From the Editor's Desk

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The majority of commercial computers in the 1950s were designed for batch processing. Simultaneously, several advanced computer projects explored real-time processing. Eventually, this became the dominant mode of mainframe computer operations of the 1980s. Ian Martin explores this essential transition in mainframe computer operations in the first article of this issue. His article tells the important history of a large project at the British Barclays Bank between 1965 and 1972. Barclays introduced real-time computer operations for all its 2,612 branches, in contrast to its existing batch operations. The project, based on Burroughs computers, failed because Burroughs was unable to meet its own ambitions of producing large computers that could handle real-time operations in several thousand locations. Ian Martin's story illustrates the tremendous difficulty involved in transitioning computers from batch processing to online operations. Burroughs tried to establish a first-mover position in real-time processing against IBM, the industry giant and first mover in batch processing. Martin provides an important contribution that helps us to understand why this process failed.

The difficulties of harvesting business opportunities with advanced computers in the late 1960s and early 1970s is also the theme of the article by Bernardo Bátiz-Lazo and Thomas Haigh. They analyze the appropriation of computer technology at the civil engineering company Grupo ICA in Mexico. ICA installed an IBM computer in 1966 and a large CDC computer in 1970 to facilitate computerized engineering applications, such as drawing topographic maps using photogrammetry. ICA encountered substantial problems in this process caused by technical computer failures, management problems, and the absence of demand for ICA's advanced engineering applications. The ICA case unfolded in Mexico and followed patterns that resemble those of similar applications elsewhere.

Also in this Issue

James W. Cortada's article, ''Information Technologies in the German Democratic Republic (GDR), 1949–1989,'' illustrates that computer technology was much more pervasive beyond the Western World in the Cold War than commonly assumed. Cortada explores the industrial and computer technology policy of the former German Democratic Republic (GDR, or East Germany). GDR closely monitored computer innovation in Western Europe and North America. It was committed to the manufacture and use of computers but was not able to compete with the Federal Republic of Germany (FRG, or West Germany). Cortada discusses why the GDR was unable to keep up with innovation in West Germany, and he rightly raises the issue of the role of incentives in generating innovation. Often, discussion across the world of how we become more innovative is marked by a limited perspective, comparing cases of slightly varying shades of success. Cortada's Eastern Europe case from the Cold War period shows us where to find cases that can provide important new perspectives on current debates.

The forth article by Silvio Hénin and Massimo Temporelli rediscovers an almost unknown mechanical calculating machine of the mid-19th century. Invented and built by Niccola Guinigi-Magrini of Lucca, Italy, the machine has a unique design and single-dial input device compared to the general multidial input adding machines. At that time, inventive people in many countries were working to improve the original designs of adding and multiplying machines from the 17th and 18th centuries and create more reliable designs for production and use. Industrial production of calculating machines started in the 1880s. However, in the mid-19th century, people were still working to find a winning design. Hénin and Temporelli provide an important contribution to understanding the intricacies of this process by pointing out several shortcomings of Guinigi-Magri's calculator design.

IEEE Annals *Legacy Articles*

Two fellow members of the *IEEE Annals of the History of Computing* Editorial Board, Jeffrey R. Yost and David Walden, have recently published books based on articles published in this journal.

Jeff Yost, Charles Babbage Institute associate director and former EIC of *IEEE Annals*, selected 10 high-quality

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memoirs and essay contributions published in the *Annals* since its inception in 1979 that cover the origin and history of IBM over a century. His book, *The IBM Century: Creating the IT Revolution*, includes the most comprehensive IBM annotated bibliography to date and an introductory essay that characterizes IBM's 100-year history and contextualizes each of the memoirs. Published by the IEEE Computer Society Press, *The IBM Century* offers readers a rich history of IBM. By publishing this book, Jeff Yost reminds us of the many great articles published here throughout the years and of the importance of making them easily available to today's readers.

A Culture of Innovation: Insider Accounts of Computing and Life at BBN (Waterside Publishing, 2011) by David Walden and Raymond Nickerson focuses on the history of the Bolt Beranek and Newman (BBN) company's work in the computer field. Dave and Raymond started with two special issues of the *Annals* (vol. 27, no. 2, 2005, and vol. 28, no. 1, 2008). They then compiled substantial additional material with contributions from 19 long-time BBN employees. The book provides a fascinating picture of the company for people who have had involvement with BBN or are interested in computing history. It is also a useful reference work for historians of computing.

Both these publications illustrate that we gain rich additional insights from additional work on themes discussed in the articles published by the *Annals*.

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cn *Selected CS articles and columns are also available for free at http://ComputingNow.computer.org.*