CS155b: E-Commerce

Lecture 5: Jan. 28, 2003

B2C E-Commerce
Acknowledgement: H. Chiang
Revenue Models

• Sell goods and services and take a cut (just like B&M retailers). (e.g., Amazon, E*Trade, Dell)

• Advertising
  – Ads only (original Yahoo)
  – Ads in combination with other sources

• Transaction fees

• Sell digital content through subscription. (e.g., WSJ online, Economist Intelligence Wire)
E-Commerce Retail Sales

Estimated Quarterly U.S. Retail E-Commerce Sales
4th Quarter 1999 - 3rd Quarter 2002, in $Billions

Source: Commerce Dept.
# Estimated Quarterly U.S. Retail Sales: Total and E-commerce

(source: U.S. Commerce Dept. at http://www.commerce.gov)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Total</th>
<th>E-Commerce</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q99</td>
<td>784,278</td>
<td>5,481</td>
<td>0.7</td>
</tr>
<tr>
<td>1Q00</td>
<td>711,600</td>
<td>5,814</td>
<td>0.8</td>
</tr>
<tr>
<td>2Q00</td>
<td>771,691</td>
<td>6,346</td>
<td>0.8</td>
</tr>
<tr>
<td>3Q00</td>
<td>765,536</td>
<td>7,266</td>
<td>0.9</td>
</tr>
<tr>
<td>4Q00</td>
<td>810,311</td>
<td>9,459</td>
<td>1.2</td>
</tr>
<tr>
<td>1Q01</td>
<td>724,224</td>
<td>8,256</td>
<td>1.1</td>
</tr>
<tr>
<td>2Q01</td>
<td>805,245</td>
<td>8,246</td>
<td>1.0</td>
</tr>
<tr>
<td>3Q01</td>
<td>782,088</td>
<td>8,236</td>
<td>1.1</td>
</tr>
<tr>
<td>4Q01</td>
<td>856,285</td>
<td>11,178</td>
<td>1.3</td>
</tr>
<tr>
<td>1Q02</td>
<td>743,810</td>
<td>9,880</td>
<td>1.3</td>
</tr>
<tr>
<td>2Q01</td>
<td>825,243</td>
<td>10,265</td>
<td>1.2</td>
</tr>
<tr>
<td>3Q02</td>
<td>827,461</td>
<td>11,061</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Online Holiday Sales, 2002

% Market Share: 17.8%  17.5%  14.7%  11.6%  11.4%

<table>
<thead>
<tr>
<th>Product</th>
<th>Spending Online ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books, Audio, Video</td>
<td>1800</td>
</tr>
<tr>
<td>Clothing, Apparel</td>
<td>1600</td>
</tr>
<tr>
<td>Travel</td>
<td>1400</td>
</tr>
<tr>
<td>Electronics</td>
<td>1200</td>
</tr>
<tr>
<td>Toys, Video Games</td>
<td>1200</td>
</tr>
</tbody>
</table>
First-Generation B2C

- **Main Attraction:** Lower Retail Prices
- **“B2C Pure Plays”** could eliminate intermediaries, storefront costs, some distribution costs, etc.
- **Archetype:** www.amazon.com

Source: Benchmark Capital Group; The Economist
Current Theories
(after first shake-out)

- High order frequency and large order size are more important than large customer base.
- E-tailers should strive for average order sizes of \( \geq 50 \) and concentrate on high-margin product categories (>35%). [Traditional grocery margins: 2-3%.]
- Concentrate on making transactions profitable, not on VC-supported market-share wars.
- Combine e-tailing with B&M stores.
“Multi-Channel” Retail (B2C w/ B&M)

• Exploit multiple marketing and distribution channels simultaneously
  - B&M (“bricks and mortar”) stores: Customers browse on the web before going to the store.
  - Catalog sales, telephone, tv advertising,...

• In 2002, multi-channel retailers (i.e., B&Ms or traditional catalog companies that also sell online) made up 69% (estimate) of B2C e-commerce. Mostly high-margin sales, e.g., computers, travel, and automotive.

• Multi-channel retailers are more profitable, on average, than web-based and store-based retailers.

(source: Boston Consulting Group)
Advantages of Multi-Channel Retail

- Leverage existing brands.
- Biggest B&M retailers have huge clout. (Walmart’s annual sales are $138B, much more than all e-tailers’ combined.)
- Profits from existing channels can subsidize e-tail start-up. No need to quit when VCs lose interest.
- Use established distribution and fulfillment infrastructure (e.g., LL Bean, Land’s End, ...).
- Cross-marketing and cross-datamining.
• Full Name: Barnes & Noble.com  
   (not the same as Barnes & Noble, Inc., booksellers [NYSE:BKS])

• Stock Price [NASDAQ:BNBN]:  
  - 1.11 (close 1/24/2003)  
  - 52-wk range: 0.43 to 2.44  
  - No earnings

• 40% owned by Barnes & Noble Booksellers, Inc., 40% owned by Bertelsmann AG, 20% by public shareholders
bn.com History

- May 1997: Website launch
  - Business conducted by a wholly owned subsidiary of Barnes & Noble, Inc.
- October 1998: Web site “split off”
  - 50-50 joint venture with Bertelsmann
- March 1999: Incorporated
- May 1999: IPO
  - $18/share; raised $486M (largest Internet IPO at the time)
BNBN Stock Chart
(source: Quicken.com, as of close 1/24/2003)
bn.com Business Strategy
(source: bn.com Investor Relations website)

• “Build a profitable e-commerce business by focusing on information, entertainment, and education products and services that can be delivered either physically or digitally.”

• Barnes & Noble.com is trying to become the central website for consumers to purchase information-based products.

• Not all products are physical: new subsite starting Jan. 2003 sells eBook content.
Increasing bn.com’s “Market Share”

• Leverage Barnes & Noble name.
• Use partnerships with media (e.g., Bertelsmann) and online (e.g., Yahoo) companies.
• Increase partnerships through its affiliate network, where websites get a cut when a bn.com purchase is made through a partner’s link.
• Improve advertising and user-customization services.
E-tailers are Adding “Offline” Channels

- Alloy.com sold clothes and accessories, but it became a hit only after its catalog was launched.
- Drugstore.com once dismissed B&M retailing, but it agreed to sell a 25% stake to Rite-Aid not long after rival Soma.com was bought by CVS.
- Gateway sells computers through WWW and catalog, but it also has 164 stores across U.S. They carry little stock, but they allow customers to “get a feel for the product” before ordering it.
Revenue Models for Online Ads

- “Number of Impressions”  
  (How many times does the user cause the advertiser’s content to be displayed?)

- “Click Through”  
  (How many times does the user click on the ad to go to the advertiser’s site?)

- “Pay-per-sale”  
  (How many times does the user click through and then buy something?)
Top Online Advertisers
(By Impressions) Source: Nielsen/NetRatings (9/23/01)

1. Microsoft Corp
2. AOL Time Warner Inc
3. Bertelsmann Ag
4. Yahoo! Inc
5. Providian Financial Corp
6. Nextcard Inc
7. Classmates Online Inc
8. Barnes & Noble Inc
9. Ebay Inc
10. Amazon.Com Inc
11. Cablevision Systems Corp
12. Cassava Enterprises Ltd
13. Citigroup Inc
14. Bank One Corp
15. Sony Corp
16. Zairmail Inc
17. American Red Cross
18. American Movie Classics Co
19. Coolsavings.Com Inc
20. Ediets.Com Inc
21. Ameritrade Holding Corp
22. Bonzi.Com Software
23. Homestore.Com Inc
24. Telefonica Sa
25. Microgaming Jackpot Network
Status as of 4th Quarter 2000

- 3% of all ads; radio twice as big
- 55% of online ads are by dot coms
- 79 companies place 1/2 of all online ads
- Most ads run on 1 site for <3 weeks
  * Portals and Search Engines host more ad impressions than any other type of site (44%).
  * 63% of ad impressions have a “branding focus”
# Top 25 National Advertisers

<table>
<thead>
<tr>
<th>Rank 1999</th>
<th>Advertiser</th>
<th>Total U.S. ad spending in 1999</th>
<th>Network TV</th>
<th>Spot TV</th>
<th>Network radio</th>
<th>National spot radio</th>
<th>Internet</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Motors Corp.</td>
<td>4,040,374.00</td>
<td>887,893.20</td>
<td>503,807.40</td>
<td>5,963.20</td>
<td>28,189.50</td>
<td>25,074.10</td>
<td>0.62%</td>
</tr>
<tr>
<td>2</td>
<td>Procter &amp; Gamble Co.</td>
<td>2,611,766.60</td>
<td>621,527.30</td>
<td>113,294.70</td>
<td>10,265.90</td>
<td>10,838.70</td>
<td>8,039.30</td>
<td>0.31%</td>
</tr>
<tr>
<td>3</td>
<td>Philip Morris Cos.</td>
<td>2,201,600.90</td>
<td>383,215.50</td>
<td>200,873.10</td>
<td>2,995.30</td>
<td>10,613.00</td>
<td>873</td>
<td>0.04%</td>
</tr>
<tr>
<td>4</td>
<td>Pfizer</td>
<td>2,142,433.70</td>
<td>364,704.20</td>
<td>59,059.30</td>
<td>11,805.10</td>
<td>1,425.90</td>
<td>1,254.20</td>
<td>0.06%</td>
</tr>
<tr>
<td>5</td>
<td>AT&amp;T Corp.</td>
<td>1,950,871.20</td>
<td>258,716.10</td>
<td>100,987.90</td>
<td>8,249.80</td>
<td>32,705.00</td>
<td>13,644.80</td>
<td>0.70%</td>
</tr>
<tr>
<td>6</td>
<td>DaimlerChrysler</td>
<td>1,804,055.50</td>
<td>286,520.60</td>
<td>664,880.60</td>
<td>2,068.30</td>
<td>23,610.50</td>
<td>9,958.30</td>
<td>0.55%</td>
</tr>
<tr>
<td>7</td>
<td>Ford Motor Co.</td>
<td>1,639,761.50</td>
<td>364,989.10</td>
<td>229,678.40</td>
<td>4,959.40</td>
<td>16,981.00</td>
<td>13,638.50</td>
<td>0.83%</td>
</tr>
<tr>
<td>8</td>
<td>Sears, Roebuck &amp; Co.</td>
<td>1,505,205.50</td>
<td>186,855.70</td>
<td>48,573.40</td>
<td>12,343.00</td>
<td>7,859.90</td>
<td>1,444.40</td>
<td>0.10%</td>
</tr>
<tr>
<td>9</td>
<td>PepsiCo</td>
<td>1,315,712.50</td>
<td>189,049.90</td>
<td>62,371.00</td>
<td>0</td>
<td>5,454.30</td>
<td>581.3</td>
<td>0.04%</td>
</tr>
<tr>
<td>10</td>
<td>Verizon Communications</td>
<td>1,312,749.00</td>
<td>1,690.50</td>
<td>135,634.90</td>
<td>0</td>
<td>74,497.40</td>
<td>1,876.20</td>
<td>0.14%</td>
</tr>
<tr>
<td>11</td>
<td>Walt Disney Co.</td>
<td>1,304,002.20</td>
<td>242,015.30</td>
<td>128,353.70</td>
<td>1,578.80</td>
<td>23,867.90</td>
<td>16,360.50</td>
<td>1.25%</td>
</tr>
<tr>
<td>12</td>
<td>Time Warner</td>
<td>1,202,905.90</td>
<td>189,959.60</td>
<td>97,659.40</td>
<td>1,999.20</td>
<td>35,172.00</td>
<td>7,487.40</td>
<td>0.62%</td>
</tr>
<tr>
<td>13</td>
<td>Diageo</td>
<td>1,198,445.20</td>
<td>269,970.40</td>
<td>78,186.80</td>
<td>0</td>
<td>34,430.10</td>
<td>80.7</td>
<td>0.01%</td>
</tr>
<tr>
<td>14</td>
<td>McDonald's Corp.</td>
<td>1,134,802.30</td>
<td>296,766.10</td>
<td>179,444.60</td>
<td>36.9</td>
<td>3,238.90</td>
<td>599.6</td>
<td>0.05%</td>
</tr>
<tr>
<td>15</td>
<td>IBM Corp.</td>
<td>1,128,462.30</td>
<td>105,545.30</td>
<td>10,526.60</td>
<td>0</td>
<td>11,748.40</td>
<td>32,158.80</td>
<td>2.85%</td>
</tr>
<tr>
<td>16</td>
<td>Intel Corp.</td>
<td>1,119,330.40</td>
<td>77,448.20</td>
<td>2,573.00</td>
<td>0</td>
<td>7,391.20</td>
<td>13,464.10</td>
<td>1.20%</td>
</tr>
<tr>
<td>17</td>
<td>WorldCom</td>
<td>1,108,381.50</td>
<td>274,400.00</td>
<td>21,760.20</td>
<td>0</td>
<td>5,030.10</td>
<td>5,581.50</td>
<td>0.50%</td>
</tr>
<tr>
<td>18</td>
<td>Viacom</td>
<td>1,064,529.80</td>
<td>115,080.10</td>
<td>192,982.50</td>
<td>10,332.20</td>
<td>32,321.90</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Toyota Motor Corp.</td>
<td>1,025,231.70</td>
<td>227,478.10</td>
<td>201,210.70</td>
<td>0</td>
<td>4,009.20</td>
<td>9,769.90</td>
<td>0.95%</td>
</tr>
<tr>
<td>20</td>
<td>Johnson &amp; Johnson</td>
<td>1,004,497.00</td>
<td>466,870.70</td>
<td>33,974.10</td>
<td>32.1</td>
<td>3,036.90</td>
<td>3,484.80</td>
<td>0.35%</td>
</tr>
<tr>
<td>21</td>
<td>U.S. Government</td>
<td>998,050.90</td>
<td>239,004.60</td>
<td>37,917.30</td>
<td>12,703.90</td>
<td>21,972.30</td>
<td>4,533.10</td>
<td>0.45%</td>
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<tr>
<td>22</td>
<td>J.C. Penney Co.</td>
<td>995,868.40</td>
<td>114,657.30</td>
<td>15,517.90</td>
<td>5,526.30</td>
<td>10,489.80</td>
<td>1,652.00</td>
<td>0.17%</td>
</tr>
<tr>
<td>23</td>
<td>SBC Communications</td>
<td>926,103.60</td>
<td>7,472.60</td>
<td>127,474.60</td>
<td>0</td>
<td>43,552.30</td>
<td>2,851.20</td>
<td>0.31%</td>
</tr>
<tr>
<td>24</td>
<td>Sony Corp.</td>
<td>922,678.80</td>
<td>149,800.30</td>
<td>65,719.20</td>
<td>292.7</td>
<td>12,763.80</td>
<td>9,719.90</td>
<td>1.05%</td>
</tr>
<tr>
<td>25</td>
<td>L’Oreal</td>
<td>899,815.10</td>
<td>209,916.90</td>
<td>19,719.80</td>
<td>0</td>
<td>3,126.00</td>
<td>402.7</td>
<td>0.04%</td>
</tr>
</tbody>
</table>
WWW Growing Faster Than Ad Supply

- Immediate problem: Too many pages, too few advertisers
- Price ~2 Years Ago: $1 per thousands of impressions
- Price ~5 Years Ago: $10 to $50 per thousands of impressions

Sources: Veronis Suhler; Internet Advertising Bureau; The Economist
Inherent Difficulty with Online Ads

• Downward Spiral
  - Banner ads easy to ignore
  - Average click through has fallen to less than 1 in 200
  - Leads to creation of more obnoxious ads, e.g., “pop-ups”

• Entertaining?
  - Getting the “right” ads requires time, effort, and money.
  - Internet market not large enough to justify it.
  - 5 of the world’s top 10 advertisers each spent less than $1 million on online ads last year.
Inherent Difficulty (continued)

• Accountability: Advertisers can tell immediately whether their ads “work.”

• High Expectations: “Well-targeted” ads cost up to 100 times as much as generic ads. But how precisely can one target?

Discussion Point: Will online advertising survive the dot com crash and the unrealistic expectations? Will it stabilize as just one more “branding medium”? 
Current Advertising Statistics Not Easily Available

- Many sites gather and publish online business statistics, including advertising, sales, etc. For example:
  - eMarketer.com
  - AdResource.com
  - Nielsen//NetRatings

- These sites no longer make all information freely available! They:
  - combine data with business tools as a package they sell to improve a business’s online advertising success
  - limit access to paying subscribers; publish only older data freely; or display only a small part to encourage new subscriptions.
Reading for January 30


• Chapter 2 of The Digital Dilemma (http://books.nap.edu/html/digital_dilemma/ch2.html)