
Histories of computing and IT have predominantly been transatlantic stories of origins and triumphs. Accordingly, computing historiography has rarely escaped its Anglo-American confines. More recently, texts such as Eden Medina’s Cybernetic Revolutionaries (2011) and Benjamin Peters’s How Not To Network a Nation (2016) have broadened our field’s geographical scope by redrawing these borders and narratives. In this vein, Dinesh C. Sharma’s The Outsourcer: The Story of India’s IT Revolution brings the world’s largest democracy into our field by providing the most comprehensive coverage yet produced of the Indian IT industry.

After independence from the United Kingdom in 1947, Indian political, industrial, and scientific elites determined that building industrial capacity through targeted import substitution could create national self-sufficiency and, in part, solve the post-colonial “poverty trap.” This required the cultivation of indigenous educational institutions for scientific and technological development, and the Indian government deemed IT a crucial sector (pp. 1–7). Indian state policy for IT development emanated from a diffuse network of academicians, businessmen, engineers, politicians, and scientists whose work centered on national programs of atomic, space, and defense research. Many of these professionals had personal and institutional links to Prime Minister Jawaharlal Nehru, ensuring that scientific and technological experts would play a decisive role in policy making (pp. 35–36).

Sharma shows that the Indian IT industry emerged from the convergence of the country’s defense needs, Cold War capitalism, and the demand for more scientific equipment. Due to India’s colonial history, the country’s scientific and technological resources were limited during the early Cold War, and the government’s IT enthusiasts were forced by the state to turn to both the Soviet Union and the United States in search of the necessary capital, technology, and expertise (such as Norbert Weiner, who seemed to be everywhere during this period). For example, in an attempt to recreate the successes of the US military-industrial-academic complex, nine US universities helped establish the Indian Institute of Technology (IIT) in Kanpur, which Sharma calls the first “Indian MIT” (pp. 10–38).

While state-to-state relations between the Indian government and the Cold War superpowers were productive, the economic and political relationships with private sector firms were initially less cordial. Sharma details how this was particularly the case with IBM. Opening its first Indian office in 1951, IBM would come to dominate the commercial market into the early 1970s. From marketing outdated systems to manipulating pricing quotes, IBM’s unfair practices and outright fraud exploited, and profiteered from, the massive state resources funneled into the growing indigenous IT industry. By the mid-1970s, the Indian government, weary of the costs to both its treasury and the technological development of the country, adjusted its legal policy to rein in IBM’s behavior. This motivated IBM to leave the country in 1978, only to return two years later as the political and social winds of India shifted toward neoliberalism and Indian computer professionals began forging important connections with the multinational corporations pioneering the IT revolution in the West (pp. 55–75).

During this period, India pioneered the practices of “bodyshopping” (contracting Indian IT workers to foreign clients for work to be done abroad) and its better-known complement “outsourcing” (bringing software work for foreign clients into the country). At the same time, private hardware and software firms grew their competencies through massive banking automation, train reservation, and rural telephony projects, all initiated and funded by the Indian government. The combination of continued government support of software development and export, the establishment of the Internet in 1989 and its commercial introduction in 1995, and the ongoing education of more and more highly trained, but poorly paid Indian IT workers secured India’s place in the global IT market (pp. 77–103, 131–184). Within a generation of IBM’s two-year “vacation” from the Indian market, the country had transformed from the world’s largest nonaligned socialist nation to the world’s largest capitalist nation.

Sharma’s more than 30 years of experience studying the Indian IT industry are evident in The Outsourcer. Primary documents such as interviews with key historical actors, selections from trade publications, and government files enrich the narrative with a plethora of dates, names, places, and “alphabet-soup” organizations (the list of acronyms in the front matter is over three pages long). However, this accumulation of details proves to be a double-edged sword. Sharma’s account bogs down early, and by midway it becomes apparent that the narrative’s most exciting and interesting avenues of inquiry have been exhausted. As a result, The Outsourcer sometimes feels more like a useful compendium than an engaging history.

The book purposefully brings to the forefront entrepreneurialism and “the market” as the primary sources of Indian IT success. As a result, Sharma misses an excellent opportunity to delve into the complex and contested politics of the state-market relations grounding the Indian IT industry’s success. India’s self-described socialist governments provided massive subsidies, procurement contracts, import restrictions, and financial and legal support
from the industry’s birth to its eventual maturity. How these processes were influenced by and intersected with Indian culture, economics, and the local, regional, and international politics of the period are, however, left to the reader’s imagination. Instead, Sharma narrates the conventional, linear story of the innovator’s pipeline whereby the state provides the basic investments necessary for innovation, and then—voilà!—the market does its magic.

Despite attempts to valorize the innovator’s pipeline in popular accounts of Western IT evolution, Sharma’s account demonstrates how the Indian IT industry’s development challenges this conventional wisdom. Peters’ broad assessment in How Not To Network a Nation that “Our networked present is the result of neither free-market triumphs nor socialist state failures” (p. 2) is as true in the West as in the East. Our networked present was, instead, the result of a highly regulated market capitalism that triumphed because of socialist state successes. Although this fact may trouble popular narratives, we need accuracy rather than ideology, now more than ever.

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Almost 20 years ago, Jennifer Light wrote about the untold story of women’s roles in early computer history.1 Known as human computers, these women calculated ballistic trajectories and decrypted coded messages during the Second World War, often using the aid of machines, such as differential analyzers and desktop commercial calculators. Since then, historians of computing have continued to explore how analyzing the gender politics of computing can transform our narratives of the field.2 Much of this work focuses on white women, and therefore Margot Lee Shetterly’s book Hidden Figures stands out for its demonstration of how the histories of gender and race are entwined in the history of computing. A best seller with an award-winning film modeled after it, Hidden Figures shows us the highly capable, scientifically minded women of color who contributed to some of the most innovative technology in American history.

Hidden Figures tells the connected stories of the black women mathematicians who helped to put men on the moon and inhabited the spaces previously occupied only by white men. Because of the loss of manpower for labor during World War II, women were called by the US government to enlist in the workforce. Hundreds of women answered the call, but Shetterly focuses on a select few who stand out through their accomplishments and long careers at NASA. Through three intertwined personal stories, Shetterly shows how many of these “figures” began their work as computers in the segregated West Area computing pool for black women at the National Advisory Committee for Aeronautics (NACA), the precursor to NASA. Dorothy Vaughan became the first black manager of the West Area pool and later reinvented herself as a computer programmer, keenly aware of a shift from computing performed manually by humans to computing processed by room-sized machines. Katherine Johnson worked with engineers in the Flight Research Division where she eventually became the first female to have her name listed as an author of a report. Mary Jackson gained the title of engineer after attaining special permission to attend the whites-only local high school that offered night courses on engineering.

A fourth story enables Shetterly to address race and gender during NASA’s origins. In 1958, after the West Area Computers Unit dissolved and NACA transitioned to NASA, Vaughan led an effort that enabled many West Area computers to become fully a part of NASA’s research operations. This is the group that Christine Darden joined when she arrived at NASA in 1967, and that was crucial to major efforts such as John Glenn’s orbital flight. Despite these achievements, Darden was aware of the still ongoing gender segregation at NASA, and indeed she asked her superiors “why is it that men get placed into engineering groups while women are sent to computing pools” (p. 261). She then transferred to the sonic boom engineering group, where she would become an internationally recognized expert in her field.

Shetterly discusses the history of segregation at Langley by emphasizing the management of the West Area pool, the use of “colored” restrooms, and the implementation of all-male meetings. The West Area women felt they had to prove themselves more capable than their white women counterparts and the male engineers with whom they worked just to gain access to many of the segregated spaces. They corrected each other’s work, appearance, and demeanor, internalizing the need to be “twice as good to get half as far” (p. 48). Shetterly presents a “triumph of meritocracy” by focusing on the achievements and accomplishments
of the women rather than the discriminatory institutional barriers. She aims to tell a story of hope, where “each of us should be allowed to rise as far as our talent and hard work can take us” (p. 247). Centering merit and ability allows for that story—one that may resonate with people of all races, ethnicities, genders, and backgrounds.

Hidden Figures not only challenges popular stereotypes about the technical capabilities of women, but it also shows how the perspectives of people marginalized by both gender and race can deepen our understanding of the history of computing. Telling the stories of marginalized actors is not a new method; Sandra Harding, Donna Haraway, and Patricia Hill Collins have argued that studying their lived experiences and situated knowledges can reveal critical insight concerning complex social inequalities as well as new knowledge aimed at dismantling oppressive power. This argument was once aimed at historians of science, but Hidden Figures shows it is no less crucial for the history of computing. Challenges to our mythical technological pasts can raise new questions regarding the future we want for knowledge-making practices.

References and Notes


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