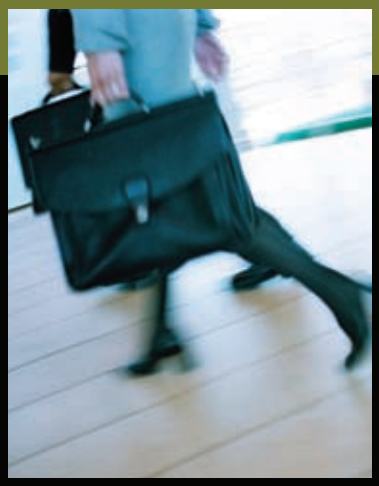
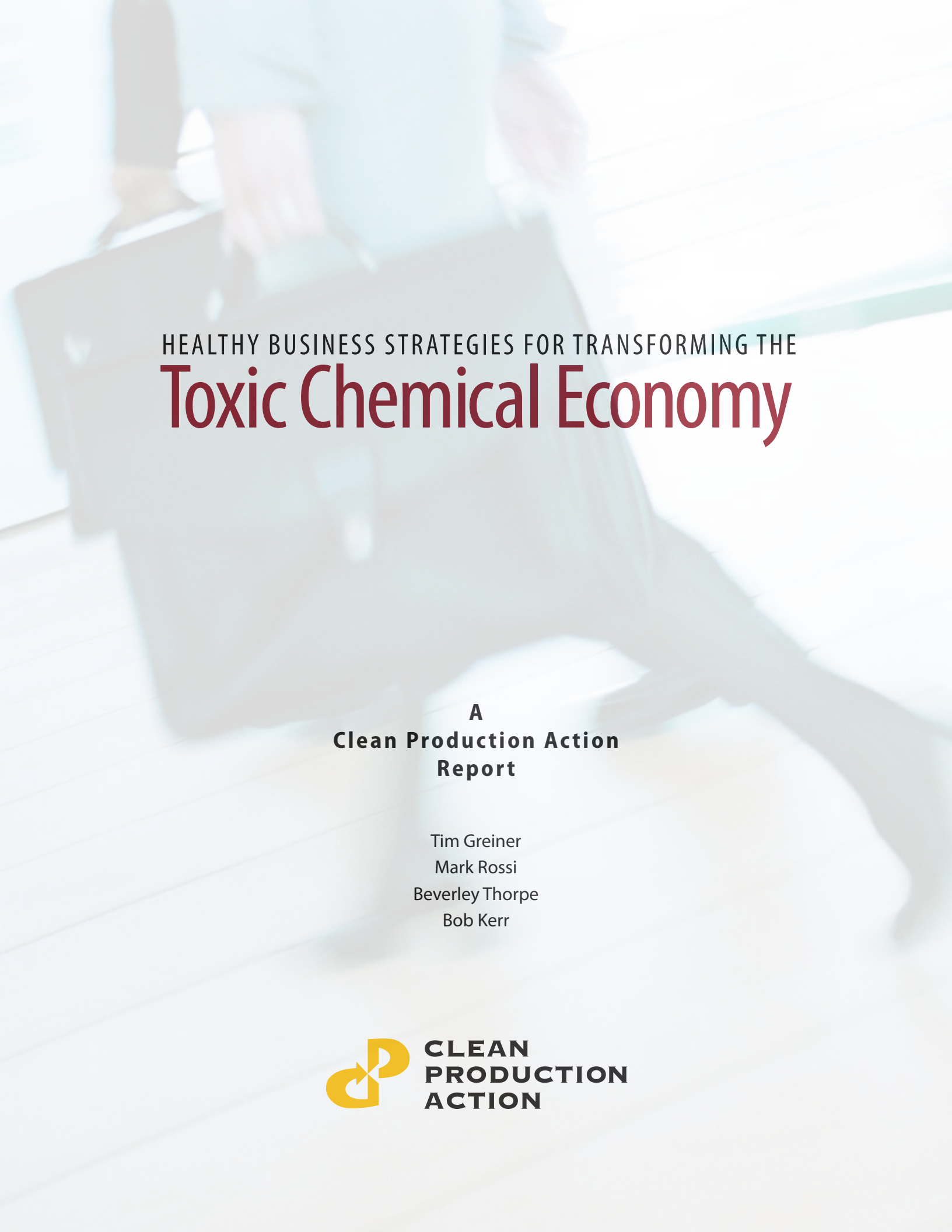



Healthy Business Strategies for Transforming the Toxic Chemical Economy

CLEAN PRODUCTION ACTION



HEALTHY BUSINESS STRATEGIES FOR TRANSFORMING THE

Toxic Chemical Economy

A
Clean Production Action
Report

Tim Greiner
Mark Rossi
Beverley Thorpe
Bob Kerr

CLEAN
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Clean Production Action
Mark Rossi, Beverley Thorpe
Clean Production Action promotes the use of products that are safer and cleaner across their life cycle for consumers, workers and communities. Our mission is to advance Clean Production which we define as the design of products and manufacturing processes in harmony with natural ecological cycles, the elimination of toxic waste and inputs and the use of renewable energy and materials.

Pure Strategies, Inc.
Tim Greiner, Bob Kerr
Pure Strategies helps companies improve their environmental and social performance using clean production tools, sustainable materials, strong community relationships and transparent measures of progress.

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Dell, Inc.: Mainstreaming the Precautionary Principle

In the mid 1990's, Dell shipped its first computers and displays free of a host of toxic brominated flame-retardants. Since then, Dell has worked with its customers, regulators, investors and environmental advocates to develop a broader list of restricted materials and implement a program with suppliers to reduce their use in Dell products.

Dell's efforts are beginning to bear fruit. The company has eliminated all halogenated flame-retardants in all desktop, notebook and server chassis plastic parts and has recently expanded these restrictions to include all products designed after June 2006. The company maintains a list of more than 50 banned or restricted substances and works with its product development team and suppliers to choose designs and materials that avoid these substances. Furthermore, Dell's suppliers are contractually prohibited from using these substances. To police its supply chain, Dell periodically tests products and components for compliance with its policies.

According to Mark Newton, Dell Senior Consultant, Corporate Sustainability, the company's chemicals management system is really just the first step in a long journey towards responsibly managing chemicals: "We, and the other companies in our industry, realize we are at the beginning of a journey in this area. We're a relatively young industry, but we're learning quickly how to meet both business and environmental goals and how to effectively manage these issues with our supply chain."

While other U.S. electronics manufacturers have introduced environmental programs, what sets Dell apart from many other companies is

DELL

Dell, Inc. and its subsidiaries engage in the design, development, manufacture, marketing, sale and support of various computer systems and services to customers worldwide.

- **Founded in 1984 by Michael Dell**
- **Headquartered in Round Rock, Texas**
- **$55.9 B annual revenue**
- **55,200 employees worldwide**

its chemicals policy. Dell was among the first U.S. electronics manufacturers to publicly adopt a precautionary approach to materials selection when it finalized its Chemicals Use Policy in 2005. In it, the company states that "to act responsibly, Dell believes that if reasonable scientific grounds indicate a substance could pose significant environmental or human health risks, even if the full extent of harm has not yet been definitively established, precautionary measures should be taken to avoid use of the substances in products unless there is convincing evidence that the risks are small and are outweighed by the benefits. Dell considers these to be 'substances of concern.'"

Listening from Outside/Listening from Within

Dell's Chemicals Use Policy and support of the Precautionary Principle did not come about overnight. The policy was a product of a deliberate and careful process involving both external and internal stakeholders.

When it came to listening to external investor, customer, and environmental advocacy stakeholders, Dell learned from an earlier experience with its computer take-back program. Back in 2002 when Dell first introduced its asset recovery program, advocates criticized Dell for the program's shortcomings. According to Mark Newton, "At first, we didn't listen closely enough to the input of all stakeholders. When we realized that this input could help improve the solutions we were trying to bring to the marketplace, our environmental momentum increased. People throughout the company realized the benefits of developing an open and transparent dialogue with environmental advocates just like we do with customers and investors."

With this new perspective, Dell began vetting its restricted materials policies with each of its important external stakeholder groups. According to Newton, "we found ourselves doing what we should have done all along – managing a transparent and open dialogue." Over the past few years, this dialogue has changed the perception with many advocates that Dell does care about chemical use. When Dell first shared a draft of its Chemicals Use Policy, one advocacy group "redlined much of it with edits and suggestions" according to Newton. But the back and forth process of exchanging comments on drafts established greater trust and sharpened the company's positions.

As this process developed externally, internal debates within Dell were no less controversial. The company's Worldwide Environmental Affairs group was clear that there were chemicals in products, such as brominated

EXCERPT FROM DELL'S CHEMICAL POLICY

Dell identifies substances of concern with consideration for legal requirements, international treaties and conventions, specific market demands, and by the following criteria:

- **Substances with hazardous properties that are a known threat to human health or the environment;**
- **Substances with hazardous properties that show strong indications of significant risks to human health or the environment;**
- **Substances with hazardous properties that are known to biopersist and bioaccumulate in humans or the environment.**

To enforce the company's precautionary measures, Dell strives to eliminate substances of concern in its products by: (1) Maintaining a Banned and Restricted Substance Program; (2) Choosing designs and materials that avoid the use of substances of concern, (3) Prohibiting supplier use of these substances contractually, and (4) Substitution of viable alternate substances.

"Several years ago, Dell challenged us to develop chlorine and bromine-free products. Our product development team successfully developed three new LEXAN resins to met Dell's strict environmental requirements."

— Pius Thrivini, Program Manager,
GE Plastics Product Compliance & Stewardship

flame-retardants, that were hazardous. They cited evidence where burning certain brominated compounds in so-called 'backyard burning' operations resulted in the formation of persistent, bioaccumulative, and toxic pollutants. And since Dell could not control whether someone in the U.S. or abroad burned the product in an open fire to recover copper or other valuable metals, the company decided to design these substances out of their products, even though it was not required to do so by law. In addition to the environmental case, there was a growing business case to be made for moving in a precautionary manner. Institutional customers such as hospitals, banks, and government agencies in Northern Europe and Japan were soliciting computer companies for products free of brominated flame-retardants and other toxic compounds — a trend that was likely to expand. If Dell failed to provide these solutions, its competitors would. But despite the growing market and clear scientific basis for action, there was little precedent in Dell or in the wider U.S. electronics industry for a company publicly committing itself to a precautionary approach.

Dell Environmental Affairs group received positive feedback throughout the company when it proposed the new Chemicals Use Policy. Nonetheless, various departments expressed concerns consistent with their position in the company. Legal articulated concern over the open-ended nature of the precautionary principle. For example, what level of risk would be sufficient for the company to act? The product development team supported the effort, but was sensitive to making technology commitments ahead of the supply chain's readiness, and to not wanting to inject higher costs into Dell products. The procurement team wondered if suppliers could meet new requirements without affecting quality and delivery. Corporate communications, however, saw the policy as an opportunity to reinforce the company's environmental reputation. Dell's Executive Team left the issue to the experts in the company, and held back until the internal debate concluded in favor of a precautionary approach. The policy was approved at the senior Vice President level and then reviewed by Michael S. Dell, Chairman of the Board, and Kevin B. Rollins, President and Chief Executive Officer.

Shortly after making its chemicals policy public, Dell followed with two public statements.

The first written statement advocated for the European Commission to maintain a proposed ban on the use of the toxic brominated flame-retardant DecaBDE in electronics. The second statement supported the proposed Registration, Evaluation, Authorization, and Restrictions of Chemicals (REACH) regulation, explaining that a precautionary approach is an essential element of an effective chemicals regulatory system. Dell's new policies broke ground for a major U.S. multinational. They meant the company decided to go beyond compliance with legal requirements, and instead recognize non-binding international conventions on hazardous materials. The policies also reinforced the company commitment to weeding Dell products of materials which posed environmental risks.

An Open Source Solution

To successfully implement its chemicals use policy, Dell has had to align its materials restriction goals with its business model. Different companies use different strategies to develop new materials and chemistry for their products. Some firms such as Fujitsu Siemens are large conglomerates and are backward integrated into basic materials research and development. Others such as Hewlett Packard have a storied history of internally funded research and development. But Dell's success as a company is built around a business model that does not rely on so-called closed-source technology, but instead on open-source standards. Dell's advantage springs from its ability to lower the cost of production in its supply chain. The company could invent its own path to cleaner materials, but instead chooses to lead and collaborate with its suppliers to develop *standardized solutions* to replacing brominated flame-retardants, PVC and other restricted materials. Once standardized solutions become available in the marketplace, Dell can wield its cost reduction

DELL RESTRICTED MATERIALS (IN CERTAIN APPLICATIONS)

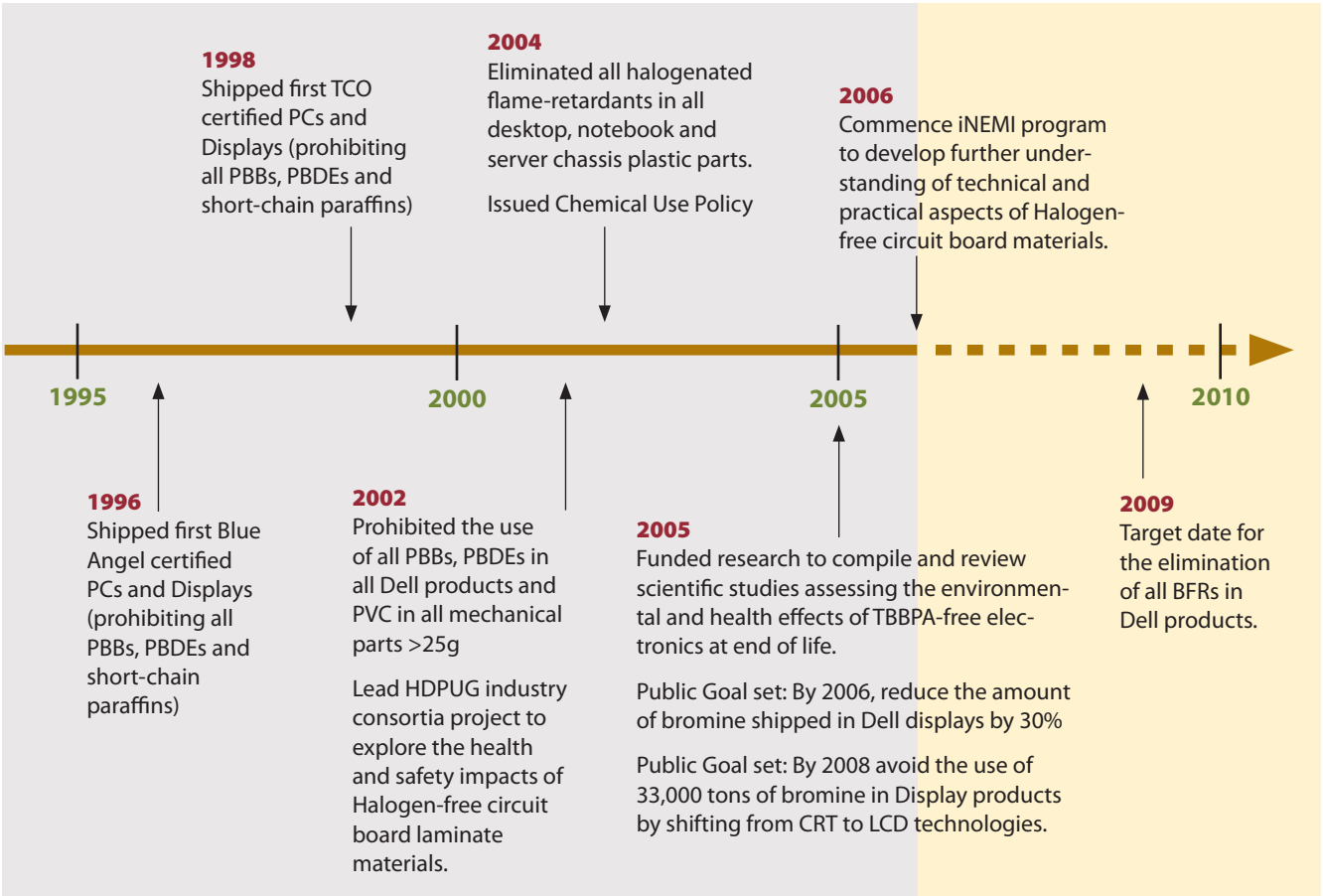
- **Asbestos and its compounds**
- **Azo dues/colorants**
- **Cadmium and its compounds**
- **Chlorofluorocarbons (CFCs)**
- **Short Chained Chlorinated Paraffins (SCCPs)**
- **Chromium VI and its compounds**
- **Halogenated flame-retardants in chassis plastic parts**
- **Hydrochlorofluorocarbons (HCFCs)**
- **Lead and its compounds**
- **Mercury and its compounds**
- **Nickel and its compounds**
- **Polychlorinated Biphenyls (PCBs) and Terphenyls (PCTs)**
- **Polyvinyl Chloride (PVC)**

In addition to the restricted substances, in mid-2006, Dell will begin collecting information from suppliers on the use and non-use of the following substances:

- **Antimony and its compounds**
- **Arsenic and its compounds**
- **Beryllium and its compounds**
- **Bismuth and its compounds**
- **Brominated/Chlorinated flame retardants used in any application**
- **Certain Phthalates**
- **Selenium and its compounds**

expertise to make the solutions affordable to the global computer hardware market. Dell used this approach with its plastics suppliers, challenging them to develop cost and performance equivalent plastics free of bromine and chlorine. It's also using this open-source model to comply with 2006 European Union regulations restricting cadmium, hexavalent chromium, lead, mercury and certain halogenated flame retardants. Keeping with its precautionary approach, Dell will not sell these compliant products only in Europe. Instead, Dell will switch its global manufacturing to meet these standards.

Since 2001, Dell has led several industry consortia to develop standardized solutions for greener chemistry. For example, Dell developed and sponsored the International Electronics Manufacturing Initiative (iNEMI) on brominated flame-retardants and led iNEMI's ROHS supply chain transition taskforce. As Mark Newton explains it, Dell is just starting out on its journey to be an environmentally responsible market leader. The company sees its environmental leadership coming from its ability to influence a supply chain comprised of roughly 400 companies where Dell buys $100 million of materials a day, 350 days a year (Terry 2005). You won't see Dell introducing a specialized "green" computer for a niche market anytime soon. Dell's volumes are too great. Instead, Dell's unique contribution is to push customer, investor, and environmental advocacy concerns in the market, to work on industry principles and standards, and to drive the larger market towards widespread adoption of safer electronics.



Healthy Business Strategies
for Transforming the Toxic Chemical Economy

Business leaders are creating value by embedding concerns for human health and the environment into their products. Healthy business strategies differentiate a company's brand from its competitors — lowering costs, enhancing consumer and employee loyalty and increasing market share by creating healthier products for people and nature. For these leading companies, using environmentally preferred chemicals and materials is a core value, not a secondary assignment relegated to the periphery of the company.

This report profiles six companies that are crafting healthy strategies for using chemicals and materials in their products. While their individual actions to address toxic chemicals vary, their best practices, when gathered together define the terrain of healthy chemical strategies:

- Identify all chemicals in products.
- Eliminate high hazardous chemicals.
- Strive to use only green chemicals.
- Commit to product re-design.
- Take responsibility for products from cradle-to-cradle.
- Adopt internal chemical policies, including the precautionary principle.
- Work collaboratively with environmental advocates.
- Publicly support government reform of chemical policies.

These strategies exemplify the approaches companies must take if they are serious about creating a healthy chemical economy.

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