

Technology Strategies for Progressive Manufacturers

[COVER STORY]

Sustainable Innovation

Electric automobiles, wind power, bio-fuels, fuel-cell technology, flywheel energy storage — these are all alternative sources of energy. Where did they come from? Need, of course.

“Necessity is the mother of invention,” the classical Greek philosopher, Plato, said. The green movement is pervasive these days. As a result, companies feel the need to act socially responsible, which often, out of necessity, leads to innovation.

Reducing gasoline consumption in a car, for example, has engineers looking at new ways to power that piece of metal. And what about that metal? It has mercury in it. What happens when the car goes to the graveyard? These are issues Daimler, Ford, Toyota, and others are thinking about.

Often, necessity takes engineers back to the drawing board.

“Typically a material — like lead in metals — these materials don’t just sit there; they have a functional purpose to them,” says Jim Todhunter, CTO of Invention Machine. “Finding a replacement is a challenging thing for these companies. They have to understand how all the functional properties play in the design and production of products, and understand how alternative selections meet or don’t meet requirements.”

As a result, many companies are looking for new ways to innovate in order to find that next big thing — either to fulfill consumer demand or to meet green initiatives.

Invention Machines offers a product to help companies achieve the “sustainable innovation” mission: The company says its Goldfire Innovator application facilitates the idea process. “It’s bringing predictability and repeatability to product design,” says Mark Atkins, Invention Machines’ chairman, president, and CEO. It’s what Atkins refers to as “knowledge-enabled ideation,” which, he says, is the front end of PLM. “You need the ideas for the design in order to change or fix the product, or to anticipate defects,” he says.

“Great innovation happens with the coherence of knowledge,” Todhunter says. By that he means proven methodologies of how to innovate things. Using semantic-based technology, Goldfire can harvest relative concepts by collaborating among engineers, tapping into internal resources, and searching external patent archives.

For example, every time an engineer changes a specification on a product, that work is captured within a global index, which enables that knowledge — and experience — to be leveraged as the product evolves. Or it can result in idea validation, which accelerates innovation, moving the manufacturer toward that next ‘aha!’ moment.

“Anytime you can turn the situation from being, ‘Oh, rats, we have to comply,’ to ‘Oh great, here’s a way to increase profitability or increase market reach and create competitive advantage,’ that’s a huge change,” Todhunter says.



Jim Todhunter