Pixar/Disney History Conclusion

Lecture 13
October 7, 2015
NBA 6120
Prof. Donald P. Greenberg

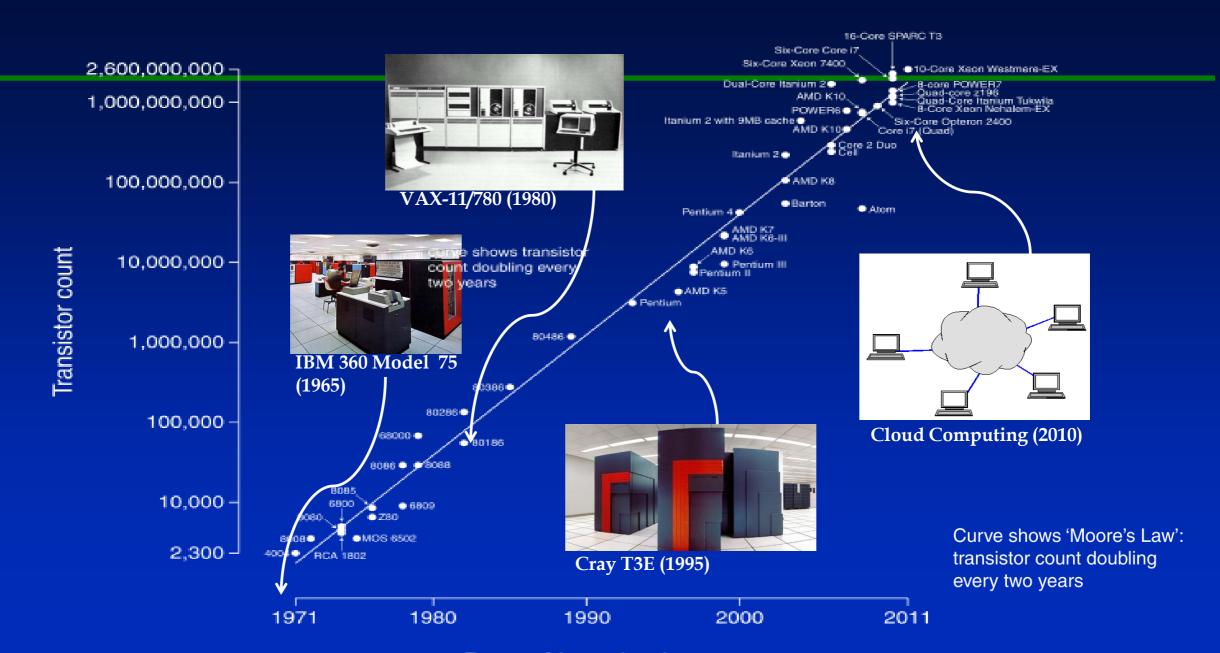
Moore's Law

"Chip density doubles every 18 months."

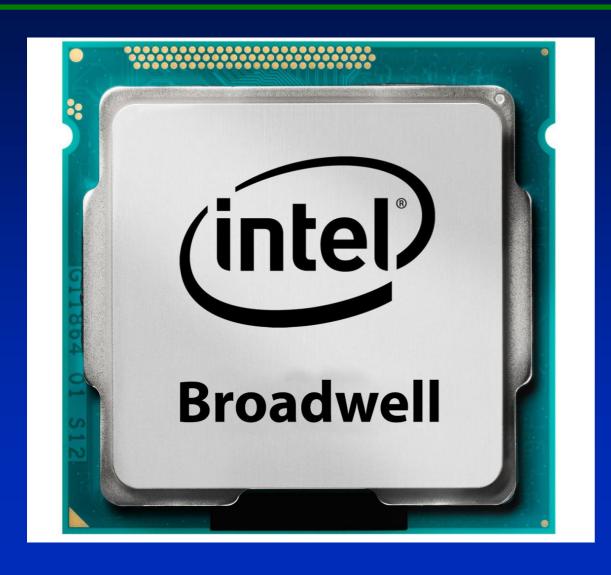
Processing Power (P) in 15 years:

$$P = P_{today}(2)^{\frac{15 \text{ years}}{18 \text{ months}}} = P_t(2)^{\frac{15}{1.5}}$$
$$= P_t(2)^{10} = 1000P_t$$

Microprocessor Transistor Counts 1971-2011 & Moore's Law



Intel 5th Generation i7 Chip (Broadwell) - 2014



- 4 core/8 threads for desktop and mobile solutions
- 14nm Hi-K+ process
- 3D tri-gate transistors
- Predicted 30% improvement in power consumption

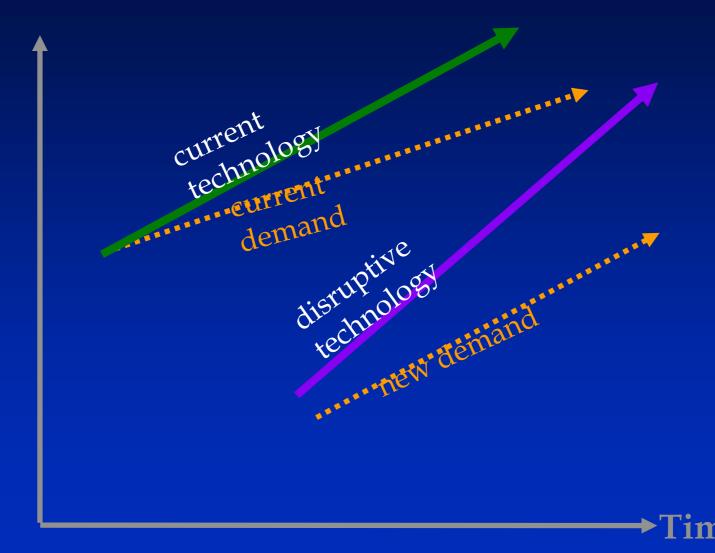
Samsung Galaxy S5

April 2014



- Samsung Exynos 5 Octa 5422, (8 cores)
- Heterogeneous ARM architecture
 (2.1 GHz Cortex-A15 quad,
 1.5 GHz Cortex-A7 quad core)
- 2 GB DDR3 Ram
- 64 GB storage

Typical Disruptive Technology



My achievements occurred,
not because of my skating skill,
but my innate ability to skate to where
"the puck will be"!

~ Wayne Gretzky

Samsung 110-inch 4K UHD TV 2014



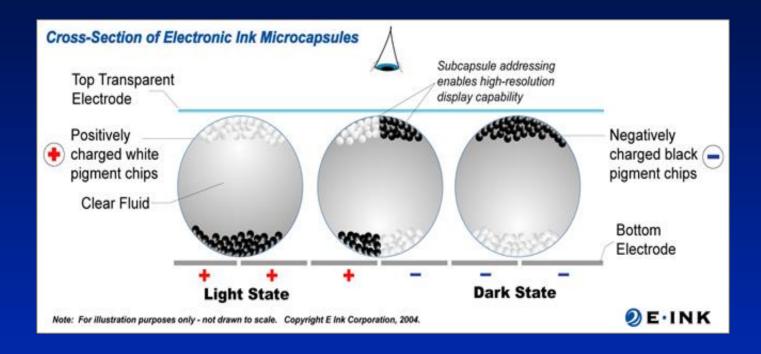
Samsung Curved OLED TV



LG press-on 'wallpaper' TV under 1mm thick



Flexible Electronic Paper Display

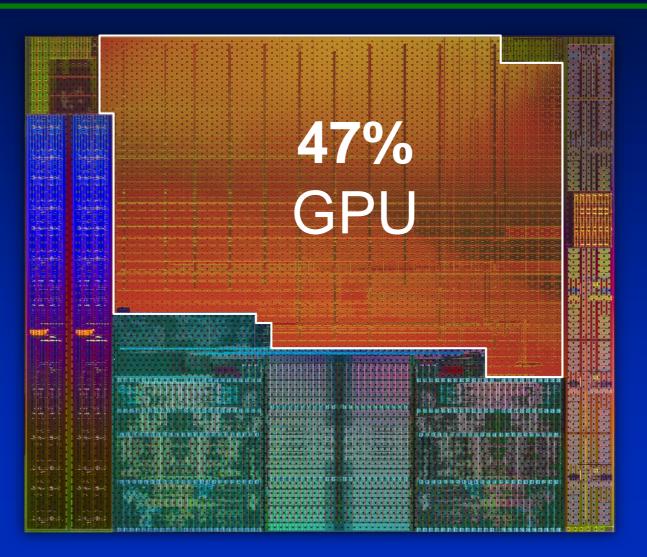


Electronic ink is a straightforward fusion of chemistry, physics and electronics to create this new material.

AMD – Integrated Graphics

2014

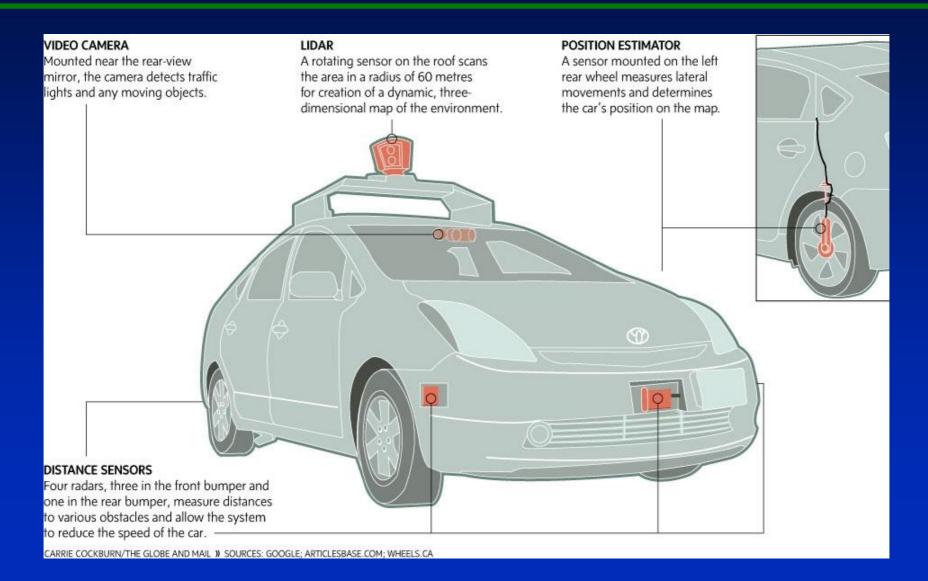
- "Kaveri"
- 28 nm
- 47% GPU



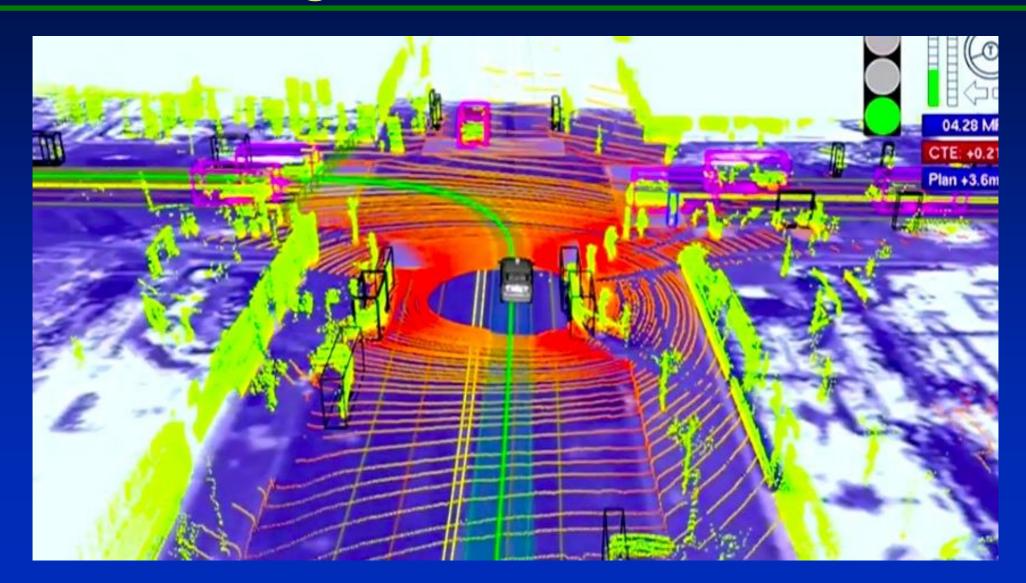
Lytro Camera



Sensors on Google's ADV



Sensors on Google's ADV



Sergey Brin with Google Glass



Oculus Rift DK2



Magic Leap



Privacy and Security: Challenges of the new Internet Regulations

- Freedom of Speech vs. Security vs. Privacy?
- Maintenance of net neutrality and a free Internet?

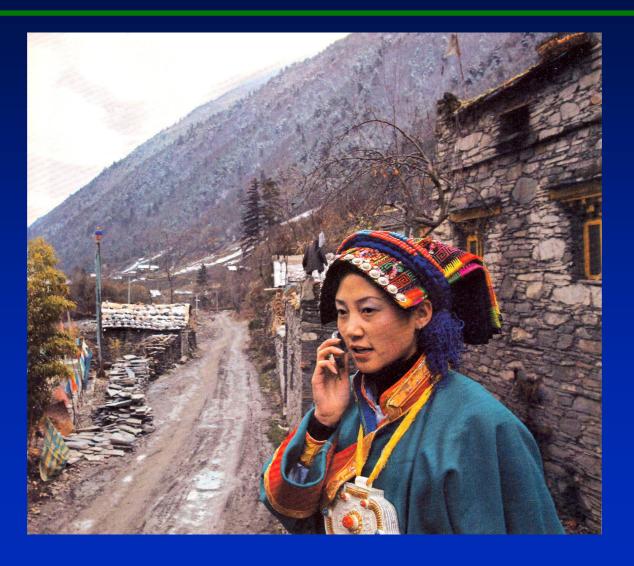
The First Amendment

"Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press, or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances."

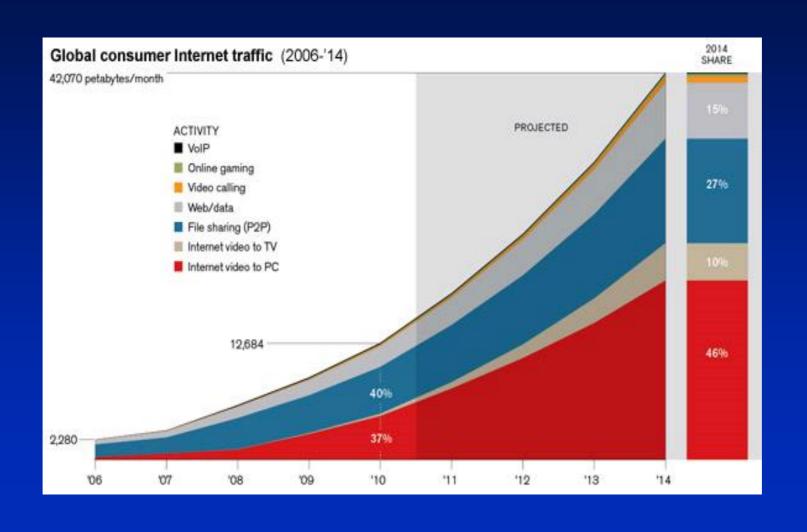
The Fourth Amendment

"The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Everywhere



Global Consumer Internet Traffic



"Every economic era is based on a key abundance and a key scarcity."

George Gilder, Forbes ASAP, 1992

What are the key scarcities?

Pixar/Disney History & Negotiations

George Lucas Computer Division

- With the success of Star Wars, he recognized the impact of special effects
- In 1979, set-up a computer division with three goals:
 - A digital video editing system
 - A digital audio system
 - A digital film printer
- The group ultimately became *Industrial Light & Magic*

Lucasfilm Computer Division, 1984



(L-R) Loren Carpenter, Bill Reeves, Ed Catmull (VP, Computer Division), Alvy Ray Smith (Dir. Of computer graphics research), Rob Cook, John Lasseter, Eben Ostby, David Salesin, Craig Good, and Sam Leffler.

(Not pictured: David DiFrancesco, Tom Duff, Tom Porter.)

George Lucas Computer Division

1983 - George Lucas divorce

Drop in revenue stream from Star Wars

Lucas had to stop cash flow losses

1986 - Steve Jobs paid \$5M to Lucas

Steve Jobs invested \$5M in capital

Basically it was a 7 year research project associated with developing entertainment production tools

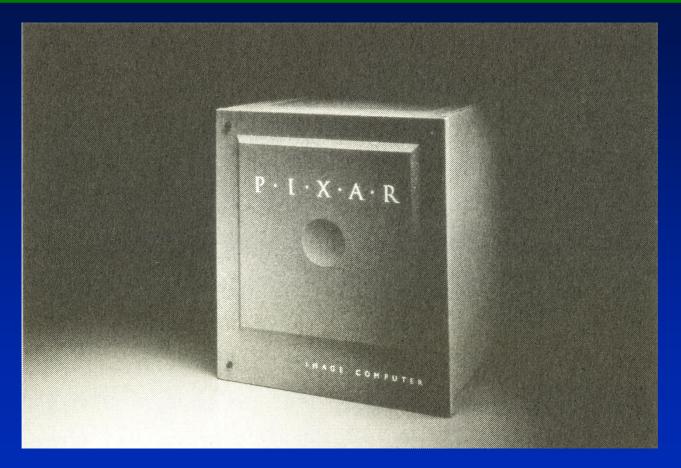
Pixar History

1986 - Pixar was formed when Steve Jobs purchased the computer division of Lucas Film

They developed the Pixar Image Computer primarily for digital compositing

Product was bought by Disney for their secret CAPS project, reducing the cost for inking & painting for 2D animation

Pixar Image Computer (mid-1986)



Pixar's first production, the ill-fated Pixar Image Computer.

1986



Pixar History

1986-1990 Recurring revenue was generated primarily from the licensing of Renderman software, software development contracts, and animated television commercials

Feature Film Agreement with Disney

The development & production of up to three animated feature films to be marketed and distributed by Disney

.: NEW BUSINESS STRATEGY

Disney/Pixar 1991 Feature Film Agreement

- Pixar was to produce three computer-animated films for Disney through 2000. Toy Story was the first.
- Disney would pay for all film development costs (except when costs exceeded the budget).
- Disney was responsible for all marketing & distribution
- Disney kept 85% of gross revenues from the films and related products. Pixar kept the remaining 15%.

Pixar History

1995 Toy Story released in November

First full length animated feature film.

Pixar goes public on November 29, 1995 just after Toy Story release.

6.9M shares open at \$22 and end at \$39/share.

IPO earns about \$140M for Pixar (greater than Netscape).

First recognition of film revenue

Pixar History

- Production of Toy Story 2 was started, but originally was to go straight to video
- This was changed to become a feature film. Steve Jobs wanted this to count.
- Disney insisted that this was not part of the 3 picture deal
- Jobs is not happy!!! #&*%\$#

1996

- Steve Jobs begins pressing Disney CEO Eisner a few months after the successful Toy Story release.
- Pixar now had cash (from IPO) and could co-finance film production.
- Jobs wanted a greater share of profits and Pixar name recognition.
- New co-production agreement signed February 24, 1997.

Co-Production Agreement - 1997

- Pixar to produce five original computer-animated feature length films for distribution by Disney
- Pixar and Disney co-finance production costs co-brand the Pictures co-own the Pictures
- Disney has exclusive distribution and exploitation rights
- Pixar and Disney share equally in the profits after recovery of all marketing and distribution costs (which Disney finances)

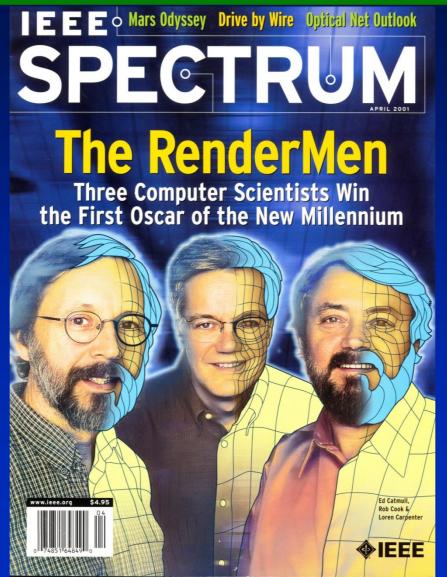
Co-Production Agreement - 1997

- Disney controls all decisions on marketing, promotion, publicity, advertising and distributing
- Pixar & Disney co-finance and co-share profits from passive royalties (theatrical sequels, TV, video, products)
- Disney will reimburse Pixar for share of administrative costs and Research & Development'
- Disney does not share theme park revenues

1998-1999

- A Bug's Life released in November 1998. Counts as the first original Picture under the Co-Production Agreement
- Production of Monster's Inc. begins in May1999
- Toy Story 2 is released in November 1999
- Since this is a "derivative work," it does not count towards original five pictures
- Expenses and profits are shared as per Co-Production Agreement

The RenderMen (IEEE Spectrum April 2001)



Disney/Pixar - 2004

- Two companies attempted to reach new agreement
- The deal would be for distribution only
- Pixar would finance its own films (100%) and pay Disney 10-15% for distribution
- Pixar demanded control of films already in production (Incredibles & Cars)
- Not acceptable to Disney

Disney/Pixar – Mid 2004

- Discussions break down between adversaries Michael Eisner vs
 Steve Jobs
- Jobs announces that Pixar is actively seeking other partners
- Pixar announces that Cars will be delayed and released in the summer of 2006 which is a more lucrative time
- Eisner is ousted in September 2005 and replaced by CEO Bob Iger

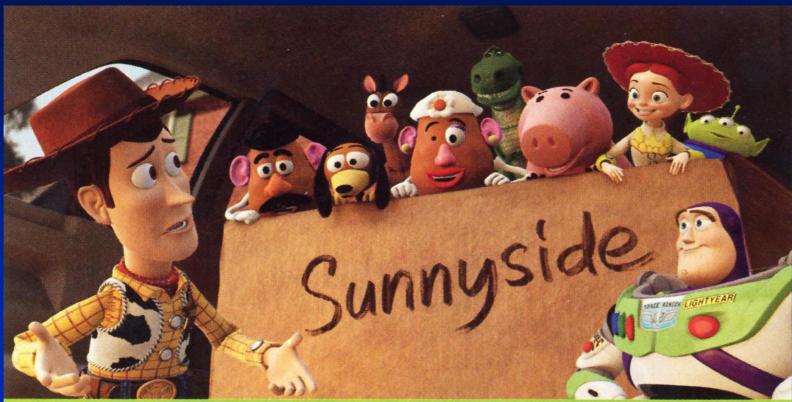
Historical Financial Data of Pixar

	2005	2004	2003	2002	2001							
(In thousands, e.	xcept per share do	ata)										
Statements of income												
Revenues	\$289,116	\$273,472	\$262,498	\$201,724	\$70,223							
Net incomes	152,938	141,722	124,768	89,950	36,217							
Earnings per common share												
Basic	\$ 1.29	\$1.25	\$1.15	\$0.89	\$0.38							
Diluted	1.24	1.19	1.09	0.84	0.35							
Dividends												
Balance sheets												
Total assets	\$1,488,740	\$1,275,037	\$1,002,056	\$732,066	\$523,294							
Borrowings												
Shareholders' equity	1,441,962	1,220,095	940,510	713,062	505,686							

2005-2006

- Iger visits Hong Kong Disneyland in September 2005 and watches Parade
- Only new characters from the last 10 years came from Pixar
- January 24, 2006, Disney buys Pixar with stock \$7.4B
- Jobs is biggest shareholder. His 50.1% of Pixar's stock is approximately
 7% of Disney





At top, Pixar's technical team improved the controls that drive hair parameters to give Andy and his mom hair that looked and moved believably. At bottom, Andy's toys all appeared in *Toy Story* or *Toy Story 2*, but Pixar rebuilt and re-rigged them for *Toy Story 3*.

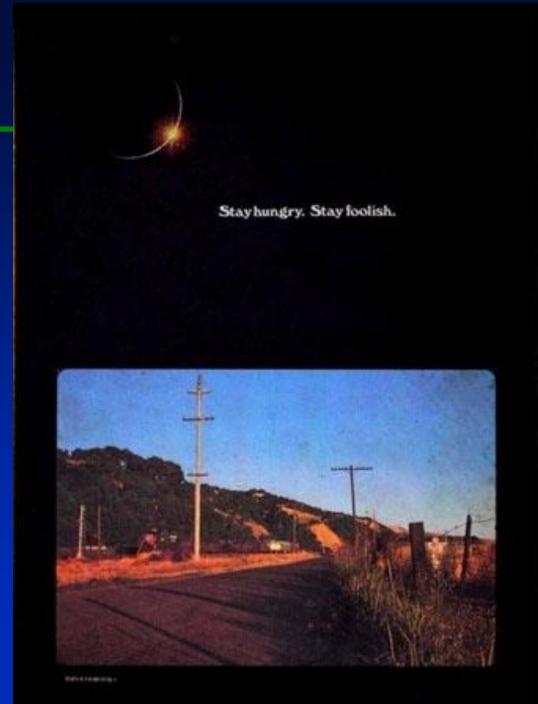
Inside Out 2015



Pixar Theater Gross Revenues

9/2015

Worldwide (Unadjusted)												
Rank	Title (click to view)	Studio	Worldwide	Domestic / %		Overseas / %		Year				
1	Toy Story 3	BV	\$1,063.2	\$415.0	39%	\$648.2	61%	2010				
2	Finding Nemo	BV	\$895.6	\$339.7	37.9%	\$555.9	62.1%	2003				
3	Inside Out	BV	\$774.6	\$353.6	45.6%	\$421.0	54.4%	2015				
4	Monsters University	BV	\$743.6	\$268.5	36.1%	\$475.1	63.9%	2013				
5	Up	BV	\$731.3	\$293.0	40.1%	\$438.3	59.9%	2009				
6	The Incredibles	BV	\$631.4	\$261.4	41.4%	\$370.0	58.6%	2004				
7	Ratatouille	BV	\$623.7	\$206.4	33.1%	\$417.3	66.9%	2007				
8	Cars 2	BV	\$559.9	\$191.5	34.2%	\$368.4	65.8%	2011				
9	Brave	BV	\$539.0	\$237.3	44%	\$301.7	56%	2012				
10	Monsters, Inc.	BV	\$528.8	\$255.9	48.4%	\$272.9	51.6%	2001				
11	WALL-E	BV	\$521.3	\$223.8	42.9%	\$297.5	57.1%	2008				
12	Toy Story 2	BV	\$485.0	\$245.9	50.7%	\$239.2	49.3%	1999				
13	Cars	BV	\$462.0	\$244.1	52.8%	\$217.9	47.2%	2006				
14	A Bug's Life	BV	\$363.4	\$162.8	44.8%	\$200.6	55.2%	1998				
15	Toy Story	BV	\$362.0	\$191.8	53%	\$170.2	47%	1995				
	Т	OTAL:	\$9,284.7	\$3,890.6	41.9%	\$5,394.1	58.1%	-				
	AVE	RAGE:	\$619.0	\$259.4	41.9%	\$359.6	58.1%	-				

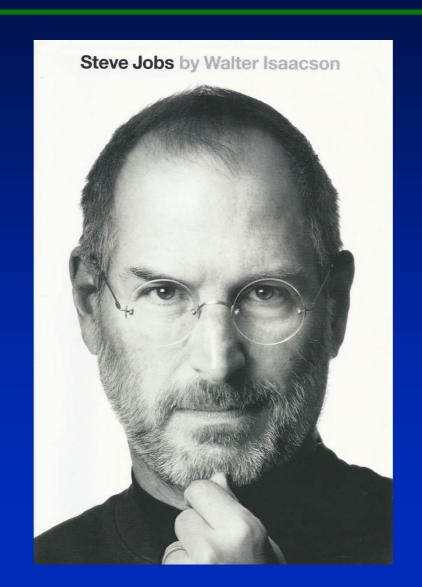


Stewart BrandWhole Earth Catalog

Jobs and Wozniak in the garage, 1976



Steve Jobs



Steve Jobs

"Passion for perfection and ferocious drive revolutionized six industries:

PCs Phones

Animated Movies Tablet Computing

Music Digital Publishing"

Walter Issacson

Steve's Credo

"It's in Apple's DNA that technology is not enough. We believe that it's technology married with the humanities that yields the results that makes our heart sing."

END...