



Innovation.

The word itself inspires. When innovation happens, it creates a sense of pride, satisfaction, even exaltation.

It builds market share, secures jobs and leads to greater profits. It gives us the hope, energy and strength to keep achieving.

More and more, leaders in Canadian manufacturing understand that to overcome the tough challenges facing industry – high energy costs, a high Canadian dollar, labour shortages and stiff foreign competition – they must actively foster innovation. Now, like never before, it is the only way to flourish, or indeed to even survive.

In this issue, *20/20* magazine presents stories of companies who are successfully implementing strategies to promote inventive and novel thinking, companies who are taking risks, companies who are reaping the benefits of fostering widespread and embedded innovation as the new norm. Innovation is now a vital component of their corporate culture.

As you read this issue, you will find that inventive thinking takes many shapes within the manufacturing sector. It is found within business models, in processes, HR practices, marketing strategies and more. This echoes IBM's 2006 'Global CEO Study,' which found the leaders surveyed see "a persistent, worldwide, sector- and size-spanning push toward a more expansive view of innovation."

More than 17,000 ideas – and counting
Innovation does not happen by itself. Company leaders worldwide increasingly understand that novel thinking and implementation of new ideas requires orchestration from the top. IBM's Global CEO Study states that in order to effectively foster innovation, CEOs [and

Leading **innovators** in **Canadian** manufacturing

Stories to **inspire** and **astound**
from across Canada

By Treena Hein

other company leaders] “need to create a more team-based environment” and “reward individual innovators.”

That is precisely what is being done by PACCAR Canada in Ste-Thérèse, QC. In 1996, the Ste-Thérèse truck plant sat dark and empty after a long strike that had started the year before. Shortly after, the federal and provincial governments began meeting with global truck manufacturer PACCAR about reopening the facility for the manufacture of medium duty transport trucks (Kenworth and Peterbilt). Gilles Gervais, plant manager, says the plant had reopened by mid-1999 with LEAN manufacturing practices in place. The plant’s management structure was also radically streamlined in comparison to the previous operation of the facility. “Five levels of management have gone down to two,” says Gervais. “Employees on the floor are grouped into teams assigned to do specific tasks in the assembly process, each with a team leader/representative. Manufacturing coordinators coach two to three teams. Team representatives report to a production centre manager, who reports to me.”

PACCAR also introduced a continuous improvement program. Gervais says, “Employees submit ideas and they get recognized through gift certificates. It’s through small gains and not only through big bang accomplishments we create the continuous improvements and productivity.” There have been an

astounding 17,000 ideas submitted and implemented since 1999, addressing everything from layout and tools to products, processes and safety.

taken very seriously, Hildebrand says, “We measure the number of ‘Bright Ideas’ brought forth by a section as part of managerial evaluation. This

“Do not get discouraged by minor setbacks. Take your vision and run with it.”

Jean-Paul Deveau, president, Acadian Seaplants Limited

At The Puratone Corporation, a producer of hogs, poultry, animal feed and agricultural technology based in Niverville, MB, teamwork and eliciting ideas is also paramount. Ray Hildebrand, chief operating officer and senior VP, says in the last three years, Puratone has taken a number of steps in terms of HR structure to foster a supportive atmosphere where creativity and innovation can flourish. “We created a continuous improvement steering committee whose role is to foster and promote innovation in our production methods,” says Hildebrand. “We also have problem-solving teams with people from different sections of the company.”

Puratone has also instituted a ‘Bright Idea’ program, wherein employees are recognized and offered awards for ideas. “These [ideas] are mostly relatively minor,” says Hildebrand, “but they add up significantly.” To ensure fostering of innovative ideas is ongoing and

tells us ‘Are they the type of manager to engage and inspire staff?’ We measure our leadership in terms of how good they are doing at doing this.” He adds, “Those who do this get promoted. Our leadership is permeated with people who can foster this type of engagement. We have removed the fear from staff for trying and failing.”

Hildebrand also credits the continuous idea generation to “a shift in pride.” He says innovative products like Puratone’s revolutionary BIOvator™ carcass composter (sbuidl respect for the company among employees, which “means they are more inclined to be engaged.”

Comdev Space in Cambridge, ON, a manufacturer of specialized space hardware subsystems also has innovated in terms of operating structure in order to elicit novel thinking from all employees. President Mike Pley says, “We have ‘Continuous Improvement Blitzes’ where ground-level employees are given

the time to break away and identify the actions and the opportunities that make a difference. The managers do the orientation and training, facilitate the blitz and then implement the changes, which may take weeks or up to six months.”

Bastien Larouche also stresses the important role of employees in ongoing innovative change in business. “Employees are the first factor in our success. Everyone feels they are an integral part of the whole organization,” says Larouche, director, management systems for Teknion | Roy & Breton, the Quebec group (four facilities + DC) of Teknion Corporation. Teknion is an international designer, manufacturer and marketer of award-winning office

“Products that are highly innovative need to be marketed in a different way than a category of products already established.”

Sean Coyle, director of marketing, Advanced Glazings Ltd.

furniture and related systems, storage and seating products.

Larouche says, “Employee involvement has been a huge factor in the company continually eliminating material and production wastes on an ongoing basis. As an example, over five years ago we issued an environmental challenge to all employees, and their ideas and implementation have allowed us to

achieve, each year since then, a four to six per cent drop in water, energy, and material rejects.” The company has also cut down on the use of chemicals and is increasing the use of natural materials in its products. These improvements were recognized by the GLOBE Foundation of Canada and *The Globe and Mail* in June, when Teknion received the Corporate Competitiveness Award.

Innovative recruiting practices

With so many recent problems to solve, Formashape™, a manufacturer of customized fibre-reinforced plastic composites in Kelowna, BC, could be easily excused for not demonstrating huge amounts of innovation. President Peter Jeffrey says, “In the last 24 months, we have seen price increases of raw materials go up 30 per cent, utility costs for gas heating have gone up, labour costs have gone up and labour availability has gone down substantially.” He adds, “From May 2006 to May 2007, the number of people in this area in the 25-44 year-old age group has dropped by 9,000.” (Jeffrey points to the Alberta oil industry as the main reason for this.)

However, innovation is exactly what is allowing Formashape™ to address these problems. Indeed, the company won an Innovation Award from the Okanagan Science and Technology Council in March 2007.

Tackling HR needs is one area of many where Formashape™ shines in terms of inventive thinking. Although labour concerns are sure to continue, Formashape™ is holding its own right now, thanks to two highly innovative strategies. In November, the company placed a huge sign in front of the facility stating ‘Trespassers will be hired’ and then phoned the media. In December, a picture of the sign and a story on Formashape’s labour woes made the front page of the business section in the region’s newspaper, sporting the headline ‘Sign of the Times.’ Jeffrey is happy to report, “We needed 30 people and we had 120 applications after the weekend.”

Besides the novel method of attracting workers through free media attention this spring, Jeffrey says they also recruited by forming a relationship with another local manufacturer in a sector experiencing a down cycle. “We contacted them and they allowed us to recruit directly from the people they were laying off in May,” Jeffrey says. He adds, “We also contracted process engineers from them, people they didn’t want to lay-off. We ‘borrowed’ them and paid the company their payroll costs.”

Collaboration is key

IBM’s 2006 ‘Global CEO Study’ also found that respondents “stressed the overwhelming importance of collaborative innovation – particularly beyond company walls.” When asked which sources their companies relied on most for their innovative ideas, CEOs in the study said, “Business partners were right near the top of the list – just behind the general employee population. And customers were third, which means two of the top three significant sources of innovative ideas now lie outside the organization.”

Manufacturers such as Abbyshot Clothiers Limited have received innovative ideas both from their customers and from CME. Puratone’s Ray Hildebrand says, “Innovation in our company has been really intertwined with CME. We joined a ‘consortium for continuous improvement’ with about ten other companies.”

Comdev joined the 'High Performance Manufacturing Consortium' (www.hpm-consortium.com) based in southwestern Ontario long ago, because President Mike Pley says simply, "We can learn from others, copy them." He adds, "It also helps when people say 'It can't be done in our business.' You show them how it is being done elsewhere in a place similar to our business, and this seeing leads to believing." For information on joining a manufacturing consortium, contact your provincial CME office or High Performance Solutions (www.hpsinc.ca)

Acadian Seaplants Limited (ASL) of Dartmouth, NS, also places great importance on outside collaboration. From the seaweeds it harvests from the wild, ASL specializes in manufacturing seaweed-based fertilizers, animal feed supplements and ingredients for the food, health, commercial brewing and beauty markets with sales in over 70 countries. It also grows seaweed on-land in large tanks for the Asian food market.

ASL has nurtured a number of research partnerships with outside institutions over the company's lifespan, several stretching back to the 1980s. These include Agriculture and Agri-food Canada, Acadia University, Dalhousie University, the Nova Scotia Agricultural College and the National Research Council Institute for Marine Biosciences. President Jean-Paul Deveau says, "We have our own researchers and research facilities, but we also work with people at other organizations to access talent, expertise and equipment. It's very important that when you're working with researchers who have developed something and you go to the commercialization phase, to keep in touch because of the technical

Innovations in marketing strategy

With such a revolutionary product, Advanced Glazings Ltd. of Sydney, NS, could hardly market their unique light-diffusing glass marvel through conventional means. Indeed, they use an innovative educational strategy to reach those immersed in building construction. Director of Marketing Sean Coyle says, "Our foundation for marketing follows the ideas of Geoffrey Moore and Clayton Christensen, which is basically that products that are highly innovative need to be marketed in a different way than a category of products already established."

Coyle explains their strategy focuses on direct business-to-business sales. "For example, we call architectural firms and provide lunch and an educational presentation on types of daylight solutions in buildings," he notes. "We are certified through the American Institute of Architects as an educational provider to its members, who must attend seminars to stay certified." He adds, "There is a focus on true education first. We talk to a huge amount of architects about daylight and bringing daylight into buildings in a controlled way. Once they truly understand these things, they understand how easy and cost-effective it can be to put our product into their designs. They are excited about what they learned."

Coyle says, "We support these marketing initiatives through PR. We also target geographically to build momentum in a region. We also did a lot of research into who is most interested in our product, which chiefly includes educational and sports facilities and administrative offices."

Tri-Star Industries Limited of Yarmouth, NS, also sells product through a novel problem-solving marketing framework. Tri-Star manufactures high quality ambulances of all types as well as specialty vehicles such as patient transfer units, emergency command posts and armoured money carriers. The firm exports its products to 42 countries.

President Keith Condon says, "We don't try to just sell the ambulance because then we'd be compared with everyone else. We sell the package." This 'package' entails a customized assessment and recommendations for implementation of pre-hospital emergency health systems, including modernization of ambulance services. Tri-Star goes beyond selling a product to selling the framework in which the product is used.

Condon says the process begins with bringing a potential client, many of whom are from developing world countries, to the Tri-Star facilities. "We then travel there, and go out on the field at the ground level and do an assessment study. We then do a report/proposal, and help them find the money," he says. "There is a large need for this in developing world countries."

This focus on offering products and services ties in with a shift in corporate thinking that occurred at Tri-Star about 15 years ago. "We decided to go for quality products, not necessarily volumes," Condon says. "We got certified in different programs such as ISO. We increased our bottom line, but decreased volume. You dump 90 per cent of the market when you do that, but there's not a lot of competition in that 10 per cent."

challenges and obstacles. This is a long road together. By maintaining those partnerships on a long-term basis, we've been able to meet the challenges of commercialization and those challenges are monumental."

Deveau says, "I would certainly encourage those starting up a biotechnology company to establish and nurture relationships with academic and research institutions to get technical expertise

and create a team that can overcome technical hurdles in the future."

ASL is also innovative in its resource management philosophy. Deveau says "We have invested heavily in determining how harvesting affects the seaweed itself and the environment. We have spent a great deal of effort and money to make sure we are harvesting sustainably...Our scientists have published scientific papers on this and our resource management

practices have been used as a model for other countries around the world." He adds, "We also have the largest land-based seaweed cultivation farm in the world and we process our seaweeds in unique ways to exacting markets."

In terms of stimulating innovation within a company and implementing new ideas, Deveau advises, "Do not get discouraged by minor setbacks. Take your vision and run with it." ^{20/20}

Novel product design

The design of shopping carts, like sunglasses, shoes, bicycles and many other items used every day across the world, hasn't changed fundamentally over time. That is, until about two years ago, when Cari-All™, based in Montréal, QC, decided to change the design of their shopping carts for several important reasons. Cari-All™ manufactures shopping carts, shelving systems and complete handling, storage and distribution systems, with plants in Montréal and North Carolina, US.

Serge Lavoie, Cari-All™ sales and marketing manager, says, "We created a two-tiered shopping cart to separate produce and other soft items from harder items." The design also addresses a desire of consumers to separate fragile food products (placed in the top basket) from non-food products such as cleaners (placed in the lower basket). Cari-All™ has also made improvements to cart stability.

Lavoie says, "Consumers like it more in terms of look and functionality. We have done tests in stores to show that with our carts, consumers ring in a grocery bill 20 to 25 per cent more than when they use a traditional cart." This is mainly because more items can fit in the two-tiered cart in comparison to the standard model.

Although the company holds the vast majority of Canadian market share in terms of traditional and new two-tiered carts, Cari-All™ is currently working to reduce costs of the new carts in order to better penetrate the US market.

At The Puratone Corporation, a producer of hog and poultry, animal feed and agricultural technology based in Niverville, MB; Dr. Shokry Rashwan has developed a highly innovative product... that wasn't intended to be a product at all.

"There were problems with existing composting and other disposal methods [for hog deadstock at Puratone's operations]," he says. "We did a feasibility study of a composter, then hypothesized and built a prototype. Commercialization was not a goal from the start, but when we shared it with other producers and saw that we could go public.

Puratone named their self-contained low-energy consumption composting technology the 'BIOvator™.' The units come in three sizes, and eliminate the disadvantages of other deadstock disposal methods such as contamination of the compost, intensive labour, leachate, risk of disease transmission and more.

Rashwan says that "Because we are hog producers and we developed a technology to solve one of our problems and we tested it etc., that gives us credibility." He adds, "We are just about finished developing a technology to control resource consumption [energy, food, water] in farming operations."

Solera, the flagship glass product manufactured by Advanced Glazings of Sydney, NS, presents a completely new method to bring daylight into buildings. Solera contains a translucent honeycomb structure that acts as an insulator while diffusing direct-beam sunlight.

Unlike traditional glass, which can permit glare and excessive heat to enter a building, Solera scatters sun beams and provides even, bright, diffused light with a much higher insulating value (and thus lower heat loss in winter) than traditional glass. However, Solera is not generally meant to replace traditional see-through glass, but is chiefly intended to replace sections of roof or walls where diffused daylight inside a building is desired.

To create Solera, Advanced Glazings first had to create the manufacturing production equipment. John Alyward, VP of operations, says, "We created a computer numeric control glass cutting system that can stick to strict tolerances. We also created our 'honeycomb' machine. Acrylic rolls are fed through this machine and heated to form the honeycomb material. A new version of this should be up and running in the next three months to replace the prototype." He adds, "We are also looking at a nanogel version of Solera to increase acoustic insulating value."