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:

\[ P = P_{\text{today}} \cdot (2)^{\frac{15 \text{ years}}{18 \text{ months}}} = P_t(2)^{1.5} \]

\[ = P_t(2)^{10} = 1000P_t \]
IBM 360 Model 75 (1965)

VAX-11/780 (1980)

Cray T3E (1995)

Cloud Computing (2010)

Curve shows ‘Moore’s Law’: transistor count doubling every two years
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

![Graph showing the relationship between performance, time, current technology, current demand, disruptive technology, and new demand.](image-url)
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
Electronic ink is a straightforward fusion of chemistry, physics and electronics to create this new material.
AMD – Integrated Graphics

- “Kaveri”
- 28 nm
- 47% GPU
Lytro Camera
Sensors on Google’s ADV

**VIDEO CAMERA**
Mounted near the rear-view mirror, the camera detects traffic lights and any moving objects.

**LIDAR**
A rotating sensor on the roof scans the area in a radius of 60 metres for creation of a dynamic, three-dimensional map of the environment.

**POSITION ESTIMATOR**
A sensor mounted on the left rear wheel measures lateral movements and determines the car's position on the map.

**DISTANCE SENSORS**
Four radars, three in the front bumper and one in the rear bumper, measure distances to various obstacles and allow the system to reduce the speed of the car.
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

“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
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
(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.)

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.
Pixar History

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
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>Toy Story released in November</td>
</tr>
<tr>
<td></td>
<td>First full length animated feature film.</td>
</tr>
<tr>
<td></td>
<td>Pixar goes public on November 29, 1995 just after Toy Story release.</td>
</tr>
<tr>
<td></td>
<td>6.9M shares open at $22 and end at $39/share.</td>
</tr>
<tr>
<td></td>
<td>IPO earns about $140M for Pixar (greater than Netscape).</td>
</tr>
<tr>
<td>1995</td>
<td>First recognition of film revenue</td>
</tr>
</tbody>
</table>
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!!!  #&*%$#
• 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.
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 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
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

*In thousands, except per share data*

### Statements of income

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>$289,116</td>
<td>$273,472</td>
<td>$262,498</td>
<td>$201,724</td>
<td>$70,223</td>
</tr>
<tr>
<td>Net incomes</td>
<td>152,938</td>
<td>141,722</td>
<td>124,768</td>
<td>89,950</td>
<td>36,217</td>
</tr>
</tbody>
</table>

### Earnings per common share

<table>
<thead>
<tr>
<th></th>
<th>Basic</th>
<th>Diluted</th>
<th>Dividends</th>
<th>Dividends</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ 1.29</td>
<td>1.24</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>$1.25</td>
<td>1.19</td>
<td>1.09</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>$1.15</td>
<td>1.09</td>
<td>----------</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>$0.89</td>
<td>0.84</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>$0.38</td>
<td>0.35</td>
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</table>

### Balance sheets

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</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>$1,488,740</td>
<td>$1,275,037</td>
<td>$1,002,056</td>
<td>$732,066</td>
<td>$523,294</td>
</tr>
<tr>
<td>Borrowings</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Shareholders’ equity</td>
<td>1,441,962</td>
<td>1,220,095</td>
<td>940,510</td>
<td>713,062</td>
<td>505,686</td>
</tr>
</tbody>
</table>
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*.
## Pixar Theater Gross Revenues 9/2015

### Worldwide (Unadjusted)

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

### Totals

- **TOTAL:** $9,284.7 $3,890.6 41.9% $5,394.1 58.1% -
- **AVERAGE:** $619.0 $259.4 41.9% $359.6 58.1% -
Stewart Brand
Whole Earth Catalog
Jobs and Wozniak in the garage, 1976
Steve Jobs

Steve Jobs by Walter Isaacson
“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.”