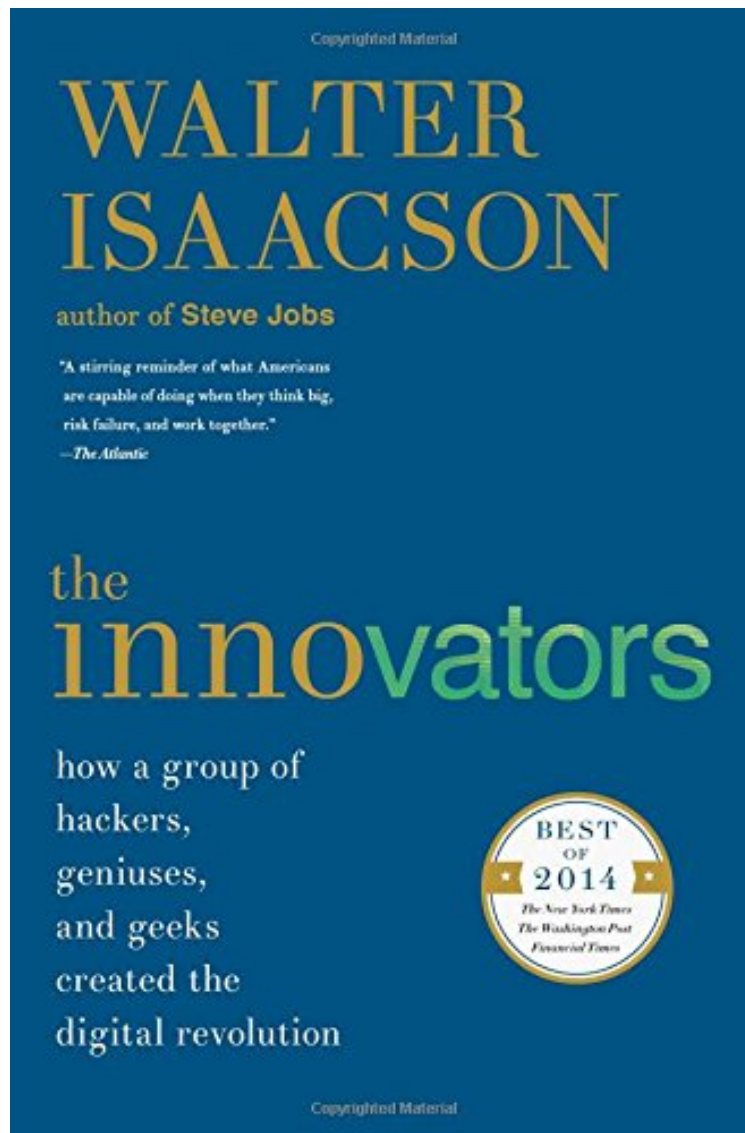


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# The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution

Walter Isaacson

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#4035 in Books Walter Isaacson 2015-10-06 2015-10-06 Original language: English PDF # 1 9.25 x 1.40 x 6.121, .0 #File Name: 1476708703560 pages The Innovators How a Group of Hackers Geniuses and Geeks Created the Digital Revolution | File size: 77.Mb

**Walter Isaacson : The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution** before purchasing it in order to gauge whether or not it would be worth my time, and all praised The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution:

409 of 434 people found the following review helpful. The Difference Between a Reporter and A Historian

**By Tech Historian**  
The good news: an epic sweep through computing history connecting the dots as Isaacson's sees them. Even if you're not a technical history fan than this book will serve as the definitive history of computing through the first decade of the 21st century. The bad news: this book will serve as the definitive history of computing through the first decade of the 21st century. It is at best technically wrong, misses some of the key threads in computing history and starts with a premise (that innovation comes from collaboration) and attempts to write history to fit. The difference between a reporter and a historian is that one does a superficial run-through of a rolodex of contacts and the other tries to find the truth. Unfortunately Isaacson's background as reporter for Time and CNN makes this "history" feel like he was comfortable going through his Rolodex of "Silicon Valley" sources connecting interviews, and calling it history. I'm sure Isaacson would claim, "more details get in the way of a good story," however that is exactly the difference between a throwaway story on CNN and a well written history. The same epic sweep could have embraced and acknowledged the other threads that Isaacson discarded. The gold standard for a technical history is Richard Rhodes "The Making of the Atomic Bomb." (Other reviewers have pointed out pointed several critical missing parts of computing history. I'll add one more. While perpetuating the "Intel invented the microprocessor" story makes great business press copy it's simply wrong. Intel commercialized something they knew someone else had already done. Lee Boysel at Four Phase invented the first microprocessor. If Isaacson had done his homework he would have found out that Bob Noyce was on the Four Phase board, knew about the chip and encouraged Intel to commercialize the concept.) Finally, one of the "facts" in this book that differentiate reporting from history is the garbled bio of Donald Davies, one of the key inventors of Packet Switching. Davies is described as "during the war he worked at Birmingham University creating alloys for nuclear weapons tubes..." I started laughing when I read that sentence. It's clear Isaacson had no idea what Davies did in WWII. He obviously found a description of Davies' war work, didn't understand it and re-edited it into something accidently amusing - and revealing. What Davies had actually done during the war is worked on the British nuclear weapons program - codenamed "TubeAlloys". Understanding the distinction is the difference between a reporter and a historian.

163 of 174 people found the following review helpful. An epic, fast moving history with some flaws and omissions that can be corrected in a second edition or paperback epilogue

**By Forrest M. Mims III**  
One of the greatest strengths of Walter Isaacson's latest book is the author's personal interviews with some of the post-Altair key players. A curious weakness noted by a few reviewers is that some of the earliest digital computers are absent from the text. A paragraph or two on the fascinating history of the ancient abacus would have been nice. While Isaacson is generally correct in observing that advances in computer technology have benefitted from or were made possible by collaborations, those advances often occurred as step functions and not gradual ramps. A full review of this latest Isaacson book would require a book of its own. So I'll zero in only on the Altair 8800 story. While the Altair's Intel 8800 microprocessor was developed in Silicon Valley, Isaacson begins his account of the Altair by noting that the first commercially successful hobby computer was developed far away in Albuquerque, New Mexico. The Altair was designed by Ed Roberts, who headed MITS, Inc. Isaacson captures only a hint of Ed's personality during those heady days, and he emphasizes Ed's hobbyist side more than his degree in electrical engineering. Ed was a first class designer of both analog and digital circuits, an ability most notably shared by Steve Wozniak. Elsewhere in this tome Isaacson adds flavor and spice to the origins of the PC era with some captivating interviews with some of the key players. Unfortunately, Ed passed away in 2010 (Bill Gates visited him in the hospital), and was not around to be interviewed. Dave Bunnell and other MITS veterans could have added some great Ed stories and corrected a few flaws. For example, the Altair was not developed in The Enchanted Sandwich Shop, which I rented for \$100 per month so we could move MITS from Ed's garage to prepare the Opticom kits we sold through Popular Electronics. That was in 1970, long before the Altair. The Altair was named by Popular Electronics staffers Alexander Burawa and John McVeigh, not by Les Solomons daughter. These errors are trivial (one of Ed's favorite words) in light of this book's vast reach and they don't take away from the significance of this book, which could be the primary text for a university course on the history of modern computing. But since Ed's Altair set the stage for much of the industry that followed, it would be good to have a flawless and somewhat more detailed account of the Altair's origin. A number of other histories of the PC have similar errors. While a revised and corrected second edition would be best, perhaps the paperback version of Isaacson's book can include an epilogue with at least some mention of the missing computers noted here by other reviewers and more about Ed, MITS and the Altair story. An ideal platform for an epilogue is the Startup Gallery of the New Mexico Museum of Natural History and Science in Albuquerque. Startup, which was conceived and largely financed by Paul Allen, presents the history of modern computing with many rare artifacts from Allen's personal collection. The centerpiece is devoted to the development of the Altair, complete with video interviews with Ed Roberts and the other key players. A nearby multimedia presentation is must watching.

2015 will be the Altair's 40th anniversary. If Isaacson can visit Startup and provide advance notice of his arrival, perhaps some of us MITS veterans can meet him there and give him a tour.

0 of 0 people found the following review helpful. Great History of the Digital Era for a General Audience

**By Frequent Reader**  
This is a remarkable work. The author is a talented writer so the book is a captivating read but it also presents a fairly accurate account of the technology and the social interactions among the scientists, engineers and entrepreneurs

that produced the "digital age." There are a lot of positive reviews on line, so I will try to answer some of the critics. The book is not a history of computing and it was not meant to be. It will be very hard to write such a history for a general audience. I can mention several omissions, such as Unix, the SUN computers, C++, Microsoft's Visual Studio, flash drives, etc, etc. At first I was taken aback, but then I thought that it would be hard to explain the importance of some of these advances to a general audience. In my view there is only one unjustifiable absence from the list of innovators: Ken Thompson and his chess playing computer Belle. Ken had the insight that programming a computer to play chess should not try to imitate the way humans play, but instead take advantage of the characteristics of the machine. Belle became soon the world champion in computer chess and both Deep Blue and Watson are based on the same principles as Belle. Still I would not downgrade my rating for just one flaw. The last chapter of the book, "Ada Forever," presents the best critique of Artificial Intelligence I have ever read and that by itself is worth the price of the book.

Following his blockbuster biography of Steve Jobs, Walter Isaacson's New York Times bestselling and critically acclaimed *The Innovators* is a riveting, propulsive, and at times deeply moving (The Atlantic) story of the people who created the computer and the Internet. What were the talents that allowed certain inventors and entrepreneurs to turn their visionary ideas into disruptive realities? What led to their creative leaps? Why did some succeed and others fail? *The Innovators* is a masterly saga of collaborative genius destined to be the standard history of the digital revolution and an indispensable guide to how innovation really happens. Isaacson begins the adventure with Ada Lovelace, Lord Byron's daughter, who pioneered computer programming in the 1840s. He explores the fascinating personalities that created our current digital revolution, such as Vannevar Bush, Alan Turing, John von Neumann, J.C.R. Licklider, Doug Engelbart, Robert Noyce, Bill Gates, Steve Wozniak, Steve Jobs, Tim Berners-Lee, and Larry Page. This is the story of how their minds worked and what made them so inventive. It's also a narrative of how their ability to collaborate and master the art of teamwork made them even more creative. For an era that seeks to foster innovation, creativity, and teamwork, *The Innovators* is a sweeping and surprisingly tenderhearted history of the digital age (The New York Times).

.com An Best Book of the Month, October 2014: Many books have been written about Silicon Valley and the collection of geniuses, eccentrics, and mavericks who launched the Digital Revolution; Robert X. Cringely's *Accidental Empires* and Michael A. Hiltzik's *Dealers of Lightning* are just two excellent accounts of the unprecedented explosion of tech entrepreneurs and their game-changing success. But Walter Isaacson goes them one better: *The Innovators*, his follow-up to the massive (in both sales and size) *Steve Jobs*, is probably the widest-ranging and most comprehensive narrative of them all. Don't let the scope or page-count deter you: while Isaacson builds the story from the 19th century--innovator by innovator, just as the players themselves stood atop the achievements of their predecessors--his discipline and era-based structure allows readers to dip in and out of digital history, from Charles Babbage's Difference Engine, to Alan Turing and the codebreakers of Bletchley Park, to Tim Berners-Lee and the birth of the World Wide Web (with contextual nods to influential counterculture weirdos along the way). Isaacson's presentation is both brisk and illuminating; while it doesn't supersede previous histories, *The Innovators* might be the definitive overview, and it's certainly one hell of a read. --Jon Foro [A] sweeping and surprisingly tenderhearted history of the digital age . . . absorbing and valuable, and Isaacson's outside narrative talents are on full display. Few authors are more adept at translating technical jargon into graceful prose, or at illustrating how hubris and greed can cause geniuses to lose their way. . . . The book evinces a genuine affection for its subjects that makes it tough to resist. . . . his book is thus most memorable not for its intricate accounts of astounding breakthroughs and the business dramas that followed, but rather for the quieter moments in which we realize that most primal drive for innovators is a need to feel childlike joy. (New York Times Book Review) *The Innovators* . . . is riveting, propulsive and at times deeply moving. . . . One of Isaacson's jealousy-provoking gifts is his ability to translate complicated science into English those who have read his biographies of Einstein and Steve Jobs understand that Isaacson is a kind of walking Rosetta Stone of physics and computer programming. . . . *The Innovators* is one of the most organically optimistic books I think I've ever read. It is a stirring reminder of what Americans are capable of doing when they think big, risk failure, and work together. (Jeffrey Goldberg The Atlantic) A sprawling companion to his best-selling *Steve Jobs* . . . this kaleidoscopic narrative serves to explain the stepwise development of 10 core innovations of the digital age from mathematical logic to transistors, video games and the Web as well as to illustrate the exemplary traits of their makers. . . . Isaacson unequivocally demonstrates the power of collaborative labor and the interplay between companies and their broader ecosystems. . . . *The Innovators* is the most accessible and comprehensive history of its kind. (The Washington Post) Walter Isaacson has written an inspiring book about genius, this time explaining how creativity and success come from collaboration. *The Innovators* is a fascinating history of the digital revolution, including the critical but often forgotten role women played from the beginning. It offers truly valuable lessons in how to work together to achieve great results. (Sheryl Sandberg) Isaacson provides a sweeping and scintillating narrative of the inventors, engineers and entrepreneurs who have given the world computers and the Internet. . . . a near-perfect marriage of

author and subject . . . an informative and accessible account of the translation of computers, programming, transistors, micro-processors, the Internet, software, PCs, the World Wide Web and search engines from idea into reality. . . . [a] masterful book. (San Francisco Chronicle)A panoramic history of technological revolution . . . a sweeping, thrilling tale. . . . Throughout his action-packed story, Isaacson . . . offers vivid portraitsmany based on firsthand interviews[and] weaves prodigious research and deftly crafted anecdotes into a vigorous, gripping narrative about the visionaries whose imaginations and zeal continue to transform our lives. (Kirkus s, starred review)A remarkable overview of the history of computers from the man who brought us biographies of Steve Jobs, Benjamin Franklin, Albert Einstein, and Henry Kissinger . . . Isaacson manages to bring together the entire universe of computing, from the first digitized loom to the web, presented in a very accessible manner that often reads like a thriller. (Booklist (starred review))Anyone who uses a computer in any of its contemporary shapes or who has an interest in modern history will enjoy this book. (Library Journal (starred review))The history of the computer as told through this fascinating book is not the story of great leaps forward but rather one of halting progress. Journalist and Aspen Institute CEO Isaacson (Steve Jobs) presents an episodic survey of advances in computing and the people who made them, from 19th-century digital prophet Ada Lovelace to Google founders Larry Page and Sergey Brin. . . . Isaacsons absorbing study shows that technological progress is a team sport, and that theres no I in computer. (Publishers Weekly)Isaacson succeeds in telling an accessible tale tailored to a general interest audience. He avoids the overhyped quicksand that swallows many technology writers as they miscast tiny incremental advances as revolutionary. Instead Isaacson focuses on the evolutionary nature of progress. The Innovators succeeds in large part because Isaacson repeatedly shows how these visionaries, through design or dumb luck, were able to build and improve on the accomplishments of previous generations. (Miami Herald). . . sharing their joy, [Isaacson] captures the primal satisfaction of solving problems together and changing the world. . . . In a way, the book is about the complex lines of force and influence in male friendships, the egging each other on and ranking each other out. (Bloomberg Business Week)[Isaacsons] careful, well-organized book, written in lucid prose accessible to even the most science-challenged, is well worth reading for its capable survey of the myriad strands that intertwined to form the brave new, ultra-connected world we live in today. (TheDailyBeast.com)If you think you know everything about computers, read The Innovators. Surprises await on every page. (Houston Chronicle)The Innovators . . . does far more than analyze the hardware and software that gave birth to digital revolution it fully explores the women and men who created the ideas that birthed the gadgets. . . . Isaacson tells stories of vanity and idealism, of greed and sacrifice, and of the kind of profound complexity that lies behind the development of seemingly simple technological improvements. . . . Isaacson is skilled at untangling the tangled strands of memory and documentation and then reweaving them into a coherent tapestry that illustrates how something as complicated and important as the microchip emerged from a series of innovations piggybacking off of one another for decades (centuries, ultimately.) . . . Its a portrait both of a technology, and the culture that nurtured it. That makes it a remarkable book, and an example for other would-be gadget chroniclers to keep readily at hand before getting lost in a labyrinth of ones and zeros at the expense of the human beings who built the maze in the first place. (Christian Science Monitor)"[A] tour dhorizon of the computer age . . . [The Innovators] presents a deeply comforting, humanistic vision: of how a succession of brilliant individuals, often working together in mutually supportive groups, built on each others ideas to create a pervasive digital culture in which man and machine live together in amicable symbiosis. . . . a fresh perspective on the birth of the information age." (Financial Times)A sweeping history of the digital revolution, and the curious partnerships and pulsing rivalries that inhabit it. (Gizmodo.com)Steve Jobss biographer delivers a fascinating, informative look at the quirky collaborative creatures who invented the computer and Internet. (People)[T]his is the defining story of our era, and its here told lucidly, thrillingly andbecause the bright ideas generally occur to human beings with the quirks, flaws and foibles that accompany overdeveloped intellectabove all, amusingly. (The Guardian)If anyone in America understands genius, its Walter Isaacson. (Salon.com)Mr. Isaacson's fine new book, The Innovators, is a serial biography of the large number of ingenious scientists and engineers who, you might say, led up to Jobs and his Apple co-founder Steve Wozniak. (Steven Shapin Wall Street Journal)a project whose gestation preceded Steve Jobs and whose vision exceeds it. (New York Magazine)For a book about programmers and algorithms, The Innovators is a lively, enthusiastically written tale and a worthwhile read, not only for tech-heads but for anyone interested in how computers got into our pockets and how innovation works. (Aspen Times)[a] landmark new work . . . In this often surprising history, Isaacson offers an encyclopedic account of the technological breakthroughs that made modern computers and networks possible: programming, transistors, chips, software, graphics, desktop computers, and the Internet. (Boston Globe)The brilliant Isaacson follows his mega-selling 2011 biography of Apple founder Steve Jobs with this detailed account of the legendary and unsung people who invented the computer and then the Internet. (Sacramento Bee)The argument against the great man theory of invention is not new. But the main merit of Walter Isaacsons The Innovators is to show that this is particularly true in information technologydespite the customary lionisation of many of its pioneers, from Babbage and Alan Turing to Bill Gates and Linus Torvalds. . . . Mr Isaacson excels at explaining complex concepts. (The Economist)Walter Isaacson is the best possible guide to this storm. He interrupted work on [The Innovators] book to write the standard biography of Steve Jobs, having previously written lives of Einstein, Benjamin Franklin and

Kissinger. His approach involves massive research combined with straight, unadorned prose and a matter-of-fact storytelling style. . . . the directness of his approach makes for clarity and pace. (Bryan Appleyard The Sunday Times) Isaacson's book offers a magisterial, detailed sweep, from the invention of the steam engine to the high-tech marvels of today, with profiles of the great innovators who made it all happen. Among the book's excellent advice is this gem from computing pioneer Howard Aiken: Don't worry about people stealing an idea. If it's original, you will have to ram it down their throats. (Forbes) "A masterpiece" (Daily News (Bowling Green, Kentucky)) In *The Innovators*, Isaacson succeeds in filling our knowledge gap by crafting a richly detailed history that traces the evolution of these modern tools and pays homage to the people whose names and contributions to computer science are little-known to most of us. . . . *The Innovators* is as much about the essence of creativity and genius as it is about cathode tubes, binary programs, circuit boards, microchips and everything in between. (SUCCESS) A sweeping history of the digital revolution, and the curious partnerships and pulsing rivalries that inhabit it. (Gizmodo) If anyone could compress all that into a readable narrative, it would be Isaacson, the former managing editor of *Time* and author of magnificent biographies of Albert Einstein and Steve Jobs. *The Innovators* shows Isaacson at his best in segments where his talents as a biographer have room to run. (Dallas Morning News) Fueled by entertaining anecdotes, quirky characters and a strong argument for creative collaboration, *The Innovators* is a fascinating history of all things digital, even for readers who align themselves more with Lord Byron than with his math-savvy daughter. (Richmond Times-Dispatch) a significant addition to [Isaacson's] list of best-selling nonfiction works with *The Innovators*. . . . Isaacson thoroughly examines the lives of such landmark personalities as Alan Turing, John von Neumann, J.C.R. Licklider, Robert Noyce, Bill Gates, Steve Wozniak, Tim Berners-Lee, Jobs and others. The most well-read of technocrats will still learn a lot from these thoroughly researched 542 pages. He shows with repeated examples that an Aha moment often went nowhere without the necessary collaborators to help flesh out the idea, or make it producible, or sell it. Collaboration is, indeed, a major theme of the book. . . . [*The Innovators*] reads as easily as the best of them. Isaacson truly has earned his spot on the best-seller lists. (Charleston Post and Courier) BEST OF 2014 NEW YORK TIMES; WASHINGTON POST; FINANCIAL TIMES; HOUSTON CHRONICLE; KIRKUS; AMAZON; NPR; BLOOMBERG.COM; WALL STREET JOURNAL; FORBES; SACRAMENTO BEE; (BEST OF 2014) About the Author Walter Isaacson, University Professor of History at Tulane, has been CEO of the Aspen Institute, chairman of CNN, and editor of *Time* magazine. He is the author of *Leonardo da Vinci*; *The Innovators*; *Steve Jobs*; *Einstein: His Life and Universe*; *Benjamin Franklin: An American Life*; and *Kissinger: A Biography*, and the coauthor of *The Wise Men: Six Friends and the World They Made*. Facebook: Walter Isaacson, Twitter: @WalterIsaacson