

Leo - Looking Back, Looking Forward: Report of the Business Computing – the Next 50 Years Conference, London Guildhall, November 5 and 6 2001.

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It is often said that in war, the winner writes the history. So also might it be said about commercial competition, the winner owns history. For the first half century of business computing, the clear winners have been American companies and they triumphantly own the history. Certainly for early computer science, the achievements were borderless. American pioneers like Herman Hollerith can hardly overshadow the achievements of British groundbreakers like Charles Babbage. Mauchly and Eckert with their American ENIAC share fame with the British Colossus based on Alan Turing's Universal Machine. But when it comes to business computing, much of British history was eclipsed with the 1964 Big Blue introduction of a revolutionary operating system (OS/360) and a "family" of computers that provided a common software environment across differing scales of computers. It was indeed an incredible achievement, reached at the cost of \$5 Billion, 60,000 new employees, and five new plants. To be fair, just about everything in business computing was eclipsed by this event, including such American electronics giants as RCA and GE.

But also lost in the American shadow of IBM's incredible success is the wonderful story of the world's first business computer, LEO, the Lyons Electronic Office. Lyons was a gigantic British chain of teashops, and had developed a corporate spirit that greatly valued independence and self-reliance. When they needed reliable and efficient delivery vans, they built their own. And when they needed better business machinery, they also built their own. In fact, they were years ahead of the business machine industry itself, launching the first business computer, the LEO I, in 1951. LEO later developed into a separate business line and a separate company that manufactured LEO computers and operated LEO service bureaus.

In typically understated British fashion, the veterans of LEO gathered in London this past November and celebrated with cerebral flair fifty years of business computing: the golden jubilee of LEO. It was a symphony of contrasts. The first contrast was the setting, the ancient Guildhall of The City of London. The Guildhall was rightfully occupied by the LEO jubilee under the auspices of the Worshipful Company of Information Technologists. This Company is the guild for computing, granted Livery status in 1992, and ranked now among the other London guilds, some of which date from the fourteenth century. Here, stone-carved medieval faces peered down upon the proceedings, seemingly mystified by the central role occupied by technology in their venerable hall. We, in turn, peered back, equally mystified by the weight of centuries that seemed to be accepting this presence into the history of human craft. It was an awing contrast of medieval history and modern technology.

The second contrast lay in the age of the participants. Naturally, the LEO originators had grown old, but they were not *that* old. A tribute to their original youth, many of the early team were present. Clearly, the LEO originators had included a youthful bunch. More to the point, these graybeards did not behave like proper geezers. They behaved more like recently graduated computing students. When they spoke of computing, they vibrated. One sensed the same obsessive excitement as a teenaged encounter with a Linux download. Bones may have aged, but my hopes rose that the spirit of pioneering computing may prove ageless.

The third contrast was the direction of interest. One would have expected the participants in the golden LEO jubilee would have focused on the past. Instead of ruminating the LEO history, the participants seemed much more excited about the current directions of computing. There were of course, some bleary eyed moments when participants extolled the elegance of LEO systems software (written of course, in contrast to the Big Blue experience, in only a few weeks by only a few programmers). Bemoaned also was the 1963 English Electric merger that spelled the demise of the LEO production line. There was indeed a sense of history in the moment. Mostly, however, the participants were more interested in discussing the future of computing.

Indeed, the program of the two-day jubilee conference reflects this interest. Only three sessions were predominantly historic including two lectures and one panel discussion. The panel considered “What have we learnt in 50 years?” Professor David Mowery lectured under the title “LEO to Linux: an economic historian's perspective on the development of IT and its applications in the business world,” and the IEE Pinkerton Lecture was delivered as part of the LEO jubilee by David Caminer “LEO and the computer revolution.” Caminer is distinguished as both the first systems and programming manager and the first systems analyst to chart a routine business computer job (for LEO, naturally).

Caminer's Lecture sparked a lively debate over the history of commercial leadership of British and American computing. Caminer charged that British computing had lost the lead and had a lot of catching up to do. In a closing comment, Frank Land highlighted the remarkable achievement represented by LEO in fundamental learning about business computing and described how this had in no way been diminished by the computing shake-out of the past decade.

The remaining sessions were forward looking, seven workshops dealt with the future of the “e-world,” Judith Mayhew lectured on “Information management and the future of London,” John Ashworth on “Knowledge management and digital information,” and Cherine Chalaby on “Investor criteria for the future for business computing.” Panels discussed “economic and social consequences and public policy” and “Crystal ball 2001-2051.” Chandra S Amaravadi delivered a National Computing Center prize paper commissioned to mark the LEO jubilee and entitled “The world and business computing in 2051”

The seven parallel workshops were fully participatory, and included “Company infrastructure for the e-world,” “Globalisation in the e-world,” “Knowledge sharing,” “Lessons of the dot.com fallout,” “Security risks and precautions,” “Transition into the e-world,” and “Virtual organizations.” These workshops were exciting exchanges of new ideas based on long experience. I participated in the workshop on company infrastructure, which concluded with several remarkable observations, including the need for core IT competence for networked organizations. This need greatly modifies the degree to which these kinds of organizations may outsource their IT function

The organizers of the LEO jubilee have created and maintained a terrific web site, with copies of the program notes, presentations and papers. <http://is.lse.ac.uk/leo/>

At the gala dinner, participants were introduced to this year’s LEO award winner, Professor Gordon Davis. The LEO Award was established in 1999 by the Association for Information Systems for the purpose of recognizing truly outstanding individuals in the Information Systems community, both academics and practitioners, who have made exceptional contributions to research in and/or the practice of Information Systems. The naming of the LEO award by this prominent IT professional group raises hopes that the story of LEO, the first business computer, will eventually emerge from the shadows of history and help illuminate the future of computing in the coming century.

The story is told in the book “LEO: The incredible story of the world’s first business computer” by Caminer et al. (McGraw Hill, 1998). LEO I, the first business computer ran its first commercial job in 1951. The last LEO 326 was switched off in the British Post Office in 1981.

Other remarkable observations from the workshop on “Company infrastructure for the e-world”

- The IT infrastructure is too often driven by vested interests: a confrontation pitting plumbing versus politics. Even today, organizational factions sponsor certain technologies making IT infrastructure a battleground of sorts.
- Strategy does not drive IT infrastructure, nor does IT infrastructure drive strategy. These two elements interact, driven by vision, organizational culture and technology.
- The concept of a network economy is not a synonym for the e-world. These are different concepts, the former partly enabled by the latter.
- IT can enable change in internal organizational boundaries only where common practice has been previously forced throughout the organization.
- IT management has yet to solve its fundamental measurement issues. We lack concise metrics for success or performance. This issue reaches beyond finance and accounting.