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# **Best Practices for the New Wave of Tech Companies Certifying to ISO 14001**

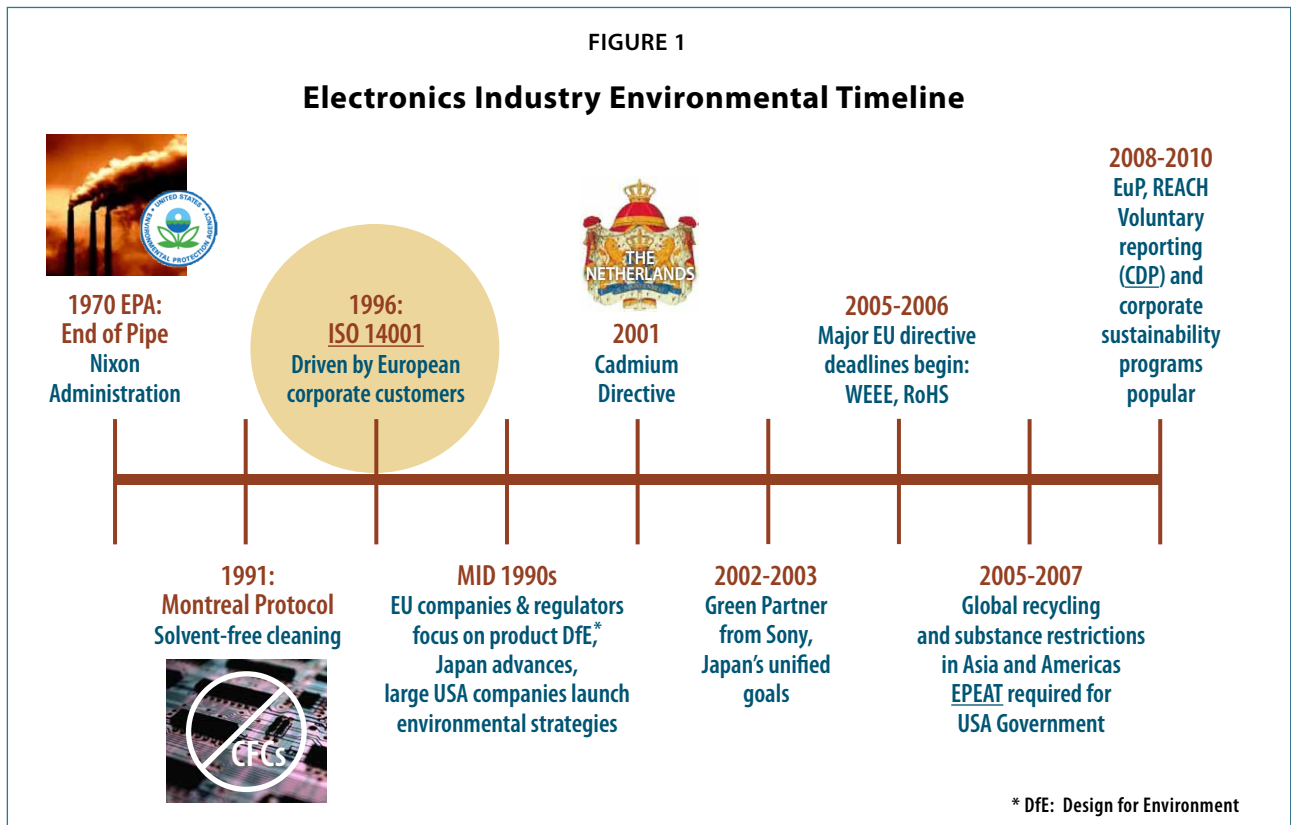
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*There is a new wave of companies certifying to ISO 14001, the international standard for environmental management systems (EMS). While the first wave of certifications consisted of electronics manufacturing companies, the second wave is hitting non-manufacturing companies in the technology industry, such as software companies, services firms, and product companies that outsource manufacturing. In this white paper, we discuss why companies that previously decided against certification are now certifying, and we identify best practices for this new wave. Finally, we look to the future of certification and speculate on coming trends.*

## THE FIRST WAVE

ISO (International Organization for Standardization) 14001, first published in 1996, delineates requirements for an organization’s Environmental Management System, applying to environmental aspects (categories of environmental impact) over which the organization has control and can influence. Companies then engage an external certification authority to “certify to ISO 14001.”

As shown in the electronics-industry environmental timeline in Figure 1, as far back as 1996, companies were starting to certify their Environmental Management Systems to ISO 14001, driven largely by European corporate customers’ demands for doing so. For example, North American electronics manufacturers that generated significant revenues in Europe rushed to certify, to prevent customer loss in the region.



Soon, other global companies followed their European counterparts in requiring that suppliers certify to ISO 14001. In 1999, USA-based Apple Computer wanted to use an eco-label stating that its suppliers would soon be certified to ISO 14001; so Apple's agreements with suppliers at the time started to require that the suppliers certify to ISO 14001 by a deadline provided. Also in the late 1990s, when one of Japan-based Kyocera's suppliers did not meet Kyocera's standards, Kyocera sent its own ISO 14001-certified internal auditors (100 employees were certified at the time) to suppliers to suggest improvements, for a fee of US\$500.

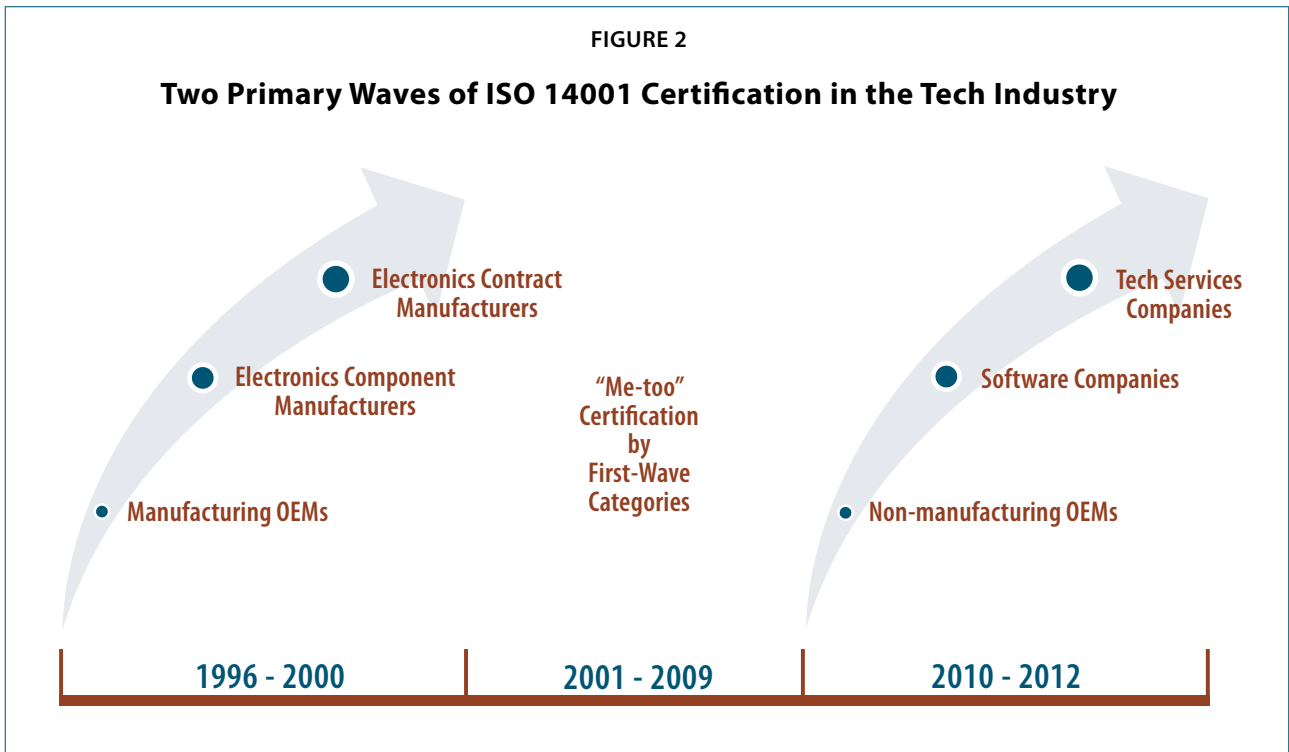
Nearly all of the 17 electronics manufacturers profiled in the 2001 book *Lean and Green: Profit for Your Workplace and the Environment*<sup>1</sup> had certified to ISO 14001 by 2000. Examples from a variety of regions and technology industries include:

- Celestica, an electronics contract manufacturer headquartered in Canada, was the first in its industry to certify.
- IBM, a USA-headquartered manufacturer (at the time) of electronic systems and components, was the first company to obtain a single, *worldwide* registration to ISO 14001.
- Philips, a consumer electronics and lighting conglomerate headquartered in The Netherlands, directed all global manufacturing facilities to certify in the 1997-2000 period.
- NEC, a Japanese manufacturer of electronic components and systems, not only certified but also licensed its internally developed Kankyo (environmental) Partners software to other companies preparing for ISO 14000 certification.
- BA Systems, a UK manufacturer of aerospace systems (at the time named British Aerospace), created a volunteer network to drive its Environmental Management System.
- Thomson (Technicolor), based in France, asked for one of their global manufacturing facilities to volunteer to be the first to certify. Their Polish television-manufacturing facility was the first facility to certify at Thomson and in Poland.

The first wave of tech companies to certify to ISO 14001 was large, global companies that manufactured their electronic systems (commonly called "OEM" companies). Because many of their OEM customers demanded certification, electronic component manufacturers and contract manufacturers were close to follow. LSI Logic (USA-based) is an example of an electronic component (semiconductor) manufacturer that certified at the end of the first wave. Figure 2 illustrates this first wave (1996-2000), the second wave breaking now (2010-2012), and those companies that certified in-between the two waves — mainly mid-sized and smaller, regional electronics manufacturing companies.

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<sup>1</sup>Gordon, Pamela J., *Lean and Green: Profit for Your Workplace and the Environment*, Berrett-Koehler Publishers, San Francisco, 2001.



An example of an electronics company in the “me too” phase between the two primary waves was USA-based Radio Waves, designing and manufacturing microwave-antenna products and certifying to ISO 14001 in 2007. Radio Waves is a manufacturing OEM, like its larger and more global counterparts in the first wave of certifying companies.

### RATIONALE FOR SECOND WAVE TECH COMPANY CERTIFICATION

Most technology companies that did not manufacture hardware (systems or components) opted out of the first ISO 14001 track. Many electronic-product companies with a 100% manufacturing-outsourcing strategy took the position that because their contract manufacturers were certified, they didn’t need to be. Most software companies — even many large ones — did not certify.

Why then are many non-manufacturing electronics companies and software firms creating environmental management systems and certifying to ISO 14001 now?

- The primary reason is market pressure: Corporate customers not only in Europe and Japan, but also in North America, are starting to demand to see suppliers’ environmental programs (see Figure 3), with a specified requirement or “bonus given” for ISO 14001 certification.
- They see an advantage in replying to customers’ requests for proposals: “Yes, we are certified to ISO 14001.”
- An environmental management system provides a structure for the management of pollution prevention. Pollution prevention programs provide cost savings, reduced legal liability, improved corporate image, and improved safety.

- Companies seek operational efficiency gains through standardization, better control, and more visibility to critical internal sustainability programs.
- Marketing departments seek enhancements to brand and opportunities for customer notification and mention in the press.
- Companies formalize organically developed sustainability programs, with international recognition to boot.
- Executives see their peers at other non-manufacturing OEM, software, and services companies certify and want to avoid “falling behind.”
- For some tech companies, ISO 14001 is a confidence builder before taking on other certification processes, such as quality (ISO 9001), designing and manufacturing medical devices (ISO 13485), software-product quality (ISO 25000), or information-security management (ISO 27000).
- The certification process is one way to cost-effectively and efficiently install an Environmental Management System at multiple facilities — all up to the standard of the ISO 14001 certification.
- Some corporate customers are “clumping” ISO 14001 in with other, newer environmental reporting conventions such as the Carbon Disclosure Project and others listed in Figure 3, and so there is a renaissance of interest in ISO 14001 by association.

FIGURE 3

**List of Corporate Customer Demands for Environmental Sustainability**

STANDARD, REPORT, OR PRACTICE	CUSTOMERS' INCREASING EXPECTATIONS
Carbon Disclosure Project	Reporting corporate carbon emissions and plans to reduce them ( <a href="http://CDProject.net">CDProject.net</a> )
Publicly stated environmental policy	Stating (on the website and perhaps financial, promotional documents) a specific (non-boiler plate) policy, usually by the CEO
Publicly stated impact-reduction goals	Quantifying reductions (CO <sub>2</sub> emissions, water usage, use of trees, etc.) and stating a baseline and goals into the future
Electronics Industry Citizens Coalition	Joining this organization ( <a href="http://EICC.info">EICC.info</a> ) whose codes of conduct cover responsibility for the environment, labor, health and safety, management systems, and ethics
<b>ISO 14001</b>	<b>Certifying all relevant facilities</b>
Manufacture in customers' regions	Offering manufacturing close to end customers to reduce environmental impact and time-to-market risk

IBM is an example of a tech-industry corporate customer that during the first wave *encouraged* suppliers to certify to ISO 14001, then at the start of the second wave *required* suppliers to do so. [In 1998, IBM wrote to suppliers](#) stating that “IBM encourages you to align your [Environmental Management System] with the requirements of ISO 14001 and to pursue registration under this international standard.” Compare this language with that in a February 2010 letter to suppliers from IBM’s VP Global Supply and Chief Procurement Officer: “As we begin a new decade and in recognition of the continually growing imperative for environmental and corporate responsibility across supply chains, I am writing to inform you about some new requirements we are now setting for our suppliers in this important part of business.” He then addresses [requirements for IBM suppliers](#) to establish a formal Environmental Management System and deploy it along with setting goals for reductions. (He stops short of requiring ISO 14001 certification specifically, but lists requirements largely taken from the standard.) This 2010 letter alone has lit a fire under some non-manufacturing tech companies to move toward ISO 14001 certification.

One may wonder, “To what extent was the first or second wave of ISO 14001 certification initiated by executives’ sincere ambition to reduce their organizations’ environmental impact?” In the past 12 months my team and I have interviewed nearly 100 executives around the world about recent business successes that have corresponded to environmental impact reduction. About half of them described themselves (or others described them to us) as being “not environmentalists,” “not really

into sustainability,” or “definitely not a tree-hugger.” But when we asked for examples of programs that benefited both their organizations’ profitability and environmental conservation, they passionately described initiatives in which power consumption was reduced, paper was eliminated, products miniaturized, packaging streamlined, water use curbed, processes halved, travel cut, and more — all saving money and/or pleasing customers. “Well, that’s good for business,” they said, or “I like it because it reduces costs and benefits society,” or “That reduces waste and therefore is good for my P&L.” Our conclusion, therefore, is that whether or not an executive is specifically and personally motivated by environmental conservation, his/her responsibility for sustainable *business* practices leads the executive to the same conclusion — be it ISO 14001 or other “Lean and Green” environmental initiatives.

For balance, we’d like to present a sample view from someone in the tech industry who believes that ISO 14001 certification is unnecessary and not desirable:

“Until the science in the green movement has been removed from the political spotlight like ‘global warming,’ this certification is totally worthless to a company that has a superior product. More business for the paper pushers and less innovation.” (March 2010)

Perhaps people with views similar to the one above might agree to the ISO 14001 certification path if *only* to protect revenue streams, as many corporate customers give buying preference to certified suppliers and other corporate customers demand it as a condition to doing business.

## BEST PRACTICES FOR THE SECOND WAVE

The good news is that many companies not part of the first wave of ISO 14001 certifications have in the meantime been creating and executing strategic, profitable environmental roadmaps. This makes the companies closer than some had realized to honing their processes and documentation, resulting in an environmental management system that independent auditors will certify. And the requirements for non-manufacturers are, in some areas, lighter than for manufacturers. In fact, the process of certification makes an existing sustainability roadmap even more successful by continually reducing environmental impact and offering more cost savings.

We asked managers at tech companies that have very recently certified to ISO 14001 — leaders of the second wave — what advice they would give to those companies considering or going for certification now. We follow this advice with a case study (on the next page) illustrating how Blue Coat Systems, a non-manufacturing tech company, successfully and swiftly certified to ISO 14001 based on the company's previously established corporate sustainability initiatives.

### **Executive Advice from Recently Certified Companies for those Considering or Starting ISO 14001 Certification:**

- Get executive buy-in: Advise executives of the strategic importance for certification, to garner the time and attention necessary from multiple functions and (if certifying more than one facility) locations.
- Start with a template: For efficiency, start with a template from another company's successful ISO 14001-certified Environmental Management System (with permission), adjust the style and formatting to what is typically used at your company, then start to populate the document with your own company's environmental aspects, programs, etc.
- Registrar/Auditor expertise counts: Engage an experienced ISO 14001 registrar that will serve as a supportive coach as well as a stickler for details; both are needed for excellent results.
- Utilize existing effective communications: Tap effective, existing internal communications modes (newsletters, intranet, videos, posters) to educate and inspire employees about the Environmental Management System, the certification process, and what each employee needs to know.
- Find internal champions: Seek internal champions by broadcasting the needs for and requirements of the roles in an inspiring way, and don't be surprised if you get more volunteers than you expect.
- Consider the timeline and your corporate culture: Some managers advised that the certification process will take longer than expected, and others advised that best results come from moving up the deadline to create urgency. Perhaps this factor is specific to company cultures.
- Listen to your auditor: Don't sweat the corrections given by the auditor; they are doing their job. Plus, implementing these

improvements only makes for a stronger Environmental Management System; after all, it's also about continuous improvement.

## CASE STUDY: BLUE COAT SYSTEMS

**“Blue Coat acquired compliance to ISO 14001:2004 in half the time many other companies take to address the Environmental Management System requirements, including the registration audit. This was possible primarily because of the commitment and support from top management down to every single employee.”**

— **Manuel Rodriguez, Lead Auditor  
TÜV SÜD America Inc.**

Blue Coat Systems, Inc., a technology leader in [Application Delivery Networking](#), achieved ISO 14001 certification in September 2010. Like most non-manufacturing tech companies, Blue Coat did not participate in the first wave of ISO 14001 certification: Blue Coat deploys a 100% manufacturing-outsourcing strategy and has selected its contract manufacturers in part on their being certified to ISO 14001. Nonetheless, more and more of the requests for quotes received from customers asked for ISO 14001 certification. The good news was that the company had already made progress environmentally through an internal initiative called BluePlanet.

In early 2010 Blue Coat sought to attain ISO 14001 certification to raise awareness about the company's environmental responsiveness. “Our customers care about the environmental impact of their strategic suppliers,” said Senior VP of Corporate Operations David Cox. “This certification demonstrates to our customers that Blue Coat Systems is dedicated to reducing the environmental footprint of our products and operations and affirms the environmental stewardship of our employees.”

The ISO 14001 registrar TÜV SÜD America Inc. reported that Blue Coat's certification process was

particularly swift — in part due to the fact that the company's corporate environmental-sustainability program, BluePlanet, was in place for more than two years before the certification process began.



“The rapid certification process reflects the forward-thinking success of our company's environmental sustainability initiative, BluePlanet, which we commenced more than two years before the certification audit,” said Cox. “Our BluePlanet program, led by a multifunctional, multiregional team, continues to reduce the environmental impact of our company and products in numerous areas applicable to ISO 14001 certification.”

Insights on the part of Paris Dieker, the Blue Coat compliance engineer who championed ISO 14001 certification, are summarized in Table 1.

**TABLE 1**  
**Blue Coat Systems' Approach for a Swift, Effective Certification**

<b>ASPECT OF ISO 14001 CERTIFICATION</b>	<b>BLUE COAT SYSTEMS' APPROACH</b>
Having a significant head start on environmental management	Over 2 years before beginning its ISO 14001 certification process, Blue Coat started a corporate environmental/sustainability program called BluePlanet, whose mission is to select and implement environmental initiatives that substantively reduce environmental impact and benefit Blue Coat financially. BluePlanet's multifunctional, multiregional employee participation and systems for setting and achieving environmental goals provided a strong foundation for the ISO 14001 process.
Strong executive commitment and follow-through	Blue Coat had a strong commitment in the executive level to the necessity and benefits of ISO 14001 certification. Employees at all levels were engaged in the process.
Effective corporate communication systems	At the outset, Blue Coat engaged a multifunctional, multiregional team and employed existing corporate communication channels to generate buy-in and cooperation among employees. This ensured that initiatives were carried out in a timely manner.
Selection of an ISO 14001 registrar	Blue Coat chose its ISO 14001 registrar based on customer focus, competence, and expertise in the Information Technology and Electronics sector. Strong customer-oriented service was a deciding factor in choosing the registrar.
Effective leverage of auditor	<p>During the certification period (from pre-assessment through the final stage 2 audit) the BluePlanet team was open to constructive feedback from the auditor to improve certain processes to better achieve goals and objectives while being more efficient. This feedback increased understanding about making improvements and adding more value for the benefit of employees, partners, customers, and the company overall.</p> <p>Additionally, the lead auditor had extensive knowledge about Blue Coat's industry sector and expertise with a variety of certification processes and implementations. The auditor's feedback helped improve Blue Coat's EMS significantly and was a valuable resource for any questions related to EMS and ISO certification.</p> <p>The auditing process was a closed loop process divided into 4 phases to ensure that at every step of the process the customer needs were clearly understood and taken into consideration during the entire certification process.</p>

### Business Benefits Achieved

Since its inception, the BluePlanet program has helped Blue Coat to reduce its operational costs by approximately US\$3.3 million and reduce CO<sub>2</sub> equivalent emissions by approximately 3,000 metric tons. This equals a year-over-year reduction of 4% per employee.

The business benefit of the ISO 14001 process has been to provide guidance in implementing best practices and world-class processes to continuously lower the company's impact on the environment, while eliminating inefficiencies and reducing or avoiding costs.

Following the ISO 14001 certification process, Dieker said, "A well implemented environmental management system will pay for itself and incites constant vigilance in the areas of waste reduction, pollution prevention, and regulatory compliance. It inspires employees to consider the environmental costs of their activities."

### ALTERNATIVES TO AND COMBINATIONS WITH ISO 14001

During the first wave of ISO-14001 certification in the tech industry, manufacturers' emphasis was on obtaining certification and, at best, driving a wide array of initiatives for reducing corporate environmental impact from the "14001" Environmental Management System. Between the two waves, however, many of the programs listed in Figure 3 were developed, and many corporations focused on them (e.g., reporting to the Carbon Disclosure Project or Global Reporting Initiative, measuring greenhouse gas emissions according to the

Green House Gas Protocols, developing public environmental policies and goals, etc.). Now at the second wave, many non-manufacturing tech companies are certifying to ISO 14001 to supplement or formalize their budding or even mature environmental programs.

Software company SAP is an example of a non-manufacturing tech company that for many years has taken tremendous strides environmentally and has not yet certified to ISO 14001. For a few years now SAP has been reporting aggressive environmental conservation goals and performing to them admirably; SAP was an early adopter of reporting to the Carbon Disclosure Project (starting five years ago). The company has developed a robust suite of software tools to enable their customers to measure and reduce environmental impact. Visiting SAP's German headquarters several times in the past couple of years, I've been impressed with their rainwater collection systems, extensive array of solar panels, attention to waste minimization in the offices, and other leading programs. Regarding why SAP was not yet ISO 14001 certified (in May 2010) Stephanie Raabe in Sustainability Operations for SAP in Walldorf, Germany, said,

"In the past, it seemed to SAP management not necessary for SAP to have an Environmental Management System. When we compare our business with other companies, our environmental impact is still very low. But we are seeing an increase of stakeholders wanting SAP to have a certified Environmental Management System. So, we will set up a project...to analyze the costs, benefits, and outcome of certifying to ISO 14001. A lot of customers

expect SAP to certify to ISO 14001. As for our certification process, I think we have many things in place already that are required, but we would want to be globally certified, requiring greater effort. SAP has more than 300 locations, and likely we would choose 5-10 larger offices around the world to certify.”

Some companies in the second wave are *combining* ISO 14001 with other programs. Joe Pfankuch, founder of the 14000 Store, notes that “the combination of [ISO 14001](#) and [OHSAS 18001](#) into some variation of the [FDA’s R2](#) is growing, and the specialization of [ISO 9001](#) to [RIOS](#) for the electronics recycling industry is somewhat interesting....Two years ago I would have said the second wave was [ISO 14064](#) and GHG, but that seems to have quieted a bit with the economic downturn.” LSI Corporation is an example of an electronics company that certified to ISO 14001 very early in the first wave (in Spring 1997, while it was Lucent Microelectronics) and today not only maintains its ISO 14001 certification but also is certified to OHSAS 18001 concerning occupational health and safety.

### **ISO 14001’s TWO WAVES AND WHAT’S COMING NEXT**

With wave one of ISO 14001 certification in the tech industry being the initial certifications (1996-2000) by electronics manufacturers, and the second wave (2010-2012) being non-manufacturing technology companies, one wonders what waves or trends are coming next. Progressive tech companies, such as Blue Coat Systems — profiled in the case study — are establishing 5- and 10-year roadmaps for

their companies’ environmental and corporate social responsibility practices and goals. We at TFI predict that by 2020 the electronics industry will have the following demands on product designs and operations:

- Consumer and corporate customers will choose between competitive electronic products according to their relative Lifecycle Analyses.
- Thousands of electronics hardware products will be replaced by The Cloud, and the remaining hardware systems will have dematerialized (reduced in size and weight) to, in some cases, one fourth of the present day products’ weight and dimensions.
- Substance restrictions will further escalate globally.
- The growing “Simplicity Culture” will drive consumers to purchase fewer products and choose only those containing streamlined and reclaimed materials and performing multiple functions.
- OEMs design products/services that *repair* environmental health (not only mitigating environmental harm).
- The electronics industry will be subject to carbon fees in some regions—forcing further creative reduction of resources for delivering desired functionality.
- Most large cities will be “Zero Waste to Landfill” by 2020, no longer accepting waste in landfill or incineration facilities.
- Renewable energy will be used and generated extremely widely.

Will certifying to ISO 14001 now — in the second wave — help enable technology companies to thrive in the scenarios forecast for 2020? For those companies using their ISO 14001-certified environmental management system to formally set aggressive goals for products and operations, with innovative solutions, and executive support for change — yes. For companies that are looking only to post the ISO 14001 certificate in their

lobbies and are satisfied only to “check yes” in response to certification inquiries in customers’ requests for quotes — no.

The good news is that the ISO 14001 framework is flexible enough to envelop or work side-by-side with numerous “Lean and Green” projects that both reduce environmental impact and generate cost savings and revenue earnings for tech companies of all sizes, all industries, and

## About Technology Forecasters Inc. and TFI Environment

Since 1987, clients have turned to [Technology Forecasters Inc.](#) for strategic advice and market insights to optimize global manufacturing relationships and achieve profitable environmental strategies. With clients in the Americas, EMEA, and Asia, TFI delivers a unique combination of industry and environmental expertise through management consulting, customized research, keynotes, and workshops. TFI Environment leads clients to [Lean and Green](#) competitive advantage for products, supply chain, logistics, and facilities. The author invites your comments: [PGordon@TFIenvironment.com](mailto:PGordon@TFIenvironment.com).



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