

Internet Advertising

UW CSE454
5/5/09
Mike Mathieu
mike@frontseat.org

Agenda

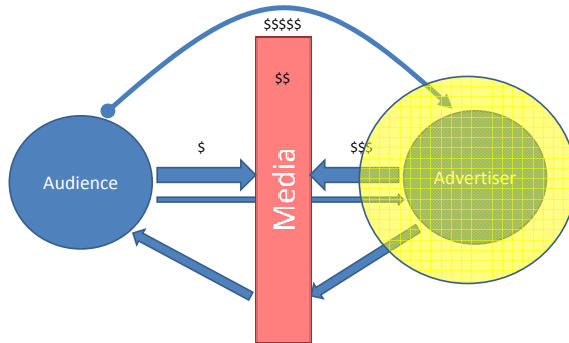
- Industry context
- Advertiser view
- Publisher view
- Audience view
- Testing/optimization

I know I'm wasting half of my ad budget. I just don't know which half.

2009 Global Ad Spend

**\$458
Billion**

Industry Structure



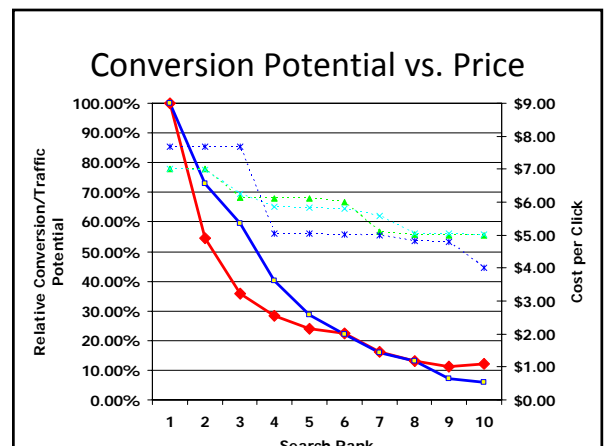
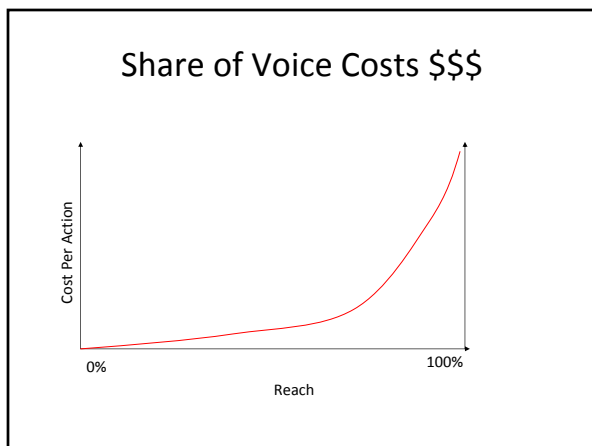
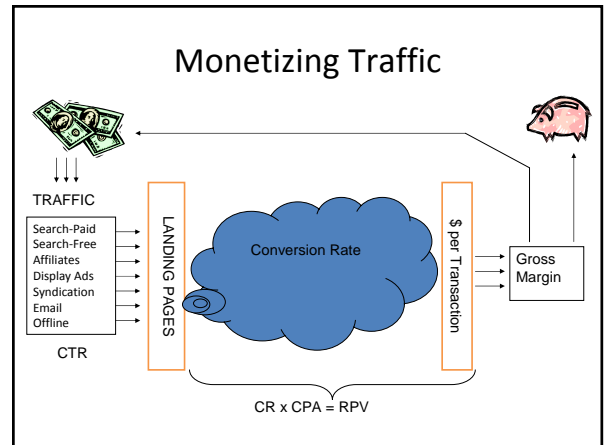
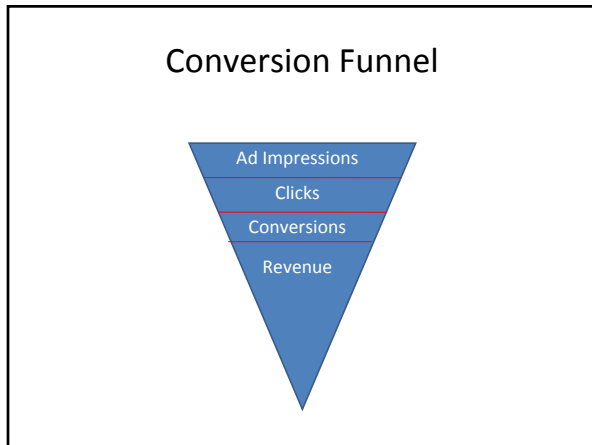
The Great Divide

Brand

- Emotions
- Indirect benefits
- Banners, TV, stadiums

Direct Response

- Transactions
- Gross profits
- Search, coupons, 1-800, radio, mail



Real World Example

CountMore.org

Where does your vote for President count more?

The U.S. Supreme Court has ruled that college students can vote in either their current state or home state. CountMore.org helps you decide where to vote. But heavy voter registration deadlines are fast approaching.

1 Choose your school state
Washington

2 Choose your home state
Oregon

3 Register to vote
The deadline has passed! **Amidst the Deadline was Oct. 14**

4 Vote by mail
Sign up to vote absentee (by mail).

5 Register to vote and **Vote at Home**

Real World Example

CountMore.org

- RefSrc on URL
- Drop cookie
- Pass RefSrc upon conversion
- Match with ad spend
- Calculate CPA

Impressions	4.4M
Clicks	2078
RegClick	69
Registrations	29

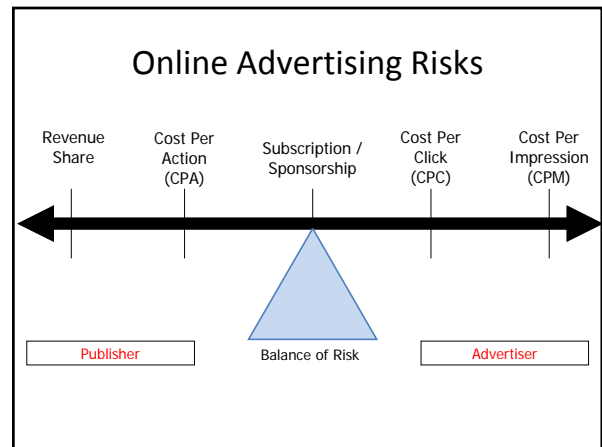
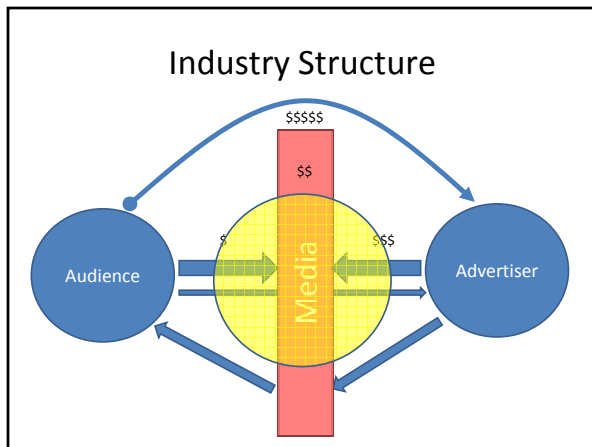
CTR=0.0469%
CPC=\$0.65
eCPM=\$0.31
CPRegClick=\$19.69
CPReg=\$46.76

Bid Management

Term	Clicks	CPC	Pos	CR	Leads	CPA	AvgPrice	Revenue	Spend	GM
Nursing School	5,000	\$1.00	1	5%	250	\$20.00	\$7.50	\$1,875	\$5,000	-63%
Nursing Schools	5,000	\$2.00	3	20%	1,000	\$10.00	\$30.00	\$30,000	\$10,000	200%
Total	10,000	\$1.50	2	12.5%	1,250	\$12.00	\$25.50	\$31,875	\$15,000	113%
Optimized	8,000	\$2.43	1	22%	1,760	\$11.05	\$30.00	\$52,800	\$19,440	172%

Bid Optimization

- Find shape of the volume, CR, and price curves as f(pos)
- Linear programming to maximize goal (e.g. LTV, gross profit, volume)
- Challenges
 - Sample size
 - Price changes
 - Seasonality



“Low-CPM” Innovation (circa 2001)

- CPC Marketplace Formation
- Advertiser Growth
 - Text-based ads
 - Self-serve ads
 - **RPV optimization**
 - Keyword suggestion
- Increased Bids
 - Max Bids
 - **Keyword opacity**
- Click Volume
 - Syndication
 - Text ad network
 - International
- Better Matches
 - **Landing page analysis**
 - Ad inhibition

RPV Optimization: Problems with Sort by CPC

Example Term: "mba"		
Ad Title	Univ. of Phx: Online MBA	Univ. of Washington MBA
Ad Body	100% online university. Fully accredited.	Foster School of business. Top 30 ranked.
CPC	\$10.00	\$0.50
CTR	0.01%	4%
Position	#1	#10
RPV	\$0.0010	\$0.0200

RPV Optimization

Sort by (CPC_Bid x CTR)

A screenshot of a Google search for "sony dvd player". The search results are sorted by relevance. A red arrow points to a result for "DVD Players at Target" which is highlighted. The search results include various product listings from different retailers like Amazon, Best Buy, and Target.

Keyword Opacity

	Impr	CTR	Clicks	CPC	CR	Leads	CPA	Spend
Nursing School	100,000	5%	5,000	\$1.00	5%	250	\$20.00	\$5,000
Nursing Schools	10,000	50%	5,000	\$2.00	20%	1,000	\$10.00	\$10,000
Total	110,000	9%	10,000	\$1.50	12.5%	1,250	\$12.00	\$15,000
MatchDriver	110,000	9%	10,000	\$2.00	12.5%	1,250	\$16.00	\$20,000

Landing Page Analysis

What?? No "Christmas"

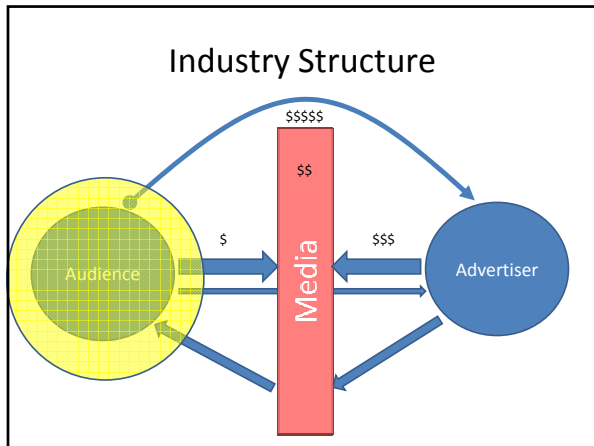
A screenshot of a Google search for "christmas cakes". The search results are sorted by relevance. A red arrow points to a result for "Nonnie Waller's Traditional Southern" which is highlighted. The search results include various recipes and product listings for Christmas cakes.

No "Christmas" here either!

Landing Page Analysis

Nonnie Waller's Traditional Southern.
Making Memories One Gift at a Time™

A screenshot of the landing page for Nonnie Waller's Traditional Southern. The page features several images of Christmas cakes and gift baskets. The text on the page includes "Cakes of Pudding Chocolate", "Flavors of Creams", "Customer Care", "Press Photo", "Contact Us", "Home", "Click here to order", "Whether for a cherished loved one or an important client, Nonnie Waller's® express delivers memory making gifts for you." There is a red box highlighting the text "No 'Christmas' here either!" at the top right of the page.



End Users

Don't bug me

Unless I like what you have to offer

A screenshot of a Facebook news feed, showing a mix of user posts, photos, and advertisements. The text 'Don't bug me Unless I like what you have to offer' is overlaid on the top half of the image.

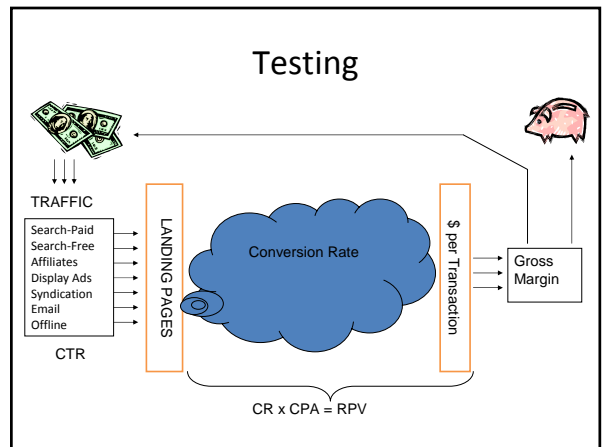
- ### Better Matching
- Context detection
 - GPS, location
 - App vs. content
 - Info seeker vs. transactor
 - Calendars/schedules/events
 - Social networks/status
 - Twitter - now
 - Behavioral – esp. w/knowledge of specific site behaviors
 - Contextual
 - Privacy
 - Google "AOL search data"

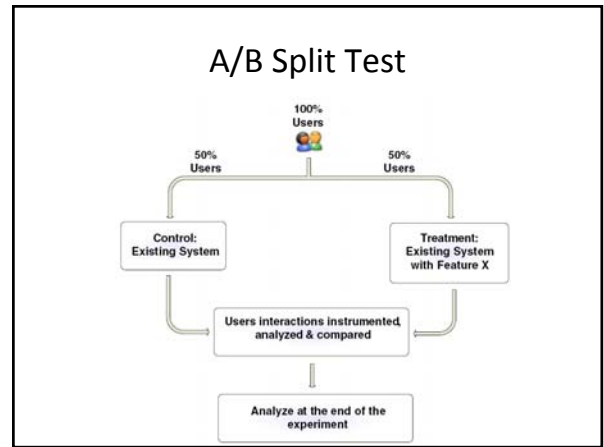
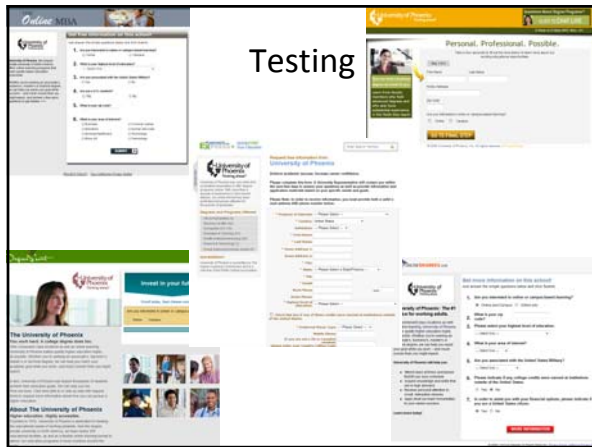
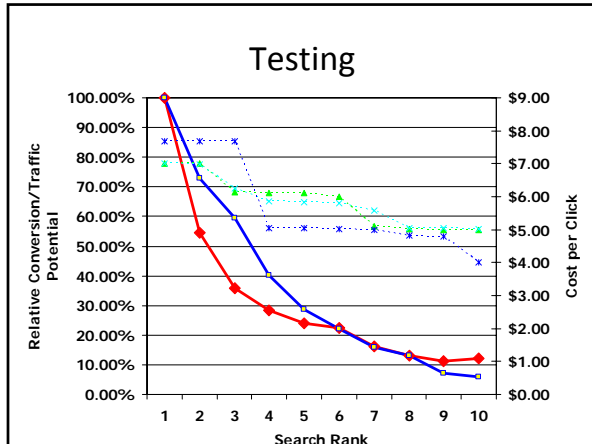
Context?

A screenshot of a search engine results page for the query 'flowers'. The page shows several advertisements for flower-related services and products, such as 'ProFlowers' and 'Flowers.com'. A list of related products is shown on the right side of the page.

- Flowers
- Mentos gum
- Trial Prep
- Credit score
- Cosmetics
- Hampton Inns
- WeightWatchers
- Vacation Home Rentals
- Home Depot
- Web Hosting
- WebMD
- Colon Cleanse – Warning
- My Teeth Aren't Yellow
- Classmates.com

TESTING





Testing

Sample Size, margin of error, confidence

$$x = Z(\frac{c}{100})^2 r(100-r)$$

$$n = Nx / ((N-1)E^2 + x)$$

$$E = \text{Sqrt}[\frac{(N-n)x}{n(N-1)}]$$

Determine Sample Size

Confidence Level:

Confidence Interval:

Population:

Sample size needed:

Find Confidence Interval

Confidence Level:

Sample Size:

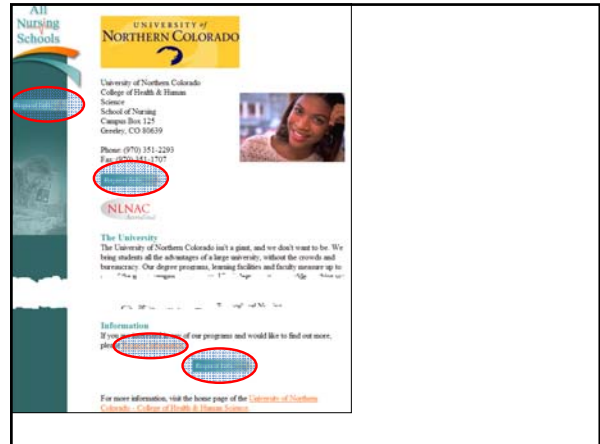
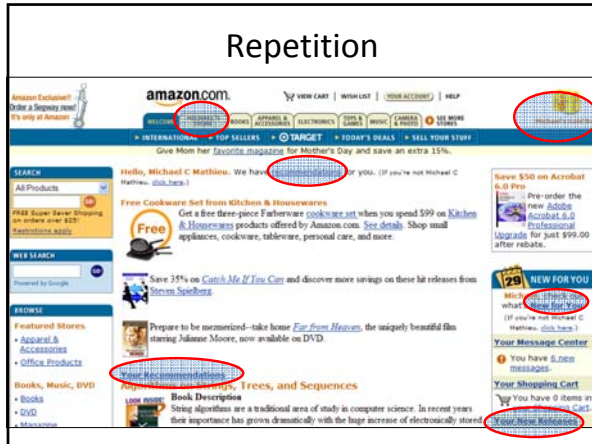
Population:

Percentage:

Confidence Interval:

- ### Sample Size Problems
- So many ideas, so little to sample...
 - Disproportionate advantage to scale
 - Multivariate testing
 - Taguchi Method
 - Method for calculating signal-to-noise ratio of different parameters in an experimental design
 - Allows optimization with A/B test of each cross-product

Repetition



Professional Photos

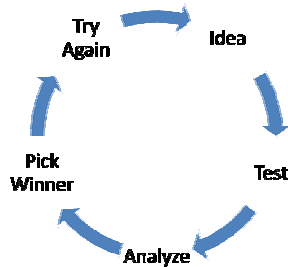


Fact Sheet Design

Existing Schools (n=1,428)	CR
Best	51.1%
Worst	0.4%
Average	11.6%

Test	# Schools	CR Lift
Professional photo	1	30%
More RFI buttons	3	21%
Marketing voice, more programs listed	1	28%
Photos + Marketing voice, more programs	1	50%

Analytics



Opportunities

- Advertisers
 - Low-RPV
 - Minimize waste
 - 10x simplicity
- Publishers / Search Engines / Ad Networks
 - Scaling local, hyperlocal
 - Other value judgments than rank
 - Under-monetized sites
 - Audience prediction
 - Duplicate detection
 - Google's path to lead gen
 - Advertiser behavioral tracking

Further Reading

- Sample size calculators
 - www.ezsurvey.com/samplesize.html
 - www.surveysystem.com/sscalc.htm
- Google Analytics – www.google.com/analytics
- Taguchi Method commercial products/whitepapers
 - www.vertster.com
 - www.omniture.com/en/products/conversion/testandtarget
- Online marketing sites
 - searchengineland.com
 - searchenginewatch.com
 - www.marketingsherpa.com
 - www.dmnews.com
 - www.imediaconnection.com
 - www.iab.net (industry group)