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R&D is how best companies stay that way

RICK BURTON

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Time for another happy column. Today's story started in Chicago when I had the chance to visit the Gatorade Sport Science Institute (GSSI) while waiting for the Cubs to play yet another out-of-contention September night game in the least commercialized stadium in America. Thank goodness for the Sears logo in the Chicago dugout and a few beer logos on the houses across the street in Wrigleyville or I might've seen a completely sanitized game of baseball.

Many of you have seen the Gatorade commercial with ABC Sports announcer Keith Jackson talking about the 1965 invention of Gatorade in the University of Florida's fabled Swamp. What you may not know is that based on one very humble coaching observation — Gator players weren't urinating enough at halftime — Gatorade's inventors and ensuing owners (Stokely Van Camp, Quaker, Pepsi) have spent millions researching what happens to an athlete's body during competition and how best to replenish those athletes with optimal fluids.

It's a fascinating process to the large staff of GSSI scientists and — here's a job for you — they've spent years building equipment designed to cause, catch and analyze sweat. Luckily, the consumer sees their work (rather than feeling it) in ads featuring Mia Hamm, Derek Jeter, Vince Carter, Peyton Manning or Chamique Holdsclaw pumping away on exer-cycles in the Gatorade lab.

It got me thinking about other great American companies that have labored to improve their sport product and, in the process, made invaluable contributions to the sports industry and casual fans. No question it's costly, but the best companies always reinvest profits in R&D.

The first organization that came to mind was Nike. In fact, its very first TV commercial (produced in 1982) offered little in the way of humor or outrageous behavior. It started by showing a tribe of cavemen chasing a scared Neanderthal running for his life. The spot then morphed into a modern laboratory showing Nike scientists measuring foot-pressure and pronation.

Like Gatorade, Nike spends millions annually trying to design footwear and apparel (notably the Sphere Collection and Dri-Fit technology) to improve an athlete's ability to run faster and jump higher. In fact, a common mantra at Nike is "Innovate or Die" and it



Jack Roush's technological innovations make motorsports safer, but the benefits extend far beyond the world of sports.

has led to kinematic and kinetic research in motion analysis, ground reaction forces/loading rates, ankle range of motion and foot morphology.

Nike's design library is a 3-D playground that quarterly arranges stimulating exhibits like the recent "Rockets, Robots and Ray Guns" and "Biomimicry." In Nike's case, much of the credit starts with the late University of Oregon track coach Bill Bowerman, who melted rubber onto his wife's waffle maker because he knew lighter shoes meant less weight and more victories.

It was the sports world's version of "Less Filling, Tastes Great."

Mix the waffle sole and, later, "visible air" cushioning with the entrepreneurial genius of Phil Knight and you get Nike's Sports Research Lab and Environmental Chamber, a facility housing 16 staff members and one of the largest nonmilitary resources in the United States for freezing and heating humans.

As with Gatorade, Nike wants to understand what happens when an athlete sweats. The scientists there can turn the temperature from minus 20 degrees Fahrenheit to a tropical 135 degrees with humidity ranging from 0 to 100 percent. That allows them to study how air circulates away from the body and how the skin's surface cools (or overheats).

Technology innovators don't exist only at product marketing companies. Roush Racing of Huntersville, N.C., has been instrumental in designing life-saving devices like roof flaps, engine ignition interrupter systems and, through Roush driver Jeff Burton (no relation), improved aluminum driver seats.

Detroit and Tokyo might not be installing any of those devices in street vehicles yet, but NASCAR sponsors on many occasions have caused the development of technology such as Goodyear's inner liners for tire blowouts, General Motors' side door bars (from its roll cage work) and Raybestos' work on a car's braking capacity. All were designed originally for sport but benefited folks far beyond the racetrack.

In fact, next year Roush Industries hopes to showcase a driver safety awareness pavilion at NASCAR races that will show common drivers (in an interactive wraparound three-screen simulator) how to become better and safer drivers.

"A driver [on the highway] needs a better understanding of the horrific things that can happen out on the road," said Jack Roush, chairman of the Roush board. "What's been needed for some time is someone coming in and implementing available technological advancements to develop a better safety training system."

Given some of the drivers I've seen out there, that sounds good to me.

A tip of the hat to all the other companies that use their research to help athletes give us their best. And it's no small commitment. Nike in 2000 spent \$96.6 million on product research and development evaluation and design, nearly 1 percent of its \$10 billion in sales. If other participants in the \$195 billion U.S. sports industry do even one-tenth as much, that approaches \$200 million a year for product research.

That's pretty good coin to help athletes stretch the limits and keep our industry vital.

Rick Burton is executive director of the Warsaw Sports Marketing Center in the University of Oregon's Lundquist College of Business.

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