CS155a: E-Commerce

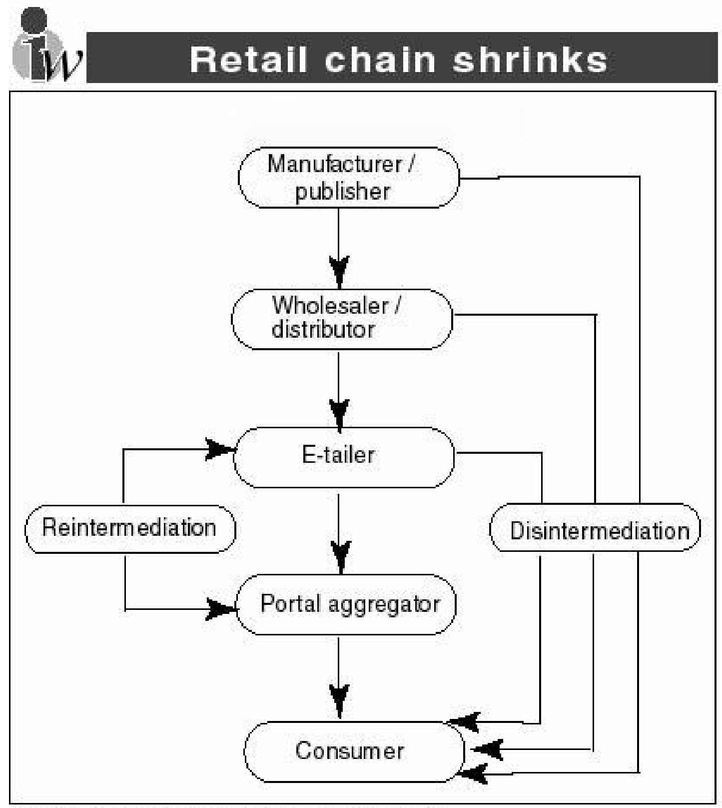
Lecture 10: October 9, 2001

B2C E-Commerce, Continued

Acknowledgement: H. Chiang

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

Basic Problems Encountered Immediately

- "Customer-Acquisition Costs" are huge.
- Service is technically commoditizable, and there are no significant network effects.
- Customers' switching costs are tiny.

  (Lock-in to online book-buying is high. Lock-in to Amazon is low. Recall Netscape and IE.)
- Competition is fierce in almost all segments. Few e-tailers are profitable.
- Investors have run out of money and patience.

Internet Customer Acquisition Costs

Customer acquisition cost = total spent on advertising and marketing divided by the total number of new customers obtained

- Amazon.com → $29
- DLJ Direct → $185
- E*Trade → $257
- Various E-Commerce Sites → $34

E-Tailing is Difficult in Low-Margin Businesses

- Toys (e-Toys.com)
  - Typical online order contributes $11 to gross revenues.
  - Warehouse, marketing, website, and other fixed overhead is high.
  - A pure-play e-tailer needs to capture at least 5% of the toy market to reach profitability.
- Groceries (Webvan.com, Peapod.com)
  - Typical online order contributes $9 to gross revenue (fulfillment costs are very high).
  - Steady customer orders ~30 times/year.
  - McKinsey/Salomon-Smith-Barney's estimate of the value of one steady customer: ~$900 over 4 years.

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 ≥\$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 1999, multi-channel retailers (*i.e.,* B&Ms or traditional catalog companies that also sell online) made up 62% of B2C e-commerce. Mostly high-margin sales, *e.g.*, computers, tickets, and financial service.
- Projected to reach 85% in next 5 years. (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 <u>all</u> 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.

E-tailers are Adding "Offline" Channels

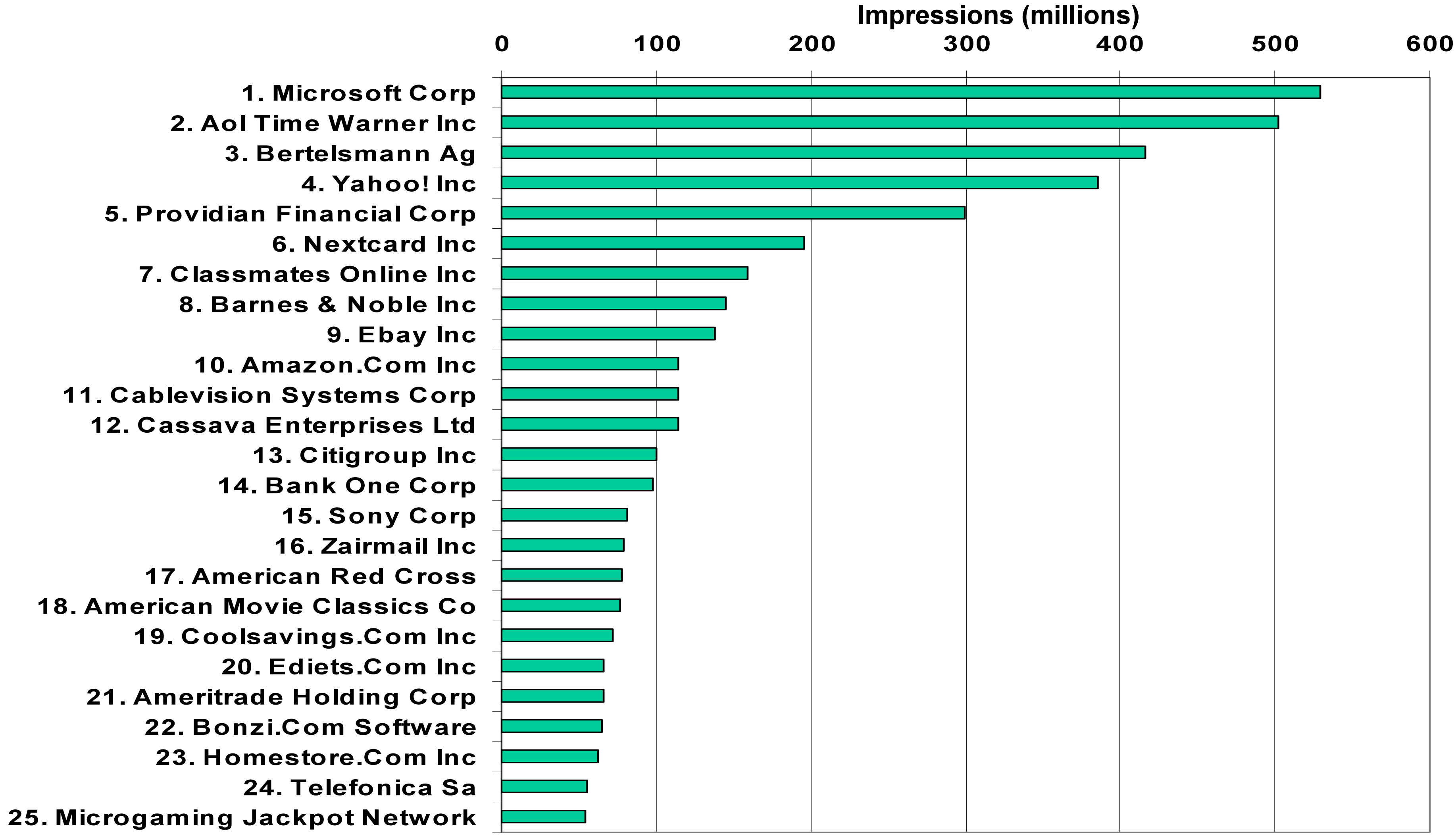
- Alloy.com sold clothes and accessories, but it became a hit only after its catalog was launched.
- Drugstore.com once dismissed B&M retailing, but it agreed to sell a 25% stake to Rite-Aid not long after rival Soma.com was bought by CVS.
- Gateway sells computers through WWW and catalog, but it also 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)



Status as of 4th Quarter 2000

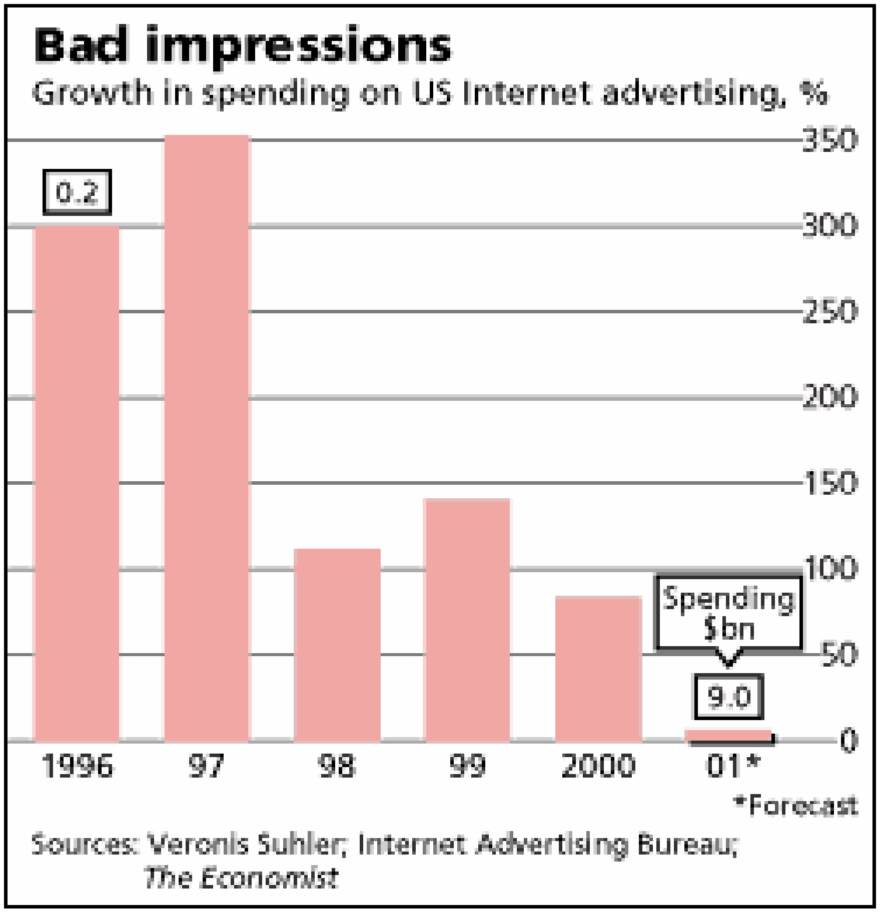
- 3% of all ads; radio twice as big
- 55% of online ads are by dot coms
- 79 companies place 1/2 of all online ads
- Most ads run on 1 site for <3 weeks

* 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

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

WWW Growing Faster Than Ad Supply



- Immediate problem: Too many pages, too few advertisers
- Current Price: $1 per thousands of impressions
- Price ~3 Years Ago: $10 to $50 per thousands of impressions

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”?

B2C E-Commerce Information Systems

Millions of users on day one

- Functionality
- capacity
- continuous availability

Bricks and Mortar environment Users

Causal Store Visitors

Prospecting Store Visitors

Behavior not recorded or analyzed

Ad/Market Target Behavior only recorded it they become actual customers

Ad/Marketing Targets

Store Customers

Bricks-and-Mortar Customer Relationship Management (CRM) Systems typically record and analyze at least some of these behavior profiles

B2C e commerce environment users

Casual site visitors

Prospecting Site visitors

Ad/Marketing targets

Registered Site Users

Site Customers

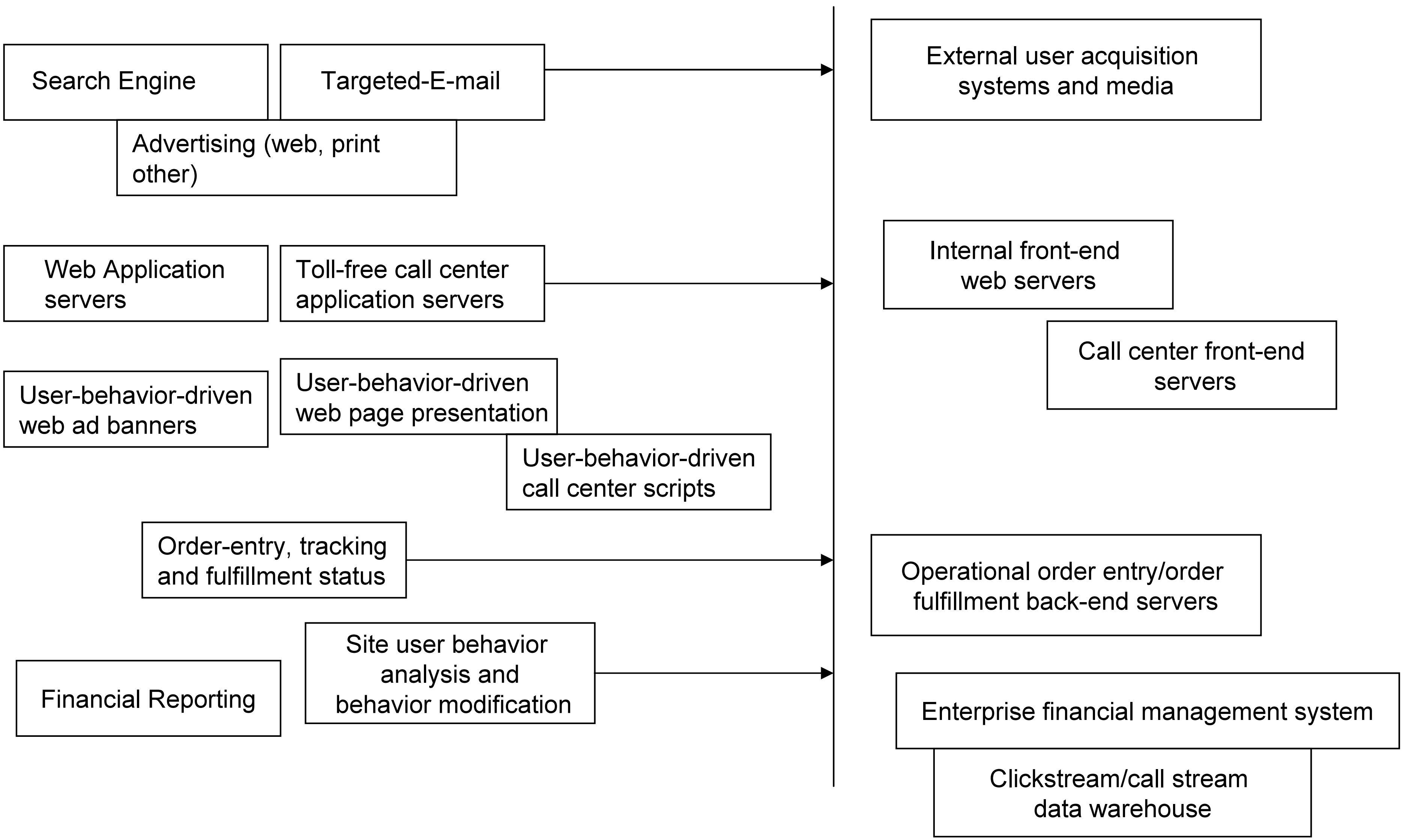
Note the increased scope of possible behavior analyses in an e-commerce User Relationship Management System

E-commerce User Relationship Management System record and analyze all aspects of user behavior

Fulfillment Mechanisms

5 Business Activity Categories	12 Fulfillment Mechanisms
Getting external user acquisition method	Search Engine Targeted-E-mail Advertising (web, print other)
General Internal User Access Interfaces	Web Application servers Toll-free call center application servers
Targeted User Modification Mechanisms	User-behavior-driven web ad banners User-behavior-driven web page presentation User-behavior-driven call center scripts
User/Customer Fulfillment Interfaces	Order-entry, tracking and fulfillment status
Enterprise Management Interfaces	Site user behavior analysis and behavior modification Financial Reporting Marketing Trends

Life After Fulfillment



Principle Goals of E-Commerce Information Systems

- Highly available and highly scalable operational infrastructure
* Massive-scale clickstream/call stream data warehouse
- Alignment of information technology vendor and e-commerce enterprises business goals

Trends in E-Commerce Solutions

- Early adopters of B2C information systems spent large amount of time and money to customize solutions.
- Now, merchants and Web-application-server vendors are focusing on vertical markets and tailoring offerings to meet specialized business needs.
- Software solutions will differentiate themselves by focusing on different vertical markets and by the way they choose to link components of their solutions.

B2C Infrastructural Software

- $3.1B market in 1999
- Projected to grow to $14.5B by 2003
- Broad price range
  - Low-end to mid-range products: <$50K
  - High-end: $100K - $1M
- Two types of vendors
  - "Usual suspects": IBM, Microsoft, Netscape
  - Start-ups: Blue Martini, Open Market, Broadvision

Technical and Business Challenges

- Ideal: Platform core and customized periphery.
  - Core still not standardized
  - Customization still very expensive (because it's labor-intensive)
- Patents
  - "One-click shopping" (Amazon)
  - Online credit-card verification (Open Market)
- Legacy technology, especially dbs and other "back-end" modules

Reading Assignment for October 11, 2001

"Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces," Federal Trade Commission, Oct. 2000
http://www.ftc.gov/os/2000/10/b2breport.pdf