EcoStruxure™
Innovation At Every Level

Living in a World of Data

Digitization as a sustainability enabler

Life Is On | Schneider Electric

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LIVING IN A WORLD OF DATA: Digitization as a sustainability enabler

Introduction

Technology opens new gateways for understanding, managing, and improving connectivity, which helps businesses identify and respond to the critical need to be planet- and profitability-compatible.

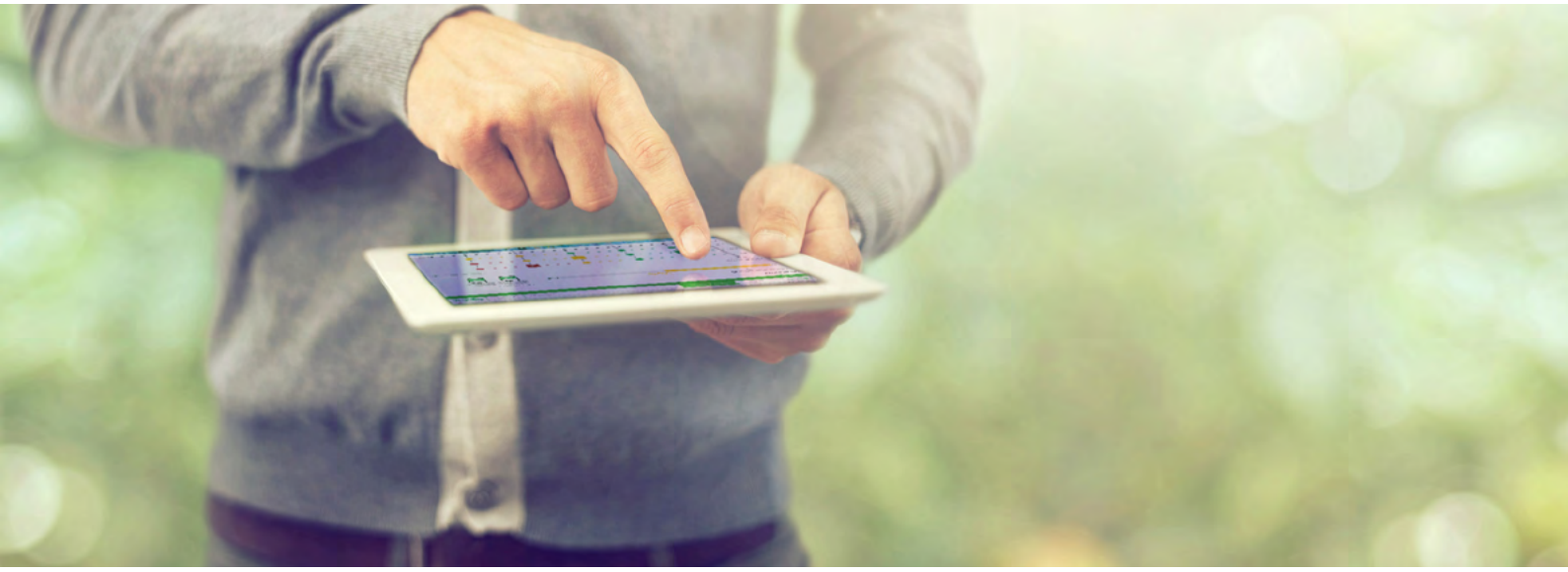
The economic, social, and environmental challenges of unprecedented resource consumption loom large. Globally, greenhouse gas emissions must be dramatically curbed to avoid irreversible damage to the planet that has the potential to radically affect humanity. Evidence of early damage and the disruption it causes has already begun to emerge: unpredictable weather patterns resulting in record temperatures in Australia; superstorms with enough power to devastate parts of the United States and Puerto Rico; sea level rise that threatens nations ranging from Vietnam and Bangladesh, to Ireland and the Netherlands; widespread drought leading to water scarcity throughout Africa and Asia; and mass human migration resulting in a global refugee crisis.

These very real challenges pose a significant and growing threat to business. Leading companies, recognizing these risks, have begun to put their commitments to sustainable practices — such as circularity, efficiency, supply chain engagement, and green power purchasing — at the very front and center of their strategy.

Solutions to these pressing challenges exist in technology. For example, major markets of industry, such as infrastructure and buildings, today consume 70% of the world's energy. Within these same markets lies the immediate potential for much greater efficiency — 82% in buildings and 79% in infrastructure — that can be harnessed through technology.[1]

Technology has dramatically increased the effectiveness of modern business. Specifically, digitization and the interconnectivity it has spawned — the so-called Internet of Things (IoT) — are driving powerful new ways to achieve sustainability goals. Information collected through IoT technologies can yield new insights about how resources are used and lead to wider sharing of real-time information, facilitating both human and machine interpretations of these data.

This paper will explore how technologies like IoT-enabled smart sensors enable companies to respond to four sustainability megatrends changing the modern business landscape, and how technology is giving organizations the license to set ambitious sustainability goals and make informed decisions to drive the highest planetary and profitability impacts.



How technology helps businesses respond to global sustainability trends

There are four global, sustainability mega-trends making a significant impact on the business world today:

- *The increasing need to decouple economic growth from environmental impacts*, to facilitate sustainable resource optimization and reduce threats to business continuity over time.
- *Evolving disclosure requirements,* including the development of metrics and reporting mechanisms to better assess the effectiveness of initiatives and drive business growth.
- *Public pressure and the importance of customer engagement to drive changes in consumer behavior*, especially adopting goods and services built on circularity, which, in turn, nurtures a life-time relationship between companies and consumers and fuels sustainable profits.
- *Digitization, decentralization, decarbon-ization, and electrification (the 3Ds + E),* which are changing the way business is done,and requiring data acquisition and analysis that enables information-based decision-making.

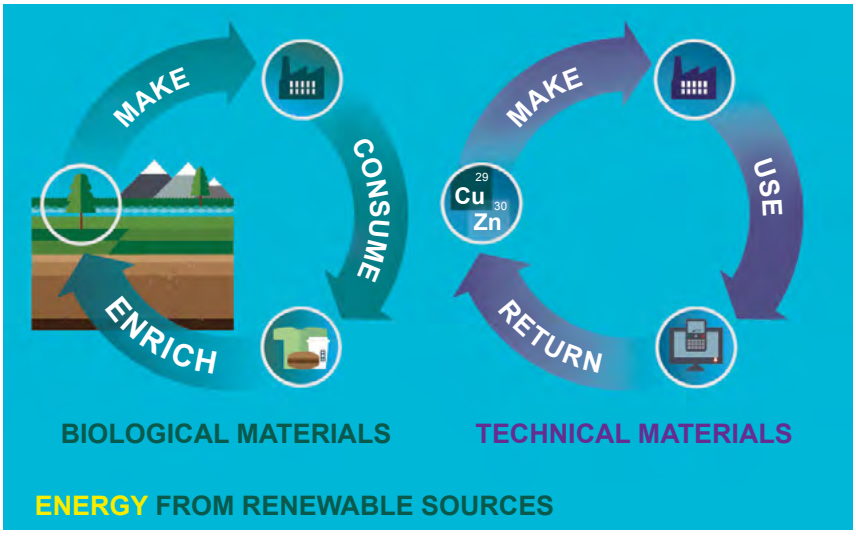


Figure 1 - Progressive manufacturers and their customers think in terms of a circular economy, extending the utility and value of products as long as possible, rather than in terms of the traditional linear approach. Source: kumo.io

Trend 1: Decoupling economic growth from environmental impacts

More than half a century ago naturalist Rachel Carson and others were warning the world of the dangers of pesticides. Today, concerned scientists, social activists, and responsible businesses are rallying support to reverse the tide of resource depletion and environmental degradation.

Humanity is using the Earth's natural resources far faster than they can be regenerated. In 2017, the planet reached Earth Overshoot Day on August 2,[2] meaning that humanity's demand on planetary resources exceed capacity by nearly half a year. By present consumption rates, it would take 1.7 Earths to regenerate enough natural resources to meet demand, and many industrialized nations use natural capital at twice that rate. Clearly, something must change. An economic strategy of infinite growth cannot continue indefinitely on a planet of finite resources.

Overshoot is driven, in part, by urbanization, which continues at an unsustainable pace; 200,000 people migrate to cities every day. If not managed properly, the costs of congestion and pollution combined with the detrimental health effects of such rapidly growing cities threaten future prosperity.[3]

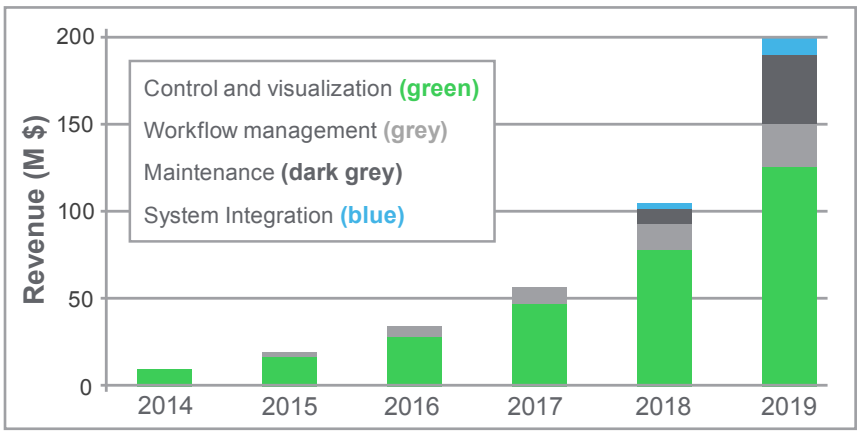


Figure 2 - Global market projections for industrial mobile applications, courtesy of HIS
Source: Schneider Electric, May 2016

To respond to the challenge of resource depletion, companies must begin to embrace the idea that economic growth can be decoupled from environmental impacts. This requires the adoption of business models based on systems thinking and circular designed processes, enabled by technology.

Several innovations are likely to be adopted in such models:

Industry 4.0, a current manufacturing trend that emphasizes automation and connectivity. Industry 4.0 comprises technologies such as cyber-physical systems, IoT, and cloud computing deployed in smart factories and through industrial mobile applications, which have undergone remarkable growth that is expected to continue. These systems allow plant operators to make decentralized decisions and achieve efficiencies heretofore unrealized. Schneider Electric's Augmented Operator is an example of this type of Industry 4.0 technology. It allows machine operators to become more efficient and more effective by increasing knowledge automation.[4]

The size and scope of a large multinational's supply chain make it the most potent source of sustainability savings.

Green supply chains, which utilize efficiency measures, enhanced transportation networks, an optimized green fleet, and digital capabilities to provide operational visibility from end-to-end.[5] The size and scope of a large multinational's supply chain make it the most potent source of sustainability savings — both monetary and environmental. The deployment of technology across the vast web of this chain is critical to efficient optimization and responsible dispatch of resources, as shown in Figure 3.

Everything as a Service (XaaS), which shifts traditional producer-and-consumer business models to ones that move core enterprise processes into a service or prosumer model. This is a logical next step for companies already using innovations like cloud computing. Executive opinions are shifting quickly on this front. A survey by Accenture and HFS found that 68% of participating executives did not think their processes would be delivered as a service within five years, but only a year later 56% were looking to incorporate as-a-service features.[6]

Figure 3 – The sheer size of the Schneider Electric supply chain, shown here at its 2016 levels, illustrates the significant role supply chains play in the overall pursuit of sustainability. (Source: Schneider Electric, "A customer-centric, green vision,")

Trend 2: Evolving disclosure requirements

Each year businesses devote significant resources to reporting sustainability performance across a growing set of global indices. Since the early emergence of green rating systems in the 1980s, there has been a proliferation of programs designed to quantify building and product sustainability. Worldwide, more than 600 green product certifications exist today with more than 100 in use in the United States alone.[7]

The proliferation of sustainability rankings and reporting standards originally led to a noise of inconsistent, incompatible metrics and formats. Much of what was reported did not reach a diverse set of audiences, such as current and prospective customers and employees, or community groups, governments, and investors. When reports did reach intended audiences, they often fell short of achieving resonance in a meaningful, memorable, and consumable way. However, a range of new policies and recommendations from nongovernmental organizations and standard-setting bodies continue to guide and push ever-greater company disclosure on sustainability performance.

Several indices have emerged as market leading: the Global Reporting Initiative (GRI), the Science Based Targets Initiative (SBTI), CDP's annual reporting and disclosure mechanism (which is responsible for the largest carbon emissions repository in the world), and the Dow Jones Sustainability Index (DJSI).

Better reporting boosts scores

Companies with well-planned sustainability strategies, clear initiatives, and reporting supported by accurate data can improve their scores on global disclosure indexes. Schneider Electric's Energy & Sustainability Services (ESS) has helped many companies achieve their reporting goals. For example:

- Brown Forman, a U.S.-based spirits distiller, has reached the CDP Leadership Index for its initiatives.
- Sporting and music entertainment presenter AEG exceeded its 2020 environmental goal for reducing water usage per attendee through targeting data collection, monitoring and related initiatives.
- Becton, Dickinson and Company (BD) improved its sustainability data collection and analysis as well as its CDP submission. The work has helped BD increase its CDP Climate Change score from a C in 2010 to a B last year. The company also added CDP water to its reporting regimen in 2016.[8]

In addition to their participation in public disclosure indices, investors of all types are increasingly paying attention to sustainability performance due to the high cost of risk, and a growing number of financial institutions have units dedicated to sustainable investing. Many regulators and standard-setting bodies (such as the Sustainability Accounting Standards Board in the United States) have released or are working on new financial disclosure guidelines that highlight the importance of sustainability, and a growing number of companies are facing pressure from investors to be more transparent about sustainability risks and performance. It should be noted, though, that in a 2016 survey of CEOs from around the world, only 10 percent cited pressure from investors as a primary reason to act on sustainability.[9]

The scope of the data streams that must be managed to report to any sustainability index can be overwhelming. It can take organizations many person-hours of dedicated time and attention to prepare a CDP response, for example, and often requires engagement across all sectors of the business. The annual reports required for GRI are even longer, typically needing a year-long engagement to properly develop, report, and implement.

Increasingly, companies are turning toward technology to help them manage the tracking, disclosure, and reporting burden. Solutions such as Schneider Electric's

Tracking Sustainable Companies

The Global Reporting Initiative (GRI) helps businesses and governments worldwide understand and communicate their impact on sustainability issues such as climate change, human rights, governance, and social well-being. The driving and distinctive value behind GRI reporting has been the continuing evolution of GRI's material standards, which have increasingly pushed companies to identify their critical sustainability indicators and to disclose their progress (or lack of) on the select set of those most material to the long-term success of the organization.

The Science Based Targets initiative (SBTI) — a collaborative effort between the UN Global Compact, CDP (formerly the Carbon Disclosure Project), We Mean Business, the World Wildlife Fund, and the World Resources Institute — focuses on challenging companies to set and achieve deep reductions in greenhouse gas emissions heretofore unachieved by most organizations. The initiative showcases companies that set science-based targets; defines and promotes best practice in science-based target setting; offers resources, workshops and guidance to reduce barriers to adoption; and independently assesses and approves company targets. To date, 350 global organizations have joined SBTI, with an average of two new companies joining every day.[10]

CDP has significantly helped expand the culture and rigor of carbon reporting and disclosure with its strict methodologies, driven by the demands of its investor base. It's annual reporting request is answered by more than 5,000 global companies. One significant area CDP has developed is the inclusion of emissions reporting by companies' own upstream supply chains. CDP has also developed reporting and disclosure indices for water and forest use.[11]

The Dow Jones Sustainability Index (DJSI) ratings and rankings also leverage rigorous sustainability assessment methodologies and frameworks developed by RobecoSAM,[12] the Switzerland-based investment specialist focused exclusively on sustainability investing. This significantly helps grow awareness and professionalization of sustainability performance assessment.

EcoStruxure™ Resource Advisor use multiple data streams to create meaningful, digestible, and reportable information dashboards, leading to the visibility and transparency that businesses crave. This equates to better business performance, cost savings, and opportunities for improved efficiency and growth. It also provides easy-to-obtain tools and reports to share progress with all shareholders and community stakeholders.

IoT technologies can further improve efficiencies by providing real-time data and creating traceable, auditable performance footprints. The data driven by these technologies can enable managers to act based on the insights provided and make more sustainable and profitable decisions. This data can influence the bottom line in numerous ways, including:

- Increased revenue
- Reduced energy expense
- Reduced waste expense
- Reduced expense for materials and water
- Increased employee productivity
- Reduced hiring and attrition expense
- Reduced risks to revenue and the expense of inaction

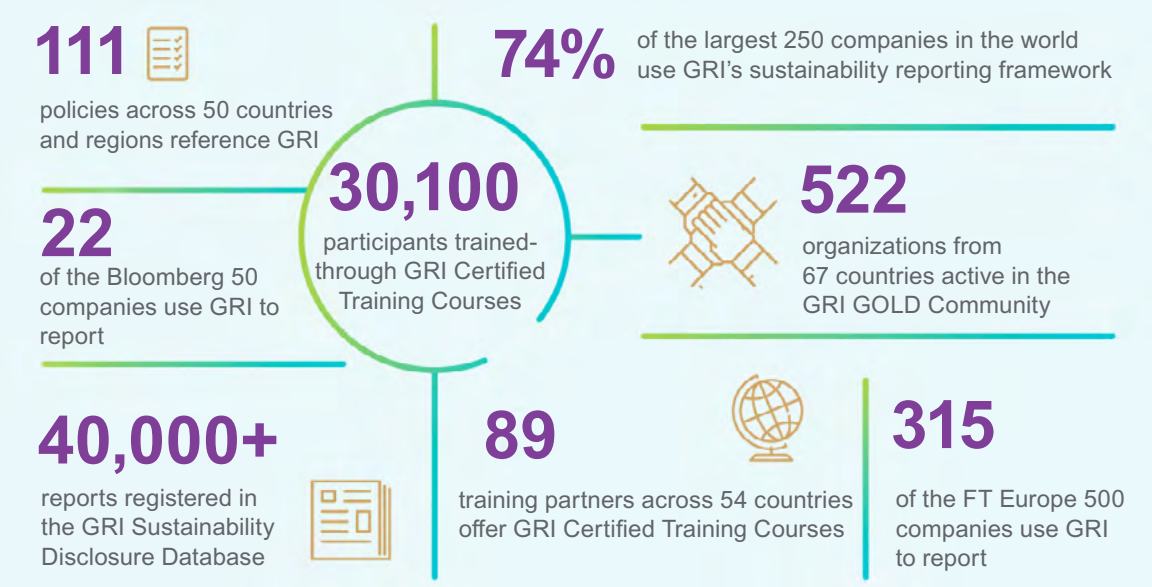


Figure 4 - A few highlights of GRI's accomplishments since it was started in 1997. Source: Global Strategic Alliance

Trend 3: Public pressure, customer engagement, and the need to change consumer behavior

Consumers can be fickle. While there has been growing interest in products that are more sustainable, actual customer behavior has only recently begun to reflect this interest. For instance, a company report released by global products manufacturer Unilever in early 2017 indicates that nearly a third of consumers are choosing brands specifically because they are doing social or environmental good.[13]

To properly address this increasing public pressure in an environment of constrained resources, businesses must understand how to measure, classify, and market sustainable products and services in a way that positively influences consumer behavior and public perception.

Engagement that leads to a change in consumer behavior rests squarely on education and communication to build superior trust in sustainable brands. Companies earn this trust through transparent business processes, optimized supply chains, and thoughtful and responsible asset management. By using technology to capture and share information with consumers, companies can influence customer behavior while simultaneously nurturing lifetime relationships that result in sustainable profits.

Leading companies don't stop with customer engagement. They also participate in, or lead, industry associations, engage with their supply chains, and even take political action. The rise of precompetitive organizations and technology-enabled platforms where businesses can come together to learn from each other and innovate — such as the global Sustainable Apparel Coalition, the UK's Innovation Gateway, and Schneider Electric's New Energy Opportunities (NEO) Network™ — indicates the need for industry leaders to collaborate to solve today's pressing challenges.

Corporate sustainability builds brands

Today organizations are seeking opportunities to improve margins while leveraging corporate sustainability to build their brand. Consumers want to know more about the brands they buy, and shareholders expect more transparency regarding product, social, environmental, and operational sustainability. Strategies for leveraging sustainability to achieve P&L improvement goals include public reporting on progress toward sustainability targets, improved efficiency of facilities, investments in renewable energy, improved product lifecycles, and active management of the sustainability of their supply chains to ensure a lower impact on the environment.

According to a PwC survey, being more environmentally, socially and economically responsible was fundamentally core to the business strategy of three quarters (77%) of organizations responding. In fact, 76% agreed that placing efforts to be more environmentally, socially and economically responsible at the heart of their business strategy will drive innovation and provide long-term financial stability, while 74% believed it will provide them with a market advantage, alongside mitigating climate change.[14]

Trend 4: The 3 Ds + E — digitization, decentralization, decarbonization, and electrification

Widespread digitization and the increased need and desire for electrification are causing significant upheavals in traditional ways of doing business, such as the advent of the sharing economy. This disruption is driving further decentralization of business operations and placing increased responsibility and autonomy into the hands of workers and technology. These trends are only expected to increase as world resource markets undergo seismic shifts — such as the arrival of autonomous electric vehicles, rapid advances in clean technologies like battery storage, and the need to contend with the risks posed by climate change, including business continuity disruption and natural resource depletion.

Investing in digitization is one of the key factors in converting business processes from reactive to proactive — and it virtually guarantees a positive return.

Digitization, specifically, has been driven by breakthroughs in technology and automation. Today, digital sensors are embedded in what was once regarded as "dumb" equipment, enabling them to gather data previously unavailable. Advanced analysis of the data provides valuable clues into how production assets are being utilized, how much energy they are consuming, when assets are reaching the end of their useful life, and when an adjustment in the field must be performed to better match output to demand. The connectedness of devices allows anything from a variable speed drive to a smartphone to become a source of data that can drive future performance and behavior.

Investing in digitization is one of the key factors in converting business processes from reactive to proactive — and it virtually guarantees a positive return. According to a recently released Schneider Electric report, decision makers began to see noticeable rates of return within the first 12 months of implementing new technology, and 75% of those surveyed expected to have the ability to intelligently connect people, processes, and data through devices and sensors within one year.[15]

Digitization is also core to a company's sustainability performance. It has begun to change the way companies think about products, technologies, and systems, enabling more sustainable business models. By replacing manual processes with software, digitization allows businesses to automatically collect data that can be mined to better understand performance, cost drivers, and the basis for risk.

Industry leaders who actively pursue digital connectivity and data to bolster their sustainability efforts can succeed in transforming their organizations. These new technologies help companies move beyond reactivity to resiliency by leveraging sustainability to drive business growth. By gathering and analyzing data in a "sense and respond" manner, digital technologies allow for ever more precise control of how resources such as energy and water can be conserved.

Global energy demand is expected to expand by a factor of 1.5 over the next 40 years, driven by increased digitization, urbanization, and industrialization.

However, digitization also presents a sustainability challenge for business, specifically, how to manage the energy demand it creates. The electrification of the world is the predominant catalyst for the anticipated 80% increase in electricity consumption over the next several decades. Global energy demand is expected to expand by a factor of 1.5 over the next 40 years, driven by increased digitization, urbanization, and industrialization. It is estimated that industrial energy use alone will increase at least 50% over the next 35 years.[16]

How commercial industry is using technology to meet sustainability challenges

There is growing and rapid adoption of technology, and digitization specifically, across global industries as companies recognize the power of IoT to drive both cost and resource reductions. This adoption is already beginning to change consumer behavior and will only accelerate. Several of these leading industries are highlighted below.

Hotels and hospitality

Hotel guests are not directly accountable for a hotel's overall utility bill. This means that room occupants have little incentive to adopt energy efficient habits. Guest room energy consumption accounts for between 40% and 80% of energy use within the hospitality industry,[17] yet in most hotels, rented rooms are unoccupied 60% to 65% of the time during the day.[18] But hotels face a unique challenge: temperature control within a room must be balanced for the comfort of the guests regardless of the time of day or occupancy rate. A guest never expects to walk into a room that is too hot or too cold.

Now imagine a hotel where energy consumption in rooms is precisely monitored and guest comfort maintained but energy conserved. New generations of sensors located within rooms gather an abundance of comfort, safety, and energy consumption data on an ongoing basis. That data is forwarded via network to building analytics software which then converts it into actionable intelligence. The result: improved energy efficiency performance of the building, reduced emissions, and higher guest satisfaction. This is digitization at work.

Beyond the minute-by-minute adjustments to environmental conditions possible within guest rooms, the intelligence built into the system also identifies potential longer-term problems. Once a potential issue is identified — for example, a fan within the ventilation system that is underperforming — the system offers suggested actions to address the situation. This type of automated fault detection and diagnostic data is stored in the cloud and analyzed by qualified experts, allowing hotels to proactively identify equipment and system faults, prioritize the sequence of operational improvements, and gather energy usage trends over time, allowing hotels to meet long-term resource reduction goals.

Manufacturing

An industrial environment is affected by digitization in a different way, but like hospitality, the implementation of smart, connected sensors in manufacturing is key to productivity, performance, efficiency, and resource management.

Sensors deployed on factory floors used to be overly complicated and included too many functions in one package, limiting their capabilities and volumes of measurement. The new generation of sensors is simpler, smaller, and connected. These sensors measure and pass along the raw data within the smart assets of a cyber-physical system. Unencumbered by the tasks of conditioning or interpreting the data — which takes place at the analysis level — sensors have only one job: measure. Industrial sensors are evolving to track single performance tasks, where each unique sensor differs from another only by the configuration of the same set of raw materials, which allows sensors to be recycled and reconfigured as a new unique sensor — the ultimate in modularity and sustainability. This capability is only possible because of the simplicity of the design of this technology.

The result of smart sensing is intelligent manufacturing: self-organizing machines and assets that enable mass customization and enhanced sustainability through the wireless collection, connection, analysis, and control of the data from thousands or even millions of simple, distributed sensors. By driving simplicity to the fundamental components (measurement), driving differentiating complexity to interpretation (control), and linking them

Global compatibility for long-term success

Semyx, an OEM that designs large, customized waterjet cutting machines for companies around the world, wanted to upgrade its product line while also maintaining compliance with global standards. By carefully selecting a wireless pendant remote for its operations from another global manufacturer, Semyx achieved a 50%–75% improvement in productivity. At the same time, Semyx could assure its customers worldwide support, further enhancing the sustainable nature of their purchase.[19]

(connectivity), there is now a directional shift in the Industrial Automation and Control model—one that can be defined as “simply complex,” where simple measurements plus complex interpretation equates to customer value and sustainable production.

In clean-in-place operations, for example, recent smart sensor technologies now enable plant operators to calculate the optimal mix of natural resources, temperatures, and flows required to achieve production and safety standards while saving at least 20% in energy cost and reducing the downtime for operational cleaning by at least 20%.[20] In addition, all the steps in the process can be easily traced and automatically documented, which simplifies any auditing requirements that need to be performed by regulatory inspectors.

Edge devices enable legacy assets to interface with newer automation or enterprise architectures.

This is not to say that older installed technology is automatically becoming obsolete. A growing number of edge devices that collect, aggregate, and filter data close to individual process or production assets are expanding the frontiers of intelligent manufacturing. Beyond running local analytics to detect process variations in real time, these devices increasingly act as intelligent gateways on the edge of industrial networks, bridging the gap between the informational and operational environments. In doing this, edge devices enable legacy assets — sensors, controllers, and other devices — to interface with newer automation or enterprise architectures.

Data centers

As mentioned in the previous example, the “big data” generated by this new generation of intelligent, connected devices is converted into useful information that heavily influences both business decisions and natural resource consumption. For the most part, this information is processed by a combination of software and hardware that resides in a data center.

Data centers also support a large population of server and smart devices themselves that require precise environmental conditions that result in high energy consumption. Energy use is a substantial cost of data center operations, in some cases exceeding the cost of the IT hardware. It’s unsurprising, as a result, that global data center companies such as Equinix, Amazon Web Services, and Digital Realty have been among the earliest adopters of utility-scale renewable energy to reduce the cost and environmental impact of managing their digital real estate.

Cost pressures, and the realization that data centers can be much more efficient in their use of energy, have also influenced many cloud operators to reduce their energy consumption through smart technologies.

Earlier infrastructure management systems generated pre-loaded lists of devices and warned that a cooling unit inlet temperature had exceeded an established threshold. The operator would have to determine on his or her own what equipment was affected by the error. The tools were not capable of generating a correlation between physical infrastructure device and server. Nor were these tools capable of initiating actions to prevent downtime, such as speeding up fans to dissipate a hot spot.

Newer smart tools are designed to identify and resolve these issues with a minimum amount of human intervention. By correlating power, cooling, and space resources to individual servers, these tools can proactively inform IT management systems of potential physical infrastructure problems and how they might impact specific IT loads.

Particularly in a highly virtualized and dynamic cloud environment, this real-time awareness of constantly changing power and cooling capacities it is important for safe server placement. These more intelligent tools also enable IT to inform cloud customers of the consequences of their actions before server provisioning decisions are made. Business decisions that result in higher data center energy consumption, for example, will impact the cost to do business as well as the data centers' carbon footprint. Charge backs for energy consumption are also possible with these new tools and can alter the way decisions are made by aligning energy usage to business outcomes.

Improving data center performance

A new high-efficiency green data center for the Director General of Highways in Taiwan was facing high energy consumption, challenging uptime demands, and low system scalability. Incorporating IoT sensors and control software resulted in a much more sustainable installation. The data center improvements are yielding annual savings of 1 million euros, which translates to a 36% reduction in energy use. In addition to reduced energy costs, the center has higher reliability, provides opportunities for business analytics and optimization, and now has flexibility for growth.[21]

The opportunity: How technology helps business respond to sustainability megatrends

The four megatrends described offer businesses the chance to leverage ongoing technological advancements — especially digitization — in four key areas directly tied to sustainability performance:

- *More efficient resource utilization and the corresponding positive impact on P&L*: As older systems are upgraded and newer, smarter systems are installed, customers save money based on increased operational efficiencies, improved digitization and data collection, and decreased manufacturing and supply chain waste. It is estimated that businesses that reduce energy consumption by 30% to 40% could realize a 10% reduction in their overall operating costs.[22] By using Schneider Electric's Resource Advisor, Whirlpool Corporation identified that its corrugated cardboard from a single plant was a significant source of waste. As a result of this new awareness, the company anticipates saving more than a million dollars over the next three years.[23]
- *Improved return on assets and business resiliency through increased circularity*: As new, more sustainable systems are put into place — whether as upgrades, replacements, or new systems — customers share in the benefits of assuming long-term responsibility for such equipment, through greater participation in the circular economy. Such a change to a regenerative, circular approach to business has the potential to grow resource productivity by up to 3% annually while increasing traceability inside business processes, enabling the most effective use of resources real-time.[24]

- *Enhanced health and safety*: Manufacturers design all new products to meet the strictest health and safety requirements as a matter of course. But savvy manufacturers continually flip the regulatory burden, turning it into a catalyst for change. By implementing technology into existing product lines to improve the sustainability of products, companies protect human lives and health and gain powerful marketing differentiation.
- *Risk mitigation and an increased level of public trust*: Over time, every company builds a reputation. Customers value a company's transparent business processes and optimized supply chain sustainability and asset management. The resulting superior trust provides one more significant competitive advantage, especially in industries related to critical services, life safety, and consumer goods. Unethical or opaque business practices are increasingly scrutinized, and the impacts can be severe — witness the billions of dollars in fines, criminal censure, and loss of market share that recently resulted from the manipulation of emission controls and test results in the auto industry.

The trends toward decoupling economic growth from environmental pressure, evolving disclosure requirements, consumer engagement, and disruption and decentralization present businesses with prime opportunities for increased economic, social, and environmental performance. The adoption of smart technologies and digitization are driving efficient resource utilization, improved P&L performance, business resilience, and value for companies and consumers. Companies that hesitate to invest in technology-enabled sustainability risk being left behind as leading organizations fully embrace the need to work differently for the long-term success of the planet and profitability.

A circular approach to business has the potential to grow resource productivity by up to 3% annually.

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Learn more.

At Schneider Electric, sustainability works.

Schneider Electric launched its sustainability approach in 2002. Since then, the company has grown to be a global leader, widely recognized as one of the most respected, ethical, and sustainable companies in the world.

On top of its own progressive approach to corporate sustainability, Schneider Electric's products, programs, and services lead the industry on environmental and social responsibility by addressing specific, pressing challenges in a customer-centric way.

- **ecoLabel Green Premium**, the self-declaring label program for Schneider Electric products that since 2008 has promoted compliance and transparency concerning use of hazardous substances, environmental impact, and end-of-life management.
- **Green Premium 2.0**, a new Schneider Electric environmental brand promise, redesigned to include value proposals tailored to different segments that will cover products, services, systems, solutions, and architectures.
- **ecoDesign Way**, our corporate commitment to designing all new products and solutions to reduce their environmental impacts throughout their life cycles.
- **ecoFit**, our field services and retrofit program designed to help customers extend the life of their medium- and low-voltage electrical distribution equipment through selective component upgrades and replacements.
- **Tailored Sustainable Connected Supply Chain 4.0 (TSC 4.0)**, a reimagined customer-centric strategy designed to be collaborative, lean, agile, project-driven, and fully flexible so we can improve our speed and responsiveness.
- **EcoStruxure™**, our next generation of active energy management and automation architecture, is driving innovation at every level to take full advantage of our connected products.
- **Energy & Sustainability Services (ESS)**, which is a trusted advisor to corporations worldwide on energy procurement, energy efficiency, renewable and clean technologies, and sustainability. Our ESS offer includes EcoStruxure™ Resource Advisor, our award-winning data management platform, and NEO Network™, our innovative global renewable energy transaction enabler.

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