Adobe Systems, Inc. Essay, Research Paper

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At a time when the business world was

eager for a high-quality way to print documents created on a personal

computer (PC), Adobe Systems was positioned with the software technology

to not only produce professional images, but create a new industry – desktop

publishing.

Like so many of the pioneers in the PC industry, John Warnock and Charles

Geschke escaped the confining structure of a large corporation and used

their entrepreneurial spirit and knowledge to move the industry forward.

In the early 1980s, as IBM was about

to announce its move into the PC market, Warnock and Geschke were working

at Xerox’s Palo

Alto Research Center (PARC) to develop a page-description language

(PDL) called Interpress. Frustrated with Xerox’s refusal to introduce

Interpress, Warnock and Geschke decided to go into business for themselves.

Warnock had written flight

simulation software and Geschke had run the PARC electronic printing

lab for Xerox. Considering briefly the copying business and office printing,

they finally turned to what they knew best, writing specialized software.

In 1982 they started Adobe Systems, Inc.

and began to work on solving some of the long-standing problems that plagued

the relationship between PCs and printers.

Solving Old Problems

For a PC to work with a printer, software

developers had to include print commands, called drivers, in the software.

A different driver had to be written for each of dozens of printers. In

addition, each of the text fonts that would be available to a printer

had to be included in a full range of sizes. There was also a language

barrier between the PC and the printer that didn’t allow the printer to

get a full description of the page, only the text and fonts; users couldn’t

print exactly what they saw on their screen and they were unable to manipulate

the text or change it until after it was printed. At the time, changing

the layout of the text or adding graphic images was typically done by

a graphic artist who would physically cut and paste the document together

after it was printed, then send the pasted-up pages to a commercial printer.

The solution for Warnock and Geschke was to create PDL software that

would work for the PC and the printer; a common language that would not

only let the user manipulate the text, but enable any printer to print

what the user saw on the screen.

Creating a New Industry

Although Adobe was ignored by most of the PC industry, it did attract

the attention of Apple Computers, which was in the process of developing

a new laser printer for its Macintosh PC. By 1984, Adobe had revenues

of over $2 million, 68 percent of which came from Apple. Revenue for 1985

more than doubled when Apple Computers

introduced the Apple LaserWriter. This $7,000 laser printer came with

Adobe PostScript,

a PDL that gave the user more flexibility than ever before. Together,

Apple and Adobe had created desktop

publishing.

Adobe PostScript used a coded description of the page, including a mathematical

description of the text, to communicate directions to the printer controller

card, a Motorola 68000 microprocessor

with at least 1MB of memory. By storing fonts in an outline format description

rather than as a library of font sizes, text could be manipulated to appear

as white on black, shaded, a mirror image, or be stretched, compressed,

or manipulated to produce a variety of effects. PostScript language treated

the text and graphics identically. Because only one printer driver was

needed for all PostScript-equipped printers, the program was machine independent.

With PostScript, a printed page was a combination of the text and graphics,

formatting commands, and the PostScript PDL. This allowed business PC

users to be creative in the layout and presentation of information and

produce dramatically improved documents on their printers. With desktop

publishing, a business could create and modify print materials, store

them on the PC, and print high quality documents without going to an offset

printer. Even if a document was to be professionally printed, the turn-around

times for proofreading and changes were substantially reduced because

the document could be stored and manipulated on a diskette.

Adobe didn’t just target the desktop printers such as LaserWriter. It

saw that the PostScript PDL would be important for $50,000 high-resolution

commercial printers as well as mid-range printers priced at $20,000. Adobe

licensed PostScript to Allied Linotype, Dataproducts, and QMS to serve

the commercial printer market. It was

also supported by word processing programs such as Word, Scenic Writer,

and GEMWrite. Even with its expansion into the commercial printer market,

84 percent of Adobe’s $16 million in revenue in 1986 came from Apple’s

royalty payments for the use of PostScript in its printers.

By 1987, Adobe had agreements with IBM, Digital,

AST Research, Hewlett-Packard,

and Texas Instruments for them to use

PostScript in their printers. By expanding into companies whose products

competed with the Apple LaserWriter, Adobe risked losing the support of

the company that put Adobe on the map.

Rumors of Apple manufacturing a new printer based on its own QuickDraw

PDL caused Charles Geschke to comment, "That’s no reason to destroy

a relationship."

In 1987, with 400 software programs supported by PostScript, Adobe introduced

its own illustration software, Adobe

Isllustrator, for the professional graphic artist. Adobe seemed to

be the company leading the charge into the world of desktop publishing.

Adobe owned rights to 200 typefaces, had the de facto standard PDL, an

agreement with Steven Jobs at NeXt to develop a version of PostScript

for workstations, and had received a royalty on more than 26,000 printers

that had been sold with PostScript.

In 1988, Adobe added thirteen fonts to its library and introduced the

Font Folio, a $9,600 hard disk containing its entire font library. Users

could download the entire library of fonts one time and only have to add

the quarterly updates of additional fonts. Compugraphic and Varityper,

two commercial typesetter manufacturers, brought out high-resolution laser

printers (1900 dots per inch to 2400 dpi) with PostScript. Adobe continued

to work with desktop printer manufacturers and added Matsushita

and Ricoh, two Japanese manufacturers,

to its list of supporters. Ricoh manufactured printer engines for several

original equipment manufacturers (OEMs), and the alliance with Ricoh was

the first time Adobe had dealt with a company other than a printer manufacturer.

Competition

Clones of PostScript were beginning to eat into Adobe’s market by offering

PDLs that many printer manufacturers and customers felt were good enough.

Phoenix Technologies, Ltd. and Conographic Corporation had introduced

their own PDLs in 1987, and by 1988 they were gaining acceptance. Some

laser printer manufacturers began to feel pinched by the additional price

they had to charge for a PostScript printer to pay the Adobe royalty.

Customers were buying impact printers, which couldn’t compare in quality

with the laser printers, but cost one-tenth the price of a laser printer.

Adobe’s 1988 revenues were $83 million, 75 percent of which came from

PostScript, and the clones were threatening to take part of the low-end

printer market. While Adobe’s PostScript was a product that had widespread

support by its users, Adobe failed to see that it was stifling growth

to maintain its reputation. Although the company began 1989 with first-quarter

revenues of $25 million and a strong future, by the end of the year Adobe

Systems would be a much different company.

The Battle for Supremacy

For Adobe Systems, 1989 was a turning point. In June, it and Apple were

served with a patent infringement lawsuit by a typesetting company, Information

International, Inc., and by September Apple and Adobe would be at war.

In June, Apple sold off its 16.4 percent equity in Adobe Systems and began

development of its own PostScript clone. Although printer and PC manufacturers

were on the verge of declaring PostScript as the standard PDL, Adobe found

itself in a battle with Apple to be accepted as the industry standard

for the display PDL to be used for PC monitors. Apple was using QuickDraw

for its Macintosh screens instead of Display PostScript, and Microsoft

was introducing its own graphical user interface (GUI) in Windows and

Presentation Manager.

To counter the threats from Microsoft and Apple, Adobe developed a program

that would allow Macintosh and OS/2 users to use the Adobe typeface software,

even without a PostScript printer.

In September, just prior to the Seybold

Computer Publishing Conference, Apple and Microsoft announced that

they would join together to develop an open-font standard for the OS/2

Presentation Manager and Macintosh System 7. PostScript had always been

a closed-font standard and Adobe had closely guarded the specifications

to make it difficult for third-party font developers to produce clones.

Although the new Macintosh system was one year away and the Microsoft

OS/2 system was two years away, the announcement was a clear shot at Adobe’s

PostScript, which had grown to be the largest collection of fonts in the

world.

Immediately after Microsoft’s Bill Gates made the predicted announcement

at the conference, John Warnock, who felt Apple had betrayed him, got

on stage and released Adobe’s specifications for PostScript Type 1 fonts

to the public, instantly making PostScript an open-font standard so developers

could create fonts without paying licensing fees to Adobe.

The two announcements had the potential to split the industry into two

camps — those who would develop for Adobe’s PostScript and continue to

support PostScript in their printers, and those who would side with Microsoft

and Apple and the companies who had committed their support to the new

standards.

In December 1989, as the battle with Apple continued, Adobe gave the

code for its Adobe Type Manager to Insight

Development Corporation so it could begin developing software drivers

for MacPrint and JetWriter. This move enabled Mac users to print on inexpensive

Hewlett-Packard LaserJet and DeskJet printers instead of the $7,000 Apple

LaserWriter.

In 1990, Adobe gained ground when IBM announced that it would support

Adobe’s Type 1 fonts as well as Apple’s new emerging technology called

Royal fonts. Although not committing to Adobe exclusively, at least IBM

did not abandon Adobe by joining with Apple and Microsoft.

Because of the loss of revenue from Apple, in June 1990, Adobe’s stock

dropped 30 percent and stockholders filed a lawsuit claiming that Adobe

had given out misleading sales projections and had artificially inflated

the value of the company’s stock.

Electronic Publishing and the Internet

By September 1990 the feud between Adobe and Apple mysteriously disappeared

and they had a licensing agreement to create new products based on Apple’s

printer technology and Adobe’s PostScript. Then in December 1991, Adobe

agreed to deliver Type 1 fonts for Macintosh users and to include Type

1 fonts for Adobe Type Manager (ATM) in future versions of the Macintosh

System 7 to control both displays and printers.

For Adobe, 1992 contained both good and bad news. The class-action lawsuit

brought against the company in 1990 by disgruntled stockholders was dismissed.

But in May 1992 the company was shocked when Adobe’s president, Charles

Geschke, a mild-mannered man who had once studied to be a Jesuit priest,

was kidnapped by two men who demanded $650,000 in ransom. After 5 days

of captivity, Geschke was returned safely and the kidnappers were arrested

by the FBI.

By 1993, it was apparent to the computer industry and especially to Adobe

that electronic publishing was becoming a very important method of distributing

information. Adobe knew that electronic distribution would need the same

capability to present attractive documents as the printer technology had

needed in 1985 and began its effort to dominate the Internet.

In 1993 Adobe released Acrobat,

a program that enabled a user to create a document then use the Adobe

Portable Document Format (PDF) to format it for electronic distribution.

Documents could be viewed on the World Wide

Web (WWW) or through e-mail, Lotus

Notes, corporate networks, CD-ROMs, or a printer, and could even include

a QuickTime movie clip in the

document. In addition, Acrobat could be used in Mac, Windows, DOS, or

UNIX platforms.

To continue its move into electronic publishing, in 1994 Adobe merged

with Aldus, the company that produced PageMaker, a page composition software

program. In 1994, having faced off with Microsoft and won, Adobe turned

around its decline and registered revenues of $441 million in product

sales and $156 million in royalties from PostScript.

The following year, Adobe moved even further into the electronic publishing

area by signing an agreement with Netscape

to integrate Acrobat technology into the Netscape Web navigational software.

In September, Adobe agreed to purchase Ceneca Communications, Inc., a

developer of WWW publishing and site management tools. Ceneca’s PageMill

software eliminated the need to understand the complex document formatting

for the WWW and made it as easy to produce Web pages as word-processed

documents. Ceneca’s SiteMill program simplified the management and administration

of Web sites.

But Adobe had not abandoned print technology and, in fact, strengthened

its presence in the printing industry in 1995 by spending $460 million

to buy Frame Technology. Its FrameMaker software program made it easier

to create, format, and publish long documents such as books. Adobe finished

1995 with revenues of $762 million.

In 1996, Adobe joined with 26 industry leaders to collaborate on the

development of SUPRA, an architecture to integrate PostScript and Adobe

PDF technology for the future high-end print market. SUPRA was conceived

to offer high page rates, provide on-demand printing, and integrate the

preprinting and finishing operations needed to work with digital presses,

color copiers, and digital plate makers.

Although Adobe’s Acrobat software had seemed like a good idea in 1993,

it had been poorly marketed and was slow to catch on. As with all software

to create WWW sites, it could only work if the end user had access to

a version of the software to view the rich text and graphics of the documents.

So in 1996, Adobe created Amber

and worked with Netscape to make it a seamless part of the Netscape browser.

Adobe charged $3,000 and up for the version of Amber that allowed people

to create Web pages, then made it available at no cost to people accessing

the Web, just as Netscape and others had done with their software.

Later, Adobe announced that it would work with Apple and Netscape to

develop an open, cross-platform technology for Type 1 and TrueType fonts

that could be used to create and view hypertext and PDF documents. Apple

agreed to bundle Adobe Acrobat and Netscape Navigator with its Internet

Connection Kit and the Apple Internet Server Solution. According to John

Warnock, Chairman and CEO of Adobe, "By working closely with Netscape

and Apple we intend to bring to the Internet the kind of visually compelling

information users have come to expect in other media."

Continuing its presence in electronic publishing and the Internet, Adobe

in 1996 worked to make its PhotoShop software work with Ceneca PageMill

to develop Web pages.

Summary

In 1984, John Warnock and Charles Geschke created PostScript, an idea

that revolutionized the creation and printing of documents and introduced

a new computer-based industry — desktop publishing. By 1989, Adobe was

simultaneously battling with the largest PC manufacturer and the largest

software company and it appeared that the company might be forced into

the background. Surprising everyone except itself, Adobe fought back successfully

and, by 1996, it faced the future with a full line of products for both

print and electronic publishing — PostScript, Adobe Illustrator, PageMaker,

FrameMaker, Adobe Premier – a non-linear video editing software, Adobe

PhotoShop, and Adobe Acrobat.

Adobe Systems, Inc. is now the world’s third largest software publisher

behind Microsoft and Oracle. PostScript

is used in over 270 products from 40 manufacturers and was selected by

the International Standards Organization

(ISO) as the Standard Page Description Language. Between its acquisitions

and growth, Adobe Systems now employs 2000 people worldwide.

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