



CS207 #9, 4 Dec 2009

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Gates B12



Syllabus:

1. Why should software be valued?
2. Principles of valuation. Cost versus value.
3. Market value of software companies.
4. Intellectual capital and property (IP).
5. The role of patents, copyrights, and trade secrets.
6. Open source software. Scope. Theory and reality
7. Life and lag of software innovation.
8. Sales expectations and discounting, Licensing. .
9. Alternate business models.
10. Separation of use rights from the property itself.
11. Risks when outsourcing and offshoring development.
12. Effects of using taxhavens to house IP.
- 13. Acquisitions and growth**



Topics Covered

Why should software be valued? Open source software, ytheory and reality. Scope.

Intellectual capital and property (IP). Principles of valuation.

Cost versus value. Market value of software companies. Sales expectations and discounting,.

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-3.pdf>>

Alternate business models.

Life and lag of software innovation

<HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-5.pdf>>

The role of patents, copyrights, and trade secrets. Managing IP.

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-6.pdf>>

Off shoring (Prof. Amar Gupta)

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/Stanford-Nov09.pdf>>

Licensing. Separation of use rights from the property itself. Offshoring alternatives. Risks.

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-7.pdf>>

Effects of using taxhavens to house IP.

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-8.pdf>>

Acquisitions and growth .

<A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-9.pdf>>

- Final

- <A HREF=<http://infolab.stanford.edu/pub/gio/2009/CS207-10.pdf>>



Consistency in plans

When comparing business alternatives

- Give each choice the same chance

1. Temporal consistency

- Computing versus communication
 - Local versus Cloud in 2012
 - *Skate to where the puck is going* [Gretsky]

2. Discount rate

3. Resource prices

- Green alternatives
 - Benefits may depend on price of oil –
 - if 3 x now, why not invest in oil instead



Example

Enterprise SW versus cloud
[Benioff:2009]

- SIEBEL sales force management \$
 1. Price \$1,500 per seat, at 200 users = 300,000
 2. \$54,000 for support (18%) /year, x 5 = 270,000
 3. \$1,200,000 consulting for installation = 1,200,000
 4. \$100,000 admin.personnel/year, x 6 = 600,000
 5. \$ 30,000 training / year, x 6 = 180,000

➤ 6 years' usage Total = 2,550,000

Note that the customer's total is >> than the price



Cloud delivery by salesforce.com

- Salesforce.com:
 - \$150.-month & user only -- monthly billing
 - Make interface look like Amazon – no training needed
 - Low risk for individual adopters
 - Still a high risk for a changeover in large businesses, where changes are controlled by a risk-adverse IT manager or CIO.
 - Start focusing on small businesses
 - Hard to reach a broad market with little cash
 - Must make a lot of noise
 - Later sales force had to change its initial model
 - Deal with large companies
 - Deal with the Dot-com bust, when many companies failed
 - Business must remain flexible

Advertising

1. Audience

Focused

➤ Salesforce

In front of competitors

annual sale meetings 3x

1. Fake demonstrators in SF.
2. Give coffee, mugs, rides, literature to attendees in NY
3. Hire all taxis in Nice, give free rides to site in Cannes.

Vs. Superbowl?

- Much buzz
- Huge audience
- Your audience?

3. Logo & name

Essential for branding

Metaphor



Negative?

4. Timing

Have Product ready

- Few bugs
- Clear operation
- Useful

2. Address

- a. Buyers in corporations
 - b. Users and employees
 - c. Both
- Understand motivations for change



Customer Segmentation


- Getting a broad market presence is very hard
 - Superbowl advertising: *30 seconds costs \$3M*
 - Apple 1984: *Macintosh* 🎯
 - Hulu 2009: *Internet video player* 🎯
 - Find narrow markets that are now not well served
 - Professional groups
 - Use professional magazines
 - Establish credibility through publishing
 - Social networks
 - Participate
 - Health concerns by symptoms or diagnoses
 - Educational specialties



`Buzz'

Customer and potential customer interaction

- In the relevant community
 - The most powerful sales tool
 - Novelty and quality drive buzz
 - Advertising effect is complementary
- Simple stories for the press
 - Writers look for good guys vs bad guys stories
 - Don't have time to dig deep
 - Match public events
 - Be ready - *security SW when there is a big break-in; ...*
- Direct mail ?
 - Sometimes for a specific off-the-net audience



Use your income to
grow IP: R&D and

- Advertising

25% of business spending

- Google Adwords /Adsense to trigger where ads go
 - Show your ad on top or on the side of a search
 - Show your ad on relevant web pages
 - Charge by show (eyeballs) or click-through
 - Do that until money runs out
 - Allocate among competitors according to money made available
- Google tools for measuring Google's ads impact
 - measurements in other media are ad-hoc
 - could be disregarded, but still contribute to the perception.

Perceptions is also IP, embodied in trademarks etc.



Growth

- Organic
 - a. Product R&D investments
 - New versions
 - b. Product Marketing
 - New, broader applications
 - c. Fundamental R&D
 - d. Trademark promotion
 - e. Curiosity-driven R&D ?
- Through acquisitions
 - a. Additional products
 - novel – first
 - complementary
 - anti-competetive
 - b. Product improvements
 - c. IP: Patents ... ➤ as with a.
 - d. Knowhow of staff
- Paid for by
 - a. Profits on existing products (after dividends are paid out)
 - b. New investors: venture funders before / stockholders after going public
 - c. Loans Interest on loans up to x can be deducted from taxes

Growth

Based on 100 top public SW companies Q1 2009

Tale of 100 Entrepreneurs

Click to interact

■ Rocket Ship

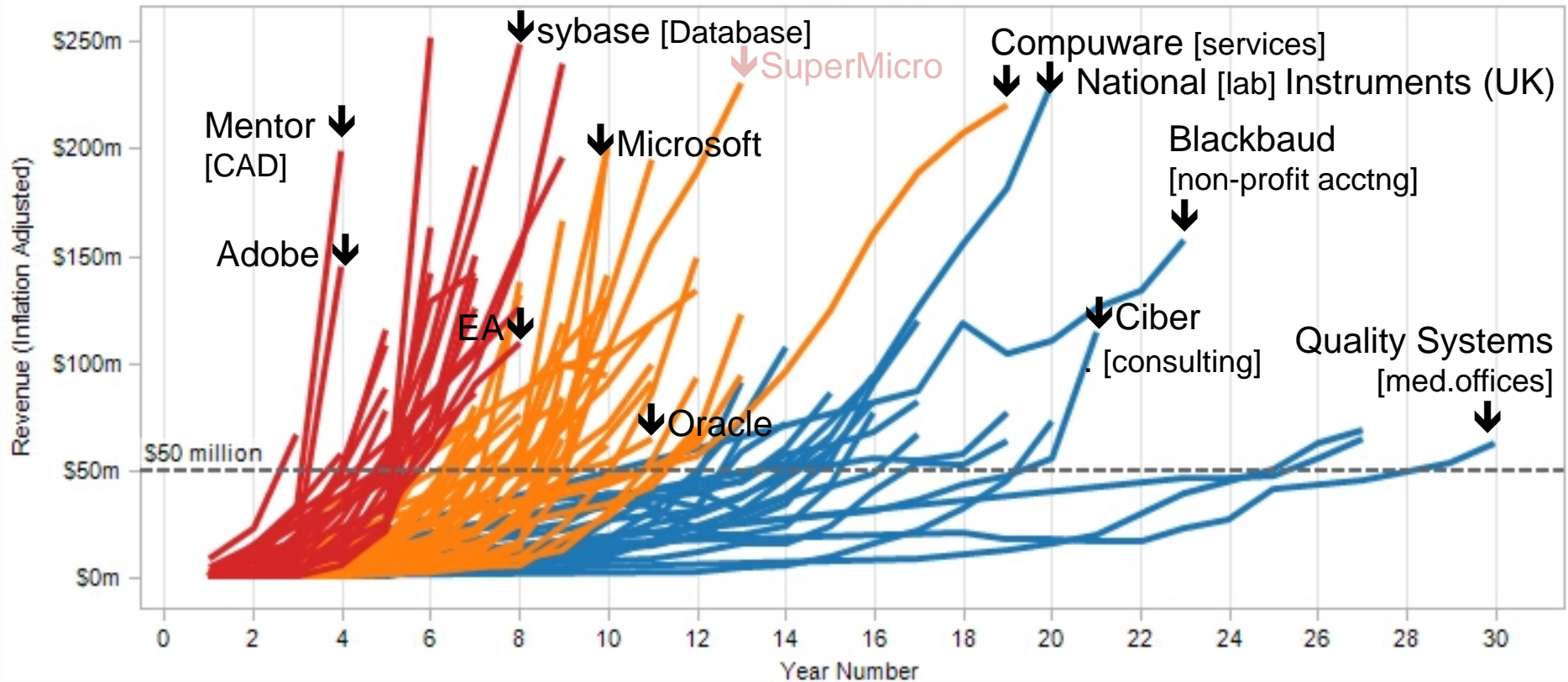
■ Hot Company

■ Slow Burner



Source: <http://www.ipo-dashboards.com/wordpress/2009/08/how-long-does-it-take-to-build-a-technology-empire/>

Growth History by Company





Categories *

* Graph includes some hardware companies

- Rocket Ship: 28%
 - Autodesk, Electronic Arts, Interwoven → Autonomy, Sybase, Novell
 - Adobe (*Xerox Parc*), McAfee (*Lockheed*), Salesforce (*Oracle*)
had substantial IP headstarts
- Hot Company
 - Microsoft, Oracle
- Slow Burner
 - SPSS, Ciber inc Consultants, Quality Systems
- Missing
 - Lotus (1982-1983 to \$53M, but acquired 1995 by IBM)
 - Macromedia, acquired by and now incorporated in Adobe,
 - Google (does not sell Software)



Rocketship list

3-6 years to \$50M Rev.

		Year Founded	Years to \$50m	Revenue (2008)	Net Income (2008)
Rocket Ship	Activision Blizzard Inc	1979	4	\$3,026m	(\$107m)
	Adobe Systems Inc.	1982	6	\$3,580m	\$872m
	Autodesk, Inc.	1982	5	\$2,172m	\$356m
	Blackboard Inc.	1997	5	\$312m	\$3m
	Cadence Design Systems, Inc.	1983	6	\$1,039m	(\$1,854m)
	Check Point Software Technologie..	1993	5	\$808m	\$324m
	China Digital TV Holding Co., Ltd.	2004	4	\$55m	\$34m
	Cognizant Technology Solutions C..	1994	5	\$2,816m	\$431m
	Electronic Arts Inc.	1982	6	\$3,665m	(\$454m)
	Interwoven, Inc.	1995	6	\$260m	\$32m
	McAfee, Inc.	1989	6	\$1,600m	\$172m
	MedAssets, Inc.	1999	5	\$189m	(\$10m)
	Mentor Graphics Corporation	1981	4	\$880m	\$29m
	Novell, Inc.	1983	3	\$957m	(\$12m)
	OpenTV Corp.	1996	6	\$116m	\$10m
	Rackspace Hosting, Inc.	1998	6	\$532m	\$22m
	RealNetworks, Inc.	1994	5	\$605m	(\$244m)
	salesforce.com, inc.	1999	5	\$749m	\$18m
	Sybase, Inc.	1984	6	\$1,132m	\$139m
	Synopsys, Inc.	1986	6	\$1,337m	\$190m
Take-Two Interactive Software, Inc.	1993	6	\$1,538m	\$97m	
Taleo Corporation	1999	6	\$128m	\$4m	
Verisign, Inc.	1995	4	\$962m	\$88m	

2nd largest

largest

Net income is convoluted due to acquisitions, write-offs, etc.



Hot Company list

7-12 years to \$50M Rev.

larger

	Year Founded	Years to \$50m	Revenue (2008)	Net Income (2008)
Actuate Corporation	1993	7	\$131m	\$14m
Art Technology Group, Inc.	1991	10	\$165m	\$4m
BMC Software Inc.	1980	8	\$1,732m	\$314m
CA Inc.	1974	9	\$4,277m	\$500m
Citrix Systems, Inc.	1989	8	\$1,583m	\$178m
CommVault Systems, Inc.	1996	8	\$198m	\$21m
Compuware Corporation	1973	12	\$1,230m	\$134m
Concur Technologies, Inc.	1993	10	\$215m	\$17m
DemandTec, Inc.	1999	10	\$61m	(\$4m)
Digital River, Inc.	1994	8	\$394m	\$64m
DivX, Inc.	2000	7	\$85m	\$9m
Echelon Corporation	1989	11	\$134m	(\$26m)
i2 Technologies, Inc.	1989	8	\$256m	\$107m

	Year Founded	Years to \$50m	Revenue (2008)	Net Income (2008)
Informatica Corporation	1993	7	\$456m	\$56m
International Game Technology	1971	10	\$2,529m	\$343m
Intuit Inc.	1983	8	\$3,071m	\$451m
JDA Software Group, Inc.	1985	12	\$390m	\$6m
Longtop Financial Technologies Li.	1996	12	\$66m	\$4m
Manhattan Associates, Inc.	1990	9	\$337m	\$23m
Microsoft Corporation	1975	8	\$60,420m	\$17,681m
MicroStrategy Incorporated	1989	9	\$360m	\$42m
Netezza Corporation	2000	8	\$127m	(\$1m)
Nice Systems Ltd. (ADR)	1986	11	\$624m	\$39m
Nuance Communications Inc.	1992	9	\$868m	(\$30m)
Omniture, Inc.	1996	11	\$296m	(\$45m)
Open Text Corporation (USA)	1991	8	\$726m	\$53m
Oracle Corporation	1977	10	\$22,430m	\$5,521m
Parametric Technology	1985	7	\$1,070m	\$80m
Progress Software Corporation	1981	10	\$516m	\$46m
Red Hat, Inc.	1993	9	\$523m	\$77m
Sourcefire, Inc.	2001	7	\$76m	(\$6m)
SuccessFactors, Inc.	2001	7	\$112m	(\$65m)
Super Micro Computer, Inc.	1993	9	\$541m	\$25m
Symantec Corporation	1982	8	\$5,874m	\$464m
The Ultimate Software Group, Inc.	1990	9	\$179m	(\$3m)
Websense Inc.	1994	9	\$296m	(\$30m)



Slow Burner list

13-30 years to \$50M Rev

	Year Founded	Years to \$50m	Revenue (2008)	Net Income (2008)	
Slow Burner	Advent Software, Inc.	1983	15	\$264m	\$19m
	ANSYS, Inc.	1970	26	\$385m	\$82m
	Blackbaud, Inc.	1982	17	\$303m	\$30m
	CIBER, Inc.	1974	20	\$1,192m	\$30m
	Deltek Inc.	1983	15	\$289m	\$24m
	EPIQ Systems, Inc.	1988	16	\$236m	\$14m
	Macrovision Solutions Corporation	1983	17	\$330m	\$21m
	MICROS Systems, Inc.	1977	14	\$954m	\$101m
	MSC Software Corp.	1963	25	\$247m	(\$3m)
	National Instruments Corp	1976	14	\$740m	\$107m
	OPNET Technologies, Inc.	1986	17	\$101m	\$1m
	Pegasystems Inc.	1983	15	\$162m	\$7m
	Quality Systems, Inc.	1974	29	\$187m	\$40m
	Quest Software, Inc.	1987	13	\$735m	\$68m
	Renaissance Learning, Inc.	1986	13	\$108m	\$8m
	Retalix Limited	1982	20	\$221m	(\$1m)
	SPSS Inc.	1975	14	\$303m	\$36m
	Synaptics, Incorporated	1986	15	\$361m	\$31m
	TeleCommunication Systems, Inc.	1987	13	\$220m	\$58m
	VanceInfo Technologies Inc.	1995	13	\$103m	\$16m
VASCO Data Security Internationa..	1991	15	\$133m	\$24m	
Wind River Systems, Inc.	1983	14	\$329m	(\$2m)	

All smaller



Acquisitions

- A common path for
 - a. Exit from a startup venture → seller
 - b. Growth of a larger company → buyer
 - 2 parties at `Arms-length
 1. Willing seller
 2. Willing buyer
 - Assumption here: *no funny business*
 - Buyer has funded seller, formal/ informal restrictions
 - Selling a non-exclusive license
 - Seller is object of a legal proceedings, as patent suit
 - Seller is bankrupt
- Both parties must agree on the value
- Both parties should understand intellectual property

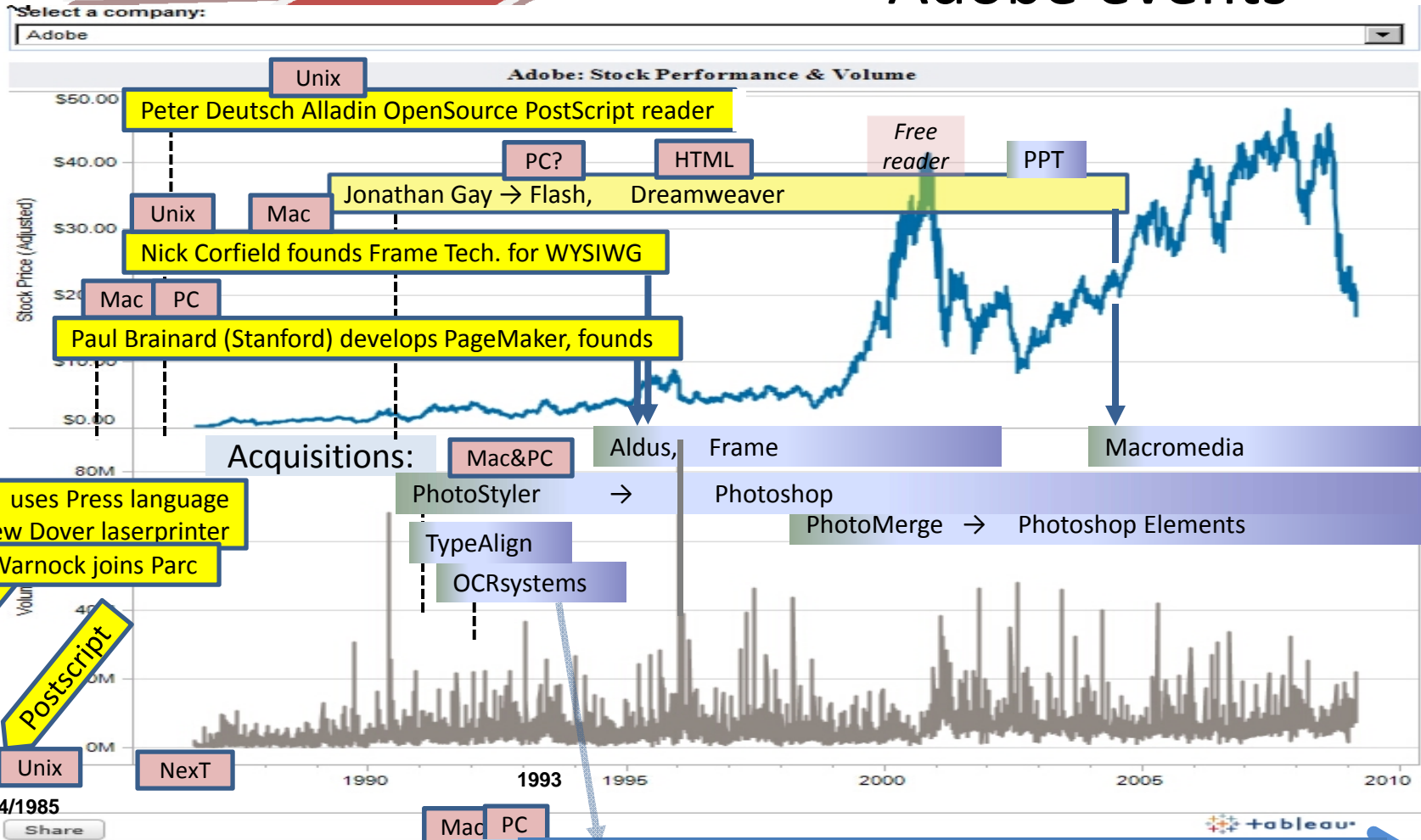


Components of IP in an Acquisition

Code Name		typical value	salvageable
Patents:	Patents	Modest, 5-20% if any	
TM:	TradeMark . . (incl. "buzz")	Can be high	?
SaP:	Extant salable products	To be assessed	?
ComP:	Component for products, incl SW	To be assessed	min
R&D:	In process R&D for new products	TP estimates	min
ImP:	Improved Products	To be assessed	min
First:	First-to-market	V.high-to zero	0
Fast:	Shortened Time-to-market	√ market share	0
Entry:	Entry into Extant Market	√ market share	0
CusB:	Customer base	Quantify	0
KH:	KnowHow, based on workforce	≈ to IP	0
GCV:	Going Concern Value <i>"excess in total over salvage" conflated with</i>		
GW:	Goodwill, to be reduced to zero	Uncertain	

Goodwill is only an accounting category to balance purchase cost vs. assets gained

Example: Adobe events



1976 Xerox Parc uses Press language to drive its new Dover laserprinter

1978 John Warnock joins Parc

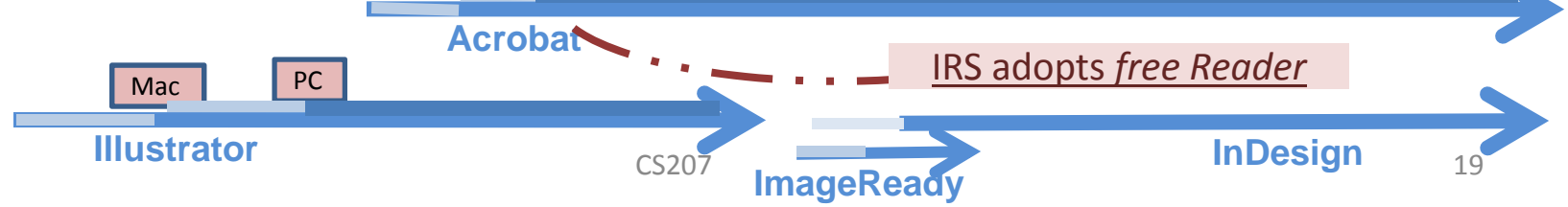
Founded by

Postscript

Dec.. 1982

1984/1985

Internal products:






Share IP?

Yes, with care

- ⤴ Adobe: Reader
- ⤵ XEROX PARC: Smalltalk OO language *nearly dead*
 - ⤴ *We got C++ instead*
- ⤴ Industry Group: Standards specifications
- ⤴ Publication in scientific venues *ok, not enough*
- ⤴ Publication in trade journals *ok, little impact*
- ⤵ Apple vs Microsoft, Xerox vs all: Look and feel
 - Apple had licensed earlier version, ⤵ without overlapping windows. ⤴ Could protect the trashcan



Generalize success

A. Broaden

- Adobe : After WYSIWIG printing
 1. Pagemaker for Page composition
 2. Dreamweaver for Web composition
 3. Photoshop for Image editing

IP shared:

1. Customers
2. Marketing
3. Distribution

B. Deepen

- Salesforce.com
 - Customer Relationship service on-line
- Force.com
 - Operating system for on-line business applications

IP shared:

1. Concept
2. Technology
3. HW Support
4. Analytic SW



Opportunities

- There are big waves where much changes
 1. Introduction of automation into manufacturing
 2. Introduction of data processing in business
 3. Introduction of the Internet into communication
- Within a big wave there are many small waves
 1. Management of feedback
 - Product improvement, advertising
 2. Locality of computing
 - a. Timesharing - many users use a large computer
 - b. Personal computing – local computing is cheap
 - c. Cloud computing – remote computing is flexible

All waves create opportunities



The End

I hope that you have learned in this course a bit about a topic which is currently ignored in the CS and Engineering curricula.

Much success in your futures

Gio Wiederhold

Business models and finance topics can be discovered when experienced entrepreneurs present their history. A good resource is of the Stanford Entrepreneurship Corner, with videos at <http://ecorner.stanford.edu>. I recommend searching for authors as Hawkins, Ries, Kaplan, Siebel, Estrin. Some of their views differ greatly, illustrating the complexity of translating IP to success. You can also search by topics.