



Death of a Sugar Daddy: The Mystery of the AFIPS Orphans

MOTION 1:

RESOLVED, that the American Federation of Information Processing Societies, Inc. ("AFIPS") shall be and is hereby dissolved, such dissolution to become effective as soon as possible.

-- Minutes of the AFIPS Board of Directors
Dissolution Meeting, October 13, 1990

AFIPS, the formerly wealthy parent of ACM, IEEE, and smaller societies, had fallen on hard times. Born in 1961, it represented the United States in the International Federation for Information Processing (IFIP). Its other principal purpose was to manage the annual National Computer Conference (NCC). NCC and its predecessors had been major research conferences and also the world's largest computer trade show. For years, huge profits from exhibitor and registration fees had helped fund ACM and IEEE. By 1990, those years were over.

AFIPS records were not preserved. I found the minutes of the brief dissolution meeting in a box at the University of Minnesota Charles Babbage Institute, which had itself received major funding from AFIPS.

MOTION 4

RESOLVED, that the Board of Directors hereby establishes an Ad Hoc Committee on Dissolution ("the Committee") to oversee all actions which in its judgment are necessary to carry out the dissolution of AFIPS.

The final report of "the Committee" was not in the box. I've looked far and wide for it. I tracked down many of the 24 men and 5 women who attended the October 13 meeting. Most were retired, surprised that they could be found, and in possession of few memories of the last months of 1990. None could answer the question: To whom did AFIPS transfer the copyright of its proceedings, journal and books?

It matters. Certain papers from the Eastern and Western Joint Computer Conferences (1951-1961), Spring and Fall Joint Computer Conferences (1962-1972), National Computer Conferences (1973-1987) and Office Automation Conferences (1980-1987) are frequently cited, but they are rarely read. Few if any libraries have complete collections. It is risky to republish a work when the copyright owner is not known.

HCI contributors to these conferences include these

and many more: Ron Baecker, John Bennett, Wes Clark, Andy van Dam, Sarah Douglas, Clarence Ellis, Doug Engelbart, Brian Gaines, John Gould, Irene Greif, Alan Kay, Rob Kling, J.C.R. Licklider, Lynne Markus, Ted Nelson, Allan Newell, William Newman, Phyllis Reisner, Terry Roberts, Ev Rogers, Ben Shneiderman, Herb Simon, Lucy Suchman, Ivan Sutherland, and John Thomas.

Some of the most cited papers by Sutherland, Engelbart, and Nelson are here. Newell and Simon published half a dozen papers, including "The chess machine" (1955), "Modeling human mental processes" (1961), and "Some issues of representation in a general problem solver" (1967). David Canfield Smith and colleagues published an article on the Star user interface in BYTE in 1982—but first they published a longer article at NCC. A few papers have been digitized and placed on the web (illegally), but the proceedings haven't systematically been made available.

THE AFIPS MYSTERY

In April, 2004, I was considering collecting a set of seminal computer science papers on human-computer interaction. I contacted ACM to see if the proceedings had been or might be digitized. The response was that IEEE owned the proceedings. I asked IEEE, and their response was: "We got *Annals of the History of Computing*, ACM got the proceedings." But that wasn't correct, either. After AFIPS dissolved, *Annals*, its one journal, was published for one year by Springer-Verlag. Then Springer gave it to IEEE.

Twice I visited the Babbage Institute in Minneapolis. I phoned and exchanged email with dozens of past officers of AFIPS, ACM, IEEE, and other organizations. Their stories diverted me into exploring the relationship between research and the industry that created and sustains it. Eventually, through the billowing mist generated by the passage of time, a possible solution to the mystery of copyright ownership emerged.

DIVERSION: A SHORT HISTORY OF TRADE SHOWS AND RESEARCH

The timeline depicts several major international trade shows. Some are (or were) exhibitions accompanying research conferences, others include tutorial lectures, some just bring together vendors, buyers, and media. AFIPS appears in the bottom row as part of the longest-running computer science conference series with published proceedings. It began as "joint" productions of

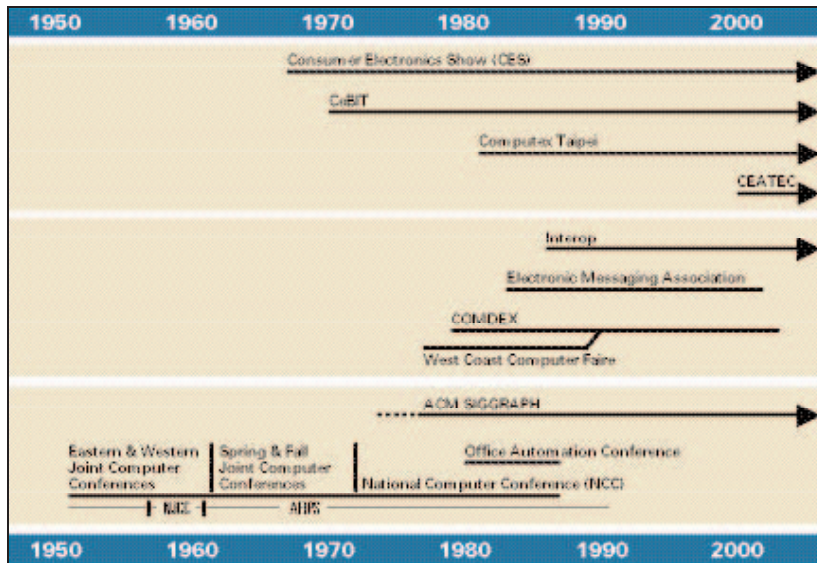


Figure 1. Annual trade shows and conferences with exhibitions. The bottom band had research tracks, middle focused on dealers, top includes more consumer electronics focus today. AFIPS/NCC, COMDEX, and CeBIT have been the largest at different times.

the Institute of Radio Engineers (IRE), American Institute of Electrical Engineers (AIEE), and Association for Computing Machinery (ACM). In 1963, IRE and AIEE merged to form the Institute of Electrical and Electronics Engineers (IEEE).

The first conferences were independently organized on the US eastern seaboard and in California. In 1957, the National Joint Computer Conference committee formed to oversee two annual conferences. IFIPS formed in 1960, and NJCC became AFIPS, the US representative, in 1961. (IFIPS soon became IFIP but AFIPS decided not to change its stationery again.)

This 38-year series of conferences began as single-track, swelled to multiple parallel tracks, returned to single-track, then expanded again. Selectivity varied, sometimes engaging formal peer review, sometimes relying on less formal screening by program organizers. Although reviewing may have been less rigorous than for the annual ACM conferences of that era, the overall quality was high in the early days, self-policed by a small community of researchers who strove to impress the crowds attending the conferences and exhibitions, as well as funding agencies and academic credentialing committees.

Commercial exhibitions were included by 1953. This increased attendance and produced substantial revenues, especially after the semi-annual conferences became the annual National Computer Conference in 1972. AFIPS maintained a large staff and built a modern headquarters building in Reston, Virginia. Lavish spending and lax accountability were accepted as long as significant revenue flowed to the member societies.

But the NCC exhibition centered on mainframe

computers, and the era of mainframe dominance drew to a close. Starting in 1977, the West Coast Computer Faire offered a relaxed contrast for computer hobbyists, its organizer cruising the grounds on roller skates. NCC banned personal computer exhibitors, providing an opening for COMDEX (1979), which advertised itself as the alternative to NCC for PC dealers. In a not unrelated development, the technical track of NCC declined as more specialized research conferences proliferated, such as the Computer Science Conference (from 1974), SIGGRAPH (first proceedings in 1974), and CHI (1983).

The NCC trade show collapsed and AFIPS almost went bankrupt. To cut losses, the 1988 conference was abruptly cancelled, absorbing the expense of breaking signed contracts.

Canaries in the Coal Mine. Association with a trade show is a double-edged sword for a research conference in a rapidly-evolving field. Trade shows interest many researchers. They draw non-researchers, some of whom may participate in technical sessions. They can raise money. But trade shows are immediately affected by changes in the industry, so research conferences closely tied to them can suffer as NCC did. Other research is affected by changes in the field, but more slowly, so causes and effects can be difficult to discern.

A Succession of Computer Trade Shows. AFIPS never accepted the PC, but it made an effort to broaden its appeal after super-minicomputers arrived. Its Office Automation Conference series started in 1980, also accompanied by an exhibition. Paper quality varied, but solid research was published here, particularly in 1980

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and 1982, including one of Engelbart's most cited papers. OAC proceedings are an interesting window onto the rapid rise and decline of a research area.

PCs were the domain of COMDEX, which absorbed WCCF. In 1977, SIGGRAPH began selling exhibition booths; by the 1980s it was a significant trade show focused on high-end workstations. SIGGRAPH also spent its huge profits lavishly, albeit on parties for volunteers rather than on buildings and paid staff.

The Electronic Messaging Association held a major exhibition from 1983, spanning minicomputer and microcomputer eras. Starting in 1986, the INTEROP exhibition, which focused on networking and interoperability, initially included technical presentations and tutorials, albeit screened rather than peer reviewed. As exhibition revenues increased, INTEROP spawned exhibitions on other continents; a Japanese series was particularly successful.

Like NCC before them, these exhibitions suffered

financial setbacks. The OAC series ended in 1987. Early in the 2000s, the collapse of the Internet speculation bubble accelerated industry changes that were already underway. PC and workstation markets had matured. EMA ended in 2001 and COMDEX in 2003. INTEROP left its Las Vegas home for more modest settings. SIGGRAPH attendance and exhibitors declined. Its technical program was besieged by a proliferation of specialized conferences, echoing NCC in its time. SIGGRAPH has now stabilized at about half its 1997 peak size.

Today, as the leading edge moves to smaller form factors, consumer electronics shows dominate. In the US, CES stands out. Germany's CeBIT is a versatile survivor and the largest trade show, with over half a million attendees. CeBIT began as the office equipment component of a general fair in 1970 and became independent in 1986, focused on computer technology. In Asia, international trade shows that attract over 100,000 attendees include CEATEC Japan (a merger of

WHAT IS PEER REVIEW?

When a research paper is submitted for publication, it may be given to other researchers for review. This practice is called peer review and reviewers typically donate their time. They look for flaws in the design, execution, analysis, or write-up of the research, and identify related work that should be mentioned. Citing related work is not only a courtesy, part of building a research community, it also enables readers to trace the development of a field.

Peer review generally assumes authorial honesty. It is not designed to detect fraud, as discussed in an article in the *New York Times* on May 2, "For Science's Gatekeepers, a Credibility Gap." (www.nytimes.com/2006/05/02/health/02docs.html)

Peer review is standard for journals, but is not the only way to organize a conference. Some respectable conferences allow any member of the profession to present. Others invite speakers. Some leave all decisions to the program organizers. In deciding how to fund research, the US National Science Foundation relies on peer review, but DARPA finds program managers it trusts and gives them considerable discretion. The European Union leavens peer review with geo-political considerations. All have had singular successes, all have made investments that were not rewarding.

Peer review can work against "outsiders," especially with highly selective conferences where an author has no opportunity to revise a submission before a decision is made. Researchers from other fields are outsiders. When most reviewers are academics, practitioners are outsiders, prone to omit citations of related work, for example. Through peer review, highly original work can run up against what one Nobel laureate called COWDUNG—the conventional wisdom of the dominant group.

In many fields, journals rely on peer review and conferences use more inclusive approaches as a way to build community. But much of US computer science has shifted its quality showcase from journals to highly selective peer-reviewed conferences. Journal peer review is an awesome resource-free consulting by experts—and journal acceptance rates are higher than those of our conferences, because journals make heavy use of "revise and resubmit" decisions. Last week I spoke to a researcher who said, "When I was coming up for tenure I stopped submitting to conferences and just submitted to journals. I've never had a journal submission rejected, but about half of my conference papers are rejected." But our field has moved away from journals, and is wrestling with the consequences.

—JG

COMDEX Japan and two other exhibitions) and Taiwan's PC-focused Computex.

THE CANARIES' MESSAGE

"Segmentation and specialization within the industry due to increasing complexity have created the need for new conferences and exhibits... To be quite frank, these changes have occurred more rapidly than the AFIPS Board and NCCB had anticipated."

-- John Gilbert, AFIPS Executive Director, in March 27, 1987 memo to the AFIPS and National Computer Conference Boards.

Continual advances in hardware and ingenuity in software produce a stream of new and generally less expensive technologies being used in more diverse settings. At the same time, earlier technologies mature and cease to attract the same level of research and commercial curiosity. Some trade shows surfed this wave successfully for a time, but the unpredictable dynamism eventually takes most by surprise as the crowds shift to other venues. Closely associated research conferences fail or shift focus to academic research. The end can come quickly. In the case of AFIPS, the retreat was so disorderly that it fumbled its legacy.

Research conferences that are not tied to trade shows are more insulated economically, but this may only mean that change registers more slowly and goes unnoticed. As use of a technology spreads, specialized conferences appear. Emerging technologies generate new research issues and new conferences. Where the status quo is largely acceptable, a research area may wither or become aridly academic.

In this way, old research conferences dwindle and die as new ones appear. The annual ACM Conference ended in 1984, the annual ACM Computer Science Conference ended in 1996. SIGGRAPH is half its 1997 size. CHI peaked in 2001 and has since become increasingly academic. Meanwhile, conferences on ubiquitous computing, mobile computing, games research, assistive technologies, design and other topics have thrived.

RESOLVING THE AFIPS MYSTERY AND MAKING AVAILABLE A QUARTER CENTURY OF PROCEEDINGS

I was stunned that there was no legal way to reproduce, electronically or on paper, some of the most important papers in HCI history. Three solutions presented themselves: (i) reproduce the papers illegally and hope that no one surfaces with both a solid claim and a good lawyer; (ii) identify the copyright owner; (iii) change the laws governing copyright. I pursued (ii). Happily, Lawrence Lessig and others are pushing Congress to enact (iii).

ACM and IEEE searched their records and found nothing. The AFIPS archive in Minneapolis was incomplete, and no past AFIPS officer I contacted had any record or recollection. The Library of Congress was no help. However, the online records of the Copyright Clearance Center produced a surprising attribution: Springer. But the Springer manager of copyrights and licensing found no record of owning the proceedings. CCC then said they would change their attribution to ACM, which seemed more plausible. When I pressed, the CCC archivist said that their information had come from Bowker Ulrich. This was the first I had heard of Bowker Ulrich, which maintains a database of periodical information. A cheerful though skeptical analyst at Bowker Ulrich typed in "National Computer Conference" as we talked on the phone and was pleasantly surprised when a record popped up. It had the correct conference dates and a contact phone number that turned out to be Springer's front desk.

Meanwhile, my endless canvas of collective memory reached a retired IEEE employee who is so far the only person to recall something. AFIPS was trying to raise money, he said, and offered their proceedings for a price. IEEE considered it but "decided it wasn't worth the candle." A non-AFIPS publisher bought it, he recalled, "Cambridge University Press comes to mind." "Could it have been Springer?" I asked. "Conceivably," he said. (Cambridge reports no record of owning it.)

On the legal front, "orphan works" legislation now before Congress will limit liability for reuse of materials after "a good faith, reasonably diligent search to locate the owner of the infringed copyright" is undertaken. If a copyright owner subsequently came forward, they would no longer be eligible for monetary damages beyond "reasonable compensation for use."

ACM would like to scan the proceedings into its digital library. ACM would also give the electronic version to the Computer History Museum. If Springer produces no claim and Congress acts, the orphaned works clause can be invoked. These important and interesting papers should soon be accessible. A good faith, reasonably diligent search has been made.

A TIP OF THE HAT...*To Mark Mandelbaum, Diane Cerra, Rhea Siegel, Carrie Seib, Larry Press, Jon Meads, and dozens of past and present volunteers and employees of AFIPS, IEEE, ACM, and other organizations. To Howard Funk, Seymour Wolfson, Herb Grosz, and Dave Brandin, for extensive recollections and suggestions, Pamela Ludford for library research, and True Seaborn for the one hazy memory.*

RESOURCES **1.** For AFIPS history, Charles Babbage Institute: www.cbi.umn.edu/collections/inv/cbi00044.html **2.** For Orphan Works legislation and RSS feed: www.copyright.gov/orphan **3.** For West Coast Computer Faire and other cool stuff, the DigiBarn Computer Museum: www.digibarn.com