Slug, Bleed, Trim & Type:

Enduring Lessons From 35 Years
of Desktop Publishing Software

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**Andvari
Associates**

Executive Summary

The study of history is an important part of the investment process at Andvari. For any company that interests us, we investigate the industry in which it participates. This helps us appreciate the evolution of technologies and organizations. We learn how the needs of customers have evolved. We can understand what motivates leaders and how they might react to changing environments. **Most importantly, this information positions Andvari to better estimate the prospects of a potential investment.**

This paper provides a brief history of the desktop publishing software market from its founding in 1984 until the 2000s. These are the software programs used to edit graphics and to lay out pages for documents ranging from brochures to newsletters to magazines. Andvari focuses on the three, historical players: Aldus, Adobe, and Quark.

Aldus and Adobe were intertwined at the start and, with the help of Apple, gave birth to the market. Quark launched its competing software in 1987, which eventually gained a near monopoly in the professional publishing market. And yet, Quark is just a footnote in history. Aldus, too, has become a footnote, but only after Adobe acquired the company in 1994. Adobe has continued to grow and evolve over time. It is now one of the most valuable software companies in the world. It has set the standards used in graphic design, publishing, media, and the information economy (including this very document).

The history of the publishing niche within the more broadly explosive software industry is a worthwhile study. In fact, it is a representative example of many core values and concepts we embrace at Andvari with which we seek long-term investments. At the end of this paper, we work through the enduring lessons highlighted below, which are still applicable to investing today and to all businesses.

ANDVARI'S 7 LESSONS
FROM THE HISTORY OF DESKTOP PUBLISHING

- Multiples Can Compress Quickly
- Know Your Customer and Take Care of Them
- Better Together / Bundling
- Importance of R&D & Value-CREATIVE M&A
- Customer Lock-In: Standards / Integrations / Plug-ins
- Be Wary When a Founder Leaves
- Fertile Grounds of FTC Divestitures

Part 1

(The Mid 1980s)

The desktop publishing industry is spawned by innovators in the newspaper space. A first-mover is born.

Part 2

(The Early 1990s)

A new giant seizes the market and rapidly advances the toolset, delighting many, only to fall prey to a predictable end.

Part 3

(The 1990s & Beyond)

A skilled acquirer and consolidator compounds itself to become the steadfast, standard maker that we know today.

Part 4

(The Present)

We highlight our major takeaways and the lessons learned from this familiar, but under-analyzed software niche.

Part 1: The Birth of Desktop Publishing

The desktop publishing (DTP) market was created in 1985 by Paul Brainerd who founded Aldus Corporation. Brainerd studied business and journalism in school and worked as an assistant to the operations director at the *Minneapolis Star*. It was there Brainerd learned to use a terminal-based editing and layout system made by Atex. Customers of Atex included some of the largest publishers in the world: *The New York Times*, *Boston Globe*, *Chicago Daily*, etc.

In 1980, Atex hired Brainerd as VP of their customer service division based in Boston. Kodak Corporation would then acquire Atex in 1981 for $77 million. Brainerd moved to Seattle to head Atex's division that was developing the next generation of text processing systems. Kodak inexplicably shut down Brainerd's division in 1983. Brainerd left to start his own business.
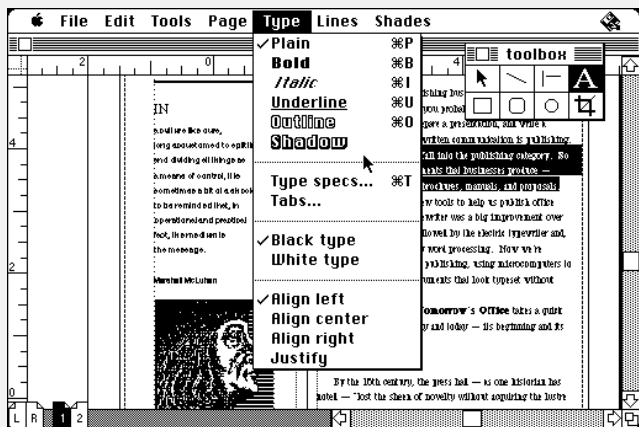
Left: screen shot of Aldus PageMaker 1.0

Right: Aldus founder Paul Brainerd on July 5, 1985 (photo David Healy)

Aldus Corporation was born in 1984 in Seattle, Washington, when Brainerd used all his $100,000 in savings to hire four other Atex microcomputer engineers. The plan was to create and sell a page layout software program that could take advantage of the Apple Macintosh. They coined the term "desktop publishing" as a simple way to describe their offering. With only six months of runway, Brainerd and his team developed a business plan, wrote out functional specifications, built a prototype, interviewed dozens of prospective customers, and raised the additional capital they'd need to grow the business.

Aldus designed PageMaker to take advantage of the Mac's new graphical user interface (GUI) and Adobe's PostScript page description language that enabled cheap, high-quality printing from Apple's new LaserWriter printer. At the time, the total cost to set up a print shop was $100,000. Together with Apple's new LaserWriter printer and Adobe's technology, Aldus helped bring the total cost down to $10,000.[1]

VOICE OF THE CUSTOMER

To ensure PageMaker had all the right features, Brainerd and his team took a week to get feedback from potential customers. Brainerd and his team traveled south down Interstate 5 from Seattle and stopped in each major town along the way to talk with small newspapers about Aldus' page-layout solution. The newspapers loved Aldus' idea, but because they were all owned by larger entities, the procurement decision would be a one to two-year process.

Brainerd quickly pivoted. Aldus shifted its focus to a different set of customers that could make faster decisions.[2] Brainerd talks about the importance of a company knowing its customers:

> *It's why it's so important to talk to customers. They loved what we were doing in terms of what it could give to them, but I realized that that market wasn't the right market. When I started working on the marketing section for the business plan, **I totally revised our strategy to focus on small business, offices, churches, schools, small publishers, and that's where the whole desktop publishing idea came from.***

Furthermore, even though one would think the founder and CEO of a company would appreciate the full potential of his own product, Brainerd still wildly underestimated the combined value proposition of PageMaker, Apple's LaserWriter printer, and the Macintosh computer:

> *We were absolutely amazed at how many small publishers there were, particularly organizations like churches. On the phone one day to an early customer, I just asked, "By the way, how many of these do you publish?" And he said, "Oh, about 650,000." I just dropped out of my chair! **We didn't have any concept that church publications would be going to 650,000 people; and that PageMaker would be the tool that they'd be using for that kind of publishing.** It was just beyond our imagination.[3]*

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[1] "Desktop Publishing Pioneer Meeting: Day 1 Session 4 - Technology in the 1980s", Computer History Museum. page 34.
[2] "Oral History of Paul Brainerd. Recorded May 16, 2006", Computer History Museum, Page 10 of 25.
[3] "Oral History of Paul Brainerd. Recorded May 16, 2006", Computer History Museum, Page 11 of 25.

THE SAVINGS FROM USING PAGEMAKER

Aldus released the first version of PageMaker in July 1985 for Apple's new Macintosh computer. PageMaker first retailed for $495 (nearly $1,200 in 2020 dollars) and "included all the basic elements needed to lay out pages: free form drag and drop positioning of page elements, sophisticated type tools, a well-chosen selection of drawing tools, the ability to import text and graphics …, and the ability to print to high resolution PostScript printers with WYSIWYG accuracy."[4]

The graphic below (taken from a 1987 PageMaker Marketing Handbook) compares the costs of different methods of creating a camera-ready, 16-page monthly newsletter that includes headlines and artwork.[5] The annual savings with PageMaker could be in the range $15,000 to $22,000—a substantial amount in 1987.

Production task	Conventional method using some in-house facilities		Conventional method using all outside services		Desktop publishing method using PageMaker	
	Cost	Day	Cost	Day	Cost	Day
Preliminary layout and design	$90	1	$300	1	$30	1
Text mark-up	30	2	100	2	N/A	
Typesetting and coordination	930	3	1000	3	N/A	
		4		4		
		5		5		
Proofreading	80	6	160	6	40	2
Camera work	200	7	200	7	40	3
Final paste-up	100	8	200	8	40	4
		9		9		
Total number of days	9		9		4	
Cost per issue	$1,430		$1,960		$150	
Cost per year	$17,160		$23,520		$1,800	
Savings per year with PageMaker					$15,360 to $21,720	

ALDUS GOES PUBLIC

Starting in 1984 with nothing but an idea and all his savings, Brainerd took Aldus from zero to nearly $40 million in revenues by the end of 1987. Sales rocketed because Aldus had exceptional product-market fit. The cost savings were real. PageMaker's focused its marketing efforts on the right set of customers that could quickly make a buy decision: communications professionals in the

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[4] "Aldus Pagemaker", History-Computer.com. https://bit.ly/2JYPxWs
[5] *PageMaker Marketing Handbook*, 1987. https://bit.ly/2VIrDkD

graphic design, marketing, and advertising fields. Aldus then expanded their customer base to "to the much larger market of business professionals who use PageMaker to effectively communicate information and ideas in their printed materials."[6]

The company offered shares to the public in June 1987. The Aldus IPO was a hot one. Richard Shaffer, editor of the *Technologic Partners Computer Letter*, said, "Aldus has the pizazz and appeal of a Lotus" and that desktop publishing "is the most important new use of a PC since the spreadsheet".[7] The company first contemplated $14 to $16 a share for its IPO, but interest was strong and they raised the price to $20. Aldus' share price nearly doubled on the first day of trading.

ALDUS STARTS STRONG, BUT THEN RUNS OUT OF STEAM

	1985	1986	1987	1988	1989	1990	1991	1992	1993
Revenues	2,234	11,136	39,542	79,054	87,853	134,983	167,530	174,132	206,780
% growth	-	*398.4%*	*255.1%*	*99.9%*	*11.1%*	*53.6%*	*24.1%*	*3.9%*	*18.7%*
Gross profits	2,073	10,069	30,942	61,958	67,372	108,551	134,940	134,711	165,293
% margin	*92.8%*	*90.4%*	*78.2%*	*78.4%*	*76.7%*	*80.4%*	*80.5%*	*77.4%*	*79.9%*
Op. income, adj'd	654	3,960	11,482	19,655	18,287	30,238	29,849	6,057	21,459
% margin	*29.3%*	*35.6%*	*29.0%*	*24.9%*	*20.8%*	*22.4%*	*17.8%*	*3.5%*	*10.4%*
All figures in $ thousands except percentages. Sourced from Aldus annual reports. Fiscal year end 12/31.									

Growth at Aldus would eventually slow as it found itself between a rock and a hard place by the end of 1991. Competition had emerged at the low and high ends of the market. WordPerfect and Microsoft Word were at the low end while Quark Software, a name we will focus on shortly, was at the high end. Aldus also delayed shipping PageMaker 5.0.

All this caused sales growth to slow. In 1992, Aldus replaced its COO and laid off 11% of its U.S. work force.[8] The company would yield more market share to the next dominant name to rise in the publishing space: Quark. But don't forget the name, Aldus. We are not quite done with it yet.

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[6] Aldus Corporation 1987 Annual Report, page 2.
[7] Fisher, Lawrence. "Aldus Drawing Guarded Praise", *New York Times*, June 26, 1987. https://nyti.ms/3kRx2jf
[8] Borzo, Jeanette. "Aldus lags behind in DTP market", *Info World*, May 3, 1993. https://bit.ly/36Rxw3O

Part 2: Quark Overtakes Aldus

Quark Software's desktop publishing program, XPress, emerged soon after Aldus' PageMaker and steadily took market share. PageMaker's share of the desktop publishing market was 60% in 1990 and then 54% in 1991. XPress went from 25% to 36% over the same time.[9]

QUARK TIMELINE[10]

Year	Event	Year	Event
1981	Tim Gill and Mark Pope found Quark Software in Denver, CO. The first two products were for Apple computers: a word processor and a program that let users run floppy disk-based applications from a hard drive.	**1991**	XPress continues to take market share away from Aldus PageMaker.
		1993	Quark hits $120 million in sales, up 50% from 1992.
1987	Quark releases XPress 1.0, a product for page layout and desktop publishing. XPress begins to gain market share from PageMaker even though XPress was priced at $695 versus $495 for PageMaker.	**1998**	Quark makes failed bid to acquire Adobe after Adobe's market value falls by over 50%.
1988	XPress 2.0 released and priced at $795. It was aimed at pros in the newspaper and magazine publishers. It was the first program capable of color separation of four-color line art on the Mac.	**2000**	Tim Gill leaves Quark and sells all his shares for $500 million to CEO Fred Ebrahimi.
		2011	Quark sold to Platinum Equity for undisclosed amount.
1990	XPress 3.0 released. MacUser says the new XPress "sets a new standard for Macintosh desktop publishing."	**2017**	Quark sold to Parallax Capital Partners for undisclosed amount.

Improved and expanded functionality becomes an important theme in Quark's ascendancy. Quark targeted XPress at the professional publishers. XPress had more precise layout tools and Quark priced it $100 higher than PageMaker.[11] An important innovation that allowed Quark to surpass Aldus in the professional market was its plugin system called Xtensions. This allowed XPress users to add custom technology to suit their unique needs and workflows. A publisher's investment in this ecosystem of niche plugins further cemented XPress as the dominant professional page layout software and reduced the odds of switching to a competing product.

At the height of its power in the late 90s, Quark had a 95% share of the DTP market with its Quark XPress product.[12] Nearly every book, magazine, and newspaper publisher used XPress. However, despite complete domination of the DTP market, Quark would eventually lose all their share by the late-2000s. Quark still exists, but it is a shell of its former self.

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[9] Borzo, Jeanette. "PageMaker users fear update delay", *InfoWorld*, Aug 17, 1992. https://bit.ly/3bRtx9K
[10] Reference for Business. Quark, Inc. https://bit.ly/361rWNp
[11] "Interview with Tim Gill", Computer History Museum, recorded April 11, 2019, page 21. https://bit.ly/2VZYjWB
[12] Girard, Dave. "How QuarkXPress became a mere afterthought in publishing", *Ars Technica*. Jan 13, 2014. https://bit.ly/372nWLP

WHAT IS CUSTOMER SERVICE?

The major factor contributing to Quark's decline came down to a familiar problem: Customer Service. For examples of how poorly Quark would eventually treat its customers, we can go to the old Fog Creek Software forum, a popular online forum for developers in the early 2000s.[13]

One user's post documents the decline of service in vivid detail. After Quark's remaining co-founder sold out to Quark's CEO Fred Ebrahimi in 2000, Ebrahimi "fired the entire development staff and outsourced all development and customer service to India." Quark also still did not have a version of XPress that could run on Apple's newest operating system, OS X. The project to port XPress took two years.

Lack of features, a dismissive and hostile attitude towards its end users, and an out-of-whack price-to-value proposition (XPress was $945 compared to $699 for Adobe's InDesign), all contributed to Quark's slow decline. Regarding the frustrating lack of features:

> *Among the problems are file incompatibility, draconian licensing, sluggishness, poor feature set, nonstandard UI, instability, and so forth. In addition to this, the program re[q]uires a flakey and unreliable dial up activation scheme as well as a dongle and can only be run on one computer total. If you want to work on your lap top AND your desktop as just about everyone does, you MUST buy 2 licenses at an outlay of two thousand dollars.[14]*

Regarding Quark's customer service:

> *In addition, customer support is abysmal. For your money you are entitled[sic] to only one customer support issue through email. If you have a second issue, you must pay $15 for each emailed-to-India question. Customers have found that Quack hangs up, refuses to answer, provides nonsensical answers, and requires you to pay multiple times in a single-issue guessing game in which they play stupid in response to your questions in order to bilk you out of additional support money, just like a phone sex operator tries to keep you on hold as long as possible.[15]*

A hostile and dismissive attitude towards users was on full display at a Quark conference in late 2002. The main topic was Quark's integration with Microsoft's .NET and SQL Server technologies. Audience questions about Quark's lack of support for Mac OS X provoked extraordinary responses from Quark's CEO. Ebrahimi told guests that "the Macintosh platform is shrinking" and that anyone dissatisfied with Quark's lack of commitment to Macs should "switch to something else." At the same time, Ebrahimi admonished those who switched to Adobe's new InDesign as "committing suicide."[16]

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[13] Fog Creek Software was founded in 2000 as a consulting company by Joel Spolsky, who was a Program Manager on the Microsoft Excel team from 1991 to 1994. Spolsky later created the project management software Trello, which was eventually acquired by Atlassian for $425 million in 2017.
[14] Fog Creek Software Forum. Nov 14, 2003. https://discuss.fogcreek.com/joelonsoftware3/86852.html
[15] Ibid.
[16] The NMR Report, *MacEdition*. Nov 26, 2002. https://bit.ly/3nPzzMT

PRIDE COMES BEFORE THE FALL

What happened to Quark for it to take its customers for granted? Well, the usual things that can happen when you dominate a market for a long time. You become overconfident and lazy. Instead of focusing on customer success, you start extracting as much as you can from customers. Product updates become less frequent. Customer service and support become non-existent. Hubris becomes a defining trait.

Research In Motion (RIM) is a fairly recent example of this type of corporate hubris. RIM was the designer of the BlackBerry, a highly popular smartphone in the 2000s known for its full physical keyboard and scroll wheel. At its peak in 2009, the BlackBerry had a 20% market share. Users loved the phone so much that "CrackBerry" was its nickname. Then Apple introduced its first iPhone in 2007. The iPhone had a full touchscreen, a web browser, and other apps. Because RIM had dominated its market for so many years, it failed to take seriously the changing demands of consumers. Eventually, RIM lost its entire market to the iPhone and Android devices.

In Quark's case, unchecked hubris showed up in an unsolicited bid in August 1998 to acquire Adobe Systems.[17] Adobe's share price was cut in half during 1998 because of management problems and poor sales results. Quark saw an opportunity to remove a competitor at a moment of weakness. For context, Quark was a private company with about $200 million in sales and Adobe was public with over $900 million in sales. Quark's bid failed due to its lack of seriousness. A lack of self-awareness and humility can fuel such questionable decision making. These events offer a clear segue to the third major name to seize the space: Adobe.

Quark's Unsolicited Bid for Adobe

QUARK

Private co.
~$200M Revenues
Single Product

Adobe

Public co.
$900M+ Revenues
Diversified Product Suite

ADOBE'S SHARE PRICE DURING 1998

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[17] "Quark says it wants to acquire rival Adobe Systems", *Computer Business Review*, Aug 25, 1998. https://bit.ly/391pCrw

Part 3: Adobe Enters the Fray

The combination of Aldus PageMaker and Apple's new Mac and laser printer allowed for the creation of the desktop publishing market. However, this leap would not have been possible without the adoption of Adobe's underlying technology.

John Warnock and Chuck Geschke founded Adobe in 1982 to develop their PostScript page description language (PDL). Adobe's PDL was the first universally adopted computer language that described the appearance of a printed page. According to *Inside the Publishing Revolution*, 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.*[18]

But most importantly, PostScript was device independent. This meant that **"a file created once could be printed on many machines and look the same on every one."**[19]

Although the alliance between Aldus, Adobe and Apple was successful, both Aldus and Adobe wanted to diversify their offerings. Both would eventually compete against each other in some areas. For example, Aldus licensed a drawing program called FreeHand that competed with Adobe's Illustrator. Adobe developed Photoshop in 1991 and then Aldus acquired PhotoStyler in 1993.

ADOBE MILESTONES		
Financial		**Product / M&A**
	1982	Adobe founded
	1983	First OEM contract
	1984	
	1985	First PostScript printer and image setter
$16M Revenue FY '86 Adobe IPO	1986	
	1987	
$83M Revenue FY '88 (291 employees)	1988	
	1989	First Japanese PostScript printer
$304M Revenue FY '90 (1,317 Employees)	1990	Photoshop and Type Manager released
	1991	Adobe Premier released
$520M Revenue FY '92	1992	
	1993	Adobe Acrobat released
	1994	Aldus acquired; PageMaker and AfterEffects released
$762M Revenue FY '95 (2,322 Employees)	1995	Frame Technology acquired
	1996	PhotoDeluxe and PageMill released
$912M Revenue FY '97 (2,654 Employees)	1997	ImageStyler and ImageReady released
	1998	
$1B Revenue FY '99 (2,800 Employees)	1999	GoLive acquired, InDesign released
	2000	
	2001	
	2002	
$1.29B Revenue FY '03 (3,600 Employees)	2003	
	2004	2004 InDesign CS and Intelligent Document Platform released

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[18] Pfiffner, Pamela. *Inside the Publishing Revolution: The Adobe Story*, pg 23.
[19] Ibid.

ADOBE ACQUIRES ALDUS

In 1994, the time was right for consolidation in the industry. Quark was starting to underinvest in its product and was earning a bad reputation for mistreating its customers. Adobe still did not have a publishing and page layout solution and had stumbled in the European market.[20] Aldus had a good publishing solution with PageMaker and was successful in foreign markets. Furthermore, Aldus founder and CEO Paul Brainerd was ready to step down and saw Adobe as the best company to take over Aldus. Thus, Brainerd solicited Adobe about acquiring Aldus. In 1994, Adobe agreed to acquire Aldus in an all-stock deal valued at $525 million.[21]

However, the deal almost didn't happen. Aldus at the time was distributing a product called FreeHand developed by Altsys Corporation. FreeHand was a competitive product to Adobe's Illustrator. Altsys sued Aldus claiming violation of a noncompete clause and then the Federal Trade Commission (FTC) got involved.[22]

The FTC allowed the deal to go through on two conditions.[23] First, Aldus had to divest FreeHand to Altsys. Second, for an entire decade, Adobe agreed to obtain FTC approval before acquiring any interest in any firm engaged in the development or sale of professional illustration software.

Adobe and Aldus agreed to the FTC conditions. Aldus turned over all rights to FreeHand back to Altsys, who then dropped its lawsuit. Aldus then agreed to receive one share of Adobe stock for each Aldus share instead of 1.15 Adobe shares. This reduced the deal value from $525 million to $411 million.[24] Adobe successfully acquired Aldus on August 31, 1994.

Adobe Co-Founders in 1994 Annual Report

Charles Geschke
President

John Warnock
Chairman & CEO

Adobe triumphantly wrote in its 1994 Annual Report about "beginning an exciting new era in Adobe's history" after acquiring Aldus.[25] Adobe had assembled a bundle of products that offers computer users "everything they need to create, manage and share content-rich information on printed and electronic media."

Adobe's Major Products in 1994	
Illustrator	Vector graphics design and editing
PhotoShop	Digital photo editing and manipulation
Premier	Video editing and production
AfterEffects	Video post-production and 2D animation
PageMaker	Page layout for document publishing
PostScript	Page-description software that describes and renders documents of any visual complexity
Acrobat	Software that creates files in Adobe's now-ubiquitous Portable Document Format (PDF)

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[20] Oral History of Paul Brainerd, *Computer History Museum*. Recorded May 16, 2006. Page 18 of 25.
[21] Williams, Scott. "A Friendly Merger—Aldus And Adobe—Aldus Name, Staff Reductions Are In Question", *Seattle Times*, Apr 18, 1994. https://bit.ly/3q4kokT
[22] Flynn, Laurie. *New York Times*. "Aldus and Adobe Lay Claim to Digital Publishing", Aug 24, 1994. https://nyti.ms/3o4PtmL
[23] *In the matter of Adobe Systems Incorporated, et al.,* Federal Trade Commission Decisions. Volume 118. Page 940.
[24] Heberlein, Greg. "Aldus-Adobe Merger Back On Track", *Seattle Times*, Jul 14, 1994. https://bit.ly/3mdasmM
[25] 1994 Adobe Annual Report, page 2.

Although Adobe updated PageMaker through the late 90s, the software was still losing against Quark's XPress. When Adobe's business hit a snag in 1998, Quark made a bid to acquire Adobe. Adobe rebuffed the bid and redoubled efforts on its new DTP product that would replace PageMaker. In 1999, Adobe released InDesign 1.0 as its replacement for PageMaker. Adobe quickly followed with InDesign 2.0 in 2000. The table below shows some of the many InDesign features that were lacking in XPress at the time.[26]
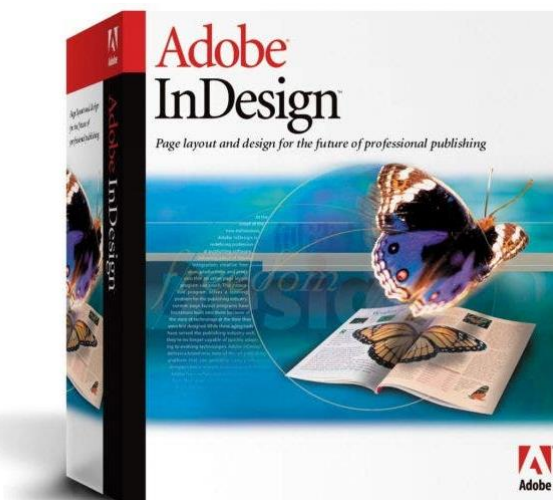
Software Features	InDesign 2.0	XPress 5.0
Support for OpenType fonts with contextual ligatures[27] and styles for fractions and numbers (to the right are 3 ligatures for "fi", "fl", and "ff") fi fl ff	Yes	No
A trimmed page preview to see how a page looks when printed	Yes	No
Ability to change multiple items at once	Yes	No
Pen/pencil tools for more organic shapes	Yes	No
Excel file support	Yes	No
Multiple undo button levels	Yes	No
Ability to drag and drop image files into layouts	Yes	No (unavailable until 2008!)

Despite InDesign being the superior product with superior service, Quark customers patiently waited for the release of XPress 6 which would be native to Apple's latest OS X. High switching costs held back many Xpress users. Adobe in its 2001 annual 10-K filing dedicated a full paragraph to the competitive strengths of Quark XPress (emphasis Andvari's):

> *Quark Xpress also benefits from an established industry infrastructure that has been built around the use of the Xpress product in print shops and service bureaus, and through the development of third party plug-in products.* **Barriers to the adoption of Adobe InDesign by Quark Xpress customers include this infrastructure, as well as the cost of conversion, training, and software/hardware procurement required in a switch to InDesign.**

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[26] Girard, Dave. "How QuarkXPress became a mere afterthought in publishing", *Ars Technica*, Jan 13, 2014. https://bit.ly/2VGTh1e
[27] Ligatures are two or more glyphs that are formed into a single glyph that creates a more readable or attractive text.

An analyst quoted in a 1999 article from the *New York Times* confirmed that a significantly better product doesn't necessarily ensure success against a competitor[28]:

> *Good technology is not enough either, said Suzanne Snygg, an analyst with Dataquest. "The biggest issue for Adobe is the matter of standards. Once you commit to a program like Quark Express, companies and people are reluctant to change, just because of the pain factor," she said.* **"Just because a product is best doesn't mean people will change."**

XPress users finally had the chance to upgrade to XPress 6 in 2003 and discovered an underwhelming update with the same underwhelming service. Users moved to Adobe's latest InDesign product and never looked back. Quark's previously solid market share went from over 90% to 50% inside two years. As one publishing professional said[29]:

> *The thing is,* **the effort and risk of changing a whole company to a new piece of software is so great that [Adobe's InDesign] release still wouldn't have swayed us if Quark had actually done its job** *with Quark 6 and made a competitive update. But it didn't, and the time, job happiness, and financial implications of switching to [InDesign] CS2 were super crystal clear. Everybody did it.*

As we trace Adobe's 10-K filings over the years, it takes Adobe more than ten years before Quark transitions from a strong competitor, deserving of a full paragraph unto itself, to an afterthought. In Adobe's 2013 10-K, Quark is mentioned in passing as part of a group of competitors and no longer deserving of even a *sentence* unto itself.

PARAGRAPHS IN ADOBE 10-Ks REGARDING QUARK

2001

Our Adobe InDesign product faces tough competition in the professional page layout market. **The main competitor product, Quark Xpress, has a leading market share** in the Roman language markets for professional page layout in the United States and Europe. **Quark Xpress also benefits from an established industry infrastructure that has been built around the use of the Xpress product** in print shops and service bureaus, and through the development of third party plug-in products. **Barriers to the adoption of Adobe InDesign by Quark Xpress customers include this infrastructure, as well as the cost of conversion, training, and software / hardware procurement required in a switch to InDesign.** We believe we can gain market share with InDesign software against Xpress due to our strong brand name, our support of Apple's new Mac OS X operating system, new product capabilities, and the recently improved infrastructure support by the industry for our solution. Adobe recently made available version 2.0 of InDesign, which will compete against the new version of Quark Xpress, version 5.0.

2011

Our InDesign product, used for professional page layout, **faces competition from offerings such as Quark Xpress in the professional page layout market.** We believe InDesign competes favorably due to InDesign's innovative features, its improved integration with our other products, our strong brand among users, positive reviews by industry experts, and more recent innovations which address customer challenges related to publishing for tablets which is delivered in concert with our new Digital Publishing solution offerings.

2013

No single company has offerings identical to our Creative Cloud products, but we face collective competition from a variety of point offerings, free products and downloadable apps. Our competitors include offerings from companies such as Apple, Autodesk, Avid, Corel, Microsoft, **Quark** and others, as well as from many lower-end offerings available on touch-enabled devices via app stores, and from various open source initiatives.

(***emphasis*** Andvari's)

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[28] Fisher, Lawrence. "Adobe Sees 'Quark Killer' Putting New Life in the Company", *New York Times*, Mar 2, 1999. https://nyti.ms/3pRwyNM
[29] Girard, Dave. "How QuarkXPress became a mere afterthought in publishing", *Ars Technica*, Jan 13, 2014. https://bit.ly/2VGTh1e

From 2001 to 2010, Adobe dedicates a full paragraph to Quark and the barriers to adoption of Adobe's product. During that time, Adobe continued improving InDesign and making it easy to work with other Adobe products like Illustrator and PhotoShop. Starting with their 2011 10-K, Quark no longer mentions the competitive barriers to adoption of InDesign. Then in 2013 10-K, Quark was merely one of a handful of competitors with no other details worth mentioning. At this point Adobe seems to have declared victory over Quark: "No single company has offerings identical to our Creative Cloud products," wrote Adobe.

CUMULATIVE PERFORMANCE OF ADOBE (ADBE) vs S&P500 (SPY)
Since Aldus Acquisition (8/31/94–11/27/20)
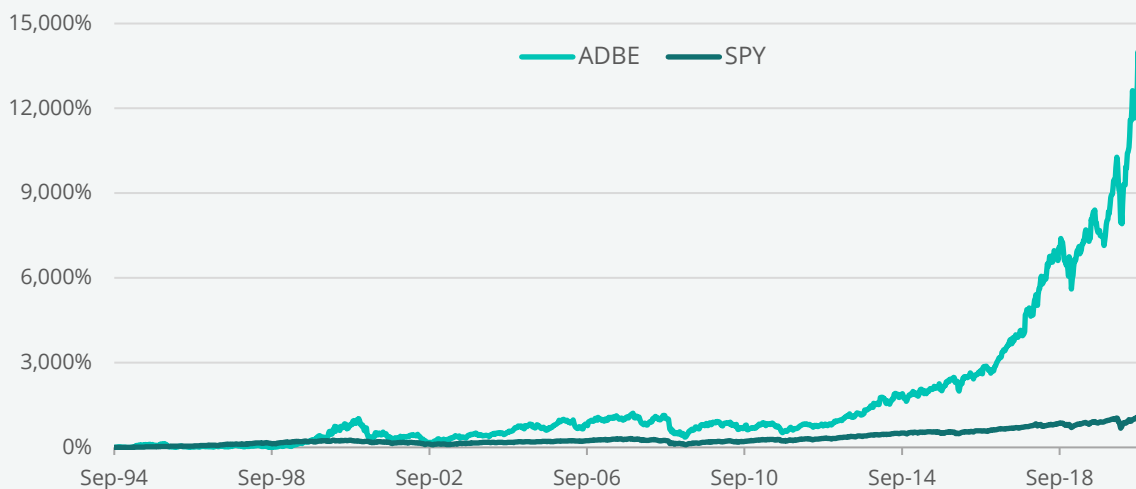
Left: A 2002 advertisement for Adobe InDesign, the successor to PageMaker.

# Part 4: Andvari Takeaways

We summarize seven universal lessons from this deep-dive into a niche-y and fairly technical space.

VALUATION MULTIPLES CAN COMPRESS QUICKLY

The hot stock of today can eventually disappoint shareholders by failing to live up to unrealistic expectations. Aldus was one such example even though it was pivotal in the creation of an entirely new market. MicroStrategy is another example. The company made business intelligence software, was growing quickly, and IPO'ed in 1998. Shareholders who bought at the IPO and held until 12/4/2020 have underperformed the S&P 500 by 200%. A recent example might well turn out to be Zoom Video Communications. Zoom IPO'ed in April 2019, revenues have been tripling year over year, shares are up more than 500% since the IPO, and it trades at 60x trailing twelve month revenues. Many things must fall into place for Zoom shareholders to earn a decent return going forward.

At its highest price in 1987, Aldus traded at a 10x enterprise value to sales ratio (amusingly quaint by today's high growth standards). Revenues were $39 million in 1987 and went to over $200 million in 1993. The lowest EV/sales ratio was 0.45x, just five years later. It was a highly competitive industry and Aldus did not have as broad and deep of a product offering as Adobe. Furthermore, Aldus' founder and CEO had simply ran out of steam. Adobe acquired Aldus for a price in 1994 not much higher than when Aldus came public.
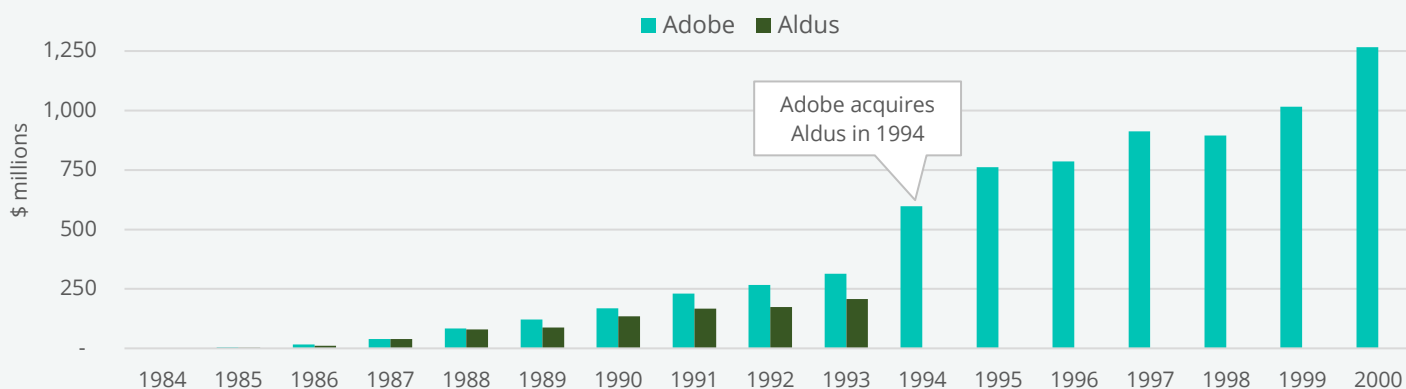

ALDUS SHARE PRICE RANGE
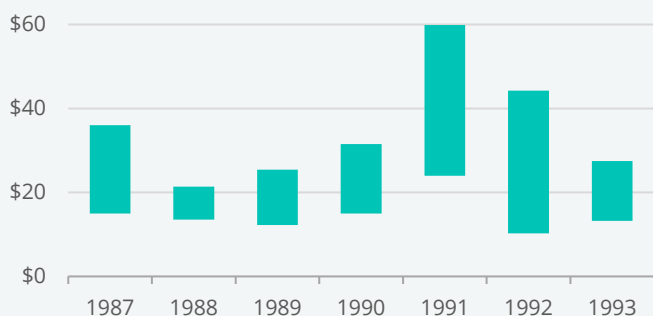
ALDUS EV/SALES RANGE
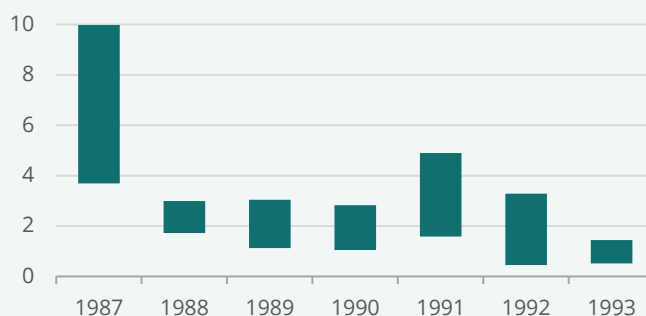
ALDUS AND ADOBE REVENUES

KNOW YOUR CUSTOMERS AND TAKE CARE OF THEM

A business should always know who their customers are and do their best to take care of them. We see this at play from the very beginning of Aldus. Founder Brainerd initially thought the target market for Aldus's publishing software would be small newspapers who would appreciate the time and money savings. If he had chosen to never interview these potential customers, he would have built a great product and then waited a year or two before making a sale. Instead, by taking time to learn about one set of potential customers, Aldus shifted its focus to a set of customers that could make decisions more quickly. In turn, these customers would see the benefits of PageMaker more quickly and help evangelize the product.

Although Quark was extremely successful in creating a product well-suited for the high-end of the publishing industry, its dominance of a market slowly eroded because of its arrogance and hubris. It simply no longer put customers first.

Quark would outsource all customer service to India. Customers would have to pay $15 per emailed support question. The CEO would publicly dismiss the concerns and desires of its customers. Quark chose not to reinvest in its business. Although it took over ten years, Quark eventually lost its dominant position.

BETTER TOGETHER / BUNDLING

We see how partnerships can play out successfully with the example of Aldus, Adobe, and Apple. This partnership allowed for the creation of the desktop publishing market. Aldus had the software, Adobe had the underlying technology, and Apple had the hardware. With any one of these elements missing, it's likely the creation of this new market would have been delayed. A combination of the right technologies can be extraordinarily powerful.

IMPORTANCE OF R&D & VALUE-CREATIVE M&A

Out of the three companies, Adobe is the one that continued to grow and remain independent. There are many reasons for this. One, major reason, however, is it continued to invest to create a powerful suite of products for its users. By continually improving its core products and by acquiring or creating new products, Adobe assembled a bundle of products with a common user interface and that all worked seamlessly together. Creative professionals could satisfy their needs with just one company that had all the best products: Adobe. The company's long-term shareholder return speaks for itself on this point.

RESEARCH AND DEVELOPMENT AS % OF REVENUES
Comparing Adobe to Two Other Software Giants
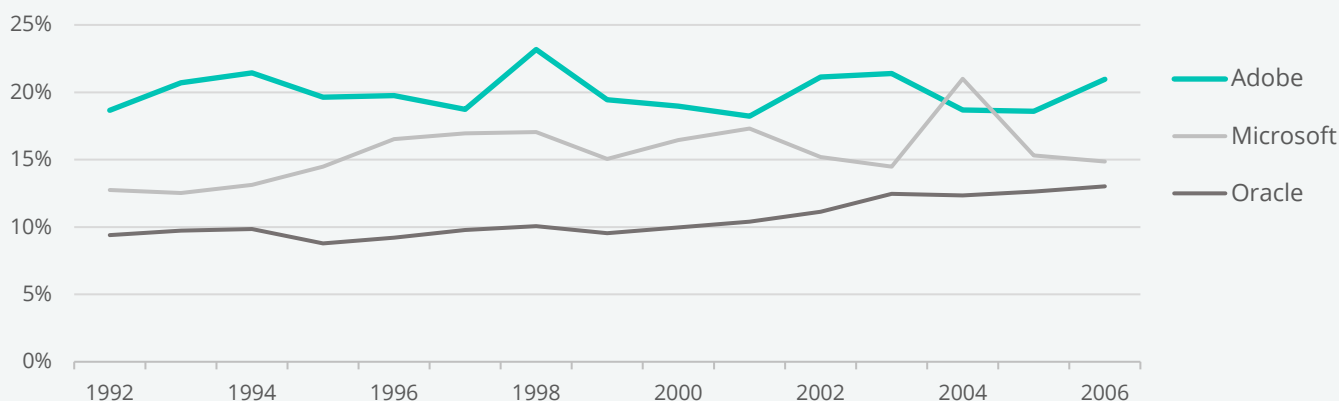
CUSTOMER LOCK-IN: STANDARDS / INTEGRATIONS / PLUG-INS

As the desktop publishing industry matured, consolidation followed. Aldus, Adobe, and Quark all added to their core products with complementary products. A good bundle of related, inter-operable products can create lock-in and reduce customer churn.

Two reasons why Quark achieved its dominant position was its focus on the high-end market and the concept of extensions/plug-ins. Third parties could create and sell plug-ins that added new functions to make the lives of Quark users easier. After a publisher makes the heavy, up-front investments in Quark XPress and multiple plug-ins—and this all becomes embedded in their workflows—the odds of switching to a competing product become lower and lower.

BE WARY WHEN A FOUNDER LEAVES

Whenever there is a dramatic change at a company, such as when a founder leaves and sells out completely, an investor should always be wary. When the last of Quark's co-founders sold out to Quark's CEO, the CEO began to make dramatic changes. Given Quark has always been a privately held company, Andvari can only surmise that changes like outsourcing customer service and software development to India were cost-saving measures meant to fund the purchase of the founder's shares. Whatever the reason might be, the result over a decade was Quark losing the competitive race with Adobe.

FERTILE GROUNDS OF FTC DIVESTITURES

When Adobe acquired Aldus, the FTC would have blocked the deal if Adobe hadn't agreed to two key provisions regarding professional illustration software. FTC involvement in any proposed deal between companies is a factor Andvari always considers in its investment process. It typically is a high-value indicator that a majority of the market has consolidated down to two or three companies. In turn, this usually means above-average profitability and an increased likelihood of above-average returns to shareholders.

In this case, the FTC found in 1994 that Aldus's FreeHand and Adobe's Illustrator were the only two products in the market for professional illustration software. Illustrator had 70% market share and FreeHand had 30%. Having dominant, industry-standard products is a big reason why Adobe has produced exceptional results for shareholders over the years.

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