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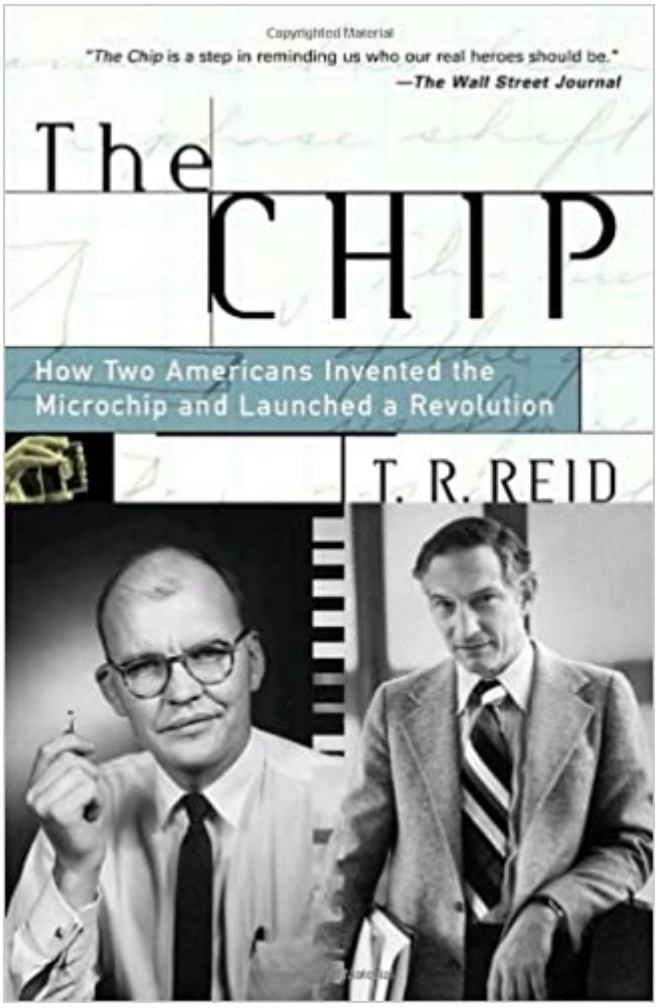
The Chip : How Two Americans Invented The Microchip And Launched A Revolution



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Synopsis

Barely fifty years ago a computer was a gargantuan, vastly expensive thing that only a handful of scientists had ever seen. The worldÃ¢â ¬â„¢s brightest engineers were stymied in their quest to make these machines small and affordable until the solution finally came from two ingenious young Americans. Jack Kilby and Robert Noyce hit upon the stunning discovery that would make possible the silicon microchip, a work that would ultimately earn Kilby the Nobel Prize for physics in 2000. In this completely revised and updated edition of The Chip, T.R. Reid tells the gripping adventure story of their invention and of its growth into a global information industry. This is the story of how the digital age began.

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Customer Reviews

They’re everywhere, but where did they come from? Silicon chips drive just about everything that sucks power, from toys to heart monitors, but their inventors aren’t nearly as widely known as Edison and Ford. Journalist T.R. Reid has thoroughly updated The Chip, his 1985 exploration of the life work of inventors Jack Kilby and Robert Noyce, to reflect the colossal shift toward smarter gadgets that has taken place since then.Satisfying as both biography and basic science text, the book perfectly captures the independence and near-obsessive problem-solving talents of the two men. Though ultimately only one of them (Noyce) ended up with legal rights to the invention, they shared a respect for each other that persisted throughout their careers. Since Kilby won the 2000 Nobel Prize for Physics for his work, the story is all the more compelling and intriguing over 40 years

after the invention. Reid's work uncovers human dimensions we'd never expect to see from 1950s engineering research. --Rob Lightner

In 1958, "before Chernobyl, before the Challenger rocket blew up, before the advent of Internet porn or cell phones that ring in the middle of the opera," when "`technological progress' still had only positive connotations," Jack Kilby had a good idea, but wasn't sure if his boss at Texas Instruments in Dallas would let him try it. In 1959, in what would become Silicon Valley, Robert Noyce had the same idea about overcoming "the numbers barrier" in electronics: "in a computer with tens of thousands of components... things were just about impossible to make," says Noyce. In his completely revised and updated edition of The Chip: How Two Americans Invented the Microchip and Launched a Revolution, Washington Post reporter and columnist T.R. Reid (Confucius Lives Next Door) investigates these underappreciated heroes of the technological age and the global repercussions of their invention. The enormity of their accomplishment was fully recognized only in 2000, when Kilby won the Nobel Prize. 3-city author tour. Copyright 2001 Cahners Business Information, Inc.

It was a very good history of the invention of the microprocessor and the different stages of it. It had a lot of details both technical as well as business on the challenges of getting this into production. For those who like technical details on computer logic it will be very interesting. If you aren't interested in some of the finer details you might end up skipping a couple of chapters later in the book. Very interesting and well written.

"The Chip: How Two Americans Invented the Microchip and Launched a Revolution," by TR Reid, Random House, NY, 2001. This 309 page paperback provides a highly readable account of the invention of the integrated circuit. It begins with the discovery of the Edison effect and carefully explains the various technologies in a non-technical way as it goes along. The heros of the story are Jack Kilby of Texas Instruments and Robert Noyce of Fairchild Camera and later Intel. Both invented integrated circuits and received patents for them. Interferences were filed to resolve the issue resulting ultimately in a cross licensing arrangement. Kilby also invented the pocket calculator.Along the way the book describes the work of Edison, Fleming and DeForest in invention of the vacuum tube, and later the invention of the transistor at Bell Labs. Other technologies are also mentioned including development of radar and television, the first Altair computer, and the Intel microprocessors. The transition from magnetic core memory to semiconductor RAM is described.

The story of the pocket calculator, digital watches, and some early computers are mentioned. Apple is mentioned but not Motorola. And little is said of Microsoft. Strangely absent are Radio Shack and their TRS-80, Commodore, Atari, Sinclair, TI-99-4a, and CP/M.The book was originally written in 1985, and then revised and update in 2001. Not surprisingly it devotes considerable space to the Japanese conquest of digital memory chips. It notes that when shortages forced domestic customers to use Japanese chips, they found those made in Japan were of higher quality. This discovery was a major factor is the quality programs initiated soon after. The books stops before the emergence of China as a major producer of electronics.The detailed non-technical explanations of numerous related topics (thermionic emission, discovery of the electron, conductivity theory, doping, Boolean algebra, digital arithmetic, Deming quality programs, patent law, operation of a digital calculator, etc) make this an excellent introduction to the field. In addition to those interested in the history of technology, those considering careers in engineering, electronics, or information technology will find the book especially useful. Extensive references. Indexed.

This book is very insightful especially for those young people who were not around at the turn of the 20th century for the invention of the light bulb (that may be most of us)in how it brought about the invention of the tube, the transistor and hence the chip. It is very clear and informative in its total development. It brings the reader into the world of the inventor, their hopes, dreams and aspirations. Moreover, it brings you a glimpse of what scientist/inventors must do to prove down the road if they indeed invented said invention. Finally, it brings a complete idea of how Americans created industries but only to loose them to their competitive counter parts by their lack of vision in the production process that resulted in poor quality standards. The book is a must read especially for those interested in how Intel became to be known as Intel especially from the human perspective of the inventor. A great read for all.

I really enjoyed the historical accounts of how they came up with the monolithic idea to resolve the issue with the tyranny of numbers...that was really good! It does make someone ask why Jack Kilby and Robert Noyce aren’t household names...they should be!There’s a section that tries to describe how different circuits are put together for a pocket calculator. That was challenging, but it really helped me understand many things that have been a mistery to me.Learning that George Boole’s "Boolean Algebra" is used as the cornerstone of digital logic is fascinating! Especially since he invented it in the early to mid 1800’s...how the heck did he do that!

An excellent account of the two Americans who ushered in the Intergrated Circuit (IC) age. It is said that the average American on a typical day encounters more than fifty microprocessors before lunch , from the alarm clock, to the microwave, to the daily commute in the automobile. The transistor was a temporary godsend that made the vacuum tube obsolete. The limitation of transistor circuits was the soldering time and accuracy. As circuit complexity exploded the number of soldered connections had to be increased accordingly. If a modern Pentium IC chip has over 60-million transistors, one can see that it would have been unattainable to obtain the required accuracy, time, and area need for these soldered joints. Without these two men we could be at the transistor level. Jack Kilby and Robert Noyce are the two men who developed the method of taking everything that was on a printed circuit and etching it into a wafer of silicon (CHIP) making the device many magnitudes smaller in the process. This breakthrough allows the complex circuits and microprocessors with the myriad of battery operated electronic devices to exist. What we now accept as civilization. .The book is well written, no knowledge of electronics is required or explained. It is just the history of two men developing a new idea to fruition.

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