

# Author brings bygone era to life in 'The Idea Factory'

"Where is the knowledge we have lost in information?"

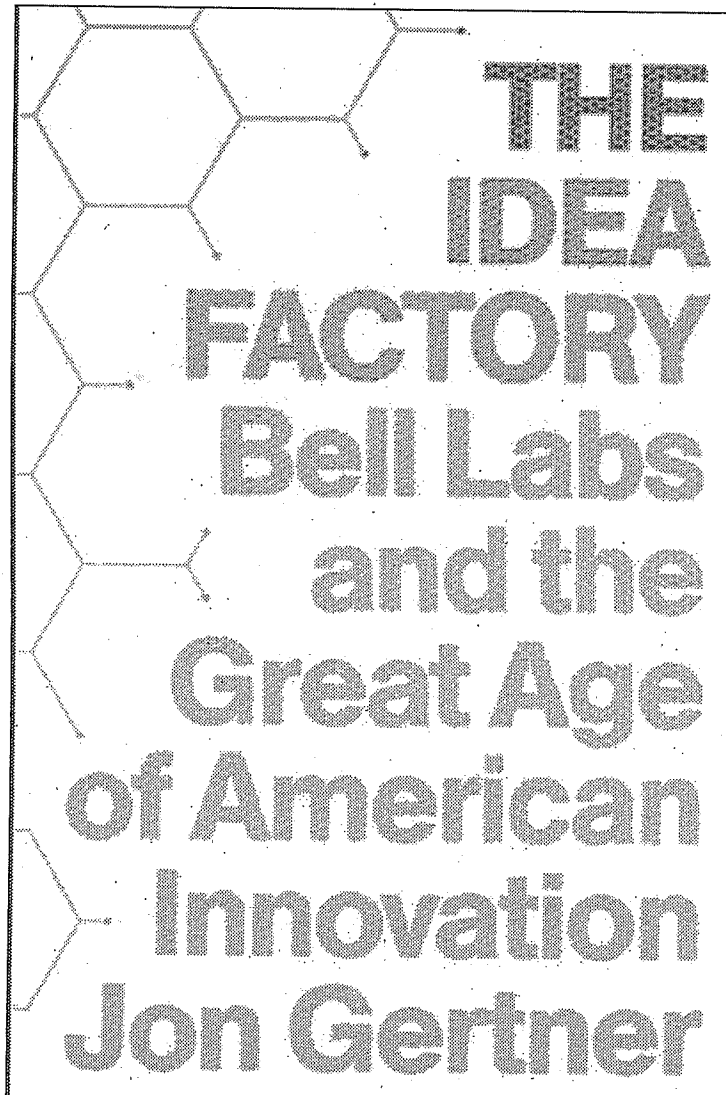
This quote from T. S. Eliot at the beginning of "The Idea Factory: Bell Labs and the Great Age of American Innovation," the new best-seller by Jon Gertner, provides a fitting introduction to the story that follows. Before Bill Hewlett; Dave Packard, Steve Jobs and Steve Wozniak got together in their respective garages, and before Bill Gates and Paul Allen decided to drop out of Harvard, there was Bell Laboratories.

Even if you are only vaguely familiar with Bell Labs, there is little doubt your existence has been significantly altered by the work that was done there. As Gertner notes: "From its beginnings in the 1920s until its demise in the 1980s, Bell Labs — officially, the research and development wing of AT&T — was the biggest, and arguably the best, laboratory for new ideas in the world. From the transistor to the laser, it's hard to find an aspect of modern life that hasn't been touched by Bell Labs."

Gertner is currently an editor at Fast Company magazine; he has also written several articles for the New York Times Magazine. He grew up in Berkeley Heights, N.J. — a few hundred yards from Bell Labs. "The Idea Factory" consists of 20 extensively researched chapters arranged in two parts. An especially appealing feature of the book is the inclusion of 16 pages of vintage photographs of the principal players and their triumphs. The more books like this I read, the greater appreciation I have for the inclusion of this kind of visual material.

"The brunt of the work for this book depended upon my personal interviews with Bell Labs veterans; a review of oral histories of Bell Labs scientists and engineers; and my perusal of documents at the Alcatel-Lucent archives, the AT&T Corporate archives, the Library of Congress, the Huntington Library, the Mudd Manuscript Library at Princeton University, and the Stanford University Archives," Gertner explains. "A large number of Bell Labs veterans gave me their time, usually several hours, and sometimes much more, so that I could interview them. Some of these veterans — Phil Anderson, Bill Fleckenstein, Manfred Schroeder, Richard Frenkiel and Irwin Dorros — also allowed me to read personal, unpublished memoirs that proved especially helpful."

"The Idea Factory" reads like a firsthand account of the events it chronicles — you can almost feel the excitement at the moment a major scientific breakthrough was made. You can also sense the frustration and even anger when human rivalries, petty jealousies and scientific politics inevitably entered the mix. Of all the scientists profiled in the book — and the list reads like a who's who of the history of technology — one of the most fascinating was Mervin Kelly, who succeeded Oliver Buckley as president of Bell Labs in 1951. By all accounts, it was Kelly's unrelenting drive and passion that secured Bell Labs a place



"The Idea Factory: Bell Labs and the Great Age of American Innovation" by Jon Gertner. New York: The Penguin Press, 2012, 422 pages, \$29.95

in the pantheon of history.

"His pace was grueling, and the frenetic schedule sometimes resulted in fits of distemper," Gertner writes. "Twice he submitted his resignation to the president of AT&T, stating that important work at Bell Laboratories was not being adequately funded. In each case, he got the funds.

"The constant travel and constant meetings and constant speaking engagements — and almost certainly, too, his constant chain-smoking — sometimes resulted in bouts of utter exhaustion, requiring him to take time off and convalesce near his tulip gardens," Gertner continues. "But within a week or two he would come roaring back."

According to Gertner, he was equally explicit about what he expected from those who worked for him: "You get paid for the seven and a half hours a day you put in there," Kelly often told new Bell Labs employees in his speech to them on their first day, "but you get your raises and promotions on what you do in the other 16 and a half hours." Although his methods could be debated, it was hard to argue with his results. At the time of his death in March 1971, Bell Labs was the acknowledged global leader in technological innovation.

At the same time, not everyone was a fan. One of the scientists who did not appreciate Kelly's management style was William Shockley, who famously parted ways with Bell Labs shortly after sharing the Nobel Prize in physics in 1956 for his role in the development of the transistor.

"Judging Shockley as unsuited for upper management, Kelly had refused to promote him," Gertner explains. "According to Ian Ross, a colleague of Shockley's who would later become president of the Labs, Shockley simply felt he was not getting the rewards he deserved at Bell Laboratories. By the early 1950s, he was a department head overseeing a small group of scientists. He thought he should be higher in the organization and paid much more."

But like many visionaries whose contributions ultimately changed the world, Shockley's later exploits only served to tarnish his early accomplishments. "After he tendered his Bell Labs resignation to Kelly in 1955, Bill Shockley's life descended, slowly and inexorably, into paranoia and disgrace," Gertner notes. "By his own choice, Shockley began transforming himself from the most esteemed solid-state physicist in the world to a fringe eugenicist."

"The Idea Factory" is a fascinating read. Bell Labs was still a dominant player on the technological scene when I was growing up; I was familiar with the names of many of the people mentioned in the book, but had no real clue about what they were like as scientists or human beings. Gertner does a remarkable job of bringing a bygone era to life in a profoundly entertaining and thought-provoking way. I highly recommend "The Idea Factory."

— Reviewed by Aaron W. Hughey, Department of Counseling and Student Affairs, Western Kentucky University.