John H. Dessauer

Born May 13, 1905, Aschaffenburg, Germany; died August 12, 1993, Rochester, N. Y; directed research and engineering at Xerox Corporation for 33 years, having been the major influence in persuading the tiny Haloid Company to acquire Chester Carlson's electrostatic photographic reproduction process and develop it into the technology which was the basis of xerography and the Xerox success.

Education: BS, Institute of Technology, Munich; MS, Institute of Technology, Aachen; PhD, Institute of Technology, Aachen.

Professional Experience: Agfa Ansco, Binghamton, N.Y, 1929-1935; director of research, director of research and engineering, director of research and advanced engineering, executive vice president, member and vice chairman of the board of directors, Xerox Corp.,[1] 1935-1970; retired, 1970.

Dessauer was born in Aschaffenburg, Germany, on May 13, 1905. He first studied liberal arts at the Albertus Magnus University in Freiburg and then chemical engineering at the Institute of Technology in Munich, where he obtained the equivalent of a bachelor of science degree. He received his master's and doctoral degrees in engineering sciences at the Institute of Technology in Aachen, both magna cum laude. He emigrated to the US in 1929, and first joined the research department, and later the photographic paper manufacturing department, of Agfa Ansco in Binghamton, N.Y In 1935 Dessauer joined the Rectigraph Company in Rochester, which shortly afterwards was acquired by the Haloid Company, a small manufacturer of copying cameras and silver-halide photographic papers. It was one of several firms that in the World War II era offered wet-process machines and material to make photocopies of documents. Dessauer established Haloid's research department.

Early in 1945 Dessauer, looking for new product opportunities, came upon an article from the July 1944 issue of *Radio News* which described Chester F. Carlson's electrophotography process. He later recalled, “It was as if lightning struck when I read that article. What came to mind first was that it could be used for reproducing documents and letters.” After some preliminary investigation, Dessauer and the new young vice president of Haloid, Joseph C. Wilson, visited the Battelle Memorial Institute in Ohio where Carlson gave a manual and very messy demonstration of his novel copying process. The two Haloid executives were impressed, saw the problems and the possibilities, and as of January 1, 1947, took a limited license. It was an offer that had been turned down by dozens of others, including GE, RCA, IBM, and Remington-Rand, which later became major computer companies.

Carlson's copier concept was embryonic and far from commercial viability. It took Dessauer's fervent conviction of its potential value, which he demonstrated in enthusiastic leadership, to resolutely and persistently attack the thousands of problems in the poorly understood technologies of photoconductivity and electrostatics that had to be overcome.

A corporate obituary had this to say of him [Bickmore et al. 1993]:

> The uncertainties of pioneering the unproven technology required great faith, perseverance, and courage. “JD,” as he was affectionately known to the technical community, embodied all of those qualities in abundance.

[1] Rectigraph Co., Rochester, N.Y, acquired by Haloid Co., which became Xerox.

He skillfully assembled and managed a team of young, creative engineers and scientists, and guided the multi-functional efforts needed to solve problems ranging from solid state physics, to optics, to the chemistry of polymers and pigments, and to mechanical design. He instilled a spirit of teamwork in R&D groups by recognizing the individual skills within the groups, thus avoiding intra-team rivalries. Dessauer's conduct at staff meetings was formal and somewhat authoritarian in approach; yet he showed a ready smile and a personal warmth that inspired trust.

Dr. Dessauer also maintained effective interactions with the business staff. He viewed himself as a “transducer” between the technical and business communities, and, as he wryly noted, at times this required him to act as a “filter.” On the one hand, he shielded the technical staff from unrealistic business pressures; on the other hand, he reassured the business staff that seemingly insurmountable technical problems could be solved. His overall appreciation of both technical and business issues allowed him to plan and direct the R&D work in a manner consistent with business realities-the needs of customers were foremost objectives in all technical activities.

In 1949 Haloid made its first abortive attempt to market a product based on xerography, a Haloid-invented name. The Xerox (with a capital “X”) Model A Copier (also called the “Ox Box”), was really three machines with one operator who had to execute 39 manual steps in three minutes and transfer a flat, dirty, heavy metal plate from each machine to the next for every single copy to be made. It worked, but nobody wanted to lease it.

This market failure shook even Dessauer's confidence, but although the Model A failed as an office copier, a redesigned version found success producing paper master plates for high volume offset duplicating. This fortuitous application supplied cash for further development. The Model A also showed that a successful office copier had to be child-simple in use.

In 1955 the Xerox Copyflow was tried out on the public. It was semiautomatic and made continuous copies on ordinary paper. It lacked the necessary simplicity. It was not what was needed.

Finally, in 1959, almost 14 years and $75 million after Dessauer first looked at Carlson's process, Haloid Xerox Inc., as it had now become, offered the revolutionary 914 copier, so named because it could copy sheets as large as 9 by 14 inches) This, the first automatic plain-paper office copier, swept all other copiers from the market, including Mimeograph, Photostat, ThermoFax, and Verifax. The 914 and its many successors, copies, and clones, foreign and domestic, became as indispensable as the telephone and changed office life and office practices forever. “Xerox” became a household term and, in spite of the corporation's protests, is now a lowercase addition to the languages of the world as a generic noun and verb.

In that same year Dessauer became executive vice president. In this role he directed an explosive expansion in R&D personnel and facilities. He gave thought to the nurturing and management of creative scientists. Appreciating that peer recognition could be a powerful motivator, he made sure that key contributors had opportunities to present their findings at technical seminars. He was also willing to let creative scientists fail occasionally, for in his view, the only unacceptable behavior was *inaction.* Recognizing that creative people may not be managers, he instituted a “dual ladder” promotion policy to reward valuable technical and scientific employees without requiring that they become administrators.

He, as well as Wilson, always felt deeply about the social responsibilities of corporations, and turned this concern into social awareness supported by action that became a mark of identity for Xerox.

Dessauer continued as executive vice president of Xerox until 1968, when he relinquished the office to an executive from outside Xerox. His replacement, Jack Goldman of Ford, was said to have been surprised to find that the concentration of Xerox's management and research and development, under Dessauer's direction, had been so narrowly focused on xerography that they had very little understanding of the world of digital technology [Bickmore et al. 1993] except, perhaps, that involved in digital imaging.

A member of the board of directors from 1946, Dessauer was vice chairman of the board and executive vice president in charge of the Research and Advanced Engineering Division from 1966 to 1970, when he retired. He participated in the corporate decision process that led to the 1969 purchase of "$900 million in stock of the computer vendor" Scientific Data Systems (SDS), and in the next year to the creation of the Xerox Palo Alto Research Center (PARC). The purchase of SDS is now seen as the first of several ill-advised and abortive efforts by Xerox to buy its way into computing, while PARC, which pioneered in digital imaging, is now recognized as having essentially invented the personal computer, "windows," Ethernet, and the laser printer, all of which were largely ignored by Xerox but accepted and exploited with great success by its competitors.

After retirement, Dessauer set up an office near his home in Pittsford, N.Y., from which he gave financial assistance to charities. He was a trustee, board member, and adviser to several charitable and educational institutions. He was a fellow of the New York Academy of Sciences and of the American Institute of Chemists, a member of the National Academy of Engineering, and in the last year of his life, was made an honorary member of the Society for Imaging Science and Technology. Dessauer held eleven patents. He co-edited *Xerography and Related Processes*, published in 1965, the first technical textbook about the subject. In 1971 Doubleday published his now out-of-print autobiography, My *Years with Xerox: The Billions Nobody Wanted.*[1]

QUOTATIONS

At the time of Dessauer's death, as part of a brief press release, Paul A. Allaire, Xerox chairman and chief executive officer, eulogized, "No history of the commercial development of the xerographic process or Xerox Corporation would be complete without early and prominent tribute to the many contributions made by John Dessauer. All of us at Xerox owe a great deal to him for our jobs, our company, and our industry. The world is a different place because of the part he played in making the office copier a vital element in propelling all of us into the information age."

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[1] By Eric Weiss.

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UPDATES

John H. Dessauer died August 12, 1993. (MRW, 2012)