Creating Adobe Systems

At its inception in December 1982, Adobe Systems had a staff of two: John Warnock and Chuck Geschke.

Starting up a new company was risky, especially for two fortysomething men with families to support. Warnock and Geschke were pragmatists, however. If Adobe failed, they knew they could find work elsewhere, given their pedigrees and the employment climate of Silicon Valley in the 1980s.

Besides, the two were confident in the technology. They knew that the software language they'd developed had natural applications for office environments in which dumb, noisy printers churned out page after page of poorly composed documents.

The programming language that became known as PostScript solved several problems. First, communications between PC and printer needed only one software language instead of a mishmash of specialized drivers and application protocols for each device. Second, the language could describe both text and graphics on one page, thus eliminating the need to literally cut and paste words and pictures onto paperboard. And this language would be hooked up to one of the new, quieter laser printers, sparing workers the clatter of dot-matrix and daisy-wheel models.

These early PostScript test files were coded by hand to demonstrate the language's versatility. The Adobe Systems Journal page was a milestone that assured continued funding from Hambrecht & Quist. It showed all the promised elements of PostScript: text, graphics, and images. The jagged ball was Warnock's killer test program, known as the "Death Star," that smoked out every last bug from the core graphics code.

Preliminary Plans

But above all, PostScript was device independent, meaning that the files printed on a 300-dpi laser printer appeared the same when printed on a 1,200-dpi typesetter—only much better. The fonts were sharper, the graphics smoother, and the pictures more detailed, but the same piece of software spoke the same language to both devices. A file created once could be printed on many machines and look the same on every one. Warnock and Geschke excitedly debated the opportunities for products and services based on such a technology.

For advice on how to start a business, Warnock had flown to Salt Lake City in early 1982 to meet with his former teacher and employer David Evans, who in turn introduced the entrepreneurs to venture capitalist William Hambrecht. In their first meeting with Hambrecht, Warnock and Geschke unveiled their plan to open a series of printing shops at which businesses would drop off their files for output and pick them up later.

"Chuck would be the counterman, greeting customers, while John would be in the backroom mixing up his magic PostScript language that could

Adobe and the Persistence of Personality

John Warnock and Chuck Geschke's partnership will go down as one of the great working relationships of Silicon Valley, along with that of legends Bill Hewlett and Dave Packard. The two men have distinct but complementary personalities, and they share personal values that have made them close friends outside work. Adobe's success and culture are directly attributable to their remarkable partnership.

On John and Chuck

Both are geniuses. But Chuck's genius shows through this company, while John's is right out there in front.

Tom Malloy, vice president, Advanced Technology Group (ATG)

People stereotype them: John's the technology guy and Chuck's the people guy. Chuck *is* very people oriented, and someone had to do the people and business stuff. But he was always very interested in technology; Chuck sacrificed his passion.

Janice Coley, Geschke's longtime assistant

They fit together nicely: Chuck was the calm one, John was the wild man.

Dick Sweet, Adobe scientist

Chuck is the polished seasoned statesman. John is the passionate mercurial inventor.

Linda Clarke, former vice president of applications marketing

On Chuck

Chuck is very logical and methodical. He was the implementer.

Steve MacDonald, original vice president of sales and marketing and former co-COO

Chuck was Mister Stability. He could do things like engineer the font cache in PostScript because it required extended work and attention to detail.

Doug Brotz, ATG principal scientist

Chuck is largely responsible for creating the culture that makes Adobe such a nice place to work.

Ed Taft, ATG scientist

Chuck has a calming influence on people. He grounds them. People would go into his office totally distraught and come out feeling much better.

John Warnock

We had this crazy public address system at the Charleston Road offices. On late Friday afternoons Chuck would get on the loudspeaker and say, "Well, I think it's time for a beer."

Jim King, ATG scientist

> *"John is like your brilliant older brother, while Chuck is like your dad."*
>
> — Bryan Lamkin

On John

John was notorious for his limited attention span. If we didn't get it figured out in a minute and a half, he's out of there.

Doug Brotz

Chuck and I had a saying: "You get the hammer and I'll get the nails." John's mind runs a mile a minute. You have to nail his feet to the floor if you want have a discussion with him.

Steve MacDonald

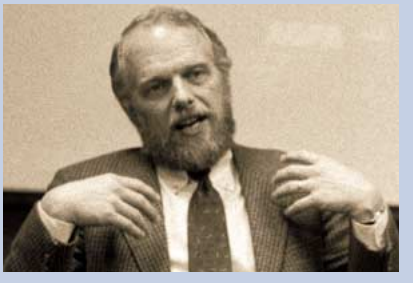
John is always full of ideas about opportunities for Adobe to solve problems in the graphic arts and publishing industries. He is also extremely effective at communicating his ideas to people and motivating them to turn the ideas into real products.

Ed Taft

On Management Style

Chuck and John didn't tell us what to do. They gave us the rope to either succeed or fail.

Dave Pratt, former co-COO and general manager of applications division



John is rather excitable and emotional when speaking on things he is passionate about. Chuck is calmer and more reassuring, which makes him an effective spokesman during difficult situations.

Ed Taft

They're a great team. Chuck was such a good inside person—great with details and the day-to-day. John was the visionary. He always had ideas that may or may not be connected to market reality. It was that equilibrium that helped them succeed.

Paul Brainerd, Aldus Corporation founder

They project a persona that they're just a bunch of scientists and a couple of of nice guys. But I had moments with John when he was not shy expressing his opinion about who had the upper hand. He could be a very aggressive businessman.

Gene Gable, president, Seybold Seminars and Publications

They were like indulgent fathers toward the engineers.

Bruce Nakao, former CFO

On Partnership

I don't think I've ever heard them argue, even though they've had plenty of opportunity to.

Doug Brotz

At one point they switched roles. Formerly, John was Adobe's primary public spokesman, while Chuck oversaw the day-to-day management of the company; in the mid-1990s, Chuck went on the road and John ran the company. They each had complete trust in the other's ability to run the company.

Ed Taft

All major decisions were talked about between themselves. You ask either one of them a question and the answer would be "I gotta talk to my buddy."

Steve MacDonald

On Respect

It was remarkable and inspiring. Just the fact that they could carry off this partnership was pretty amazing. They reinforced and respected each other, and it percolated through the company.

Sumner Stone, Adobe's first director of type development

I can't think of any other two people who maintained that supportive a partnership over that long a period of time.

Jonathan Seybold, founder and former president, Seybold Seminars

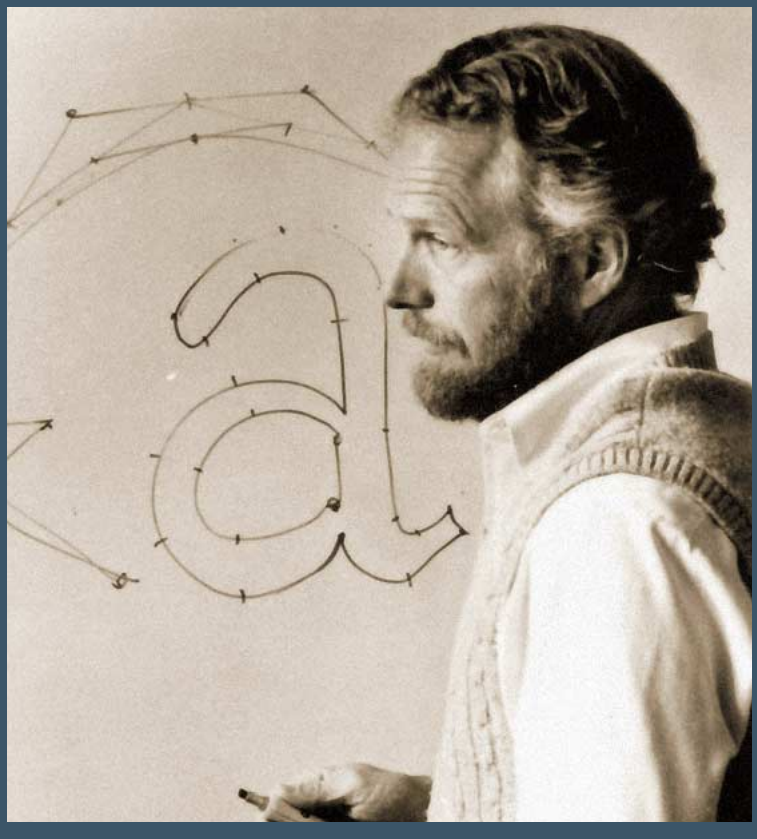
On Each Other

John is the brother I never had.

Chuck Geschke

It has always been great to have a partner who is also my best friend.

John Warnock



Adobe's first logo was designed by Marva Warnock .

produce pages in 15 minutes," says Doug Brotz, a Xerox PARC alumnus and Adobe's fourth hire. Realizing the absurdity of such a scenario—they were scientists after all, not shopkeepers—Warnock and Geschke jettisoned that plan at Hambrecht's urging. Hambrecht then hired a consultant to assist the two men in writing a new business plan.

Warnock and Geschke hatched a revised plan to develop systems composed of high-powered workstations and printers and to sell them to large corporations like Boeing and Hughes Aircraft for in-house use. Leveraging PostScript's device-independent resolution, the workstation would be connected to a laser printer for draft copies and to a typesetter for camera-ready final output.

The plan to develop a new printing protocol for the office environment was good—so good that at least six other companies were trying to do approximately the same thing. Recognizing this competition as a healthy

sign, Hambrecht gave them a personal check for $50,000 as an advance on startup costs when the pair departed Xerox in November 1982. The deal was sealed with a handshake. Later, the firm of Hambrecht & Quist invested $2.5 million in Adobe Systems—the only venture capital Adobe ever received. "Now they had the money to get out of John's bedroom," quips Dan Putman.

Everyone Sweeps the Floor

With the help of Clinton Nagy, a real estate broker who eventually joined the Adobe sales team, Adobe secured a 2,800-square-foot space on Marine Way in Mountain View, California. Warnock and Geschke leased computers and furniture. Friends and family were put to work—even Geschke's 80-year-old father stained the lumber for shelving. Graphic designer Marva Warnock, John's wife, designed the company logo.

Adobe's first office space was located on Marine Way in Mountain View, California.

The hands-on nature of the startup was communicated to everyone the company brought onboard. For years, Warnock and Geschke hand-delivered a bottle of champagne or cognac and a dozen roses to a new hire's house. The employee arrived at work to find hammer, ruler, and screwdriver on a desk, which were to be used for hanging up shelves, pictures, and so on.

"From the start we wanted them to have the mentality that everyone sweeps the floor around here," says Geschke, adding that while the hand tools may be gone, the ethic persists today.

The cofounders started compiling a team, drawing from a pool of friends and former coworkers from Xerox PARC that initially included Dan Putman, Tom Boynton, Doug Brotz, and Bill Paxton; over time they were joined by Ed Taft, Dick Sweet, and others. For some former PARC employees, the idea that business could be built around describing pages for laser printers was "goofy," says Brotz. "Of all the companies that came out of PARC I thought that this one was guaranteed to fail."

Nevertheless Brotz met with Warnock and Geschke over lunch for an interview. Brotz had worked on email systems at PARC and, compared to Warnock, had little experience with computer graphics. He expressed his reservations to the pair. Geschke replied: "You're a smart guy and you can learn. John will whisper everything he knows about graphics in your ear and you will build it." Brotz says today: "I said to myself, 'Even though this will fail, I will have the time of my life for five years.' Ultimately I chose the opportunity that had the least probability of success but the most opportunity for learning and having fun." He started at Adobe in March 1983; as of 2002, he is Adobe's longest-tenured employee.

Like any other startup, Adobe was a bit idiosyncratic. Hewlett-Packard veteran Steve MacDonald remembers going to meet Warnock and

BizStats: 1983

No. of employees: 13

Revenue: $83,000

Other:

>> Adobe incorporated in California

First OEM contract signed, with Apple Computer, to license PostScript driver and fonts for LaserWriter printers. Agreement includes an investment in the company.

Geschke for a lunchtime interview at a restaurant, only to find it closed—no one had called beforehand to check. Over lunch somewhere else, MacDonald was further perplexed to learn that Adobe didn't actually have a job for him—yet. Still he was intrigued and agreed to join the team in six months. He signed on as vice president of sales and marketing in May 1983.

The team swung into action, and a few months after Warnock and Geschke had struck out on their own, PostScript was born. Its authors were John Warnock, Chuck Geschke, Doug Brotz, Ed Taft, and Bill Paxton. PostScript bore little resemblance to Xerox's Interpress. Technically PostScript is much closer to JaM, but mindful of PostScript's origins as the Design System, Adobe entered into a licensing agreement with Warnock's old employer, Evans & Sutherland, to head off any entanglements over intellectual property.

"John had 50 flashes of brilliance a day. Maybe only one would pan out, but he's always thinking of something."

— Doug Brotz

Going Solo

Adobe borrowed a Xerox laser printer from fellow PARC alum Forest Baskett at Digital Equipment Corporation and used it to test its new printer controllers. By March 1983, Putman had a prototype PostScript laser printer up and running. "At that point the only question was what vehicle was going to take us to market," Putman says. Another early implementation of PostScript was developed for a top-secret, somewhat improbable high-resolution gravity-fed typesetter based on fluid mechanics. Putman, Adobe's second official employee and the designated "hardware guy," remarked that the scanning motion of the unusual device would have a smooth action: "All I said was 'Gravity is smooth.' That was the extent of my contribution."

Warnock and Geschke invited publishing consultant Jonathan Seybold to observe their progress. "The whole concept to describe pages in a device-independent way was a real breakthrough," Seybold says. "They took a radically different approach than anyone else. They invented a language and a way to interpret it in the output device so that as long as you had that engine it didn't matter what you put it into. It was exactly what was needed."

Word soon got out, and calls came in inquiring about what the PARC refugees were up to. One call came from Gordon Bell, then vice president of engineering at Digital Equipment Corporation (DEC). Bell told them that his company had spent years working to improve office printing and that while DEC had cracked the workstation and printer problems, it was struggling with the software communication between them. Perhaps Adobe would like to license its software to DEC?

Still intent on building and selling computers, the pair said no.

PostScript's breakthrough was the way it handled fonts. Instead of requiring hand-tuned bitmaps for each style and size of typeface, it could generate fonts of any size and shape from mathematical descriptions. Shown here: Linda Gass, with Chuck Geschke and John Warnock.

Ahead of the Curve

But Warnock and Geschke had another reason to decline Bell's offer. They had the solution to what had stymied their rivals and they weren't quite ready to share it. The key to PostScript's breakthrough was the way it handled fonts. Instead of requiring hand-tuned bitmaps to be generated for each style and size of typeface, PostScript was able to generate fonts of any size and shape from mathematical descriptions and do so automatically on the fly, thereby eliminating intensive manual labor. This method of building device-independent fonts is perhaps Warnock's crowning engineering achievement. To license the technology meant potentially giving up a competitive advantage.

"Technology is never created in a vacuum," Geschke says today. "If you're working on it, then someone else is too. The only way to succeed is to get there first."

In hindsight, although Adobe never built computers or opened storefronts, its original ideas were remarkably on target. The foundation of desktop publishing is PostScript's ability to connect PCs to output devices capable of any resolution, and the walk-in typesetting shops resembled what we now know as service bureaus.

But in 1983 Adobe's plans changed for good when Steve Jobs called.