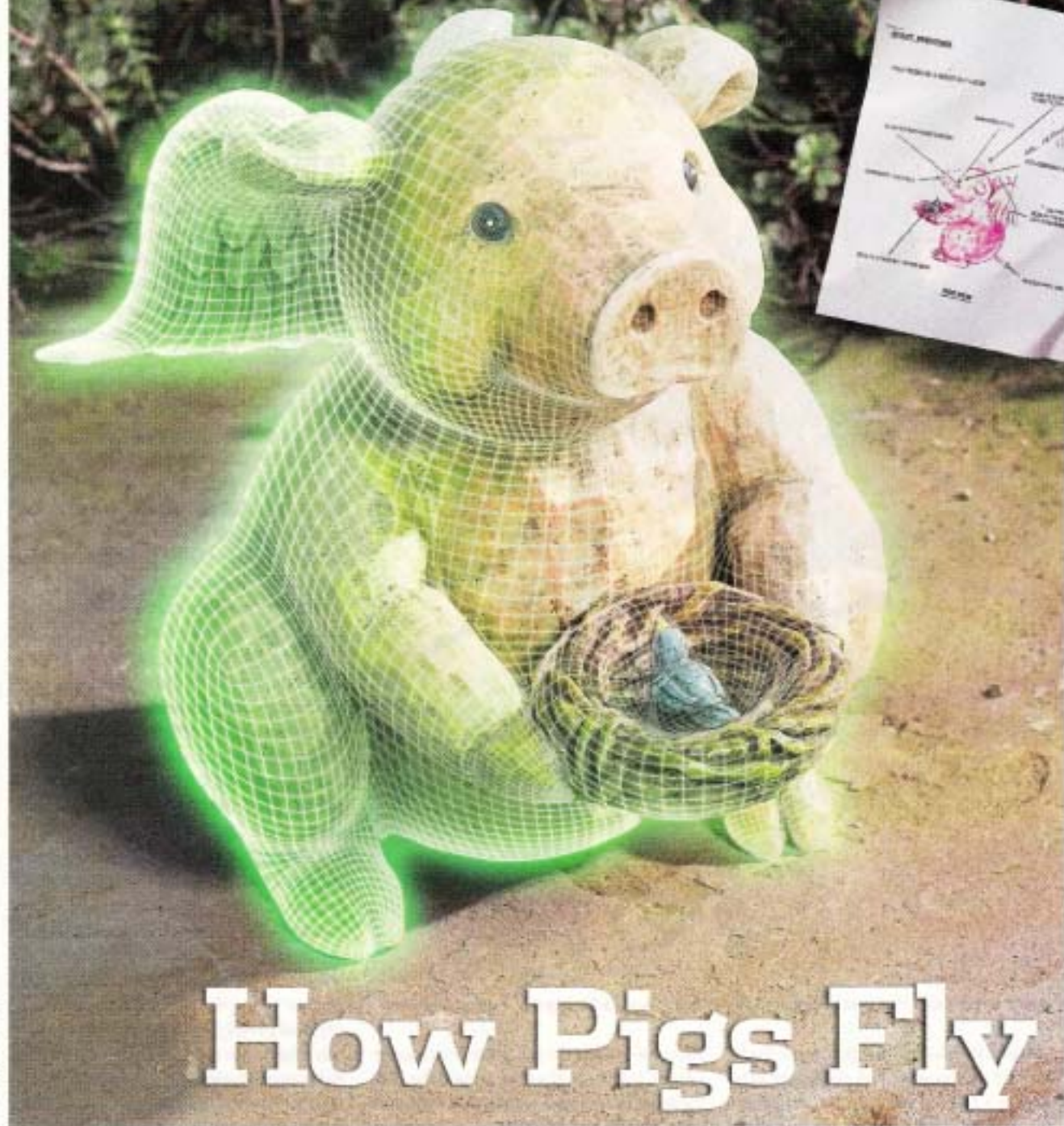


**PAPERLESS PORK:**  
Future versions of  
this lawn pig will be  
engineered digitally.

**ROI | TECHNOLOGY**



# How Pigs Fly

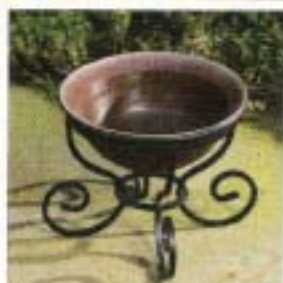
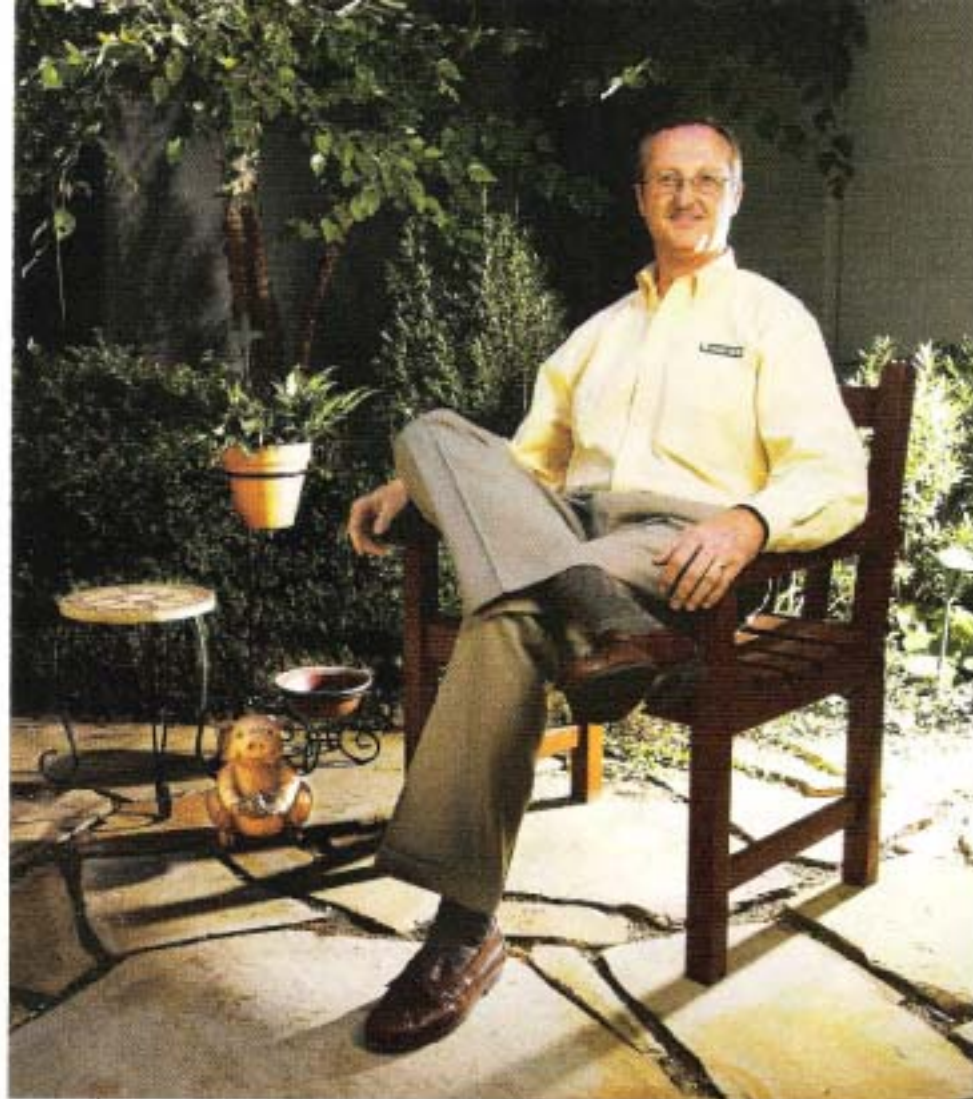
**W**INGED PIGS HAVE BEEN GOOD TO THE Hayes Co. The Wichita manufacturer sells thousands of hand-painted polyresin porkers, metal planters, and other lawn ornaments to retail powerhouses such as Wal-Mart and Home Depot. But until last year the company's product-development process was messier than the proverbial pigsty. And that was costing Hayes big money.

In the lawn-product business, last year's bestselling item can

New software tools help organize production and control costs.

**By Erik Sherman**

quickly become this year's bargain-bin reject. Yet in recent years Hayes has averaged 20% compound annual growth. Revenues are expected to reach \$100 million this year. To maintain those torrid numbers, Hayes must keep its product pipeline filled with



**LAWN GUY:** Hayes's Waisner uses computer design to make his planter (bottom) a reality.

new knickknacks that will please the fickle tastes of consumers. The challenge is to winnow a few successful products from thousands of initial designs submitted by freelancers.

Take the winged pig, one of the company's most popular offerings. In the past, designers might submit, at the company's request, two dozen preliminary sketches. Hayes's in-house modeling shop would build a prototype from each. At this point the marketing, sales, and manufacturing departments would start suggesting

changes—make the pig fatter, increase its height by two inches, lengthen the tail. Each set of changes would require a new prototype. Yet there was no easy way to record who requested changes or why.

Nor did Hayes keep centralized records of dimensions, weights, material costs, or even blueprints. "It was not unheard of for the sales department to haul prototypes that it liked off to a sales meeting," says Hayes president Glenn R. Waisner. "That was great, but there were no engineering drawings for that item." If someone wanted

to buy a batch, the company literally had to reverse-engineer from the sample.

That meant that the prototypes had to be shipped, express, back to Wichita. Then came more changes and more prototypes. Because much of the manufacturing was being done overseas, the prototype then had to be shipped again. Without a database of product information, the company also ran the risk of poor communications with its manufacturing and design partners, which could result in costly mistakes at the factory.

In February 2003 management started looking at product life-cycle management software. One of the latest trends to hit manufacturing software, PLM applications help businesses manage all product information: design drawings, engineering changes, parts lists, and the like. "It's not just for big companies, but for small companies that are complex," says Mike Burkett of the Boston market-analysis firm AMR Research.

Hayes considered products from market leaders Agile Software and PTC, but chose the Matrix10 package from Matrix-One because it required minimal customization and was well suited to tracking consumer goods. Although the Westford, Mass., company is one of the top ten vendors in its niche, it has a small share of the overall PLM market—about 1%, according to AMR Research.

Designers now load digital sketches of concepts into Matrix10 through a web interface. About a quarter of the concepts are eliminated at this stage. The remaining designs receive full digital renderings, and a second review narrows the field by half. The surviving designs are translated into physical prototypes that Hayes salespeople can take on the road. Everyone involved at the manufacturing stage can access full design and technical information on every product. And at the shipping stage customers can check packaging dimensions and the number of items in a carton, important for the tightly run distribution systems of Wal-Mart and other retail giants.

PLM software can be pricey: Hayes spent roughly \$250,000 to license and implement its Matrix10 package. Yet the savings were equally dramatic. Hayes has saved \$200,000 in express-shipping

TAKE A  
TEST DRIVE.  
AND GET  
OUT OF TOWN.

©2004 Freightliner



Test drive a Freightliner Sprinter between 9/1/04 and 11/30/04 and receive a FREE ONE-YEAR MAGAZINE SUBSCRIPTION TO ONE OF FOUR POPULAR MAGAZINES. Plus, with your subscription, you'll automatically be entered in our "Inspired Escapes" sweepstakes. One lucky winner will have their choice of five spectacular dream vacations which includes round-trip air travel and hotel accommodations for two, and \$500 in American Express® Gift Cheques. Go to [fl-sprinter.com](http://fl-sprinter.com) to find a dealer near you, and a chance to escape with the Freightliner Sprinter.



Freightliner  
**SPRINTER**  
FORWARD MOTION

For official rules see page 124.

## ROI | TECHNOLOGY

charges alone since it started using Matrix10 in July 2003. Prototype costs are also down significantly, and the company's eight product managers are handling more than twice the new concepts they did in 2002.

These include a next-generation wingless porker, a seated kitten holding an in-

explicitly cheerful mouse in its paw, and a bear brandishing a welcome sign. Waisner expects the bear to move like an airborne pig. Meanwhile, PLM has made it easier and cheaper to get the entire menagerie into stores in the first place. □

For links to Hayes and other firms in this story and to give feedback, visit [fsb.com](http://fsb.com).

## Wetware

How the sea helped spawn some killer manufacturing software for small business. **By Maggie Overfelt**

TEN YEARS AGO MICHAEL TOPOLOVAC WAS LURING SHARKS INTO CAGES FOR *National Geographic* photo shoots in the South Pacific. So what is he doing landlocked in Silicon Valley, selling software that helps manufacturing firms track product development?

Four years ago Topolovac gave up a career in oceanography to launch Arena Solutions. The company sells product life-cycle management software designed specifically for small businesses. Unlike larger-scale PLM applications such as MatrixOne (see preceding story), Arena's product is delivered over the Internet. That makes it more affordable (annual cost: \$600 to \$1,000 a user, about 25% cheaper than what the big guys offer). It also allows clients to get up and running in far less time.

Topolovac built the first version of the software in the mid-1990s, when he was running a company that made batteries and enclosures for underwa-



WATERBOY: Topolovac in his element

ter camcorders. His products required thousands of parts from manufacturers worldwide. No existing software could handle such complex product lists. So Topolovac and his engineers wrote code that organized all his product data into one simple application that could be shared with suppliers. Topolovac says the company's revenue jumped about 30% after it adopted the new software.

Five years later, after noticing that many firms suffered the same pain that his had, Topolovac bagged his scuba gear and moved to Silicon Valley. Just eight months after the dot-com crash, Arena Solutions raised \$3.5 million in seed capital. "They were solving a problem that everyone has in a more cost-effective way," says Otter Capital managing member John Pasquesi, lead investor on two of Arena's early rounds. "It impressed us that these guys had already solved this problem for themselves."

Although Arena hopes to sell its product to clients of all sizes, the software isn't for everyone. It's probably best suited to companies that don't need to migrate large quantities of complex data from other software applications. "Arena's solution can't be modified to fit a company's special needs," says analyst Kevin O'Marah of AMR Research.

Does Topolovac still ache for the sea? "I can't lie about missing the South Pacific," he says. "But this was too big of an opportunity to pass up." □