Private Partnerships (P3) in US. It discusses benefits and challenges, and then suggests next steps.

(IS-2016-39) The Energy Efficiency and Productivity Benefits of Smart Appliances and ICT-Enabled Networks: An Initial Assessment
This report presents initial assessment results on energy efficiency and productivity benefits of smart appliances and ICT-nnabled networks. It suggests that ICT-enabled networks and services might enhance overall economic activities by as much as $600 billion per year over the next several decades.

IS-2016-38) The Internet of Things: Security Research Study

This report was completed by the Veracode. The white paper examined the security of six internet connected, always on consumer devices in four different domains to determine the potential for real-world impact. All devices but one exhibited vulnerabilities across most categories putting consumers at risk for an attack or physical intrusion. There is a clear need to perform security reviews of device architecture and accompanying applications to minimize the risk to Internet-of-things users.

(IS-2016-37) Water Conservation and Water Resource Management in California's Green Buildings
This report was completed in 2015 by the US Green Building Council. The paper reviewed a decade of LEED project credit achievement data and identified trends in how LEED projects have conserved water. Opportunities for further improvements will increase participation rates, climate and energy impacts of water use in buildings require closer attention, and existing levers can effectively improve conservation.

(IS-2016-36) Why is the so-called Smart World still So Stupid
This white paper was completed in 2015 by GreenPeak Technologies. The paper describes the difference between connected homes and smart homes and suggests that consumers will better value smart homes once they provide more meaningful utility. An evolutionary comparison to the automotive industry is provided.

(IS-2016-35) Banking on Solar: An Analysis of Banking Opportunities in the US Distributed Photovoltaic Market
This report was completed in November 2014 by the National Renewable Energy Laboratory of the US Dept of Energy. The report provides a high level overview of the developing U.S. solar loan product landscape for both a market and economic perspective. Covered are current and potential solar lending institutions, loan products, program structures, lender risks/opportunities, and an economic analysis comparing third party-financed loan products.

(IS-2016-34) To Own or Lease Solar: Understanding Commercial Retailers' Decisions to Use Alternative Financing Models
This report was completed in December 2014 by the National Renewable Energy Laboratory of the US Dept of Energy. The report examines the tradeoffs among financing methods for businesses installing onsite photovoltaics. Costs and benefits of financing strategies are reviewed. Case studies comparing IKEA (ownership) to Staples (Power Purchase Agreement) are provided.

(IS-2016-32) 2015 State of Modern Motherhood: Mobile and Media in the Lives of Moms
Designed in February 2015, the Interactive Advertising Bureau conducted a global study to compare the purchasing habits of US millennial mothers. The study focuses on how parenthood influences the use of media devices, media habits, brand choices, and the likelihood of noticing advertising. The methodology consists of an in depth survey supported by third party sources from Comscore, the United States Census, and Pew Research Center.

(IS-2016-31) A Neuroscience Perspective: Assessing Visual Focus, Message Processing & the Ability to Strengthen Associations Through Mobile Native Advertising
Published in 2015, Sharethrough provides a neuroscience perspective summary of the effects of mobile advertising and reader attention. The reaction of human visual focus is explored for native ads and banner ads.

(IS-2016-30) The Aspect Consumer Experience Index: Millennial Research on Customer Service Expectations
This report from the Center for Generational Kinetics examines consumer attitudes, expectations, preferences

and customer service priorities by generation. The primary focus of this report is the behavior of Millennials, or "Generation Y", within the context of another generation to highlight similarities and differences.

(IS-2016-29) THE MARTINI REPORT: The Affluent Audience Online. Vol 1: Autos and the Elite
This report from Martini Media examines the role of the Internet in "Affluent lives" and "Affluent spending". This report is the first in a series of White Papers synthesizing findings from this research with data from a variety of sources in order to understand the online spending habits of high-income individuals.

(IS-2016-28) Smart Grid Today Exclusive Industry Report
This report from MMI examines the issues currently surrounding the renewable energy and smart grid industries around the world. The report not only outlines these issues (which range from the retrofitting of smart inverters to the economics of personal rooftop solar panels) but also provides the practical solutions that are currently being implemented.

(IS-2016-27) The WELL Building Standard
This report from the WELL Building Institute outlines overall strategies, performance targets, and certification and compliance steps required for projects to meet the "WELL Building Standard v1.0". This building standard focuses on occupant health and well-being, which is achieved by implementing strategies, programs and technologies designed to encourage healthier, more active lifestyles and reducing occupant exposure to harmful chemicals and pollutants.

(IS-2016-26) Natural Gas and the Canadian Industrial Sector 2014
This report from the Canadian Gas Association provides data on of the relative use and importance of natural gas in industry. Industries described in more detail include Food and Beverage, Wood Products, Pulp and Paper, Chemical Products, Cement and Lime, and the Primary Metals industries. Furthermore, using a simulation models, estimates were obtained on where natural gas is used in Canada.

(IS-2016-25) Supply Chain Risk Management Practices for Federal Information Systems and Organizations
This report from NIST provides guidance to federal agencies on identifying, assessing, and mitigating information and communications technology (ICT) supply chain risks at all levels of their organizations. The publication integrates ICT supply chain risk management (SCRM) into federal agency risk management activities by applying a multitiered, SCRM- specific approach, including guidance on assessing supply chain risk and applying mitigation activities.

(IS-2016-24) Rate Design for the Distribution Edge
This report from the Rocky Mountain Institute was prepared to support discussion and dialogue about next-generation retail electricity pricing approaches appropriate for a future with increasing quantities of distributed energy resources. It is intended to stimulate and advance discussion about the advantages and disadvantages of alternative pricing approaches.

(IS-2016-23) Lighting quality perceived in offices
This study from Zumtobel Research deals with the quality of office lighting as perceived by the user, and with the discrepancy between the actual situation and the users' preferences. It allows for specific design principles to be derived as a basis for effective lighting concepts that are adequate to users and activities, beyond existing standards and procedures.

(IS-2016-22) 2015 Data Breach Investigations Report
This report from Verizon examines data breaches in 2015 and analyzes the threats, vulnerabilities, and actions that lead to security incidents, as well as how they impact organizations suffering them. The report analyzes information from 70 different organizations in order to provide a detailed breakdown of 79,790 security incidents that led to 2,122 confirmed data breaches in 2015.

(IS-2016-21) Mogul Base LED Replacement Lamps
This report from the Lighting Research Center examines Mogul base LED replacement lamps, which are being marketed as equivalent replacements for incumbent HID lamps. Photometric and electrical testing was conducted

on 18 mogul base LED lamps. The study found that only 4 of the 18 lamps met the minimum tested DLC QPL criteria for retrofit kits when the lamps were placed in area lighting and roadway luminaires.

(IS-2016-20) 2014 Digital Storage for Media and Entertainment Report
This report by Coughlin Associates analyzes requirements and trends in worldwide data storage for entertainment content acquisition, editing, archiving and digital preservation, as well as digital cinema, broadcast, satellite, cable, network, internet and VOD distribution. Also discussed are capacity and performance trends, as well as media projections.

(IS-2016-19) 2014 Emerging Non-Volatile Memory & Storage Technologies and Manufacturing Report
This report from Coughin Associates looks at the efforts to develop new memory technologies. Most of these new technologies are non-volatile memories and can be used for long term storage or to provide a memory that does not lose information when power is not applied to the electronics. The memories addressed in this report include PRAM, RRAM, FRAM, MRAM, STT, MRAM and a variety of less mainstream technologies such as carbon nanotubes.

(IS-2016-18) Responding to - and Recovering From - Sophisticated Security Attacks
This white paper from IBM Global Technology Services discusses the four proactive steps that should be taken to keep an organization safe. The four steps discussed in detail are: Prioritizing your business objectives, protecting your organization, preparing your response to a sophisticated attack and promoting a culture of security awareness.

(IS-2016-17) The Self-Encrypting Drive Market and Technology Report
This report is based on a survey conducted by Coughlin Associates on the use of encryption to provide security in various types of electronic equipment that use storage devices. Those interviewed include storage device suppliers, systems OEMs, security software companies, storage control suppliers and others.

(IS-2016-16) European Wind Energy Operations & Maintenance Market Overview 2014/15
Wind Energy Update interviewed over 100 wind energy experts working in the European market and collated the results in this report, which contains the latest market data. This data gives insight into the latest challenges being faced and the potential growth for this expanding market.

(IS-2016-15) The Internet of Things: Can it Find a Foothold with Mainstream Audiences Today?
In this white paper, Nielsen uses the Internet of Things as a case study for understanding how to align new, disruptive offerings with mainstream consumer needs. Nielsen evaluated more than 4 million product concept alternatives for smart products by asking consumers to make choices about which concepts they preferred and these voices were used to shed light on key consumer preferences and barriers to mainstream adoption of smart products.

(IS-2016-14) Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness
This white paper compares the biological effects of reading an electronic book on a light-emitting device with reading a printed book in the hours before bedtime. In this report from PNAS, it examines the results that eBooks can have on sleep, including reduced evening sleepiness, reduced melatonin secretion, later timing of the circadian clock and reduced next-morning alertness.

(IS-2016-13) Financing Small Commercial Building Energy Performance Upgrades: Challenges and Opportunities
This paper focuses on the tremendous economic opportunity associated with small commercial buildings measuring 50,000 square feet or less. Insight is provided into where policy changes could have the greatest impact on increasing the pace of energy efficiency upgrades, while also strengthening small businesses, creating jobs and enhancing economic and environmental resiliency in the face of climate change.

(IS-2016-12) Benchmarking Utility Clean Energy Deployment: 2014
Renewable energy and energy efficiency have become increasingly important elements of the U.S. electricity system. This white paper by Ceres looks at how U.S. electric utilities rank in terms of deploying these clean

energy solutions. Data is assembled from more than 10 sources to show how 32 of the largest U.S. investor-owned electric utility holding companies stack up on renewable energy and energy efficiency.

(IS-2016-11) Multiple Benefits of Business-Sector Energy Efficiency
This white paper describes the current understanding of non-energy benefits that accrue to businesses. Data is collected from surveying experts and conducting literature searches and this report concludes that there is evidence that the inclusion of non-energy benefits can cut the payback time of some energy efficiency investments by 50%.

(IS-2016-10) Bright Green Buildings: The Convergence of Green and Intelligent Buildings
The intent of this research is to provide documented evidence and build tools that can be used to educate and influence end-users, building owners, architects, and contractors that a "greener building" can be achieved using intelligent technology, and will provide a tangible and significant return on investment. This concept – intelligent, green, and profitable – is what we call a bright green building. This research identifies the exciting developments taking place on the technology front and analyzes their implications for intelligent and green buildings, highlighting examples of "best in class" buildings employing green and intelligent technologies. These buildings are dynamic environments that respond to their occupants' changing needs and lifestyles.

(IS-2016-09) How safe are home security systems?
This report from HP examines home security systems for cloud and mobile interfaces. HP reviewed and performed security testing on ten off-the-shelf home security systems and found several authentication and authorization issues.

(IS-2016-08) 2013 data breach investigations report
This report from Verizon attempts to study and combat data breaches by examining over 7,000 reported security incidents and 621 confirmed data breaches from 2012. The report provides key findings and highlights trends (such as statistical breakdowns of who is victimized, who commits the breaches, how they occur and why) from the compiled incident reports.

(IS-2016-07) 2014 Getting to Zero Status Update
This report from NBI presents their findings on zero net energy buildings and "ultra-low2" energy buildings and districts across North America and builds on their previous report "Getting to Zero 2012 Status Update work by New Buildings Institute (NBI)".

(IS-2016-06) Building Our Capacity to Reliably Achieve Climate-Neutral Building Outcomes
This report from the World Sustainable Building Conference examines the capacity-building conditions and practices within the green building community, and sets forth necessary conditions for the consistent, successful, and cost-effective realization of building projects with high performance goals.

(IS-2016-05) SDG&E Smart Grid Development Plan 2014 Annual Report
This report from SDG&E provides stakeholders with an update on SDG&E's Smart Grid deployment in the San Diego region. This Annual Report provides a status update to SDG&E's Smart Grid metrics, deployment costs, and benefits for the Reporting Period.

(IS-2016-04) State of the Electric Utility
This report from Utility Dive provides the results of a survey on "the state of the electric utility going into 2015" which aims to analyze current market trends. The report focuses on smart distribution platforms and new energy services, claiming that they will be the foundations of the industry's future.

(IS-2016-03) Getting to Zero 2015: National Forum Event Report
This report, which is a result of a collaborated effort between the New Buildings Institute, the National Association of Energy Officials and the Rocky Mountain Institute, summarizes the findings and outcomes of the 2015 Getting to Zero National Forum. The event provided a platform for "thought leaders and early adopters could come together to share perspectives on the growth of zero energy buildings, learn about best practices for successful projects and collaborate on opportunities to drive zero energy performance in the built environment."

(IS-2016-02) Vision of Smart Home The Role of Mobile in the Home of the Future

This report from GSMA examines the potential role of mobile connectivity in future smart home systems. It is intended to provide insight on the capabilities of mobile connectivity as well as smart home market opportunities and the associated challenges for companies and regulatory bodies from both the mobile and the utilities industries.

(IS-2016-01) Real-Time energy management

This case study from the NRDC examines the energy management initiative implemented by The Tower Companies ("Tower"), in three large, multi-tenant office buildings it owns and operates in downtown Washington, D.C. Tower's initiative was designed to deliver its buildings operations team with better information about the energy use in each building to catch and correct operational stray, and to provide actionable recommendations to ptimize energy use.This case study provides building owners, tenants, efficiency programs, and others with a model of an energy managementinitiative.

(IS-2015-150) Expanding the Energy Efficiency Pie: Serving More Customers, Saving More Energy Through High Program Participation

Currently there is a need for utility programs to increase energy savings as a way to save money for all utility customers, to reduce emissions, and to improve reliability. Achieving higher energy savings through energy efficiency programs generally requires higher customer participation. This report looks at the ways that customer participation can be improved.

(IS-2015-149) Building IQ's Meter Processing Flow

Meter data collection from buildings is highly variable in terms of source, format, and quality. BuildingIQ is able to receive, load, and process any data stream, whether from third-party vendors, through file transfer, or through email. This report looks at Building IQ's meter processing from collecting data to analyzing it.

(IS-2015-148) Wearing and Disrupting the In-Vehicle Experience

OEMs go to great lengths creating connected-car environments to replicate the burgeoning digital lifestyle of their customers. Enter wearables, which present a multitude of possibilities—and problems. This white paper looks at what it will take to make wearables work seamlessly and enhance the auto experience.

(IS-2015-147) 2015 Strategic Directions: Smart Utility Report

The Black & Veatch 2015 Strategic Directions: Smart Utility report is a compilation of data and analysis from an industry-wide survey. Topics addressed include devices, telecommunications networks and automation technologies used to meet new service requirements and provide greater integration with smart city programs.

(IS-2015-146) Internet of Things: Privacy and Security in a Connected World

The FTC hosted a workshop on November 19, 2013 titled, The Internet of Things: Privacy and Security in a Connected World. This report summarizes the workshop and provides staff's recommendations in this area. The discussions in this report are focused on IoT devices that are sold to or used by consumers.

(IS-2015-145) Predictive Grid Quarterly Report: Building a Predictive Grid for the Motor City

In June of 2014, Tollgrade partnered with DTE Energy to work together on a Clinton Global Initiative (CGI) Commitment to Action for a comprehensive grid modernization project in the Detroit metropolitan area. This report aims to provide a new industry benchmark to show how U.S. utilities can better detect and respond proactively to power outages, a well as new methods in the battle to prevent outages.

(IS-2015-144) Threat Landscape and Good Practice Guide for Smart Home and Converged Media

This report provides an overview of the current state of cyber security in the smart home domain. In particular it identifies commonly used assets, exposure of these assets to cyber threats, threat agents, vulnerabilities and risks, as well as available good practices in the field.

(IS-2015-143) Natural Gas Utilities: Driving Canadian Energy Efficiency and Innovation

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This report highlights the historical achievements of natural gas utility energy efficiency programs, as well as provides recommendations that will help the industry respond to the ongoing efficiency interests of Canadian natural gas consumers.

(IS-2015-142) Gamified Energy Efficiency Programs

Turning something into a game—using the features of games to accomplish a real-world objective—is called gamification. Evidence suggests that games can encourage positive behavior change. Most notably for this report, a number of games have been developed that motivate consumers to save energy. This report describes and analyzes 22 game-based solutions that either are or could be part of an energy efficiency program.

(IS-2015-141) Cyber Security: Points That Need to be Part of the Conversation

Cyber security has emerged as the number one priority and it is a fact that cyber threats are continuing to increase. This report looks at cyber security in the workplace, prevention and protection.

(IS-2015-140) Webinsure Medical: Automating Medicare

This report looks at the increase in Medicare Advantage enrollments despite the changes to the Affordable Care Act (ACA). The problems and challenged associated with Medicare Advantage are discussed, as well as the solution, which is WebinsureMedicare.

(IS-2015-139) Assessing the Impacts of FERC 745

FERC Order 745 was revoked after the U.S. Court of Appeals announced that FERC had overstepped its boundaries in initially issuing the order in 2012. FERC Order 745 states that grid operators are required to pay the full market price ($/kWh) to economic load curtailments. This report looks at the short term and long term impact of FERC 745.

(IS-2015-138) Smart Grid: 10 Trends to Watch in 2015 and Beyond

Smart grid technology is a fast-moving industry with technological breakthroughs and innovations emerging all the time. Navigant Research has prepared this white paper to provide current and interested stakeholders in the smart grid market, including technology companies, service providers, utilities, investors, and policymakers, with an overview of 10 key trends that will affect the smart grid market during 2015 and beyond.

(IS-2015-137) IEEE CS 2022 Report

This report surveys 23 innovative technologies that could change the industry by the year 2022. The goal of this report is to help researchers understand the future impact of various technologies and help a general audience understand where technology is evolving and the implications for human society.

(IS-2015-136) Transform Every Customer into a Demand Response Resource: How Utilities Can Unlock the Full Potential of Residential Demand Response

More and more, utilities are choosing demand response (DR) as a way to balance grid operations, lower energy prices for consumers, and integrate renewable resources like solar power. This white paper looks at how utilities can unlock DR's full potential by analyzing three key areas: Unlocking the base through behaviour, keeping dynamic pricing simple and deepening customer relationships.

(IS-2015-135) How Much Energy Do Building Energy Codes Really Save? Evidence from California

This report looks at how effective the building codes enacted by California in 1978 have been in reducing residential energy use and associated pollution over time. Three key areas to measure the effect of building codes are examined in this report: Selection, behavioral response and policy endogeneity.

(IS-2015-134) How Can Utilities Survive Energy Demand Disruption?

Through extensive scenario modeling and analysis, as well as in-depth interviews with utilities executives, Accenture provides a view of the likely impact of technology adoption and specific insights to help utilities identify a path to a more digitally enabled grid.

(IS-2015-133) Forging a Path Toward a Digital Grid: Global Perspectives on Smart Grid Opportunities

This paper will provide a review of the challenges driving the uptake of smart grid solutions and consider how the variations in challenges for each nation could result in diverging priorities for smart grid investment. Following on from the national challenges, the paper focuses on the tasks required to determine and execute the appropriate smart grid strategies for utilities.

(IS-2015-132) How the Connected Consumer is Shaping Retailers' Omnichannel Strategy

A whopping 87% of smartphone owners use their phones for shopping purposes. This phenomenon has changed the role of the store associate and the physical store. This report looks at the changing landscape of the brick-and-mortar store and explores a few digital tools that retailers can use today to transform their stores and augment the in-store experience.

(IS-2015-131) Role of Natural Gas for Power Generation

This report reviews Canada's current electricity system and examines how it may evolve. It highlights the role of clean and affordable natural gas in today's system, and the role the commodity – and natural gas infrastructure – can play in the model as it evolves.

(IS-2015-130) Zero Net Energy Building Controls: Characteristics, Energy Impacts and Lessons

The Continental Automated Buildings Association (CABA) commissioned New Buildings Institute (NBI) to conduct research on controls in Zero Net Energy commercial buildings. ZNE buildings are an emerging trend in response to energy efficiency and carbon reduction policies, as well as market interest in 'green and sustainable' environments. NBI's last decade of work in building performance outcomes and ZNE buildings identified a gap in information concerning the control systems applied in these leading edge buildings. The outcomes of this collaborative research project can help fill that gap and enable a better understanding for CABA, its members, and the building and energy industry.

(IS-2015-129) ISS 2020 Vision: Scenarios for the future of the Global Facility Management Industry

The objective of the ISS 2020 Vision study is to develop a set of global scenarios for the future of the FM and services industry and to bring awareness about future trends, uncertainties and opportunities that could have the greatest impact on the industry.

(IS-2015-128) Government Works: Federal Agency Actions on Energy Efficiency

This paper looks at potential savings from four key sets of federal agency actions related to energy efficiency: Appliance and equipment efficiency standards, vehicle fuel economy standards, power plant greenhouse gas emissions standards and select housing efficiency standards and financing policies.

(IS-2015-127) Energy-Efficient Lighting Explained

This report aims to help commercial enterprises understand their options, including the benefits, costs and savings offered through the installation of high-efficiency lighting. This report also describes the various kinds of lighting and lighting controls and their pluses and minuses. In addition, audio interviews with leaders in the field about energy efficient lighting and how to best take advantage of the different options are provided.

(IS-2015-126) Smart Meter Controls White Paper

The paper aims to identify assets, threats and mitigating controls for smart metering using the OCTAVE Alle-gro risk assessment method. The result is a collection of 43 controls, which apply to any smart meter environment. Although the analysis is tailored to the analysis of the wireless M-Bus, the listed controls provide a good basis for metering companies, utilities or meter manufacturers to verify their meters protection level.

(IS-2015-125) Early Evidence Suggests Gigabit Broadband Drives GDP

This report examines the relationship between the availability of gigabit broadband services and economic activity at the community level. The study outlined in this report suggests that communities where gigabit broadband is widely available enjoyed higher GDP, relative to similar communities where gigabit broadband was not widely available.

(IS-2015-124) Using the HP Vertica Analytics Platform to Manage Massive Volumes of Smart Meter Data
This white paper presents a smart metering use case for a large electric utility with 40 million customers. The results show how the HP Vertica Analytics Platform delivers consistent, cutting-edge performance month after month, ultimately storing more than a decade of data on a cluster of eight HP generation 8 servers.

(IS-2015-123) Meeting the 4K HEVC and Multiscreen Challenge: Cost Effective Deployment of High-Quality Video Processing for Broadcast Using Off-the-Shelf Technology
This white paper outlines the trends driving the need for high-quality video transcoding and encoding and offers an alternative to conventional host media processing. Using a PCI Express video accelerator and embedded broadcast video processing firmware, this approach offers dramatically improved performance, taking up less space, consuming less power and costing less.

(IS-2015-122) The Fuel Cell and Hydrogen Industries: 10 Trends to Watch
This white paper looks at some of the major trends that Navigant Research sees happening over the next 12 months. The trends were generated from Navigant Research's analysis of the fuel cell and hydrogen industries, as well as research into the sectors in which fuel cells compete, including combined heat and power (CHP) generation, energy storage, and electric transportation.

(IS-2015-121) Digital Home Entertainment to Exceed Physical by 2016, Study Finds
This report looks at the steady increase of box office and digital revenue over the next five years and the decrease in the rentals and sales of DVDs and other discs. Due to these statistics, this report presents the idea that the future will be streamed and downloaded and that electronic home video revenue will exceed that of physical home video in 2016.

(IS-2015-120) Guide to Energy, Carbon and Sustainability Software
This Guide to energy, carbon and sustainability software presents the main drivers for companies to invest in sustainability software. The guide describes the biggest challenges, identifies key software features to look for and offers recommendations for selecting sustainability software.

(IS-2015-119) American Society for Healthcare Engineering Code Summary Report
This report from the American Society for Healthcare Engineering provides standard building codes for new and existing healthcare buildings.

(IS-2015-118) Addressing the health IT interoperability challenge through public-private partnerships
This report from TM Forum explores how the convergence of the telecommunications industry, digital service providers and healthcare institutions can "create more robust health standards and processes to promote the rapid adoption of sustainable digital ecosystems that can deliver cost savings and improvements in the quality of care." The report emphasizes the importance of establishing public and private partnerships (P3s) in order to formalize and promote cross-industry dialog and, as a result, to assist in designing end-to-end solutions for sharing data.

(IS-2015-117) How to Calculate and Present Deep Retrofit Value
This report from RMI is a guide for owner-occupants (although it can be applied, with adjustment, to residential spaces and other property types) on how to calculate and present deep retrofit value. This practice guide details how to calculate and present the value of a property-specific deep retrofit for owner-occupants, and it breaks down the non-energy cost aspects of deep retrofit value into nine discrete value elements, and then offers a sample report showing how to synthesize and present such an analysis.

(IS-2015-116) Research and analysis about determining constructive and project factors in domotic housing
This report from the World Congress on Housing examines the current relationship between smart buildings and the architectural process. The report determines that all home automation factors relevant to architects and designers should be standardized in order to allow buildings to be designed with a "domotic pre-installation" and thus improve home automatedtechnologies.

(IS-2015-115) Smart Cities: Business Models, Technologies & Existing Projects
This report from IHS Technology examines the use of technology in smart city solutions. The main smart city applications covered in this report are mobility and transport, energy and sustainability, physical infrastructure, governance, and safety and security. Within each section, IHS provides specific examples of what types of solutions smart technology can provide to a 'smart city'.

(IS-2015-114) Department of Energy: Rules and Regulations
This report from the U.S. Department of Energy contains regulatory documents for the Green Building Certification Systems for Federal Buildings. These regulations update the Federal energy efficiency standards by adding criteria that green building rating systems must meet. Federal agencies are not required to use a green building rating system, but if they choose to do so, the systems must meet these criteria.

(IS-2015-113) Turning Title 24 Regulations into Smart Savings
This report from Daintree Networks argues that it is important for California businesses to invest in building-wide energy management solutions due to the recent update of the California Energy Commission's "Title 24 Energy Efficiency standards", which requires businesses to implement technologies that enable highly efficient and zero-net-energy buildings with systems that are integrated with advanced communications capabilities.

(IS-2015-112) Essential Guide to Lighting Retrofits & Upgrades
This report from Daintree Networks explains the benefits for businesses to implement energy efficiency technologies and provides information for managers on how to choose the most effective solutions for reducing energy use.

(IS-2015-111) Background and Approach to a Definition of Smart Buildings
This report from Pennsylvania State University (PSU) and the U.S. Department of Energy attempts to create an intentional definition of the term "Smart Building" separate from the ostensive definitions that are currently used. The report claims that the ambiguity of the term "Smart Building" may be cause for society to reject new automated services. A proper definition will also limit the scope of research in the field.

(IS-2015-110) 10 Policy Principles for Unlocking the Potential of the Internet of Things
Created in 2014, the 10 Ten Policy Principles for Unlocking the Potential of the Internet of Things highlights important policy tools to consider and apply for the advancement of the Internet of Things. This white paper is designed to help policymakers establish viable programs and services driven through an IofT framework. The Center for Data Innovation is a think tank based in Washington D.C. specializing in the intersection of public policy and data driven technology.

(IS-2015-109) Smart Cities Open Data Guide: Advice, Best Practice and Tools for Creating a Data-Driven City
The Smart Cities Open Data Guide: Advice, Best Practices and Tools for Creating a Data-Driven City provides a global overview of successful and challenging open data usage within metropolitan areas. This white paper also outlines a general framework to assist in the creation and promotion of new open data projects at the local government level.

(IS-2015-108) Development and Growth of the Solar Sector in Asia
This 13 page Ebook provides a brief general overview of growth and development within the Asian Solar Sector. Contributors include Thierry Lepercq, Robert Haendel, Mohd Azhar Abdul Rahman, and Dr. Thomas Reindl. The "Development and Growth of the Solar Sector in Asia" would be more suited for exploratory research and/ or new entrants considering entering themarket.

(IS-2015-107) The Economics of Load Defection

This report was completed in April 2015 by the Rocky Mountain Institute. This report explores the economic impact of grid defections using various combinations of power supplied by the grid, solar power and batteries in five sample cities for both residential and commercial markets to 2050. As solar plus battery combinations become cost effective, the grid will be evolve to a role of backup power supply. Impacts of this shift on the various stakeholders are discussed.

(IS-2015-106) UPnP The Discovery and Service Layer for the Internet of Things

This white paper was completed in April, 2015 by the UPnP Forum. Based on the successful implementation of UPnP technology, this white paper proposes using the UPnP+ as the future standard to enable the Internet of Things beyond the home into mobile, work and industry. UPnP+ incorporates capabilities such as access to cloud and web services, sensor bridging for any device regardless or power profile or network, a flexible and easily expandable data model and a robust security layer to create a future-proofed standard built to enable the Internet of Things to reach its full potential.

(IS-2015-105) The Robust and Resilient Smart Grid: Many Applications, One Powerful Platform

This report by Trilliant was completed in 2014. It outlines some of the Smart Grid network requirements the should be evaluated, including; cost, coverage, capabilities, bandwidth and latency. Choosing the right Smart Grid Communications Platform is essential for being able to support many different applications today and in the future.

(IS-2015-104) 2015 Cost of Data Breack Study: Global Analysis

This report was created May 2015 by the Pnemon Institute, sponsored by IBM. The report outlines the cost of data breaches, surveying 350 companies in 11 countries. The document outlines the increasing impact of data breaches, statistics and causes including two focus areas impacting the financial consequences: 1) executive involvement and 20 cyber insurance. This report covers variance by country, time to report and cause of data breach and impacted cost.

(IS-2015-103) Acquity Group 2013 B2C Omnichannel eCommerce Study

This report was completed on November 26th, 2013 by the Acquity Group. It summarizes, explains and expands upon the results of a survey taken by 1526 smartphone users on the subject of their shopping habits and preferences. The end results showed clear consumer preferences in shopping behaviour and found that consumers prefer retailers that provide a seamless omnichannel experience.

(IS-2015-102) Innovative Connections - Where the Cloud Meets Fiber to Drive Business Growth and Opportunity
This report was completed in September, 2014 by Forbes Insight in association with Comcast Business. It gives several examples of redevelopments which are being given modern infrastructure including fast broadband connections. These new high bandwidth areas are one way to attract and keep entrepreneurs. This report was written based off of interviews with senior executives, business owners and innovation center founders.

(IS-2015-101) Project Shine (Shodan Intelligence Extraction) Findings Report

Project SHINE was created because of the large volume of infrastructure security professionals who wonder as to what extent critical systems are exposed to the Internet. This report highlights the details of this project, including the results and lessons learned.

(IS-2015-100) CES 2015 - Insights, Perspectives and Assessments after the Show

This white paper was completed in 2015 by IHS Technology. This white paper examines the insights, perspectives, assessments and trends gleaned from the 2015 Consumers Electronics Show. Advancements in semiconductors has driven a number of new opportunities and products, drones being of not. The show's most

prominent segments included: automotive, consumer electronics & smart homes, displays, Internet-of-Things, mobile and wearables.

(IS-2015-99) Leveraging UPnP+ The Next Generation Of Universal Interoperability

This white paper was completed in April 2015 by the UPnP Forum. This white paper compares UPnP with UPnP+, the technical differences between the two, and the certification process requirements. UPnP+ is the next generation of UPnP, and provides a standards framework to extend the Internet of Things into mobile, work and industry.

(IS-2015-98) The Complete UHD Guidebook – A Reference Tool for Next-Generation Video

This report was completed in 2015 by The Diffusion Group. This report provides and appraisal of the future of Ultra-High-Definition video, and includes the challenges and opportunities that creatives, network operators, and service providers will encounter as the TV ecosystem transitions from HD to UHD. Included are discussions regarding key technical issues, market analysis and strategic recommendations for industry stakeholders.

(IS-2015-97) Addressing Transparency Expectations in the Metals and Mining Sector

This article was published by PE International in 2014. It addresses the issue of supplier transparency in the metals and mining sector. The three approaches being used to address the transparency expectations of manufacturers, customers and regulators are explained in this article. In the future, suppliers who do not have proof of responsibly sourced material or Environmental Product Declarations (EPDs) will not be considered when comparing to other material suppliers who do have these data.

(IS-2015-96) Tracking and Hacking- Security and Privacy Gaps Put American Drivers at Risk

This report was completed February 2015 by the staff of Senator Ed Markey (Massachusetts). The report addresses security and privacy issues specific to increased technology in automobiles. The document outlines the response to surveys sent to the major car manufacturers requesting data on vehicle security and privacy practices. The report summarized eight key findings and suggests a necessity for standards to address automobile manufacturer security and privacypractices.

(IS-2015-95) New Channel Effectiveness in Restaurant Marketing Mix - A Study of Daily Deal Marketing Success
This report was completed in July, 2013 by Ipsos in collaboration with the National Restaurant Association and Groupon. Restaurant owners now have many technological promotional opportunities, including daily deals advertising. This paper evaluates how to be successful with daily deal marketing, and compares the unsuccessful users with the successful ones. A list of best practices for running daily deals promotions is also given.

(IS-2015-94) Directive on energy, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC
This is a paper from the Official Journal of the European Union. It focuses on directives with regards to energy efficiency and amending previousdirectives.

(IS-2015-93) IEEE CS 2022 Report

This report covers 23 innovative technologies that could change the industry by 2022. These technologies, tied into a scenario this report deems "seamless intelligence," presents a view of the future. For each of the technologies, there is a description of it, the challenges and disruptions.

(IS-2015-92) 4 Critical Trends in Electronics for 2014 and Beyond

This report by IHS Technology looks at four critical trends in the electronics industry for 2014. The four trends explored surround the issues of growth patterns, the impact of Cloud computing, the electronic supply chain and product life cycle.

(IS-2015-90) Internet Protocol for Smart Objects (IPSO) Alliance Technical Guide

An IPSO Smart Object is a specified collection of reusable resources that have a well-known object ID and which represent a particular type of physical sensor, actuator, connected object or other data source. This technical guide describes 18 Smart Object types, representing a variety of use case domains. This guide provides an example of how IPSO Smart Objects can be built to address some application specific use cases.

(IS-2015-89) Energy Efficient County Buildings: Realizing Money and Energy-Saving Opportunities

This report provides a summary of the data counties have provided to NACo through Portfolio Manager, a tool for monitoring utility costs and benchmarking facilities against their counterparts across the country. This Portfolio Manager analysis spans 21 states and totals more than 62 million square feet. This report contains a detailed discussion on benchmarking, energy efficiencies and future challenges and opportunities related to energy savings.

(IS-2015-88) Pacific Gas and Electric Company: Smart Grid Annual Report 2013

As on of the earliest and largest adopters of Advanced Metering Infrastructure (AMI) in North America, Pacific Gas and Electric Company is now leveraging this technology platform to prudently and methodically build the next generation Smart Grid to meet the 21st century needs of its electric and gas customers. This report looks at its Smart Grid Deployment Plan in great detail and highlights its development, benefits and risks.

(IS-2015-87) 2014 GRESB Report

GRESB reporting has become standard practice for most of the world's property companies and fund managers. GRESB's mission is to enhance and protect shareholder value by evaluating and improving sustainability best practices in the global real estate sector. This report looks at GRESB process, global results and future trends.

(IS-2015-86) Design Guidelines for the Visual Environment

With the increasing emphasis on accommodation of people with low vision within the built environment, this report is intended for use in obtaining guidelines in new construction and alterations of public accommodations and commercial facilities required to be accessible by the ADA and ABA.

(IS-2015-85) European Innovation Partnership on Smart Cities and Communities: Operational Implementation Plan: First Public Draft

This Operational Implementation Plan (OIP) is a companion document to the Strategic Implementation Plan of the European Innovation Partnership on Smart Cities and Communities. This OIP outlines eleven priority areas, which are discussed in great deal. It also highlights recommendations for starting points and examples intended to inspire interested parties.

(IS-2015-84) European Innovation Partnership on Smart Cities and Communities: Strategic Implementation Plan

This report is written by the European Innovation Partnership on Smart Cities & Communities. They seek to accelerate the industrial-scale roll out of smart city solutions integrating technologies from energy, transport, information and communications technologies, where the most untapped innovation potential is found This report outlines the strategic plan to implement this roll out of smart city solutions.

(IS-2015-83) Impact of Work Styles on Knowledge Worker Productivity: Finding of the TELUS-Ivey Study

From February 2013 to February 2014, TELUS and Ivey undertook to study the impact of the Work Styles program on the productivity of knowledge workers. They gathered data from focus groups of both knowledge workers and their leaders to develop the Knowledge Worker Productivity Measure. This Measure was validated and used to compare resident, home and mobile knowledge users. The findings of the study are outlined in this report.

(IS-2015-82) ISS 2020 Vision: New Ways of Working - The Workplace of the Future

The report aims to help customers create better workplace strategies. This report is divided into two parts: Part 1 describes the context in which future organizations will operate and provides a framework for discussing these

challenges and Part 2 focuses on providing a structure though which customers can define the role to be played in shaping the workplace towards 2020.

(IS-2015-81) Digital Services: Assembling the Business Blocks of Success

This report looks at how to be a successful service provider in the new digital ecosystem. Section 1 of this report looks at the critical role of developing a strategy. Section 2 examines recent, in-depth research from service providers to present a snapshot of what kinds of digital services they have to offer. Finally, Section 3 examines the building blocks that are needed to be put in place to be successful in an open digital ecosystem.

(IS-2015-80) Broadband Technology Opportunities Program Evaluation Study: Case Study Report Round 2

In 2010, the National Telecommunications and Information Administration awarded the C.K. Blandin Foundation with a Broadband Technology Opportunities Program Sustainable Broadband Adoption grant to implement the Minnesota Intelligent Rural Communities project. This case study looks at how the BTOP investment was maximized, successful strategies and techniques from this project and best practices utilized.

(IS-2015-79) Understanding the FTTH Landscape to Enable Better Business Decisions

This presentation was featured at the FTTH 2014 Conference & Expo and focuses on Fiber to the Home (FTTH). It discusses better FTTH planning including the drivers for FTTH and directions of FTTH. The presentation also highlights better FTTH positioning and messaging, as well as better marketing strategies.

(IS-2015-78) Managing Cyber Risks in an Interconnected World

This report was completed September 30, 2014 by PWC. This report outlines the global information security trends. Analyzed, surveyed, and consolidated by PWC, CIO, and CSO the global report includes data from 9700 corporate surveys conducted in 2014. The report explores industry cybersecurity topics including security spend, new threats, industry financial spend, losses due to breach, and hacker and vulnerability profiles.

(IS-2015-77) Guidelines for Smart Grid Cybersecurity

The report was completed September 2014 by the NIST Smart Grid Interoperability Panel- Smart Grid Cybersecurity Committee. This report details a framework for organizations to develop effective smart grid cybersecurity strategies. The set of guidelines are intended for individuals and organizations responsible for addressing cybersecurity for smart grid systems; including vendors of energy information and management services, equipment manufacturers, utilities, and system operators.

(IS-2015-76) MAKING THE SMART HOME SMARTER WITH UPnP® TECHNOLOGIES

This white paper provides a brief introduction to UPnP (Universal Plug and Play) technologies, UPnP Forum and its services on testing and certification.

(IS-2015-75) IHS Ranks the Top 10 Technologies That are Transforming the World

This report by IHS Technology ranks and briefly describes the top 10 technologies that are changing the world, including Internet of Everything (Things), Cloud Computing and Big Data.

(IS-2015-74) Innovators in the Internet of Things

IoT Nexus pioneered an industry-wide survey, collecting opinions from more than 300 decision makers working across the Internet of Things industry. From this survey, several companies were highlighted for their astounding innovative work, and IoT Nexus set out to gain further insights from the brightest prospects in IoT, as decided by the industry itself. Within this free paper you'll find interviews with key personnel from the most innovative SMEs and Start-Ups in IoT.

(IS-2015-73) 2015 Internet of Things (IoT) Survey

This brief report presents a summary of survey results on five questions related to Internet of Things (IoT) in smart buildings. The survey was done by Daintree Networks, involving 242 building owners, managers and other industry professionals, in order to gain insight into the awareness around IoT and building automation technologies for smart buildings.

(IS-2015-72) MANAGING MEDIA IN THE TV EVERYWHERE ECOSYSTEM

This paper addresses the challenges of making content (movies and TV shows) available on a variety of platforms ranging from large-format TVs to smart phones. The platform capabilities, quality (especially during Internet streaming), and economics are examined. For now, the largest market share and revenue for content comes from TV, not from the Internet. Service providers are encouraged to obtain high-resolution source material and to scale it for the various transmission methods and displays.

(IS-2015-71) Home Energy Management: Products & Trends

This paper examines the market for home energy management systems. These systems can reduce energy consumption 4-12%, but adoption has been slow. Products are categorized as control devices, user interfaces, and enabling technologies. Residential energy consumption is 22% of the US total energy produced. Better consumer feedback of energy consumption is recommended. Energy management may be combined with utility demand-response programs. Product success depends on human factors.

(IS-2015-70) Sentrollers, and the World of Small Data

This paper examines the role of data collection in the Internet-of-Things (IoT). Small amounts of data (termed "Small Data") will be collected from many sources such as sensors and thermostats located throughout the house. Collectively, the author calls sensors, actuators, and controllers "sentrollers" and predicts a synergy between small data and big data creating the Internet of Everything. Data collection may be supported by advertising.

(IS-2015-69) VIDEO-ON-DEMAND and the Consumer Advertising Experience

A consortium of media operators and advertisers examined the effectiveness of advertising in video-on-demand (VoD) television. They found that consumers tolerate ads and accept more and longer-format commercials in VoD than in conventional TV (called "linear TV"). This is because consumers are more engaged with programs they have selected through VoD.

(IS-2015-68) Smart TV Alliance Technical Specifications, Version 4.0

This report contains technical details for developing apps to run on Smart TV devices. Smart TV devices include a TV equipped with Internet access managed by the software in the TV. It also includes devices connected to the Smart TV such as a Blu-ray player and a set-top box. Examples of Smart TV applications include video-on-demand such as movie rental, catch-up TV, and 3D services; social networking; games; and news applications. A companion document for the Smart Home includes methods to discover, monitor, and control smart home appliances.

(IS-2015-67) THE SOCIAL CONSUMER STUDY

This paper examines consumer motivations for brand selection among products. It focuses on the impact of human and social values of the manufacturer on consumer preferences. The researchers found that women are twice as likely as men (31% versus 15%) to use social networks for brand selections. Corporate Social Responsibility (CSR) does not motivate decisions significantly unless there is negative news about the company. Customer loyalty to a brand is based on quality, customer service, and price.

(IS-2015-66) THE INTERNET OF THINGS - CAN IT FIND A FOOTHOLD WITH MAINSTREAM AUDIENCES TODAY?

Market research is reported on consumer understanding and desire for products based on the concept of the Internet-of-Things. For now consumers think this is a gimmick and show no strong product preferences. However, they assume that within 20 years such products will be common place. They are concerned about loss

of control if such products automatically make re-order decisions to buy consumables. Also, privacy and high costs are concerns.

(IS-2015-65) Connected Home Roadmap 2010
CABA's "Connected Home Roadmap 2010" project was a large-scale study created to provide insights into consumer attitudes concerning technologies, value propositions and future market adoption. The Roadmap's research quantified current business levels and identified the key players within the connected home space across multiple segments. Additionally, the project identified and prioritized consumer needs in the connected home space by pulling together past connected home research and converging it with new research to develop a concise vision where all the segments are headed.

(IS-2015-64) Aging in the Connected Home
The broad purpose of this CABA study was to identify a potential new market space by helping seniors remain longer in their home. Areas of consideration involve understanding the various inputs and outcomes of specific jobs within the home that affect the aging adult as they move about the home and take care of basic necessities. This research project will help organizations understand the opportunities for value creation amongst different groups within this population. It should also help companies identify key targets of opportunity for short-term innovation and long-term strategic planning.

(IS-2015-63) CABA North American Intelligent Buildings Roadmap 2011
CABA's Intelligent & Integrated Buildings Council undertook a collaborative North American Intelligent Buildings Roadmap research project to further strengthen the existing industry knowledge base and further perspectives on intelligent and integrated buildings.

(IS-2015-62) Connected Home User Interface Study
CABA members sponsored a consumer research project titled 'Connected Home User Interface Study' that helped defined the specific attributes or baseline criteria of a 'connected home user interface' for consumers when managing the connected home. In essence, the study explored and addressed some of the following questions (not limited to) through broad concept testing of various features that may be potentially incorporated into a whole home user interface.

(IS-2015-61) Intelligent and Integrated Buildings Technologies: Market Size in North America 2010
This CABA report provides an in depth analysis of the growing North American markets for integrated and converged intelligent building control systems ranging from environmental control technologies, to fire detection, to security to lighting systems to IT convergence.

(IS-2015-60) Unlocking your business value: Leveraging Java on devices
The Internet of Things (IoT) will change everything. It will feature intelligent devices at the edge of the network. Business value would come from using the large amounts of resulting data and acting on it quickly and as closely and as automatically as possible to create new services and to convert data to information and to business value. According to the article, Java is perfectly suited for helping achieving this vision. Java can provide local device intelligence, portability and flexibility, all within a secure environment.

(IS-2015-59) The Next Generation of Asset Management
Smart meters, Digital sensors, Data Analytic, Cloud Computing, M-to-M realtime communication, and IoT are key enablers for Intelligent Asset Management. Asset management is increasingly about feeding information from across the utility into asset management systems, and using that in a real-time, predictive manner to improve financial and operational performance. The paper summarizes the key findings, identifies the opportunities, and formulate the recommendations for utilities owner.

(IS-2015-58) Measurement and Verification Functionality of the BuildingIQ System
The paper describes IPMVP (International Performance Measurement and Verification Protocol) and how M&V software calculates energy savings before and after implementation. BuildingIQ software continuously monitors inputs including weather forecast, occupancy, energy prices and demand response events. It makes small

changes in HVAC settings that result in large financial gains without impacting occupant comfort.

(IS-2015-57) Mainstream Green: Moving sustainability from niche to normal

The Green Gap project identifies the gap between consumer's green intentions and green actions; the why and way to close the gap. While consumers are aware of the importance of sustainable behaviors and practices, many companies are unable to convert this belief into actionable business opportunities. This research paper enables marketers to: (1) create products and services that better meet consumer needs; (2) change consumers' perceptions of the value of green products and inspire them to take action; (3) target communication more effectively; (4)establish their leadership in the sustainable world.

(IS-2015-56) Determination of the influence of specific building regulations in smart buildings

'Smart or Digital Home' is a residence that uses a centralized control to integrate the various home automation systems including but not limited to control environmental systems such as heating and lighting, any electrical component within the house to provide a comfortable and safe environment in which to relax, learn, communicate, socialize and entertain. When designing a home automation system, it is necessary to know the requirements and applicable regulations. This research paper highlites the influence of regulations in promoting the implementation of specific home automation solutions.

(IS-2015-55) BuildingIQ Security

The paper discusses the 3 clusters of BMS and IT systems security components: (1) Front-end browser-based user interface, (2) On-site vendor's (BuildingIQ Site Agent) proprietary HW/SW solution, and (3) Cloud computing infrastructure. It outlines information and infrastructure security policy, including but not limited to the safe use of the Internet, working from remote locations, as well as identification and handling of sensitive information.

(IS-2015-54) Watts in a Drop of Water: Savings at the Water-Energy Nexus

This report from the American Council for an Energy-Efficient Economy (ACEEE) examines the relationship between water and energy conservation. Water is need to produce electricity; electricity is need to treat (up to 16 MWh/MG), transport (up to 14 MWh/MG), and heat water (up to 258 MWh/MG). Waste-water treatment may consume as much as 4.7 MWh/MG. Maximum efficiency measures could result in a 50%-savings of indoor water consumption (where 70% of all residential water is used). More empirical data are needed "to encourage more utilities to work together to save both water and energy, increase efficiency, and reduce consumption."

(IS-2015-53) Smart Material House; Smart is Green

This report from IBA_Hamburg explores the possibility of energy conservation by installing materials on building facades to adapt to environmental changes. A project to build this concept into an apartment house for thermal conservation is presented. The architecture and materials for each side of the building were chosen according to the sun exposure. Phase-change materials were installed for thermal storage. Some of these materials are embedded in window curtains. These materials store district heat (community-based heating) if needed. Part of the façade includes photo-voltaic cells that generate four times more power than needed by the building. Vertical handing gardens provide evaporative cooling. Issues encountered during construction are presented.

IS-2015-52) THE CONNECTED-HOME REPORT: Forecasts And Growth Trends For The Leading 'Internet Of Things' Market

This report from Business Insider projects an increased growth rate for sales of connected home devices. A unit growth rate of 67% through 2019 is predicted reaching 1.8 billion units. Sales in 2014 were $61 billion growing to $450 billion by 2019. The most likely purchasers are the millennial generation (20s and young 30s). Price and interoperability are barriers. Likely purchases are smart thermostats, smoke detectors, and temperature sensors. Second are security devices. The slowest growth will be in smart appliances (28% growth). Connected home devices are about one-quarter of the Internet-of-Things market

(IS-2015-51) Update on preparations for smart metering

This report from the U.K. Parliament examines the installation of smart electric and gas meters for 53 million households and small businesses. Parliament is concerned about of the cost of the meters and technology

obsolescence. The smart meters are expected to save consumers about 2% (3% by 2030) and to cost about 0.8% of the bill per month. These meters are to be linked to in-home displays via radio signals. However, about 5% of these signals will not reach the displays because of blockage by building materials. Parliament wants to be sure that prepayment customers benefit from smart meters.

(IS-2015-50) Verifying Environmental Sustainability in the Electronics Marketplace
This white paper was published in 2014 by Underwriters Laboratory and provides details on the sustainability verification options available to electronics manufacturers. Beginning with an overview of the market for sustainable electronic products, the paper identifies the spectrum of product sustainability concerns. Various verification pathways available to manufacturers and the role of sustainability standards in that process are discussed.

(IS-2015-49) Unlocking ROI – Understanding the Complete Return on Smart Building Investments
This paper was provided by Daintree Networks. This paper suggests ROI measurement should include impacts on productivity, employee comfort, operating efficiencies, risk reductions and utility/tax incentives. Several examples are provided to illustrate this points. While the examples are company specific, this paper identifies a number of things to consider when searching for a BEMS provider.

(IS-2015-48) Connected Home Report: Forecasts and Growth Trends for the Leading IoT Market
This paper was completed on September 29, 2014 by Business Intelligence. Smart home management, particularly with security and energy, will increasingly become "mainstream". Connected home device shipments will grow at a compounded rate of 67% over the next five years to 1.8 billion units shipped annually in 2019, accounting for 27% of the broader Internet of Things device category. Pricing and coding standards continue to be barriers for consumers and vendors, and industry consolidation will continue.

(IS-2015-47) Smart Grid Interoperability Report
This paper was completed on June 2014. This report focuses on the shift of the energy value chain from a centrally focused to a more dynamic, distributed system where the major challenges will be observed closest to the consumer. Developing standards and imposing market regulation /defining harmonization of market models, roles and responsibilities for market players will increase the speed and enhance the value of adoption. Outlined in the paper is a balanced perspective on this topic, and a suggested framework to provide for further discussion.

(IS-2015-46) Market Resources Alternatives: An Examination of New Technologies in the Electric Transmission Planning Process
Wire Group's 2014 report examines an important aspect of North America's evolving electric power infrastructure called "market resource alternatives" or MRAs. This report is designed to provide an analysis and observations about how developments like MRAs affect the need for, and planning of, high voltage electric transmission.

(IS-2015-45) Smart Cities and the Energy Cloud: Reshaping the Energy Landscape
This 2014 white paper looks at the smart city concept which, has developed in response to the rapid changes happening in cities around the world. Navigant Research examines some of the critical issues facing smart cities and utilities as they develop the energy policies needed in the century of this city.

(IS-2015-44) New Energy Retrofit Concept: "Renovation Trains" for Mass Housing
Building Research & Information's 2014 report looks at the large scale operation required to make millions of homes in Europe more energy efficient. They examine a pilot project in the Netherlands that used a standardized process to retrofit homes and how this "renovation train" can be used to scale up the process from 100 to 10,000 renovations a year.

(IS-2015-43) Digital Services: Building Trust Through the Value Fabric
This 2014 report, written by TM Forum, examines the security and privacy challenges that digital ecosystem partners and end users are facing, with a particular focus on security from the customer's perspective.

(IS-2015-42) Energy Efficiency Playbook: Replacements vs. Investments

This paper by Noesis gives guidelines on how to sell energy efficient equipment as an investment to facilities. Replacements and investments are compared and the approach that should be taken for each of them is given. Investment sales need to be sold in terms of cash flows rather than energy terms and you need to present the opportunity directly to the CFO.

(IS-2015-41) Creating Healthier Furniture and Building Materials by Minimizing Chemical Emissions

This paper was published in 2014 by UL. In it, the increasing importance of indoor air quality (IAQ) is addressed, causes of poor IAQ are explored and strategies for improving IAQ are examined. One solution includes using products that have been designed and constructed to be low emitters of volatile organic compounds. Finally, information is given on how to certify products that are designed for indoor use. The GREENGUARD Certification Program is given as an example of a method of certification.

(IS-2015-40) Driving Performance and Transparency in Green Building Products and Materials

This white paper by UL outlines and reviews some of the methods used to demonstrate that building products are compliant with green building certification programs and codes. It then discusses some of the tools available to compare and select green products, such as "environmental product certifications, lifecycle assessments (LCAs) and environmental product declarations (EPDs), as well as the specific functions of each."

(IS-2015-39) 14 Strategies to Save Up to 70% in Energy Costs Using the Latest in Warehouse Lighting ...and More

This white paper was published by Daintree Networks in 2014. 14 different lighting control strategies are examined along with the associated technology that is required to implement them.

(IS-2015-38) Pre-Heating Season Update

This paper, published by the Canadian Gas Association in October 2014, examines the natural gas market in Canada for the winter 2014-15 season. The paper lists the advantages of natural gas for heating, outlines the state of the North American natural gas market after the long 2013-14 winter heating season, and explains what has been done in terms of storage and delivery systems to better prepare for a potential long 2014-15 winter.

(IS-2015-37) The benefits of the Z-Wave Installation and Maintenance Application

This report from Sigma Designs discusses the Z-Wave Installation and Maintenance Application, or IMA, which is currently the most widely used protocol for smart home and home security technology. Also discussed are the benefits of the Z-Wave such as low power consumption, secure communications and automatic mesh networking.

(IS-2015-36) Preparing Millennials to Lead in Cyberspace

Raytheon and the National Cyber Security Alliance (NCSA) commissioned a survey to understand U.S. millennials' career interests, level of career preparedness and their online attitudes and behaviours. This report outlines and discusses the findings of this survey and focuses on the need to prevent and combat incidents of online security breaches by strengthening the cybersecurity workforce.

(IS-2015-35) Health, Wellbeing & Productivity in the Office: The Next Chapter for Green Building

This report shares the latest information on the building design features that are known to have positive impacts on the health, wellbeing and productivity of office occupants. This report also provides a high-level framework for building owners, occupiers and their advisors to start tracking the impacts of buildings on employee health, wellbeing and productivity in order to use the information in financial decision making.

(IS-2015-34) Technology, Media & Telecommunications Predictions 2014

This report is the 2014 edition of Deloitte's predictions for the technology, media and telecommunications (TMT) sectors. The objective of this report is to identify critical inflection points that should inform industry strategic thinking, and to explain how these will manifest over the next 12-18 months.

(IS-2015-33) Open Standards-Driven Wireless Building Energy Management

Introduction of LG LED/Daintree wireless mesh network light fixtures that can be used as a cost-effective solution for providing addressable light fixtures. According to this white paper, the solution can save up to 85% in labour and equipment costs and up to 90% in energy efficiency.

(IS-2015-32) Facilitating Success (Why is A Facilities Management System Needed?) White paper advocating for use of Facilities Management Systems. A short description of FMS is included. The article includes also a checklist to help decide if a FMS is required/appropriate and shows the benefits of using a FMS.
This is a second article in a series.

(IS-2015-31) The 12 Things You Need to Know about Monitoring-Based Commissioning (MBCx)

This article discusses the needs for monitoring-based (or continuous) building commissioning (MBCx). Twelve reasons for implementing MBCx are listed.
A good article worth reading for anyone involved in "Smart Buildings", "Intelligent Buildings", "fault detection and diagnosis", commissioning etc.

(IS-2015-30) China's digital transformation: The Internet's impact on productivity and growth

This June 2014 report completed by McKinsey Global Institute examines how the Internet will have a positive affect on China's economic growth and productivity as Small &Medium Enterprises (SME's) start to adopt the 'cloud' and the potential cost savings in hardware and support. The report specifically looks at the Internet's growing impact in the consumer electronics, automotive, and chemical sectors and how this will positively affect the in finance, real estate, and health care industries acting as a possible counter-balance to the slowdown in the retail and manufacturing industries.

(IS-2015-29) More of What We Want - The Cross Platform Report

This Nielsen report completed in June of 2014 examines how consumers viewing habits are changing with the introduction of more connected devices (smart phones & tablets) and increased viewing options such as; video-on-demand, time shifting & subscription services (Netflix). This report is focused on the U.S. market.

(IS-2015-28) The State of the Art of mHealth App Publishing

This paper completed in May 2014 by Guidance2Research examines the mHealth App market and future trends. This is a global study that looks at the growth of the app market and who the major players and adopters are and who is behind the increasing number of medical and health & fitness apps and their objectives. The study notes the growth of the industry, driven by end user demand and the increase of wearable technology and the barriers to adoption such as a lack of data security and the failure of the traditional healthcare (hospitals and Pharmaceuticals) players to adopt and produce mHealth apps.

(IS-2015-27) Maximizing Mobile Operator Opportunities in M2M

This paper was completed in Q1 of 2010 by ABI Research and sponsored by Cisco. It looks at the growing M2M market and the drivers behind it (Telematics/telemetry as sources of greater operational efficiency). It also explores the effects the growing demand for the M2M market has on Mobile Network Operators, Mobile Virtual Network Operators and Application Service Providers and the overall effect on the 'Internet of Things'.

(IS-2015-26) Telecom Analytics: Actionable Intelligence - Technology and Applications

Big data poses a challenge for telecom service providers to figure out how to leverage the amounts and types of dating pouring in. This whitepaper focuses on the need for the automation of big data applications and issues surrounding mobile marketing.

(IS-2015-25) Green Multifamily and Single Family Homes: Growth in a Recovering Market

The whitepaper discusses the evolution of green building for single family homes from boom to bust to recover through comparisons of studies from 2006 to 2011. It also looks at the addition of multifamily housing and the ways in which multifamily firms differ from those doing single family housing in terms of their drivers, marketing efforts and general approach to green building.

(IS-2015-24) Doing Well by Doing Good

This whitepaper looks at corporate responsibility and how this influences the consumers and their consumption patterns. Topics addressed include how passionate consumers are about sustainable practices when it comes to purchase considerations and which social issues and causes that are affecting the most concern.

(IS-2015-23) From Risky Business to Smart, Successful Connectivity

This whitepaper provides insight into the importance of assured reliability connecting devices. It outlines how to increase performance and reliability of the functionality in connected devices. This whitepaper also discusses the huge growth in connected devices and the opportunities and hazards that go along with this growth.

(IS-2015-22) Running OSS/BSS and NMS Applications on Cloud

Cloud computing is widely known for the advantage that it brings to the users. This paper discusses the various aspects of deploying OSS (Operating Support Systems), BSS (Business Support Systems) and NMS solutions on cloud. The scope of this paper is limited to only OSS/BSS applications, the advantages, disadvantages and therefore perspectives may differ from other applications.

(IS-2015-21) Benchmarking Utility Clean Energy Deployment: 2014

Renewable energy and energy efficiencies have become increasingly important elements of the U.S. electricity system. This report by Ceres and Clean Edge assembles data from more than ten sources to demonstrate how 32 of the largest U.S. investor-owned electric utility holding companies stack up on renewable energy and energy efficiency.

(IS-2015-20) Custora E-Commerce Pulse Mobile Report

This report explores mobile computing and how it is impacting the way people shop online. It takes an in-depth look at mobile e-commerce, email marketing, Apple's domination of mobile purchases and the future of cross-device shopping.

(IS-2015-19) Clinical Innovation + Technology: Leadership to Transform Healthcare Vol 3. No. 7

This is the July/August magazine for Clinical Innovation + Technology. It features articles covering the area of technology and healthcare. The cover story is regarding health IT and its impact on the workflow of nurses.

(IS-2015-18) Building Resilience in Boston: "Best Practices" for Climate Change Adaptation and Resilience for Existing Buildings

This reports includes a review of national and international research, publication and planning documents to identify best practices related to the improvement of existing buildings to better withstand climate change impacts. This report is focused on the city of Boston and its specific geologic, population, cultural and natural environment context.

(IS-2015-17) Connected Consumer Roadmap: Driven by the Internet of Things (Executive Summary) Using a two-phase research approach, including both an extensive consumer survey and in-depth industry interviews, IHS & CABA examined a vast ecosystem, much wider than the connected home. This unique landmark research study leveraged an "Internet of Things" perspective; taking into account a consumer focused view, from both inside and outside of the home, of Health and Wellness, Entertainment, Mobility, Transportation, Security, etc. This research study assessed consumer expectations around the enabled devices they use every day to live in a fully connected world, and also provides insight into key industry topics, ranging from cybersecurity to privacy. Importantly this research explores and identifies new opportunities and solutions within ecosystems and across ecosystems.

(IS-2015-16) CABA Intelligent Buildings and Big Data 2015 Report (Executive Summary)

CABA, a leading industry association that promotes advanced technologies in homes and buildings in North America, has completed its collaborative "Intelligent Buildings and Big Data" research study. This landmark research study was a major initiative of the CABA Research Program, which offers a range of opt-in technical and advisory research services designed to provide industry stakeholders with collaborative research and R&D opportunities. The study focused on how "Big Data" translates into the intelligent building context and whether Big

Data analytics will help keep businesses competitive. A combination of different types of primary research examined market perspectives on Big Data in order to project near and mid-term opportunities in intelligent buildings. The findings present a new understanding of customer behaviors, competition and market trends that will shape the adoption of Big Data solutions.

(IS-2015-15) CABA Intelligent Buildings Market Sizing North America 2015 Report (Executive Summary)
This research provides an update to the CABA Research Report entitled "Intelligent and Integrated Buildings Technologies: Market Size in North America 2010". The 2010 report provided an in-depth analysis of the growing North American market for integrated and converged intelligent building control systems including: environmental control technologies, fire detection, security, lighting systems and IT convergence. This updated research will also include a market review of the threats to the building automation and control systems (BACS) business, including: new DX AC entrants, increasing sophistication of AC and heating controls, VRF systems equipped with own controls and energy management functionality, new developments in smart homes and communicating room controllers.

(IS-2015-14) The Internet of Things: The Future of Consumer Adoption
This white paper provides an in-depth look into consumer behaviour across a variety of areas related to connected technology, including current and future adoption plans and potential barriers to mass consumer penetration. For B2B and B2C companies, the research provides a picture into how consumers view IoT technology and the growth potential of this market in both short and long term.

(IS-2015-13) Internet of Things - More (and less) Than You May Think
The ebook by FierceWireless takes an in-depth look at the security risks associated with the Internet of Things. Other topics explored in this ebook include the wearable opportunity and the latest developments in connected healthcare.

(IS-2015-12) The State of Broadband 2014: Broadband for All
This report seeks to enhance understanding of the importance of broadband networks, services, and applications to guide international broadband policy discussions and support the expansion of broadband. There is also a focus on the importance of integrating ICT skills into education to ensure that the next generation is able to compete in the digital economy.

(IS-2015-11) A High Accuracy Standard for Electricity Meters
Accuracy is perhaps the most important attribute of high-end metering. This white paper explores ANSI C12 metering standards, which has proven invaluable to the technical buyer for evaluating new metering technologies as they emerge. On the other hand, this white paper also discusses the future amendments to ANSI C12 in order to keep pace with technology and remain relevant to the end user.

(IS-2015-10) Property Assessed Clean Energy Financing
This paper was completed January 8th, 2014, and revised April 29th, 2014 by Consortium for Building Energy Innovation. This paper explores the implementation, opportunities, progress and the future of Property Assessed Clean Energy financing. PACE restructures the financing of costs associated with energy efficiency improvements by smoothing them over a multi-year period.

(IS-2015-09) Blackouts - How a utility cured an Ibuprofen plant's biggest headache
This case study completed in 2014 by Utility Dive (in cooperation with Siemens) describes the power outages experienced by Albemarle Corporation's Ibuprofen plant in Orangeburg, S.C. and the solution they found with the help of Siemens Smart Grid Division. The solution they found was a "fast bus transfer system that can handle more than two sources" in terms of distribution automation.

(IS-2015-08) Benchmarking Utility Clean Energy Deployment: 2014
This paper benchmarks the largest utilities in the U.S. based on renewable energy deployments by year. It segments the utilities in several ways such as total renewable energy sales versus renewable energy as a percentage of total output. It also gives recommendations to Federal and State agencies how to classify and

report renewable energy in the future so as to make it easier to benchmark the utilities.

(IS-2015-07) Stimulating Innovation on Behalf of Canada's Electricity and Natural Gas Consumers
This discussion paper was completed on August 21, 2014 by Concentric Energy Advisors for the Canadian Gas Association and the Canadian Electricity Association. It examines the roles that Canada's utilities and regulators can play to promote innovation in the industry. It makes recommendations for an optimal approach for Canada that includes utilities, regulators, and governments.

(IS-2015-06) Regional Briefing: Renewable Energy in Latin America and the Caribbean
This white paper discusses the issues and opportunities in the Latin American and the Caribbean (LAC) region renewable energy markets. Present energy issues in the region have the potential to be addressed and fixed by moving towards renewable energy. However, financial, policy and market solutions need to be created in order to facilitate the renewable energy growth in the LAC region.

(IS-2015-05) Sentrollers, and the World of Small Data
This white paper describes the broader perspective of the Internet of Things in light of the terms Cloud and Big Data. It also brings up a new term – Small Data – which is the trillions and zillions of small bits and pieces of information that will be coming from every environment. Lastly, the white paper explains the role of GreenPeak Technologies and their focus on Small Data application systems.

(IS-2015-04) UPnP Enabling Standard IoT: Future-proofing device communications
This white paper discusses how UPnP is focusing on expanding the uniform connectivity platform they provide for consumer electronics and computing devices. UPnP is taking the concept of "allowing devices to talk to each other" and expanding it toward a new paradigm of total interconnectivity and limitless functionality.

(IS-2015-03) Network Transformation: Get Smart With Your Data
Communications service providers (CSPs) are entering an era of unprecedented change. This white paper examines the face of this transformation, along with the challenges and how to overcome them. Also discussed in this white paper is the impact of data transformation on network transformation, the role Neustar plays and the services they provide in the face of this communications transformation.

(IS-2015-02) High-Quality Multimedia Distribution in Commercial Buildings
This CABA White Paper examines the increasing need for high-quality multimedia in commercial buildings and the options for a distribution infrastructure. The paper notes that building industry has adopted standards for a building data infrastructure that can be extended to multimedia. The paper demonstrates that there is a solution using HDBaseT technology that overcomes the limitations of HDMI, while carrying HDMI signals. The solution is cost-effective and suitable for content-protected audio and video, and can be integrated with a building data network using established installation skills andtools.

(IS-2015-01) Connected Car White Paper
CABA recently published a white paper on the connected car market. An increasing number of vehicles are coming to market with the capability to support communications of various sorts. In 2013 more than one billion sensors were sold to the auto industry, more than doubling the 2009 levels. While tethered and integrated solutions have dominated car connectivity to date, embedded connectivity solutions began appearing in 2014 with the number of such vehicles increasing in 2015 and beyond.