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INNOVATION ENGINE

The untold story of how the Aeron chair was born

Almost everyone knows the Aeron chair as a high-tech design classic. But few people know that its true origins lie in a 10-year effort to create furniture for the elderly.

BY CLIFF KUANG

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Bill Stumpf with the Ergon chair, one of his first major successes for Herman Miller.

An unexpected origin

After the great dotcom bust of 2000, there was one lasting symbol of the crash: Herman Miller's Aeron chair. The ergonomic, mesh-backed office chair was launched in 1994, at the start of the bubble; at a cost of more than $1,000 at the time, it quickly became a status symbol in Silicon Valley–spotted constantly in magazines, and in cameos on TV and film. Then, as the dotcoms failed, the chairs went empty. As one information architect told New York magazine years later, he remembered them "piled up in a corner as a kind of corporate graveyard." He went on: "They're not in my mind an example of hubris as much as they are an example of companies trying to treat their staff more generously than they could actually afford."

The Aeron was a throne perfectly tailored to Silicon Valley's vanities. With a frame of high-tech molded plastic, a skin of woven plastic fibers pulled taut, and mechanics that accommodated slouchy rebels, the chair flattered the people who bought it. It was the best engineering money could buy, and it seemed purpose-built for squeaky-voiced billionaires inventing the future in front of a computer. But the Aeron's origin story isn't so simple. The apotheosis of the office chair–and perhaps the only one ever to become a recognizable and coveted brand name among cubicle-dwellers–was actually the unexpected fruit of a 10-year effort to create better furniture for the elderly.



The Sarah chair: Stumpf's response to the needs of an aging population. The project would become the unlikely starting point for the Aeron.

A different kind of brief

One of the Aeron's designers was Bill Stumpf, the son of a gerontology nurse and a preternaturally keen observer of human behavior. So he was well primed in the late 1970s, when the American furniture company Herman Miller began casting about for growth prospects and hired Stumpf and Don Chadwick–who had done several pieces for Herman Miller–to investigate the potential of furniture for the elderly. It seemed like a tantalizing market opportunity. The American populace was aging quickly, assisted living facilities were rare, and hospitals lacked ergonomic furniture suited to long-term care. In each environment, Stumpf and Chadwick observed the surest sign of an opportunity: Furniture being used in unintended ways. The homely workhorse common in both medical and residential settings was the La-Z-Boy. In hospitals, the elderly often got dialysis in semi-reclined La-Z-Boys; at home they spent hours in them watching TV. "The chair becomes the center of one's universe. These sorts of realizations at the time weren't just overlooked, they weren't [deemed] important," says Clark Malcolm, who helped manage the project. Those observation studies and focus groups "made Bill and Don focus on seating, in a way they never had before."

The La-Z-Boy was terribly suited to both settings. The elderly, with weakened legs, had to back up to the chair and simply fall backward. The lever for reclining was awkward to reach and hard to engage. And, worst of all, the foam stuffing, often upholstered in vinyl, spread the sitter's weight unevenly while retaining body heat and moisture–potentially causing bedsores.

Stumpf and Chadwick addressed all of those problems with the Sarah Chair, which was finally completed in 1988, as part of a larger study of in-home medical equipment dubbed Metaforms. To solve the falling-backward problem, they settled on a footrest that, when closed, folded in under the seat, leaving the sitter with room to curl her legs under the chair as she sat, thus bracing herself. When a sitter was fully reclined, fins flipped up, bracing her feet–like the fins on a wheelchair–and keeping them from falling asleep. The lever was banished in favor of a pneumatic control inspired by the recline buttons found on airplane seats.



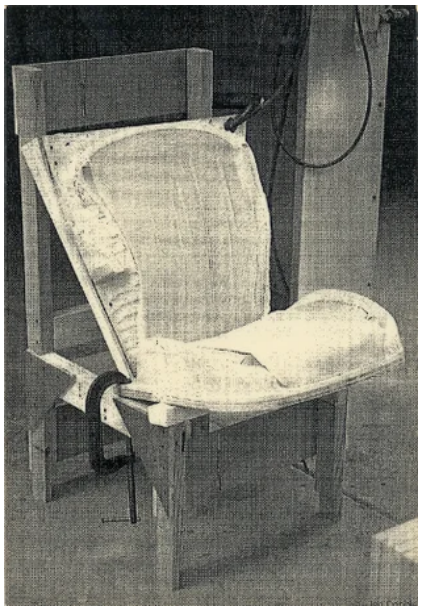
Sarah paired with a suite of nearby surfaces.



Metaforms explored the entire home.

The idea returns





Early mock-ups of the reclining mechanism developed for Sarah, and later applied to the Aeron.

But the chair's greatest innovation was hidden: Its foam cushions were supported not by an upholstered wooden box, as was typical at the time, but by a span of plastic fabric stretched across a plastic frame. The foam could thus be thinner and more able to mold to the body. And because the foam's backing was exposed to air, the design mitigated heat build-up.

"People became emotionally attached to that chair," says Gary Miller, who headed Herman Miller's R&D department at the time and eventually oversaw the Aeron project. Everyone who sat in it seemed to mention a parent or a sibling who needed it. But Herman Miller's management balked at how futuristic it was. No one could figure out how to sell it, since there weren't any stores selling high-design furniture to the elderly. The company was in far greater need of high-margin office chairs, so they killed the Sarah.

Stumpf and Chadwick were personally wounded, and drifted out of contact with Herman Miller for a period. Inside Herman Miller, people who'd seen the Sarah chair as well its accompanying Metaforms products grumbled that the company was being short sighted. But eventually Herman Miller did come back to Stumpf and Chadwick, asking delicately if there were anything that could be saved from the Sarah work and applied to the office.

"They licked their wounds for some time," says Gary Miller. "They resolved to come in with guns blazing." Stumpf demanded one condition: That he and Chadwick could pitch directly to the executive board, rather than just the company's design director, who had battled Stumpf over a fundamental disagreement about whether design at Herman Miller should focus on problem solving, as Stumpf believed, or on aesthetic refinement, in the vein of the old-line European furniture houses.

More performance. Less material.





Mesh support and compact controls: the engineering becomes the expression of the chair.

The design concept that Stumpf presented in 1992 took the lessons of the Sarah to their logical extreme. “We started to realize that people were interacting with computers and keyboards in all sorts of positions. They’d have the keyboard in their lap. Or they’d be at their desk slouching back, semi-reclined,” says Chadwick. So they proposed a reclining mechanism based on the Sarah’s, one that allowed the seatpan and chairback to move in concert. And, most important, they came up with the idea of getting rid of the Sarah’s foam altogether. The right fabric mesh, they argued, would mold to any person’s shape—what prevented bedsores would also keep people comfortable. In the end, the chair’s oddball looks would be a direct expression of its engineering.

Stumpf and Chadwick also argued forcefully that the design would benefit both the environment and the bottom line. The executives recognized the truth of this argument intuitively. “The chair plant was filled with foam hanging from the ceiling and curing in the open air, everywhere you looked. It smelled horrible,” says Gary Miller. “You had to wonder, ‘Where’s the end to this? How can this scale?'” Chairs at the time were mainly foam; foam was a huge part of their cost. Without it, the chair’s economics would change radically. “Green wasn’t an issue at the time,” says Chadwick. “But instinctively, we felt the importance of getting more performance from less materials.”

Herman Miller’s CEO, Dick Ruch, stewed on the decision for a few days. Finally, he signed off. It was an enormous risk: Because of the company’s production schedule, the inordinately expensive plastic molds for the frame would have to be made before the engineers even knew if they would be able to find a suitable fabric. Chadwick eventually led the invention of one, and the chair gradually came to life in increasingly futuristic prototypes.

A strange-looking success



On the Aeron assembly line at Herman Miller.

When the Aeron was finally done, Herman Miller's executives had warmed to Stumpf and Chadwick's problem-solving rigor, but remained leery about the chair's weird looks. They turned out to be a major selling point, making the chair seem incomparably advanced. One dealer in Hollywood, shortly after its unveiling in October of 1994, reported putting his first floor sample in the window, and hearing cars screech to a halt upon seeing it. By 1996, the orders were already dwarfing Herman Miller's expectations. Pop culture had made it a phenomenon: Will, on Will and Grace, spent an entire episode trying to get an Aeron; it had a cameo on The Simpsons; and Nathan Myhrvold, then Microsoft's CTO, penned an anonymous 1998 Vanity Fair confessional about owning a private jet which suggested that a Gulfstream made sense because, after all, bodily comfort topped out with the Aeron. Then the crash came. The dotcom-era profits helped keep Herman Miller alive in the early 2000s, and sales eventually bounced back. Nearly 7 million Aerons have been sold to date, and another one comes off of Herman Miller's lines every 17 seconds.

Even without such mainstream success, the Aeron would have become a design classic simply because it tells so many stories about the industry's changing mores. It anticipated the move towards dematerialized, more sustainable products. Together with the first Dyson vacuum–produced in 1993–it embodied a function-forward, engineering-heavy ethos new to product design.

Comfort, reconsidered



The Aeron helped establish a new generation of task chairs at Herman Miller.

But today the chair also embodies an embattled assumption about office work. Stumpf and Chadwick knew that it wasn't healthy to sit in a chair for hours–you had to get up and walk around periodically–but the Aeron's comfort nonetheless encouraged it. And that sedentary work life is killing us: One study, conducted over 13 years, observed that women who habitually sit for over 6 hours a day were 94% more likely to die than their most active peers. (For men, that figure was 48%.) Likewise, another study found that those who sit the most compared with those who sit the least have twice the risk for diabetes—and working out doesn't help.

The Aeron obviously isn't the cause of "sitting disease," no more than it was the cause of the dotcom bubble. But it is, along with so many of the chairs that followed its example, and enabler of it. As a result, we now see a wave of products that you might call the anti-Aerons–many of which, incidentally, were first popularized in Silicon Valley. There are exercise balls that some people use for office chairs; desks (some of them designed by Herman Miller) that let you work standing up; desks attached to treadmills; and desks integrated with chairs that make sitting always slightly precarious. One of the most lauded designers alive today, Konstantin Grcic, actually designed a stool that's intentionally too uncomfortable to sit in for long periods.

If designs like these become mainstream–and if we can find no better solution to sitting disease than intentionally uncomfortable chairs–then the Aeron might one day look less like a design masterpiece and more like the modern descendant of a perfectly designed Bauhaus ash tray: Beguiling in its perfection, but necessary only because of a waning, deadly habit.

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