

BEST OF SHOW

By **Tim Adkins**, *Innovation* contributing writer

Nike+ FuelBand





GAMBLE ON, WORLD

Noble intentions often stall before they become sustained action. The pursuit of change or improvement or starting is made possible when a person gets a nudge to stay motivated, on task and inspired. How many of us have declared that we'd like to be more active, fitter or healthier? And how many of us have reached for tools and systems to assist us with those pursuits? Finding a solution that will work—and keep working—is a common fitness dilemma. The more accessible the solution, the more likely it is to stick. And it doesn't hurt if it taps into those intrinsic human urges to compare and compete. Such is the thinking behind the Nike+ FuelBand.

A+ Design Heritage

Nike sets the bar pretty high for itself. Using one award scheme as a gauge, it does a fine job of clearing it regularly. From 1995 to 2011 the company earned 22 IDEA trophies: seven Golds, eight Silvers and seven Bronzes. One of those Gold awards—for the Trash Talk basketball shoe in 2009—claimed Best in Show that year as well. A different article could delve more deeply into whether this correlation doubles as causation for Nike's business model, but it is fair to say here that design drives Nike.

The company exists to bring inspiration and innovation to every athlete in the world. Co-founder Bill Bowerman long ago defined an athlete as follows: "If you have a body, you're an athlete." It's an egalitarian ethic that, in practice, is top-down.

“Nike has made the most of human performance data generated by inexpensive, high quality sensor technology, and has richly integrated all the elements of user experience: an elegant interface, simple interaction, refined industrial design and a compelling Web application. It also tells time.”

—Philip Swift, IDSA, director of design, Crown Equipment Corp.

Nike's elite stable of pinnacle athletes (think Serena Williams or Kevin Durant) have long benefited from the performance data generated through the Nike Sports Research Lab (NSRL). This 33-year-old sports science lab (including biometrics, exercise physiology and sensory-perception research) houses equipment that helps researchers better understand how the human body and Nike's latest products respond to an extreme range of movement and usage scenarios. The lab features, among other things, a sensor-filled track and force plates to gauge torque, an environmental chamber to test reactions to bitter cold or withering humidity, and a 3D body bioscanner to observe how the bodies of some of its top athletes change before, during and after their sports' seasons.

The Innovation Kitchen, as its name suggests, is a place where future opportunities are explored. Situated next to the NSRL, the Kitchen mines data accumulated by the NSRL's researchers to develop or refine Nike's product offerings. The data is not used exclusively to support the best of the best, but there is a Talented Tenth-like paradigm at work here. As in W.E.B. DuBois' classic theory calling for a group to aspire to the standards established by its most gifted members, Nike's performance benchmarks are shaped by its most superior athletes. Out of the lab, a question materialized some years back: Could Nike scale this data-based model for the ordinary runner?

The answer to that question, Nike+ Running, delivered NSRL-level insight to runners of all levels enabling them to know how far, how fast and how often they ran. "It gave them a measure they could progress from," said Jamian Cobbett, IDSA, design lead for Digital Sport at Nike. "Before Nike+, it was pen and paper logbooks. It changed running. From there it became a matter of how we can build upon the learnings of Nike+ Running to benefit all athletes."

Two early products from the Nike+ Running line earned IDEA honors. The Nike+ iPod Sport Kit claimed Bronze in 2007 and the Nike LunarGlide+ took Bronze in 2010. Apart from design awards, Nike+ Running amassed a global community of runners totaling over 3.5 million who had logged

almost 310 million miles by the end of 2010. Based on any standard, the technology used in Nike+ Running products was quite smart, and the application of it proved to have great appeal for athletes of all persuasions. But was the idea being fully realized? Could there be more to this concept? Possibly an eco-system where any body engaged in any activity could track and broadcast its performance?

Making Fuel

In 2010 Nike combined its Techlab and Digital services to create Digital Sport, a new business unit charged with creating end-to-end digital experiences for athletes. Stefan Olander, VP of Digital Sport, tasked design, engineering and user-experience teams with creating a universal metric of performance that could enable athletes at all levels to compare, compete and collaborate.

If you're looking to create a universal measure of activity to unite all athletes, you'd need one that applies to every level of every imaginable activity. So you start with the fundamentals—like oxygen consumption. "Nike worked directly with some of the world's leading experts to create an algorithm using oxygen kinetics," said Aaron Weast, engineering lead for Digital Sport. "Activity

intensity can be derived from quantifying the oxygen uptake both during an activity and while at rest, expressed using the M.E.T. (metabolic equivalent of a task) index. Nike measured the M.E.T. scores of activities and linked those to activity patterns to formulate NikeFuel."

Unlike calorie counts, which vary based on gender and body type, measuring oxygen uptake can generate a normalized metric that remains consistent across bodies and activities—from the 100-yard dash to descending a flight of stairs and everything in between. "You're moving and walking and active in ways that you're probably not recognizing yet," said Kwamina Crankson, UX lead for FuelBand. "This experience starts to give me a measure of how active I am and how much my body is traveling throughout the day."

The algorithm for NikeFuel subtly shifts people's focus from how much energy they're burning to how much activity they're accumulating while creating a context for a collab-





orative competition. In essence, it adheres to that Talented Tenth performance paradigm. “There’s a reason top athletes train together,” said Crankson. “Teammates can push each other and celebrate their successes together. Now with NikeFuel they can even see who is working harder.”

With the methodology in place—a dramatic build on the thinking that underpinned Nike+ Running—the Digital Sport teams simply needed to make a pathway product to empower athletes of all persuasions to get in this new game.

A Scoreboard on Your Wrist

The initial FuelBand concept was dreamt up by Stefan Olander, Ricky Engelberg and BJ Naedele, the senior leadership team from Digital Sport. They envisioned reviving the sweatbands tennis players wore in the 1970s as a flexible wristband that changes color to register the amount of accumulated NikeFuel. Although that concept was not feasible within the timeline, it set a precedent for a product that employs color as a key communicator of performance and has game-changing potential.

The Digital Sport design team partnered with Astro Studios to fully explore what the Fuelband could be. Astro infused Nike’s persona of the everyday athlete into the aesthetic attitude of the product and the visualization of NikeFuel accumulation, from dropping in at the skate park to imagining a transition from the gym to a night out on the town. “Designing a low-profile form factor with universal appeal and personality was a real challenge,” said Kyle Swen, IDSA, a partner at Astro Studios.

One proposal aligned perfectly with Nike Digital Sport’s principles: simple, human and indispensable. Inspired by parkour, it edited down the product attributes to a thin cylindrical band. In opposition to the original concept, it was a livable statement: attention grabbing but easily worn throughout the day. “It had to be as universal as NikeFuel,” said Cobbett. “It was essential that the band be an appropriate fusion of sport and fashion. It needed to balance personal and public communication. It had to make a bold statement yet be infinitely wearable.”

Editor’s Note: In addition, the Nike+ FuelBand received a Gold IDEA in the Leisure & Recreation category.

“From the out-of-box experience to the easy-to-read feedback you get while you are still at your desk at 6 p.m., the Nike+ FuelBand helps anyone to see their daily physical activity *and* motivates them to do more.

A perfect integrated health solution for a complex world.”

—Leslie Speer, IDSA, associate professor of design, San Jose State University

The Nike+ Running experience featured a dense series of color-based levels associated with kilometer or mileage accumulation that acted as a scoreboard of sorts for runners. The teams adapted this concept for the FuelBand, proposing the spectrum ranging from red through yellow to green to represent progress toward a daily activity goal. “The use of color sparks an emotional response,” said Cobbett. “Green is a positive reinforcement of an active day, whereas red incentivizes you to get moving. We realized that color alone is too abstract, so we added a linear dimension to further clarify NikeFuel accumulation and progression toward a defined goal.”

The resulting design employed a progress bar consisting of 20 LEDs, covering the spectrum of red through green, and a matrix of 100 white LEDs to elaborate on specific NikeFuel accumulation, communicate other metrics and display the time of day. All were concealed within the band and would appear at the touch of a button. “It complements the technology with a wink toward the magic of the product,” said Swen. “In an off state, there is a mild sport-bracelet expression. But in the on state, the display and activity magically appear, inspiring further interaction and the ability to show off a little.”

The LEDs, of course, would draw considerable battery power. The accelerometer needed to constantly record movement, and the Bluetooth connectivity required to sync effortlessly to mobile devices drew a lot of power as well. Couple the FuelBand’s hefty fuel needs with its elliptical shape and the engineering team faced a steep challenge.

“Not many parts of the human body are flat,” said Weast. “We designed a two-part curved battery out of necessity. Battery makers like things to be flat to keep costs down, but we pushed for it. The battery design was critical to the product to enable the team’s vision.” Crankson added, “Managing power was a key aspect. We wanted it to last around four days on a single charge.” When it does come time to recharge, simply open the band to reveal the seamlessly integrated USB and connect it directly to a laptop, or use the specially designed USB cord and desk stand.

Unlike the shape of the Nike+ FuelBand’s curved split battery, Nike expected users to come in all shapes and sizes. The FuelBand team conducted extensive research on wrist sizes and shapes to develop profiles of users occupying pretty distant poles. “Engineering and design collaborated to develop the final fit geometries based on Nike’s proprietary wrist data,” said Weast. The Nike+ FuelBand, which is not quite a perfect ellipse, uses detachable links to enable users to customize the fit. Cobbett said, “We visually integrated the links and created the band in three sizes to limit the visual impact of the sizing.” “In human terms, this one design fits ballerinas to offensive linemen,” added Swen.

The scoreboard could be made to fit a variety of wrist profiles, and it could be powered sufficiently. But how would it fit into users’ lifestyles? And how would they interact with it?

The You in UX

Nike’s top-down innovation approach often results in products designed for performance applications. A pair of Air Jordans may have become a style icon, but its first intent was to support Michael Jordan’s play on the basketball court. The design intent for the FuelBand was to create a performance-based object of desire. Cobbett said, “It’s a simple form from a distance, but when people get up close and see the LED display, you want them to say ‘Cool. What is that?’”

A deep respect for everyday life informed that design intent. Cobbett said, “It had to be rugged enough to participate in sport and activity but comfortable to wear everyday, all day. And it needed to be complementary to what a person might wear during the different activities of the day.”

The Digital Sport team chose materials based on both functional needs and quality perspective. “Most products have an exoskeleton, but this has a flexible spine upon which the FPC is mounted and then encapsulated in a soft outer shell to bring down the size and achieve flexibility,” Weast said. “Thixo molded magnesium is used to achieve rigidity around the batteries, while not impacting the overall product thickness. Materials are used honestly throughout the product, resulting in an authentic premium product.”

At the risk of trafficking in cliché, the clean look of the FuelBand derives from its utterly simple functionality. It features a single button to cycle through a tightly defined core experience, which is defined around accumulating NikeFuel and is articulated by three colors. It also connects with the mobile ecosystem.

“The design intent focused around mobile because it’s the most convenient for athletes,” Crankson explained. “Mobile has limited real estate, so the user experience had to be refined to its simplest form. We focused on the key information the device needs to impart, which is their personal daily goal, how well they’re reaching it and their motivation to do more. Athletes can also visit nikeplus.com to explore their information in more depth.”

The FuelBand features both Bluetooth and USB connectivity. Once they’ve synched with the ecosystem, users can compare, collaborate and compete with other athletes. The digital design of the physically durable object makes for a highly adaptable experience. “We architected this to be an open and expandable feature set,” said Weast.

Behavior Change

The Nike ethos encourages multiple applications of motivation. With the NikeFuel ecosystem, users are able to compete against themselves as well as their friends—and complete strangers, like Nike’s pinnacle athletes. Ostensibly, ordinary users could measure themselves against Serena Williams to determine who accumulated more NikeFuel in a day—even if she’s tracking hers while serving and volleying at Wimbledon.

In fact, Williams wore a FuelBand earlier this summer when she won her fifth Wimbledon championship. She chal-



lenged her Twitter followers with hashtags like #fuels Serena and #makeitcount. She’s not the only pinnacle athlete who has jumped into the FuelBand fray. As part of his training to compete with USA Basketball in the London Olympics, NBA scoring champ Kevin Durant tracked his NikeFuel by his Twitter feed, taunting followers with hashtags like #keepupwith-KD and #gameonworld.

The world on the other side of Nike’s wrist-worn device exists today as a very early iteration. If online reviews from slightly less celebrated athletes are to be believed, early adopters are already demonstrating the FuelBand’s potential to change behavior. To wit, one anecdote emerged from the IDEA 2012 jury process to articulate the Nike+ FuelBand’s ultimate output. When design leaders from around the world convene at the Henry Ford Museum each spring to evaluate the IDEA finalists, they engage in a vigorous evaluation that requires them to be active in ways they may not recognize. However, it’s not nearly as heart-pounding as getting in a good run. This year, at the end of a full day of measuring design excellence, one juror checked his FuelBand to determine where he was on his NikeFuel goal for that day. When he learned that he hadn’t met his goal yet, he asked if he could walk a mile and a half back to the hotel rather than board the museum shuttle. He remarked afterward that he never would have thought to do so had he not been tracking his activity by his Nike+ FuelBand.

“We want this to be indispensable, a part of your usual routine when you leave the house,” said Cobbett. “You make sure you have your keys, your wallet, your phone and your FuelBand.” For one IDEA juror, the FuelBand already is indispensable. And he’s more motivated because of it. ■

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