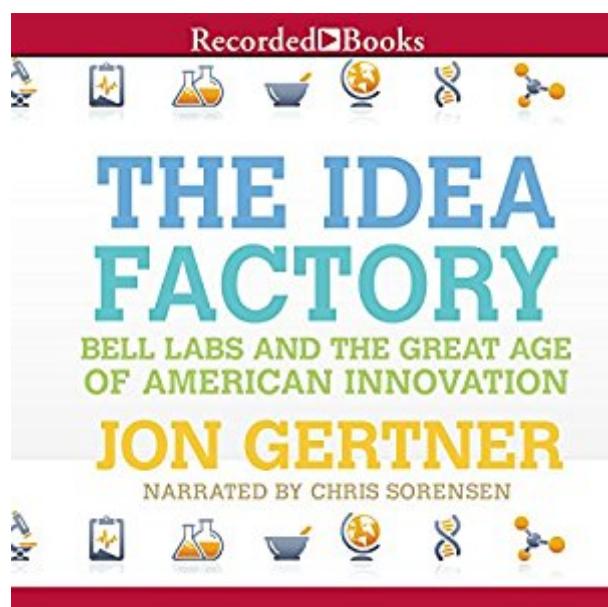


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# The Idea Factory: Bell Labs And The Great Age Of American Innovation



## **Synopsis**

In *The Idea Factory*, New York Times Magazine writer Jon Gertner reveals how Bell Labs served as an incubator for scientific innovation from the 1920s through the 1980s. In its heyday, Bell Labs boasted nearly 15,000 employees, 1200 of whom held PhDs and 13 of whom won Nobel Prizes. Thriving in a work environment that embraced new ideas, Bell Labs scientists introduced concepts that still propel many of today's most exciting technologies.

## **Book Information**

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## **Customer Reviews**

Anyone interested in science and technology can hardly be ignorant of Bell Labs. Discoveries like the structure of the transistor and the presence of universal background radiation are key moments in 20th century progress. Still, the stories behind these leaps forward are often less well-known than they deserve to be. Fortunately, Mr. Gertner has written an excellent book to fill in the gaps and tell so much more. Born in the 1920's to solve specific problems for the phone company, it is easy to forget how important an aspect that was to most of the scientists at Bell Labs. In its early years these men developed solutions for sending long distance phone calls across the country and, eventually, around the world. The cables, amplifiers, and vacuum tubes they developed were meant not only to improve phone service but also last for decades without breaking down. Their incredible push for quality control would influence corporations around the world. Ultimately more important, however, was the processes put in place to allow the best scientists freedom to discover. Everything

from trolling colleges for the best graduates to designing laboratory spaces to encourage collaboration to giving opportunities for scientists to follow their own interests would lead an incredible series of steps forward: the aforementioned transistor and radio telescope as well as solar panels, satellites, lasers, cellular phone structure, computer technology and more. (There were failures as well, of course; notably, the Picturephone, where the marketing failures would presage AT&T's struggles when it was no longer a monopoly.) The story is inherently fascinating, but Mr. Gertner deserves a lot of credit for making a very readable book. The best aspect is how he tells the story through its people and places. A number of small-town boys like Mervin Kelly and the great minds to follow--Bill Shockley, Walter Brattain, Claude Shannon, for example--get plenty of attention from Gertner. Their interactions and personalities are the driving force behind the discoveries. He also describes the legendary sites like the West Street building, Murray Hill, and Holmdel and how they contributed to the success of those who worked there. Somehow, the work done at Bell Labs is simultaneously among the best/worst known pieces of scientific history. Perhaps because their work was done under the auspices of a corporation it has been somewhat passed over. Mr. Gertner has done a real service by bringing this important slice of history to public attention.

Well focused on key areas in the Bell Lab in Murray Hill, NJ. Enjoy reading the development of the Lab reflecting the history of telecommunication in which the old triad vacuum tube, switch board and so on were used. These stories are fascinating to the old timer like me who knows the involvement of operators in telecommunication.

I bought this book with great expectations as it was recommended by a friend. As background I was an engineer and manager at Bell Labs from 1970 to 2001. I was in Ohio not NJ but traveled often to other locations. The story of the early beginnings and early leaders of Bell Labs was well described and very interesting. I had known snippets of this but enjoyed a more complete story of folks like Kelly, Shannon, Pierce, and Shockley. As one reviewer noted, the perspective is from the leaders and presidents rather from the ordinary engineers. It would have been good to get some perspective from interviews with the members of staff who did most of the more mundane but important "grunt work" of development. However, the most glaring omission was discussion of software, especially the UNIX operating system done by Ritchie and Thompson. I believe there were 3 or 4 sentences in the whole book. And this for a technology that is at the core of most of our computers, tablets, and smartphones today. This should have warranted a full chapter at least. On a more positive note, I did appreciate the treatment of what I call "The End of Bell Labs" which

happened after I left in 2001. It is tragic to all of us who were there to see an institution like this dismantled by greed and mismanagement. I am glad I did not stick around to see that.

I highly recommend this book. The author had a close personal experience with Bell Labs, as an observer. He grew up very close to the Murray Hill campus and interviewed many people who worked there. I am a semi retired electronics engineer, age 74, and I have used many ideas developed at Bell Labs during my career. During the twilight of my career I now teach electronics at a technical college and do my best to describe what a sense of accomplishment I have found in this work and I inspire them to overcome their obstacles to learning the concepts they will need for success. In addition to technical skills my students will need people skills in order to prosper in this rapidly changing economy. Part of this includes understanding the wide range of personalities involved the creative process. Studying this book and the following other books will help give them perspective:

1. "The Man Behind the Microchip", by Leslie Berlin.
2. "Crystal Fire", by Michael Riordan
3. "The Invention That Changed the World", by Robert Buderi

A fascinating read of the development of the technologies that transformed the world in the 20th century. Two complaints: too wordy and minuscule coverage of Unix and the C language. The author at one point speaks Unix as a programming language. Unix is the software foundation of the internet; deserves a little more ink. Bell Labs was a technology incubator such as we won't see again. Brilliant minds given freedom and resources. This book shows us the human side of these giants. Sometimes a glorious destiny, and occasionally an ignominious crash.

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