

SEPTEMBER 25, 2006

THE CORPORATION/Online Extra

[▶ Back to Main Story](#)

Get Four Free Issues

Register
Subscribe to BW
Customer Service

Full Table of Contents
Cover Story
Innovation Supplement
Up Front
Readers Report
Corrections & Clarifications
Technology & You
Media Centric
Business Outlook
The Business Week News & Insights

Rehabing the RIT Way

Its research lab gives new life to old products, and allows companies to learn from the compiled data in the process

The Rochester Institute of Technology is generally a pretty happy place for tinkering-minded engineers to be. But the National Center for Remanufacturing & Resource Recovery (or NC3R) must be the kind of place that feels like the waiting room to engineer heaven. It's an outpost on the edge of the western New York university campus, a hybrid applied research lab that's almost like a consulting firm, dedicated to the proposition of getting expensive things and breaking them apart.

Get 4 FREE Issues!

STORY TOOLS

- ▶ [Printer-Friendly Version](#)
- ▶ [E-Mail This Story](#)



TODAY'S MOST POPULAR STORIES

1. [Can Wall Street Withstand Weak Housing?](#)
2. [A Real Rival for Apple's iPod?](#)
3. [Intel and Yahoo! Hit the Marketing Gas](#)
4. [India's Modern Architectural Wonders](#)
5. [Who Is Jonathan Ive?](#)

[Get Free RSS Feed >>](#)

MARKET INFO

DJIA	11503.53	-51.50
S&P 500	1314.11	-7.07
Nasdaq	2210.37	-25.38

STOCK LOOKUP GO

Stocks Slide after Soft Inflation, Housing Data
[Create / Check Portfolio](#)
[Launch Popup Ticker](#)

RELATED ITEMS

- [The Stat](#)
- [The Virtuous Cycle](#)
- [Slide Show: Rebuilt To Last](#)
- [Online Extra: Cutting an Ecological Rug](#)
- [Online Extra: Rebuilt to Last](#)



Global Business
The Corporation
Finance
Feedback
Government
Info Tech
Science & Technology
Legal Affairs
The Environment
Marketing
Executive Life
Executive Life -- Parker on Wine
Plus
Personal Finance
Inside Wall Street
Figures of the Week
Ideas -- Books
Ideas -- Face Time with Maria Bartiromo
Ideas -- The Welch Way

In one room, you'll find inkjet and toner cartridges stacked in boxes floor to ceiling. Go out that door, take a couple turns, and you're staring at a massive Navy A-6E Intruder jet. Past that, through some more doors (after you've passed an enormous working printing press), you're in an electrical engineer's lab, where the tolerance levels of oscilloscopes and micrometers are being tested. This is what passes for hallway banter: "Hey, we just started the enzymatic digestion of the celluloid."

It's all in the service of understanding remanufacturing, a process in which used products are reclaimed, cleaned, inspected, and put back together to make another product that's "like new" or better. Amid all the seemingly arcane testing and conceptual work, NC3R Director Nabil Nasr and his staff are actually serving big corporate clients, helping them to get a better sense of how the components in their products actually perform over time.

THROUGH THE WRINGER. In traditional remanufacturing, "You understand the

BUSINESS DIRECTORY

Stop searching,
start finding!

Accounting
Advertising &
Marketing
Air Charter
Annuities
Antivirus / Antispar
Solutions
Apartment Loans

POWERED BY
DIRECTORY 

PREMIUM CONTENT

MBA Insider

BW MAGAZINE

Get Four Free Issues

Register
Subscribe
Customer Service

ONLINE FEATURES

Book Reviews
BW Video
Columnists
Interactive Gallery
Newsletters
Past Covers
Philanthropy
Podcasts
Special Reports

BLOGS

Auto Beat
Blogspotting
Brand New Day
Byte of the Apple
Deal Flow
Economics Unbound
Fine On Media
Hot Property
Investing Insights
New Tech in Asia
NussbaumOnDesign
Tech Beat
Working Parents

TECHNOLOGY

J.D. Power Ratings
Product Reviews
Tech Stats
Wildstrom: Tech
Maven

AUTOS

Home Page
Auto Reviews
Classic Cars
Car Care & Safety
Hybrids

INNOVATION
& DESIGN

process that you use to make the component, so you can predict the quality of the product," Nasr says. But "when you bring a product back through remanufacturing channels, everything is a suspect."

For instance, Staples ([SPLS](#)) does all of the quality assurance for its remanufactured ink and toner cartridge at RIT. What does that mean? The humble cartridge, before RIT will release it back into the real world, must endure an altitude chamber, a weathering chamber, a "Q-sun Xenon Test chamber," and an "ozone destruct module," among other indignities.

The payoff: Staples can use that data to make products that will last for many more life cycles. "It's the company that understands where the defects are...that makes the difference," explains Andy Harlan, the NC3R's industrial programs manager.

AN EDIBLE BLAST. One of the biggest problems that remanufacturers face is how to clean things. Soap and water just won't work on a grimy, used diesel engine, for example. And while a chemical bath might remove the dirt, it might also disturb the metal itself. So at RIT, they test guns that fire rapid shots of steel to scrape gunk off engine blocks, as well as ceramic pellet degreasers and baking soda blasters.

Baking soda? In fact, those blasters are used to "remanufacture" Luxus coffee canisters, the tall urns that carry branded labels on them, like the ones at airport Starbucks. Whenever Starbucks changes its look, baristas can't manually change the labels. The glue is too sticky, and pasting a second label on top of the original one eventually results in puckering. So RIT engineers strip most of the coating off with a heat gun.

When a "high pressure aqueous blast" didn't get the last bits of glue off, pelting it at a high velocity with baking soda did the trick, says Bob German, a senior staff engineer at the NC3R. "It's an edible blast medium," German chuckles.

DEFENSE DOLLARS. But ink cartridges and coffee urns are small projects, relatively speaking. The NC3R's biggest sponsor is the Defense Dept.—hence, the Intruder jet. Nasr's team is studying the material aging of the actuator, the hydraulics, and the fuselage. To examine the hull, a 3D model was scanned into a computer using a laser-tipped robotic arm. The data learned will be applied to the EA-6B Prowler jet.

Nasr, in fact, says the Defense Dept. is the biggest remanufacturer in the world, and estimates that the Pentagon spends about \$15 billion every year to keep its fleets up and running. Another example: There's a light armored vehicle fresh from the battlefield at the NC3R. The whole line was supposed to have been retired in 2003, Nasr says, but now it will have to last for another 25 years. Remanufacturing is vastly much more cost effective than ordering up new combat vehicles. To illustrate, Nasr points out that replacing a driveshaft ruined by sand with a remanufactured one would cost about \$50, vs. about \$700 for new.

Most companies and organizations that go to the NC3R for research help are, usually, ultimately motivated by how much money remanufacturing can save them. But Nasr is keenly aware, and extremely excited, by the environmentally friendly nature of the process. In fact, he's planning to launch a PhD program specifically dedicated to sustainable engineering. "The opportunities that we have," Nasr says, "for material conservation, for recycling, for energy conservation are tremendous."

By Brian Hindo

BW MALL SPONSORED LINKS

- [Find Consulting Jobs](#) Access Pre-Qualified Projects from Top Businesses. Register Now!
- [Are you or your spouse age 50 or over?](#) You deserve great auto insurance. You've earned it. You expect it! Now you can get it. The AARP Auto Insurance Program from The Hartford offers great rates, peace-of-mind protection and first-class service. Click for your free quote.
- [Compare Free Refinance Quotes](#) Refinance while rates are still low and get the

AMD
Virtual
IT
Experience

The Premiere
Online
Technology
Expo

Click to Join
Paul Miller
Now!

Home Page
 Architecture
 Brand Equity
 Auto Design
 Game Room

SMALLBIZ

Smart Answers
 Success Stories
 Today's Tip

INVESTING

Investing: Europe
 Annual Reports
 BW 50
 S&P Picks & Pans
 Stock Screeners
 Free S&P Stock Report



SCOREBOARDS

Hot Growth 100
 Mutual Funds
 Info Tech 100
 S&P 500

B-SCHOOLS

Undergrad Programs
 MBA Blogs
 MBA Profiles
 MBA Rankings
 Who's Hiring Grads


BW EXTRAS

BW Digital
 BW Mobile
 BW Online Alerts
 Dashboard Widgets
 Podcasts 
 RSS Feeds 
 Reprints/ Permissions
 Conferences
 Research Services

cash you need. Free with no obligation- Bad Credit OK.

- **Smart Investment: Costa Rica Real Estate** Introducing Costa Esterillos, a private gated community located on the Central Pacific Coast of Costa Rica. Pre-development pricing is now being offered on oversized estate home sites with ocean, river and mountain views. Free DVD and brochure.
- **Durable Notebooks for Mobile Professionals** Free Carrying Case & 2 Year Warranty Upgrade with Durabook Purchase. Durabook notebook computers provide the ultimate combination of durability and performance to mobile professionals. Spill resistant, drop resistant, and shock resistant.

[Buy a link now!](#)

Get BusinessWeek directly on your desktop with our **RSS feeds**. 

Add BusinessWeek news to your Web site with our **headline feed**.

Click to buy an **e-print or reprint** of a *BusinessWeek* or BusinessWeek Online story or video.

To subscribe online to *BusinessWeek* magazine, please **click here**.

Learn more, go to the **BusinessWeekOnline home page**

 [BACK TO TOP](#)

Copyright 2006, by The McGraw-Hill Companies Inc. All rights reserved.
[Terms of Use](#) | [Privacy Notice](#)

[Media Kit](#) | [Special Sections](#) | [MarketPlace](#) | [Knowledge Centers](#)

The McGraw-Hill Companies