
Entertainment Pixar/Disney History Conclusion

NBA 6120

Lecture 10

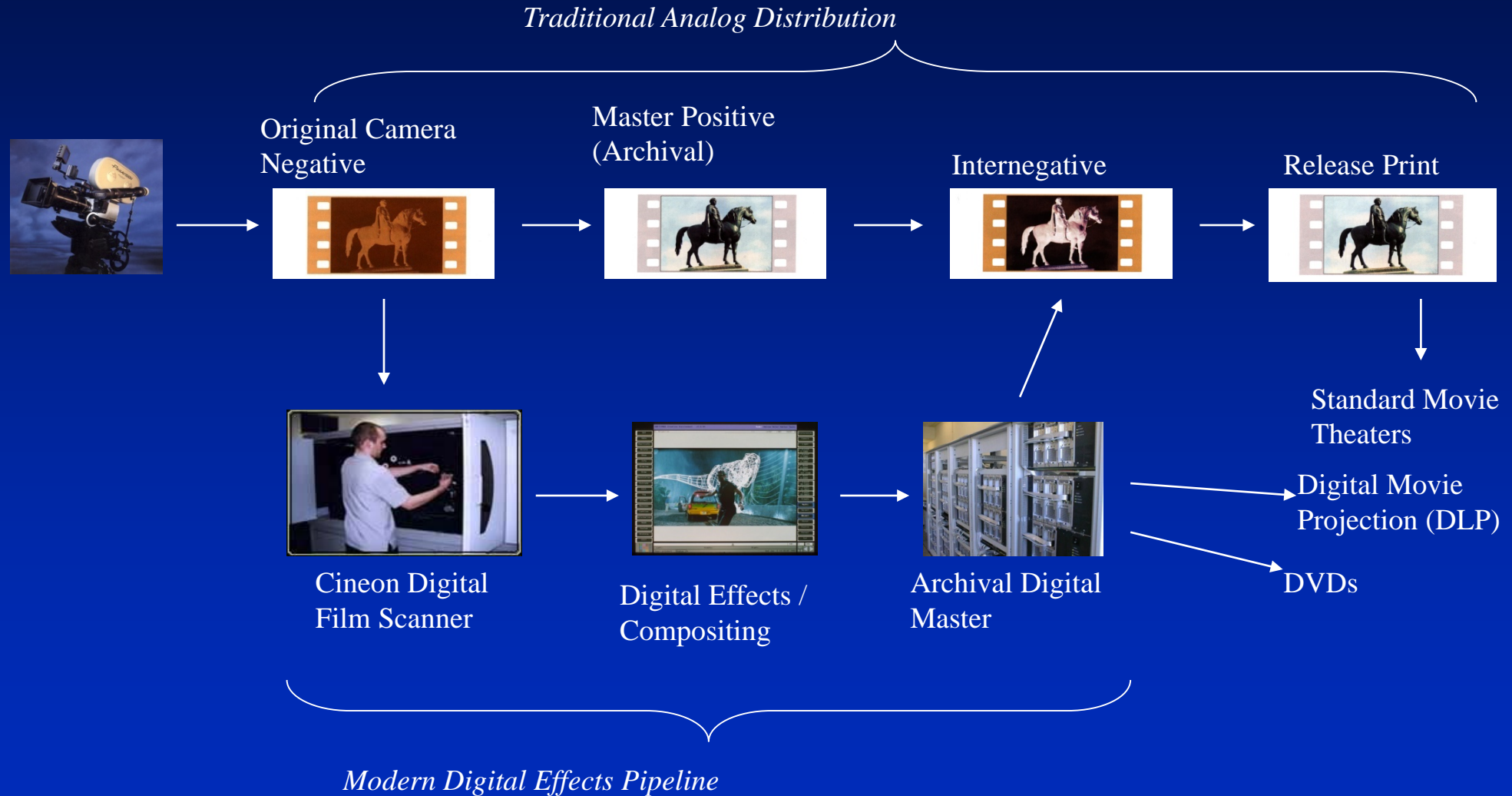
Donald Greenberg

February 28, 2018

Recommended Reading

- Brooks Barnes. “Disney and Pixar: The Power of the Prenup,” June 1, 2008.
[The New York Times](#).

Motion Picture Film Pipeline



Compositing: the blue screen

Advanced blue screen algorithm can produce fantastic results. Observe in the image below that important details, such as the reflections in the window, and the fine edges of the hair are maintained.



"The Saint" (1997)

A naïve observer would have a hard time identifying that the above image was not an original photograph.

Compositing: Putting it all together, “A Perfect Storm”

The boat is computer generated.



base geometry



textured model



Final Composite

“The Perfect Storm” (2000)

Compositing: Putting it all together, “A Perfect Storm”

These simple techniques are used in production situations, only on a much larger scale. “The Perfect Storm” is an excellent example.



“The Perfect Storm” (2000)

Is this a real image, or a composite?

Star Wars

Lucasfilm, 1977



George Lucas Computer Division

1979

- 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

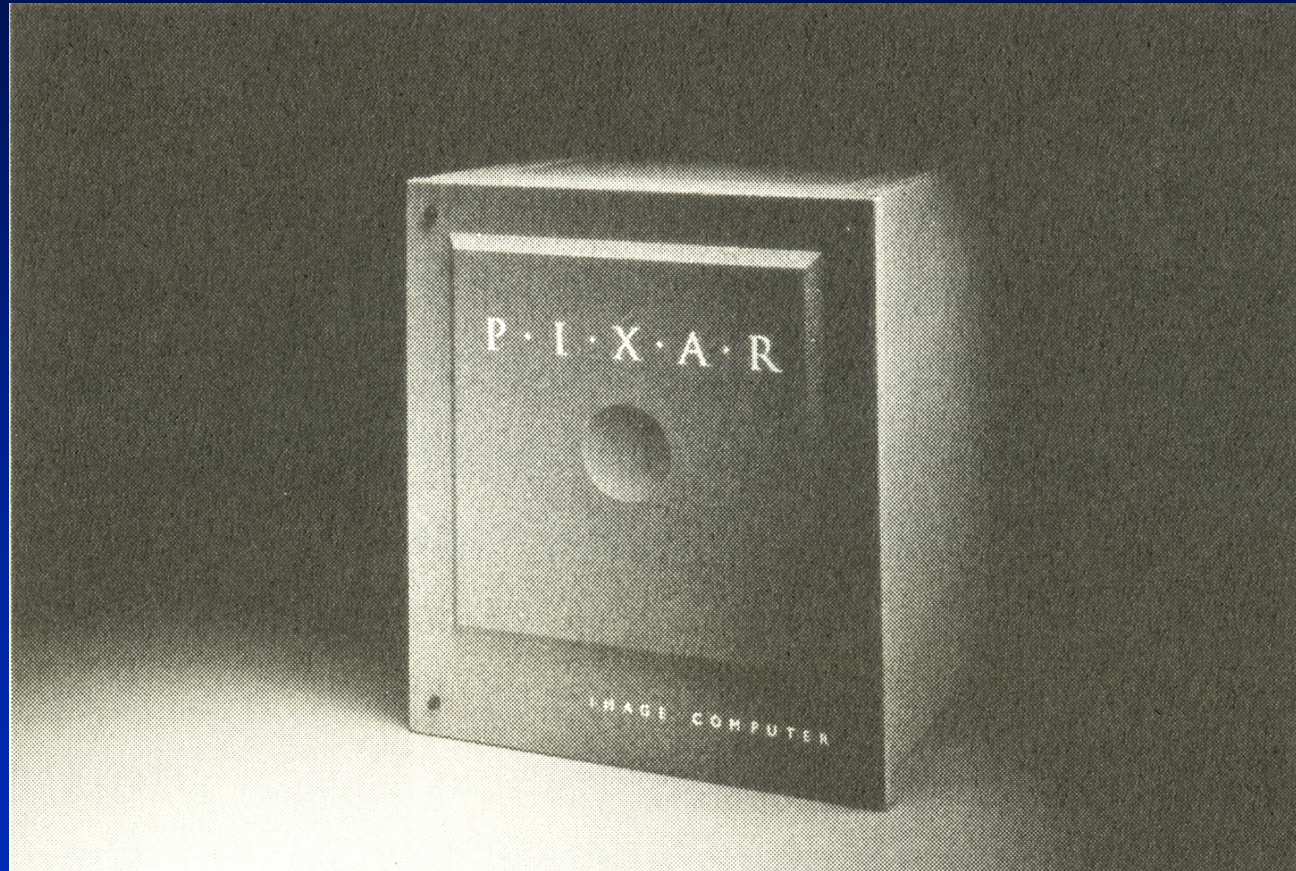
1986 - Pixar was formed when Steve Jobs purchased the computer division of Lucas Film

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

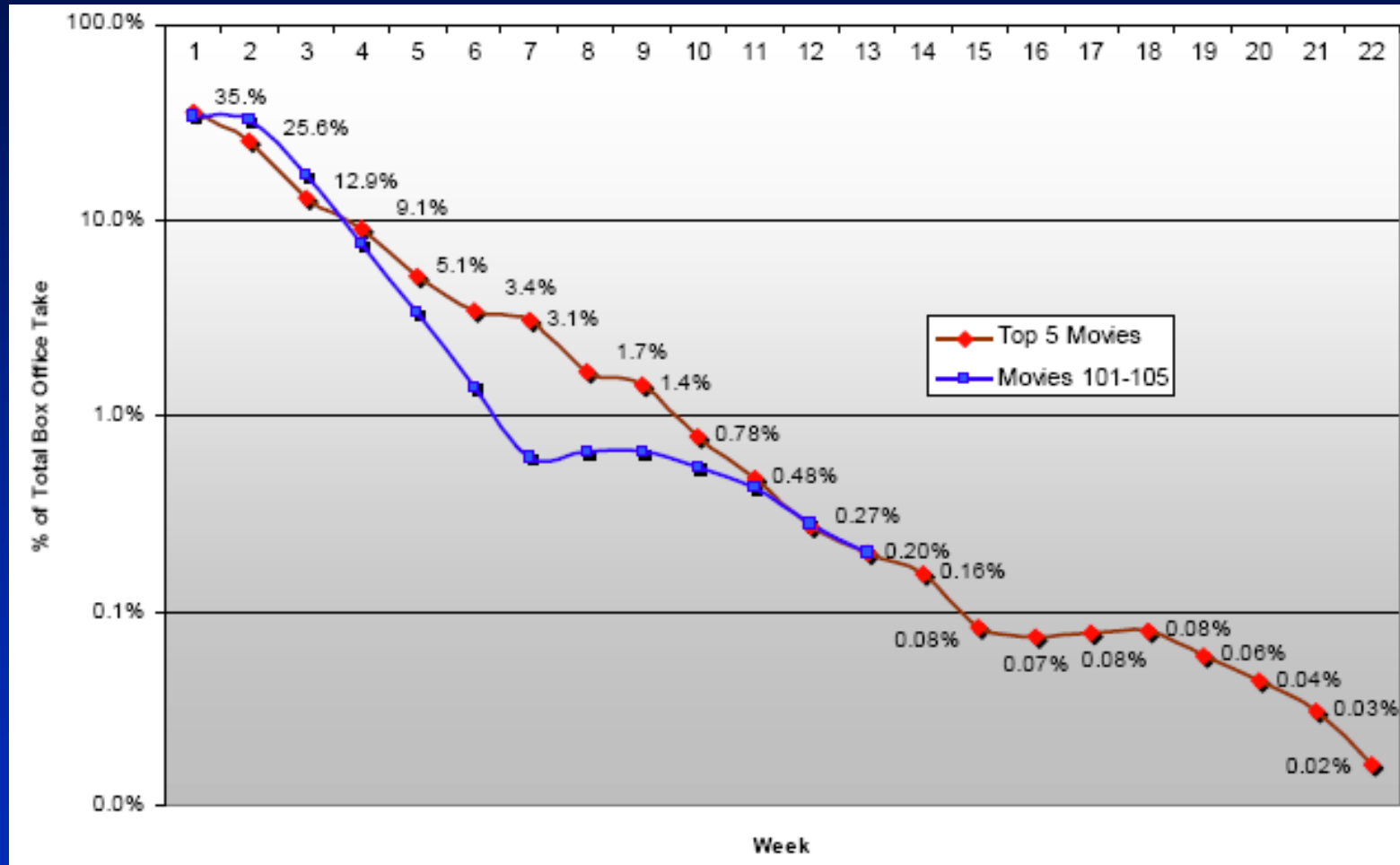


Pixar's first production, the ill-fated Pixar Image Computer.

Hollywood's Aftermarket Strategy

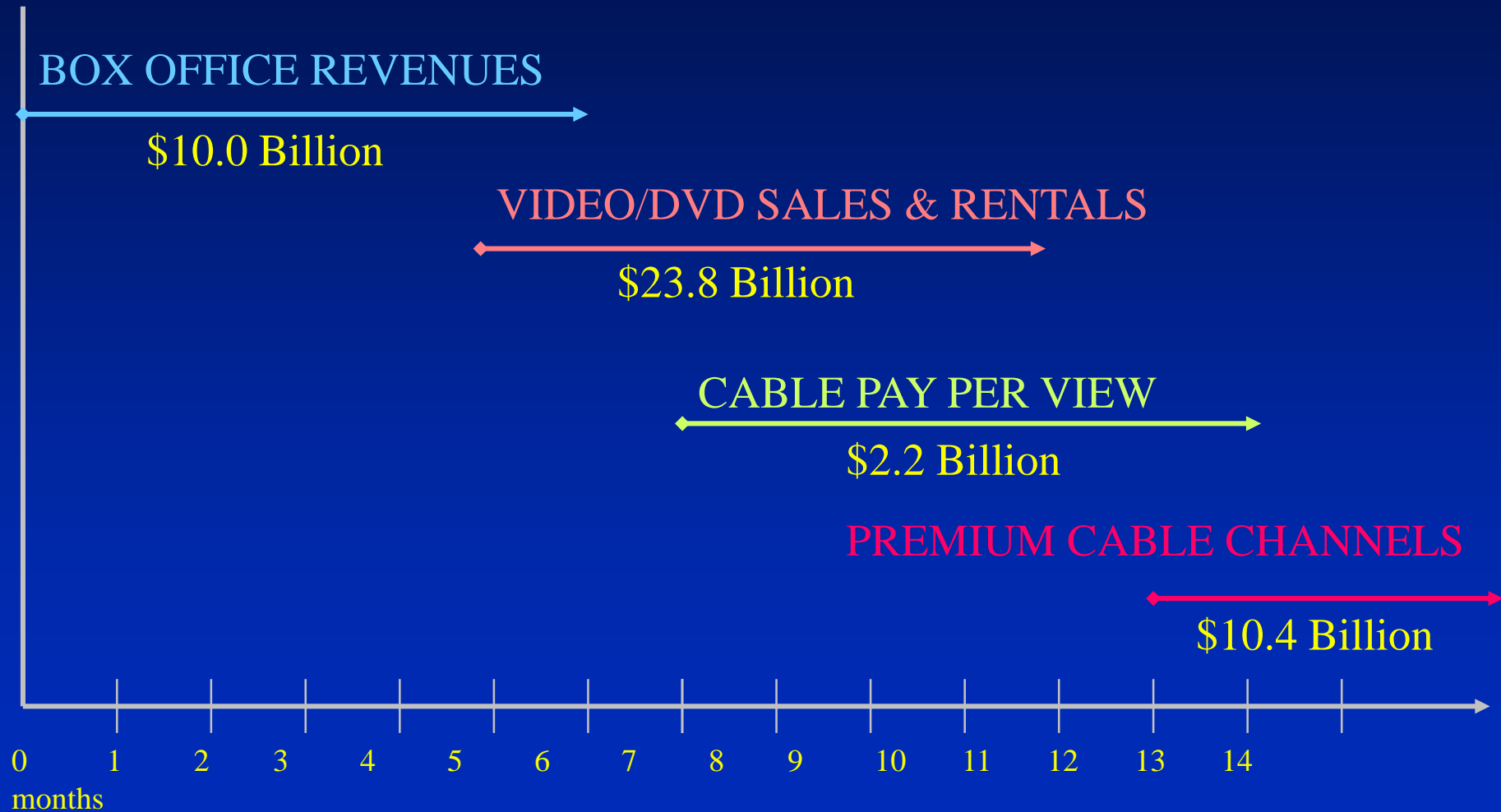
DVD's, Cable, Netflix

Box Office Revenues/Week

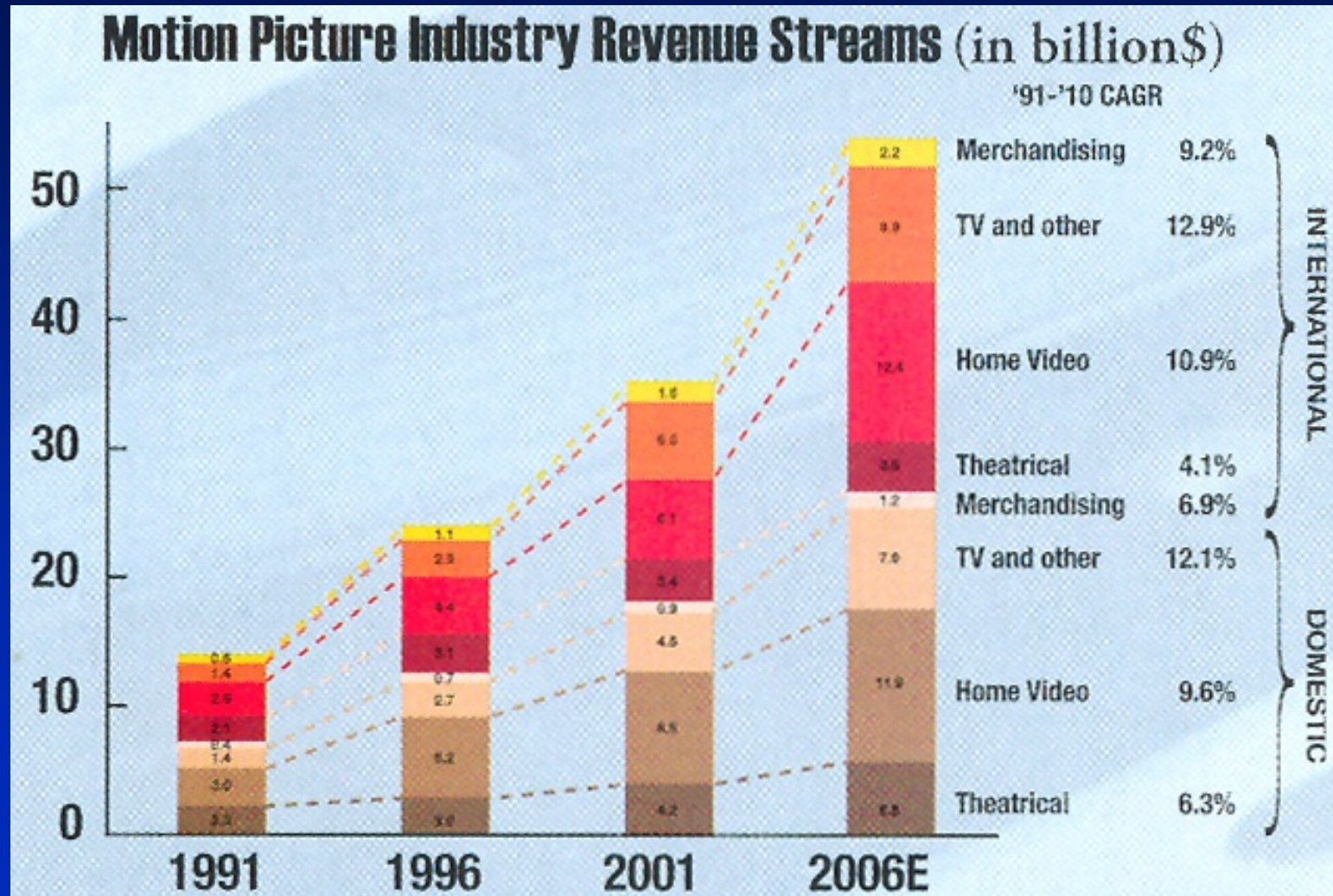


- Box Office take falls dramatically each week

Revenues From Movie Production



Motion Picture Revenue Streams



Motorola: Spotlight Stories



Lytro's new light field camera

2017



Pixar/Disney History & Negotiations

Luxo & Luxo Jr.

1986



Pixar History

1986-1991

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

1991 - 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. Each was to have new characters.
- 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

Nov. 22, 1995

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).

1995 – First recognition of film revenue

Toy Story

1995



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!!! #&*%\$#

Pixar History

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

- 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 May 1999
- 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

Monsters, Inc.

2001



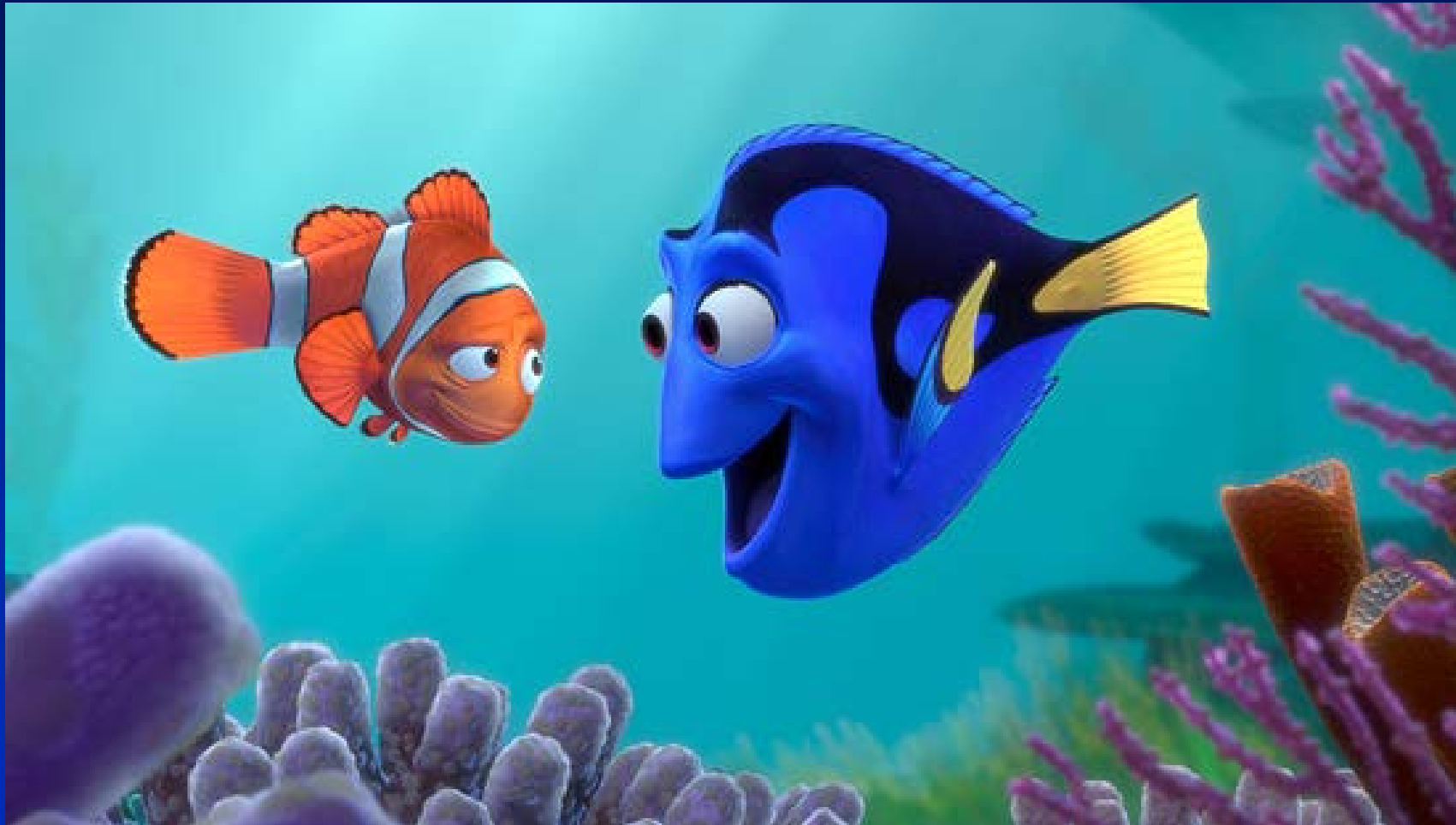
The RenderMen

IEEE Spectrum, April 2001



Finding NEMO

2003



- 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

Historical Financial Data of Pixar

	2005	2004	2003	2002	2001
<i>(In thousands, except per share data)</i>					
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

Bob Iger

Hong Kong Disneyland



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

Pixar Purchase

2006



Partial Disney/Pixar Prenup

- Pixar Employees could keep relatively plentiful health benefits
- Employees did not have to sign employment contracts
- The front gate at Emeryville kept Pixar's sign

Ratatouille

2007



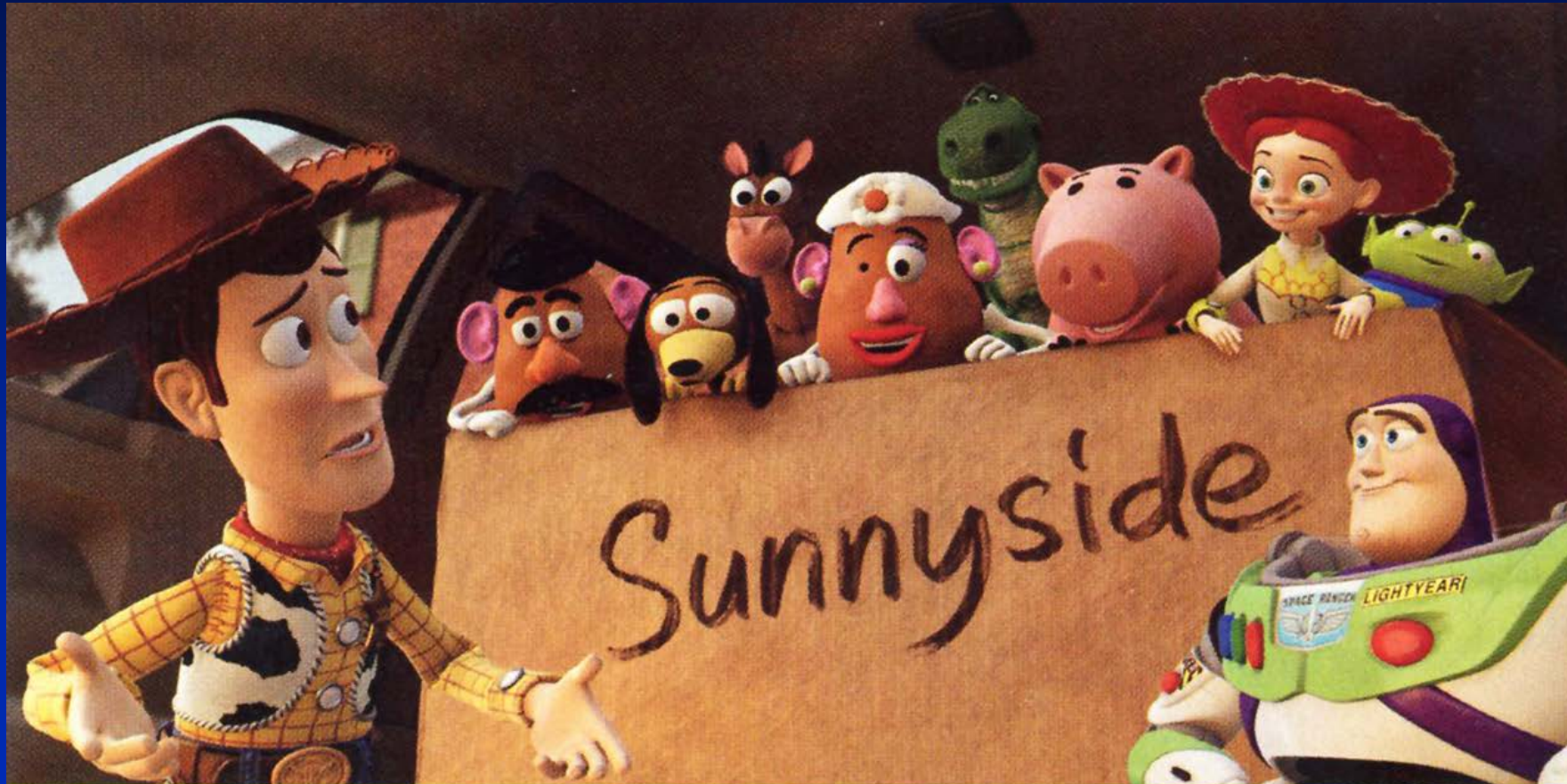
WALL•E

2008



Toy Story 3

2010



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



Finding Dory

2016



Coco

2017



Pixar Theater Gross Revenues

2018

Rank	Title (click to view)	Studio	Gross / Theaters		Opening / Theaters		Date
1	Finding Dory	BV	\$486,295,561	4,305	\$135,060,273	4,305	6/17/16
2	Toy Story 3	BV	\$415,004,880	4,028	\$110,307,189	4,028	6/18/10
3	Inside Out	BV	\$356,461,711	4,158	\$90,440,272	3,946	6/19/15
4	Finding Nemo	BV	\$339,714,978	3,425	\$70,251,710	3,374	5/30/03
5	Up	BV	\$293,004,164	3,886	\$68,108,790	3,766	5/29/09
6	Monsters University	BV	\$268,492,764	4,004	\$82,429,469	4,004	6/21/13
7	The Incredibles	BV	\$261,441,092	3,933	\$70,467,623	3,933	11/5/04
8	Monsters, Inc.	BV	\$255,873,250	3,649	\$62,577,067	3,237	11/2/01
9	Toy Story 2	BV	\$245,852,179	3,257	\$300,163	1	11/19/99
10	Cars	BV	\$244,082,982	3,988	\$60,119,509	3,985	6/9/06
11	Brave	BV	\$237,283,207	4,164	\$66,323,594	4,164	6/22/12
12	WALL-E	BV	\$223,808,164	3,992	\$63,087,526	3,992	6/27/08
13	Coco	BV	\$208,056,010	3,987	\$50,802,605	3,987	11/22/17
14	Ratatouille	BV	\$206,445,654	3,940	\$47,027,395	3,940	6/29/07
15	Toy Story	BV	\$191,796,233	2,574	\$29,140,617	2,457	11/22/95
16	Cars 2	BV	\$191,452,396	4,115	\$66,135,507	4,115	6/24/11
17	A Bug's Life	BV	\$162,798,565	2,773	\$291,121	1	11/20/98
18	Cars 3	BV	\$152,901,115	4,256	\$53,688,680	4,256	6/16/17
19	The Good Dinosaur	BV	\$123,087,120	3,749	\$39,155,217	3,749	11/25/15
TOTAL:			\$4,863,852,025	-	-	-	-
AVERAGE:			\$255,992,212	3,799	\$61,353,386	3,434	-

Pixar Theater Gross Revenues (Worldwide) 2018

Rank	Title (click to view)	Studio	Worldwide	Domestic / %		Overseas / %		Year
1	Toy Story 3	BV	\$1,067.0	\$415.0	38.9%	\$652.0	61.1%	2010
2	Finding Dory	BV	\$1,028.6	\$486.3	47.3%	\$542.3	52.7%	2016
3	Finding Nemo	BV	\$899.2	\$339.7	37.8%	\$559.5	62.2%	2003
4	Inside Out	BV	\$857.6	\$356.5	41.6%	\$501.1	58.4%	2015
5	Monsters University	BV	\$744.2	\$268.5	36.1%	\$475.7	63.9%	2013
6	Coco	BV	\$739.3	\$208.1	28.1%	\$531.2	71.9%	2017
7	Up	BV	\$735.1	\$293.0	39.9%	\$442.1	60.1%	2009
8	The Incredibles	BV	\$633.0	\$261.4	41.3%	\$371.6	58.7%	2004
9	Ratatouille	BV	\$620.7	\$206.4	33.3%	\$414.3	66.7%	2007
10	Cars 2	BV	\$562.1	\$191.5	34.1%	\$370.7	65.9%	2011
11	Monsters, Inc.	BV	\$543.4	\$255.9	47.1%	\$287.5	52.9%	2001
12	Brave	BV	\$540.4	\$237.3	43.9%	\$303.2	56.1%	2012
13	WALL-E	BV	\$533.3	\$223.8	42%	\$309.5	58%	2008
14	Toy Story 2	BV	\$497.4	\$245.9	49.4%	\$251.5	50.6%	1999
15	Cars	BV	\$462.2	\$244.1	52.8%	\$218.1	47.2%	2006
16	Cars 3	BV	\$383.9	\$152.9	39.8%	\$231.0	60.2%	2017
17	Toy Story	BV	\$373.6	\$191.8	51.3%	\$181.8	48.7%	1995
18	A Bug's Life	BV	\$363.3	\$162.8	44.8%	\$200.5	55.2%	1998
19	The Good Dinosaur	BV	\$332.2	\$123.1	37.1%	\$209.1	62.9%	2015
TOTAL:			\$11,916.4	\$4,863.9	40.8%	\$7,052.5	59.2%	-
AVERAGE:			\$627.2	\$256.0	40.8%	\$371.2	59.2%	-

Summary and Conclusion

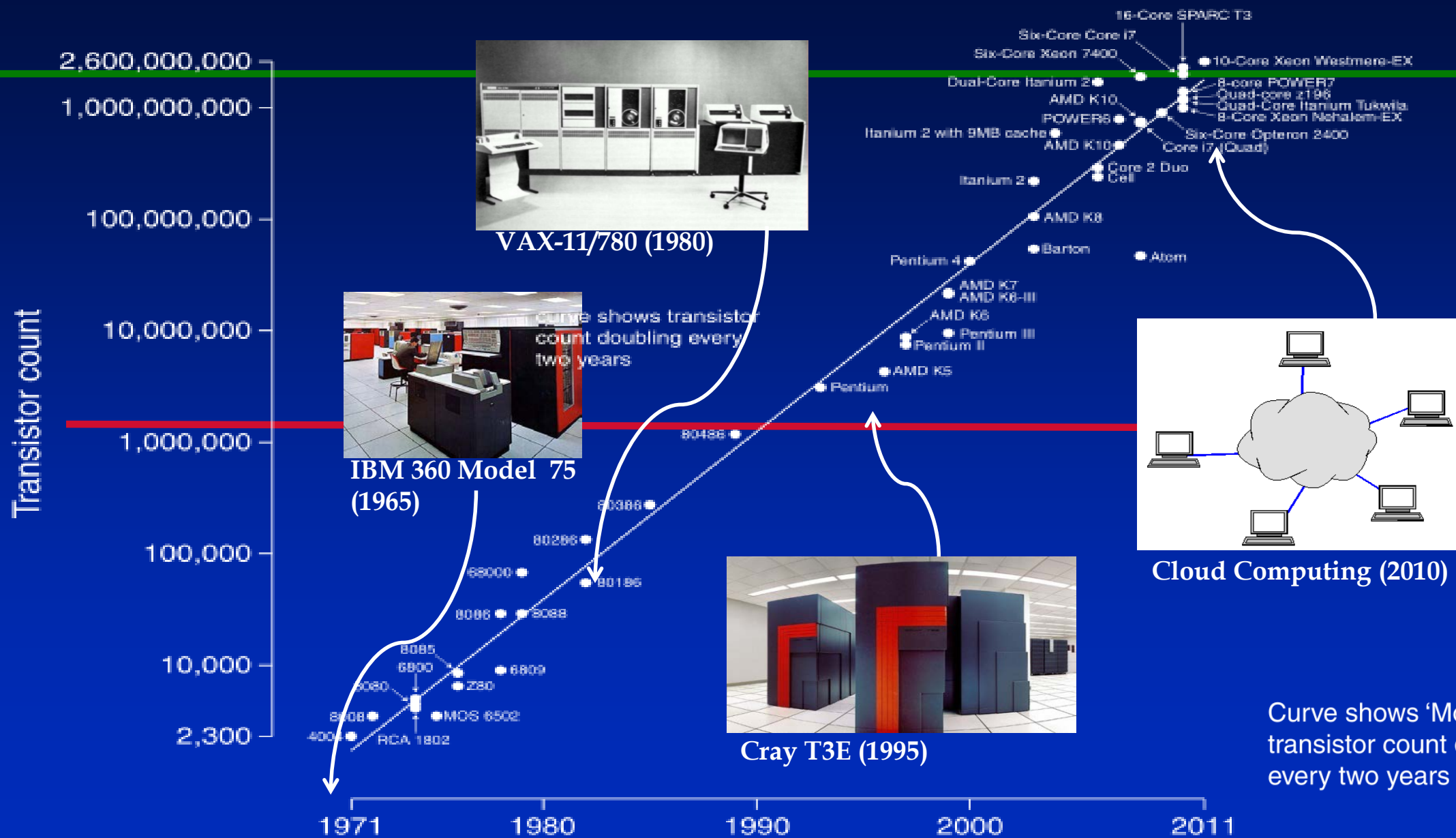
Moore's Law

“Chip density doubles every 18 months.”

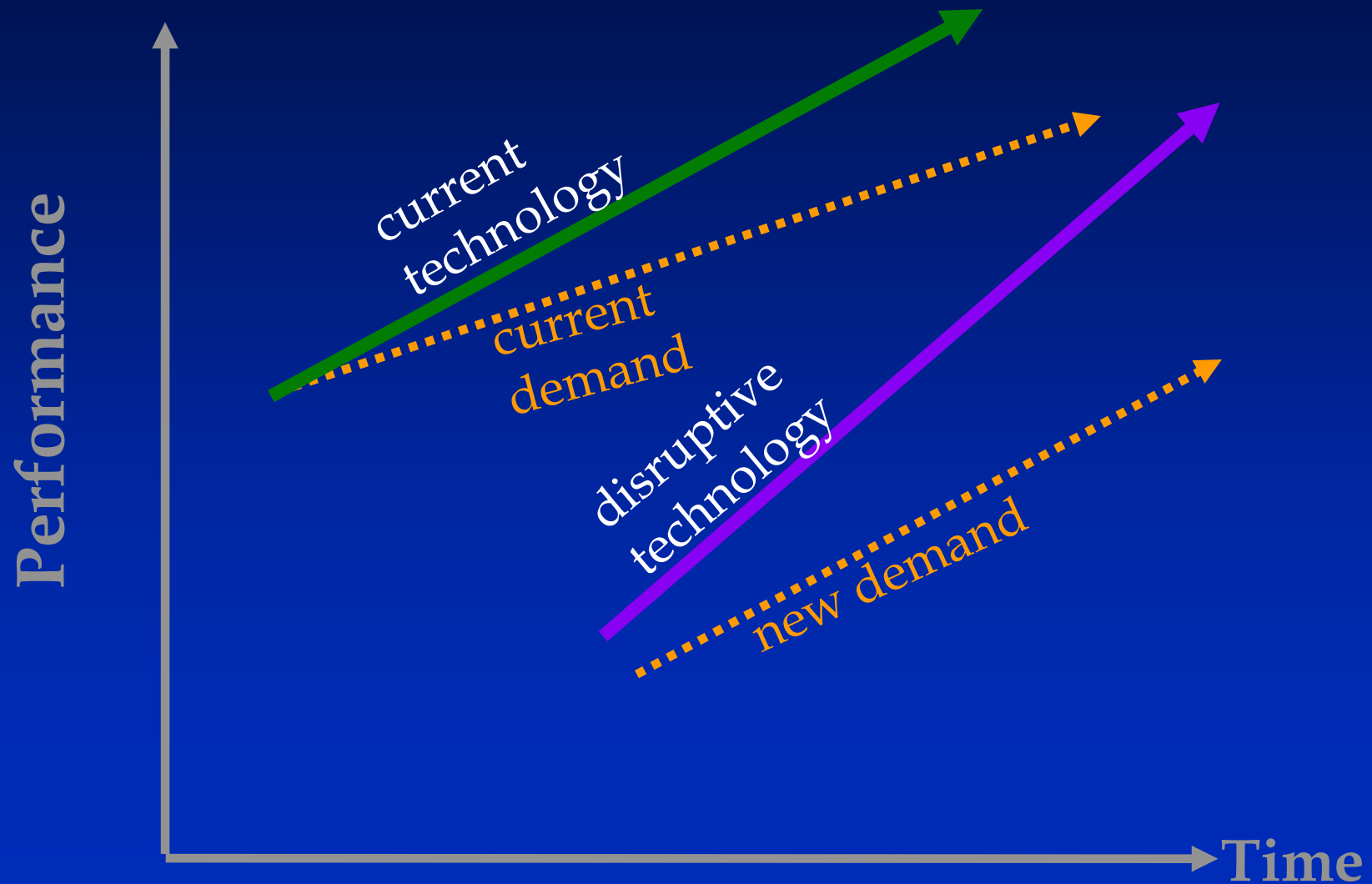
Processing Power (P) in 15 years:

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

Microprocessor Transistor Counts 1971-2011 & Moore's Law



Typical Disruptive Technology



Everything is a System

Large Scale:

Google → Internet → Mobile device

Desktop:

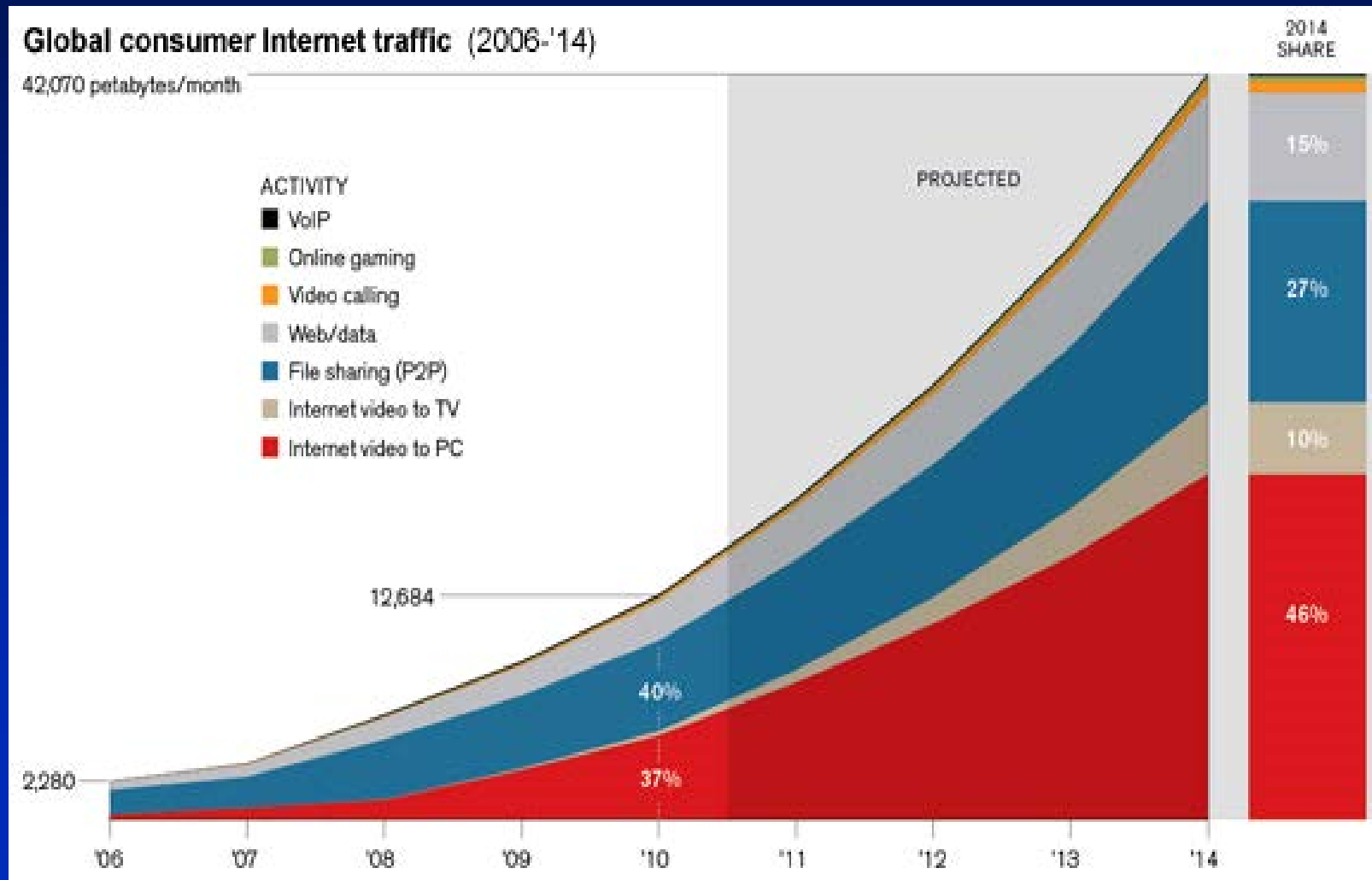
CPU → Memory/Hard drive → Display

Chip Level:

Memory → Data Movement →

Cache → Instruction Execution

Global Consumer Internet Traffic



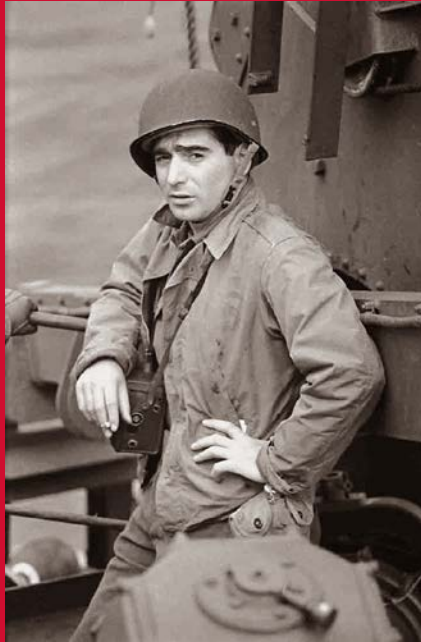
“Every economic era is based on a key abundance and a key scarcity.”

*George Gilder,
Forbes ASAP, 1992*

Ethics in the age of alternative facts

Magnum Photographers

Robert Capa



Henri Cartier-Bressone



- Organization was founded on the ideal that photographs must not be altered, cropped, or manipulated in any form.

Kerry and Fonda



The picture of Senator Kerry was captured by photographer Ken Light as Kerry was preparing to give a speech at the Register for Peace Rally held in Mineola, New York, in June 1971. The picture of Jane Fonda was captured by Owen Franken as Fonda was speaking at a political rally in Miami Beach, Florida, in August 1972.

Kerry and Fonda

Fonda Speaks To Vietnam Veterans At Anti-War Rally



Actress And Anti-War Activist Jane Fonda Speaks to a crowd of Vietnam Veterans as Activist and former Vietnam Vet John Kerry (LEFT) listens and prepares to speak next concerning the war in Vietnam (AP Photo)

February 2004: This digital composite of Senator John Kerry and Jane Fonda sharing a stage at an anti-war rally emerged during the 2004 Presidential primaries as Senator Kerry was campaigning for the Democratic nomination.

Original



Margaret Thatcher and George Bush
(*New York Times*, *Scientific American*,
Museum of Modern Art) 1994.

English Version



U.S. Version



Margaret Thatcher and George Bush (*New York Times*, *Scientific American*, *Museum of Modern Art*). 1994.

AI Generated Images

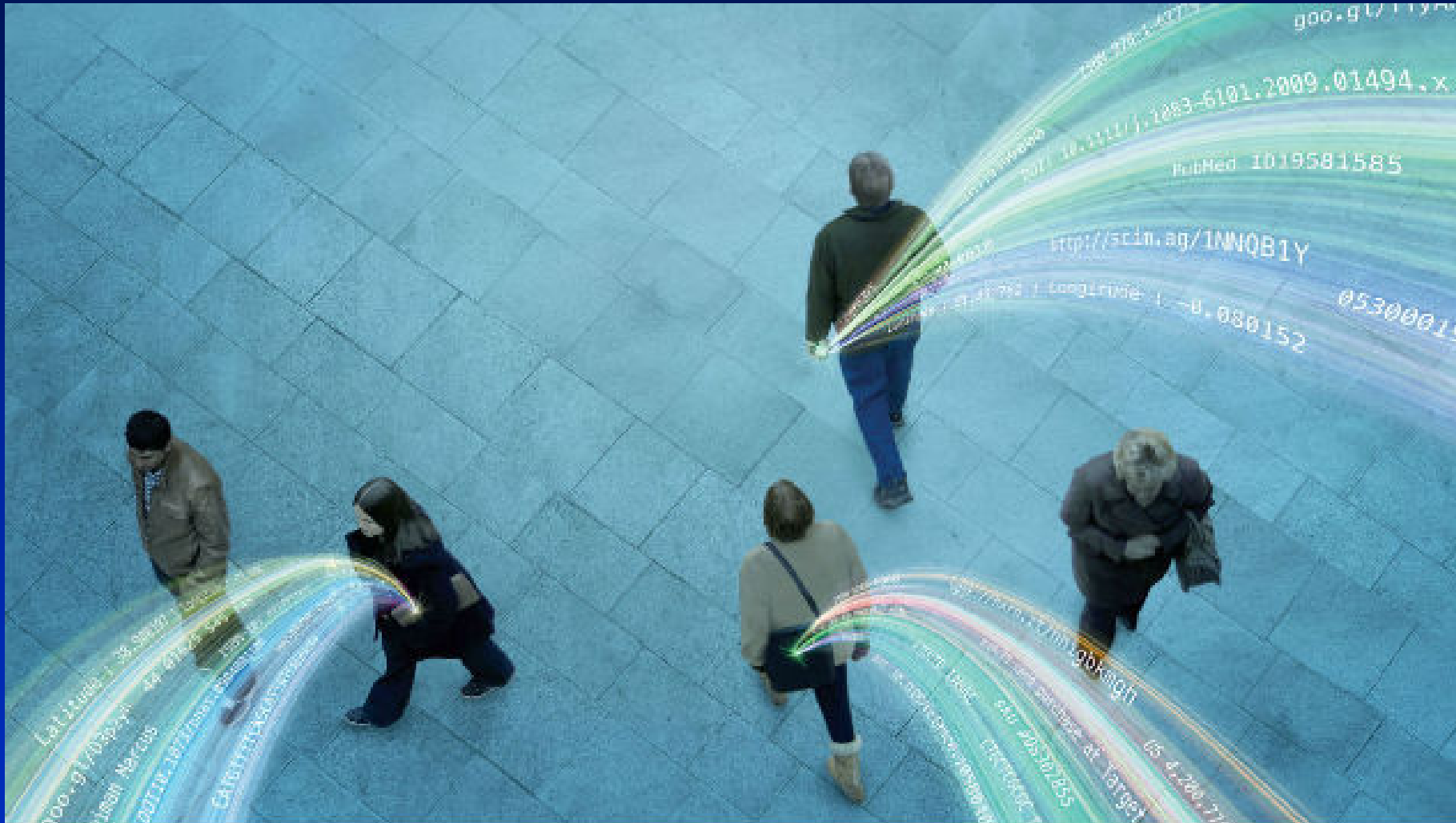
2018



Privacy and Security: Challenges of the new Internet Regulations

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

Data streams continuously from your device



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.

“An idea whose time has come is the most powerful of all
natural forces”

- Ralph Waldo Emerson

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

~ Wayne Gretzky

“Make this a better world!”

- Uncle Don