

# From the Editor's Desk



**Lars Heide**  
*Editor in Chief*

*IEEE Annals of the History of Computing* was founded in 1979. Originally, the main focus was exploring the history of the shaping of mainframe computers. But as the *Annals* became established, industrial producers and users were reshaping computers beyond the original batch-processing design.

The first commercial mainframe computers were produced in the early 1950s. A decade later computers had attained reliability, and a somewhat lower price enabled substantial use in private companies and public organizations. However, computers still had restricted calculating capacity because of limited storage. Punch cards, punch tape, and magnetic tape were the only large-scale memory and data entry media. Therefore, inputting data required punching or keying it into magnetic tape, and banks had to operate through batch processing, which to a large extent made computers just advanced punched-card machines. These computers comprised the industry's main business, and in addition, several companies produced smaller numbers of differently designed computers—for example, for process control.

Starting in the late 1960s, online processing (for example, by clerks) allowed for real-time processing. This advanced data processing, beyond batch processing, and facilitated extensive new diffusion of computer jobs across offices and new ways of organizing office jobs. This crucial transformation lasted several

decades and shaped today's computer networks, which we access through our personal computers. The first phase of online processing was the introduction of online "dumb" terminals for mainframe computers, which appeared in the late 1960s and became common in the 1970s. In banks, they gave cashiers access to a customer's actual credit balance, which simplified the operations of endorsing and registering transactions.

The second phase of online processing was based on the computer industry's introduction of personal computers and microprocessors in the early 1980s. They supported more powerful mainframe computers and decentralized networks, which contrasted with the older networks, where all the company's terminals linked to its main computer. Local area networks (LAN) of personal computers linked to a server in each branch office improved speed and reliability because the computer system ceased to rely on one single computer. In addition, the information industry introduced relational databases, which facilitated improved interactive computer operations for clerks.

This reshaping of computers encompassed extensive basic hardware and software innovations and provided widespread new business opportunities. It opened new ways to organize office jobs and fundamentally influenced our perception of the world; the new technology facilitated easy access to digital information across the world.

The *Annals* has already published several pioneer accounts and scholarly articles on this transformation—for example, Stephen J. Lukasik's "Why the Arpanet Was Built" (vol. 33, no. 3, 2011), Juan Alvarez and Claudio Gutierrez's "History of Computing in Chile, 1961–1982" (vol. 34, no. 3, 2012), Ian Martin's "Too Far Ahead of its Time: Barclays, Burroughs, and Real-Time Banking" (vol. 34, no. 2, 2012), and a special issue on "Relational Database Management Systems: The Formative Years" (vol. 34, no. 4, 2012). However, more documentation and historical studies are needed for us to reach a comprehensive understanding of the dynamics and impact of this

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transformation on business, technology, and how we live and work.

The growth of the software industry since the 1970s was an essential element in the transformation of computer technology and the computer industry. Since 2002, the *Annals* has published a series of special issues on this history based on a collection of material and interviews by the Software Industry Special Interest Group, which is affiliated with the Computer History Museum in Mountain View, California.<sup>1</sup> Burton Grad and Luanne Johnson from the Software Industry Group have edited a series of special issues in the *Annals* featuring software industry pioneers' own stories. (Johnson is also a member of the *Annals'* editorial board.) Through this great work, they have added essential new knowledge on the history of software and its industry. This issue is the sixth in their line of special issues on software history. The first five issues told great stories about "The Start of the Software Products Industry" (vol. 24, no. 1, 2002), "PC Software: Word Processing for Everyone" (vol. 28, no. 4, 2006), "PC Software: Spreadsheets for Everyone" (vol. 29, no. 3, 2007), "Mainframe Software: Database Management Systems" (vol. 31, no. 4, 2009), and "Relational Database Management Systems: The Formative Years" (vol. 34, no. 4, 2012). As editor in chief, I thank Burton Grad and Luanne Johnson for their contributions to the *Annals* and its readers through their labor with these five special issues. And I also thank Burton Grad for his achievements as guest editor of this special issue.

## Reference

1. For example, see "From the Editor's Desk," *IEEE Annals of the History of Computing*, vol. 34, no. 4, 2012, pp. 2–3, and visit [www.softwarehistory.org](http://www.softwarehistory.org).

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

### Editor in Chief

**Lars Heide**  
Copenhagen Business School  
Email: [heide@cbs.dk](mailto:heide@cbs.dk)

### Associate Editors in Chief

**Janet Abbate**  
Virginia Tech  
Email: [jabbate@computer.org](mailto:jabbate@computer.org)

**Nathan Ensmenger**  
Indiana University  
Email: [nensmeng@indiana.edu](mailto:nensmeng@indiana.edu)

### Associate Editors

**Marie Hicks**  
Illinois Institute of Technology  
Email: [mhicks1@iit.edu](mailto:mhicks1@iit.edu)

**Eden Medina**  
Indiana University  
Email: [edenm@indiana.edu](mailto:edenm@indiana.edu)

### Department Editors

#### Biographies

**Thomas Haigh**  
University of Wisconsin, Milwaukee  
Email: [thomas.haigh@gmail.com](mailto:thomas.haigh@gmail.com);  
[annals-biographies@computer.org](mailto:annals-biographies@computer.org)

#### Computing Then

**Luanne Johnson**  
Computer History Museum  
Email: [luanne.i.johnson@gmail.com](mailto:luanne.i.johnson@gmail.com)

#### Events and Sightings

**Chigusa Kita**  
Kansai University  
Email: [ckita@res.kutc.kansai-u.ac.jp](mailto:ckita@res.kutc.kansai-u.ac.jp);  
[annals-es@computer.org](mailto:annals-es@computer.org)

#### Interviews

**David Walden**  
Email: [dave@walden-family.com](mailto:dave@walden-family.com)

#### Reviews

**Andrew Russell**  
Stevens Institute of Technology  
Email: [arussell@stevens.edu](mailto:arussell@stevens.edu);  
[annals-reviews@computer.org](mailto:annals-reviews@computer.org)

#### Think Piece

**Nathan Ensmenger**  
Indiana University  
Email: [nensmeng@indiana.edu](mailto:nensmeng@indiana.edu)

### Contributing Editor

**Eric A. Weiss**  
[eaweiss@hawaiiantel.net](mailto:eaweiss@hawaiiantel.net)

### Editorial Board Members

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**William Aspray**  
University of Texas at Austin  
Email: [bill@ischool.utexas.edu](mailto:bill@ischool.utexas.edu)

**Martin Campbell-Kelly**  
University of Warwick  
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National Air and Space Museum  
Email: [paul.ceruzzi@nasm.si.edu](mailto:paul.ceruzzi@nasm.si.edu)

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University of Teeside  
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**James W. Cortada**  
Charles Babbage Institute  
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**David Alan Grier**  
George Washington University  
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**Ulf Hashagen**  
Deutsches Museum  
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**Hunter Heyck**  
University of Oklahoma  
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**Peggy Aldrich Kidwell**  
Smithsonian Institution  
Email: [kidwellp@si.edu](mailto:kidwellp@si.edu)

**Jennifer Light**  
Northwestern University  
Email: [light@northwestern.edu](mailto:light@northwestern.edu)

**Brian Randell**  
University of Newcastle upon Tyne  
Email: [Brian.Randell@newcastle.ac.uk](mailto:Brian.Randell@newcastle.ac.uk)

**Keith Smillie**  
University of Alberta  
Email: [smillie@cs.ualberta.ca](mailto:smillie@cs.ualberta.ca)

**Dag Spicer**  
Computer History Museum  
Email: [spicer@computerhistory.org](mailto:spicer@computerhistory.org)

**Christopher H. Sterling**  
George Washington University  
Email: [chriss@gwu.edu](mailto:chriss@gwu.edu)

**Jeffrey R. Yost**  
Charles Babbage Institute  
Email: [yostx003@umn.edu](mailto:yostx003@umn.edu)

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Editorial Services  
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Society Pub. Coordinator  
Email: [annals-ma@computer.org](mailto:annals-ma@computer.org)