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'The Innovators' a masterpiece

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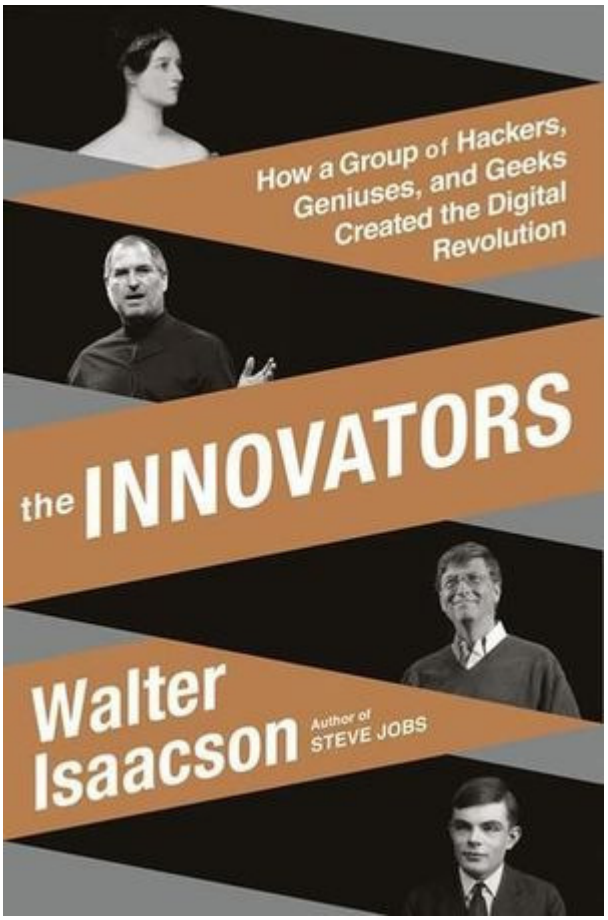
"The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution," by Walter Isaacson. New York, NY: Simon & Schuster, 2014, 542 pages, $35.



"The main lesson to draw from the birth of computers is that innovation is usually a group effort, involving collaboration between visionaries and engineers, and that creativity comes from drawing on many sources," Walter Isaacson explains in "The Computer," the second chapter of "The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution," his new bestseller. "Only in storybooks do inventions come like a thunderbolt, or a light bulb popping out of the head of a lone individual in a basement or garage."

Isaacson's treatise on the development of the modern digital computer, and the inevitable (in retrospect) manifestation it made possible, the Internet, is as comprehensive as the history he seeks to condense into this exquisite volume. If you are familiar with his prior work, you already know the author is a gifted raconteur. His literary style is a perfect marriage of grassroots journalism and superb investigative reporting; Isaacson is able to get close to his subjects without losing his objectivity. The more I read, the more I come to realize this is an increasingly rare talent. At the same time, he makes it look easy.

Many readers will no doubt recognize several of the main characters profiled in "The Innovators." Their accomplishments, and the inevitable consequences – both good and bad – that evolved once the chain of innovation was set in motion are well-documented. What I find most intriguing about this particular brand of nonfiction, however, are the dimensions that often do not make it into the public consciousness. At the end of the day, it turns out immense intellect is no match for the petty resentments universal to the human experience. Consider the following passage from "The Transistor," the fourth chapter that revolves around the work of William Shockley, one of three Bell Labs scientists who developed the first transistor in 1947: "Shockley signed Bardeen's historic notebook entry as a witness, but he did not make any entries of his own that day. He was clearly rattled. The pride he should have felt in the success of his team was overshadowed by his intense and dark competitive drive. There were demons that increasingly gnawed away deep in his psyche. He would never again be friends with Bardeen and Brattain. Instead, he started working feverishly to claim equal credit for the invention and to create, on his own, an even better version."

Isaacson does a masterful job of detailing all the advances in technology that took us literally from the time a computer was an idea in the minds of a few visionaries until the modern era where the machines are ubiquitous and irreversibly integrated into every aspect of our existence. And although I recognized many of the key players, I still learned a great deal through Isaacson's description of several fortuitous events and relationships that help explain how we ultimately arrived at the present moment. Case in point: the origins of Mosaic, the first widely-accepted web browser.

"When Andreessen saw the Web demonstrated in November 1992, he was blown away," the author notes in "The Web," the next-to-last chapter. "So he enlisted an NCSA (National Center for Supercomputing Applications) staffer, Eric Bina, a first-class programmer, to partner with him in building a more exciting browser. They loved Berners-Lee's concepts, but they thought CERN's implementation software was drab and devoid of cool features.

"For two months they engaged in a programming binge that rivaled those of Bill Gates and Paul Allen," he continues. "For three or four days straight they would code around the clock – Andreessen fueled by milk and cookies, Bina by Skittles and Mountain Dew – and then they would crash for a full day to recover. They were a great team: Bina was a methodological programmer, Andreessen a product-driven visionary."

Isaacson is CEO of the Aspen Institute. He previously served as chairman of CNN and managing editor of Time magazine. A prolific and accomplished biographer, his previous books include "Steve Jobs," "Einstein: His Life and Universe," "Benjamin Franklin: An American Life," and "Kissinger: A Biography."

As might be expected, "The Innovators" is extensively researched, with 30 pages of source notes at the conclusion of the introduction and 12 chapters that form the main text. A feature I found especially useful was the six-page timeline at the very beginning, laying out the total scope of the book as a succinct chronological progression. It begins with Ada Byron's publication of "Notes" on Babbage's analytical engine in 1843, and ends with IBM's supercomputer Watson winning on "Jeopardy" in 2011. The tome – and at 542 pages, that is an apt descriptor – is illustrated with several pages of photographs scattered liberally throughout the narrative.

In the final analysis, "The Innovators" succeeds as a major contribution not only to the history of technology, but also as a testament to the fundamental nature of individuals and their inseparable connection to the culture and society to which they belong. "Human creativity involves values, intentions, aesthetic judgments, emotions, personal consciousness, and a moral sense," the author concludes in "Ada Forever," the final chapter. "These are what the arts and humanities teach us – and why those realms are as valuable a part of education as science, technology, engineering, and math."

After reflecting on the incontrovertible evidence provided for this thesis on virtually every page of Isaacson's masterpiece, it would be difficult to deny the author is not onto something profound. I highly recommend "The Innovators" to anyone searching for a clearer understanding of how computers and their progeny became so infused into every aspect of our daily lives – and what it means for our collective future.

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