Securing Online Advertising

Benjamin Edelman

Banner Ads



ARTS Books

Movies Music Television

OPINION

Theater

STYLE

Dining & Wine Fashion & Style Home & Garden Weddings/ Celebrations

TRAVEL

Blogs Cartoons / Humor Classifieds Corrections

Crossword/

works programs and alternative energy.

- · Text of Address | ₩ Video
- · Saturday Word: Obama Aims for 2.5 Million Jobs

NEWS ANALYSIS

Obama Tilts to Center, Inviting a Clash of Ideas

By DAVID E. SANGER

President-elect Barack Obama's reported selections for two major cabinet jobs suggest a preference for pragmatists, not ideologues.

- · Clinton Is Said to Accept Secretary of State Position
- · Fed Official Is Said to Be Choice for Treasury



Eric Grigorian for The New York Times

Ry Cooder's American West

By LAWRENCE DOWNES

El Mirage Dry Lake sounds like a place one step from nonexistence, but it's a critical stop on a journey into the idiosyncratic world of the influential rock and blues

■ Audio Slide Show: Journey to El Mirage Dry Lake

U.S. Strike in Pakistan Kills British Militant

By ISMAIL KHAN and JANE PERLEZ 4 minutes ago

The militant, who served as a liaison to Al Qaeda, was a key suspect in a plot to blow up trans-Atlantic airliners.

Shares Falling, Citigroup Talks to Government

By ANDREW ROSS SORKIN and LOUISE STORY

Options discussed included a public endorsement from the ---+ --- - ---- £:-----!-1 1!£-1!--

Motors would travel in bankruptcy.



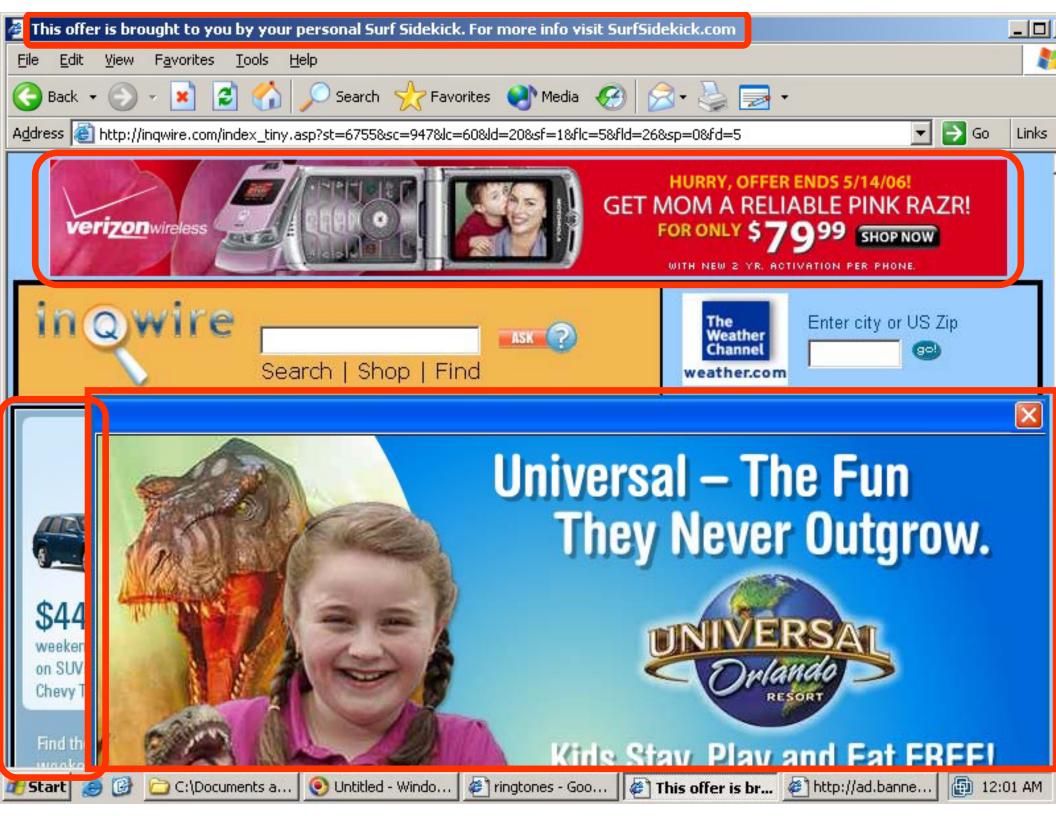
Scoreboard | More Coverage »







Banner ads gone bad

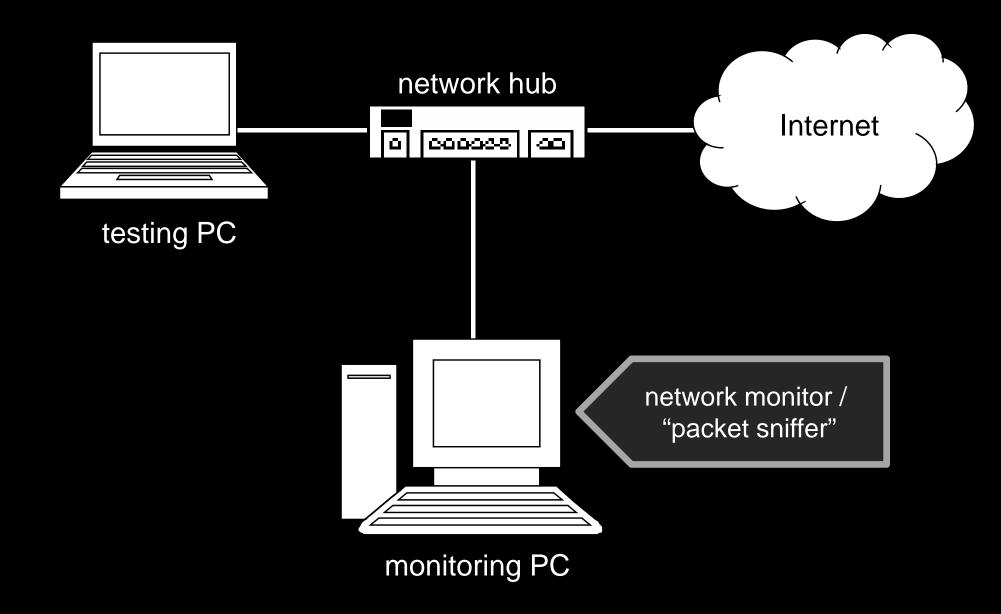


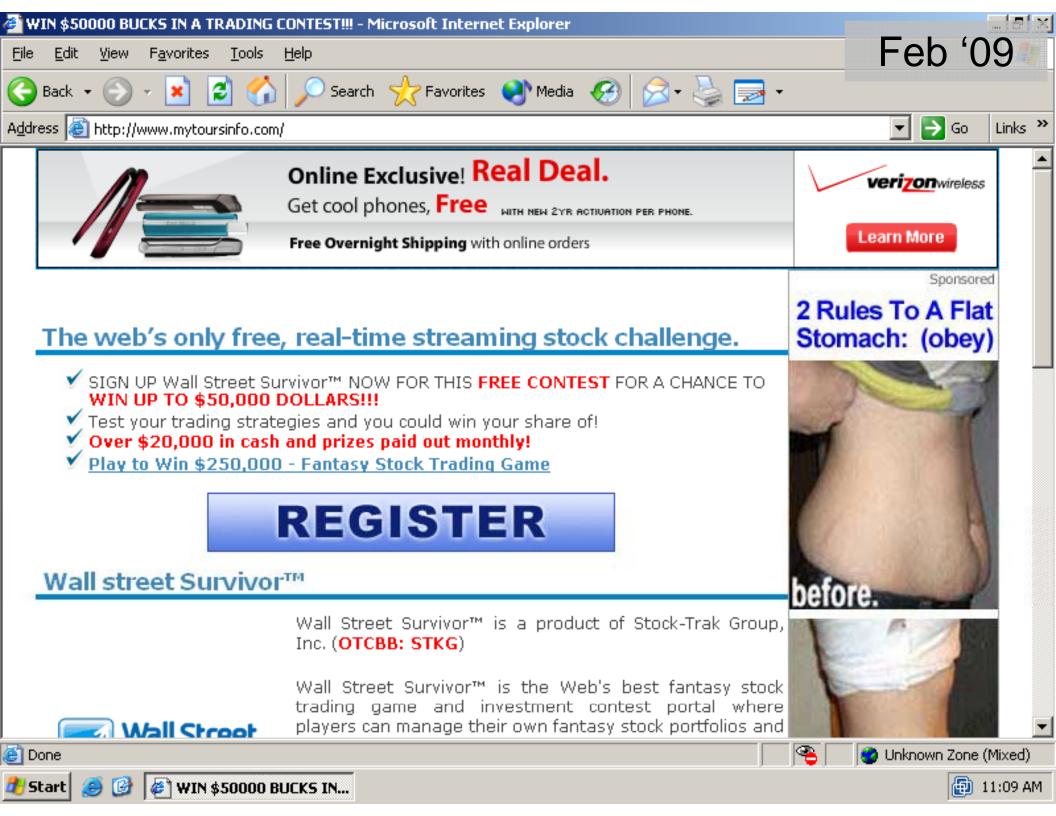
```
<iframe src="728x90.asp?jscode=...">
<html>
<head>
<meta http-equiv="Refresh" content="9;</pre>
url=728x90.asp?jscode=...">
<body leftmargin=0 rightmargin=0 topmargin=0</pre>
bottommargin=0 >
<SCRIPT TYPE='text/javascript'</pre>
SRC='http://ad.yieldmanager.com/rmtag2.js'></S
CRIPT><SCRIPT language='JavaScript'>var
rm_host = 'http://ad.yieldmanager.com';var
rm_site_id = 2578; var rm_section_code
=4400; var rm_iframe_tags =
1;rmShowAd('728x90');</script>
</body>
</html>
```

Inqwire Ad Relationships

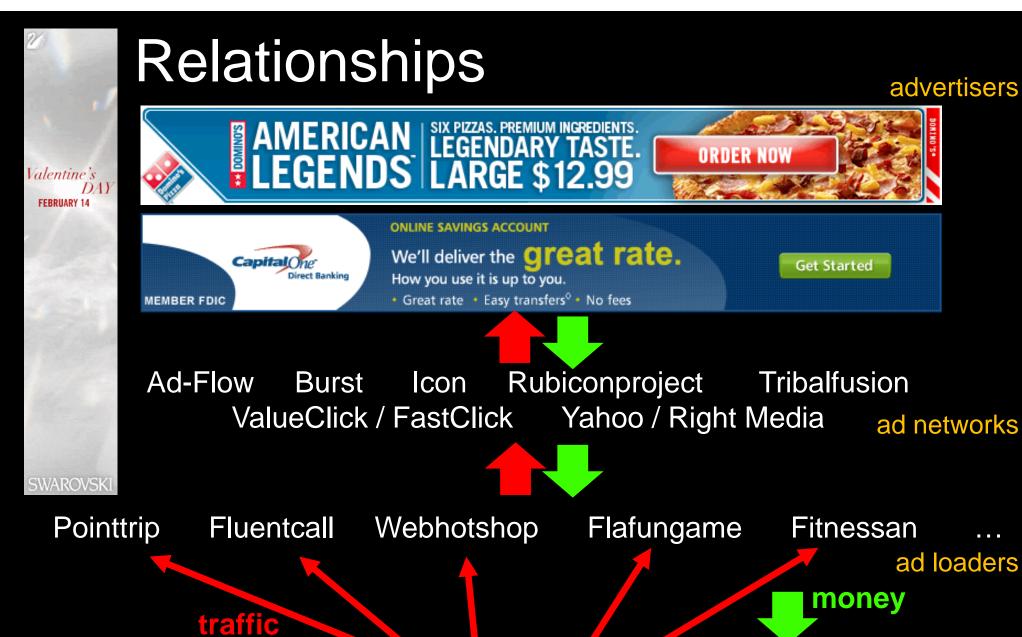
Universal Studios money traffic **Traffic Marketplace** money traffic **Right Media** money traffic Inqwire money i traffic **Surf Sidekick**

Investigator's tools





```
GET / HTTP/1.1
Host: www.mytoursinfo.com
HTTP/1.1 200 OK ...
<html> ...
<script src="/js/counter.js" type="text/javascript"></script>
<script src="/js/stat.js" type="text/javascript"></script> ...
GET /js/stat.js HTTP/1.1 ...
HTTP/1.1 200 OK
document.write("<iframe_width=0 height=0 src='http://www.pointtrip.com/florida_tour.html'>");
document.write("<iframe width=0 height=0 src='http://www.fluentcall.com/pda_phones.html'>");
document.write("<iframe width=0 height=0 src='http://www.webhotshop.com/shopping.htm'>");
document.write("<iframe width=0 height=0 src='http://www.freebiespack.com/freebies_insider.htm'>...
document.write("<iframe width=0 height=0 src='http://www.onlinemoneytrading.net/forex_trading.ht...
document.write("<iframe width=0 height=0 src='http://flafungame.com/top_fun_games.htm'>");
document.write("<iframe width=0 height=0 src='http://www.multimediasolutions.in/digital multimed...
document.write("<iframe width=0 height=0 src='http://www.bxbex.com/Featured Schools/index.html'>...
document.write("<iframe width=0 height=0 src='http://www.ramblepace.com/denmark_travel.htm'>");
document.write("<iframe width=0 height=0 src='http://www.journeyidea.com/journey_tips.htm'>");
document.write("<iframe width=0 height=0 src='http://www.go-bay.com/search/cs_location.php'>");
document.write("<iframe width=0 height=0 src='http://www.willhealthy.com/willhealthy.htm'>");
document.write("<iframe width=0 height=0 src='http://www.fitnessan.com/bu.htm'>");
document.write("<iframe width=0 height=0 src='http://www.investdady.com/vc.htm'>");
document.write("<iframe width=0 height=0 src='http://www.9truck.com/semitrucks.htm'>");
document.write("<iframe width=0 height=0 src='http://www.healthykey.com/Bacteria-Improves-Your-I...
document.write("<iframe width=0 height=0 src='http://www.volcars.com/hybrid.htm'>");
GET /bu.htm HTTP/1.1
Host: www.fitnessan.com
HTTP/1.1 200 OK ...
<iframe ... width=728 height=90 src=http://www.fitnessan.com/code 728 90.htm>
```



Mytoursinfo

traffic loader

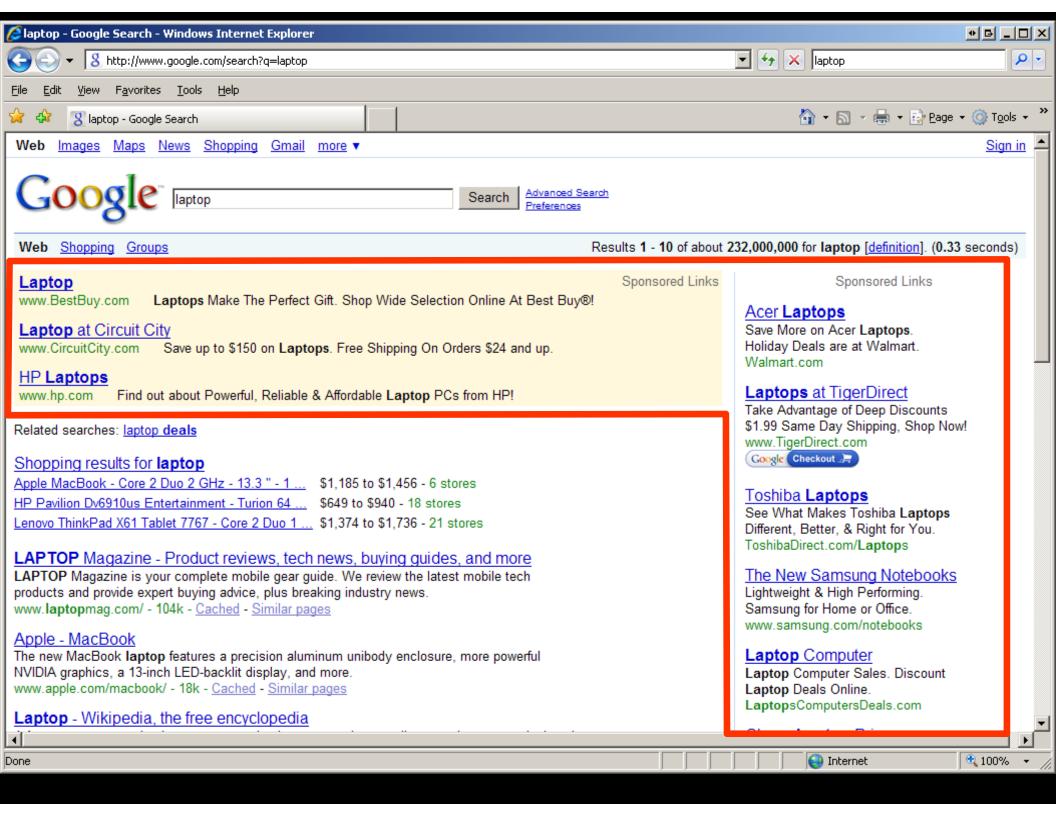
ad loaders

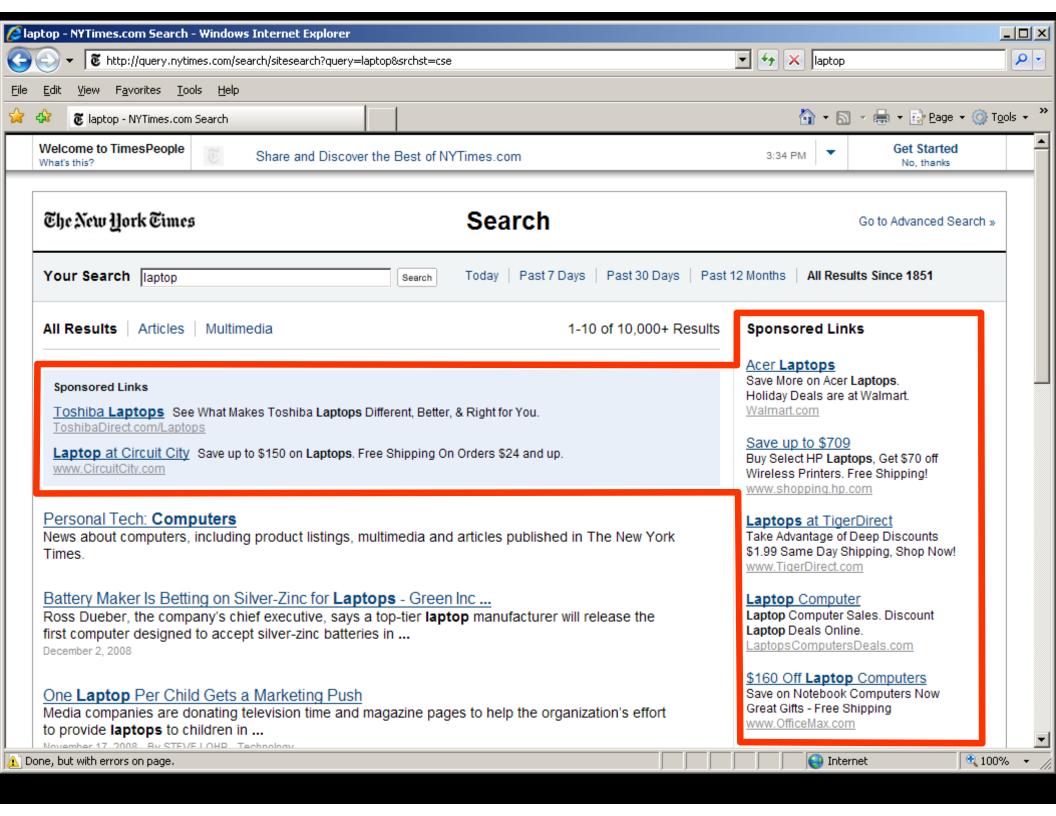
advertisers

Solutions to banner fraud

- Limit where ads may appear.
 - But networks prefer not to say.
- Enforce IAB standards on reload frequency.
 - Imprecise. AJAX-style apps challenge norms.
 Publishers can push the limits.
- Don't pay per impression.

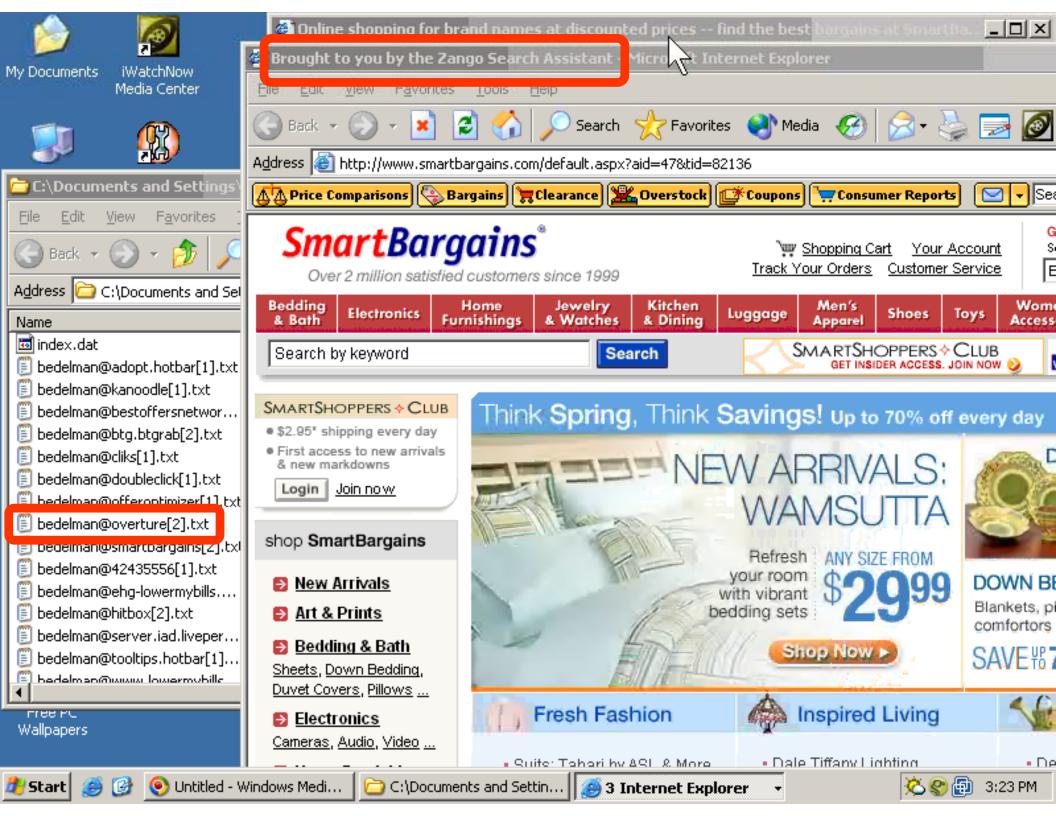
Paying per click





CPC gone wrong

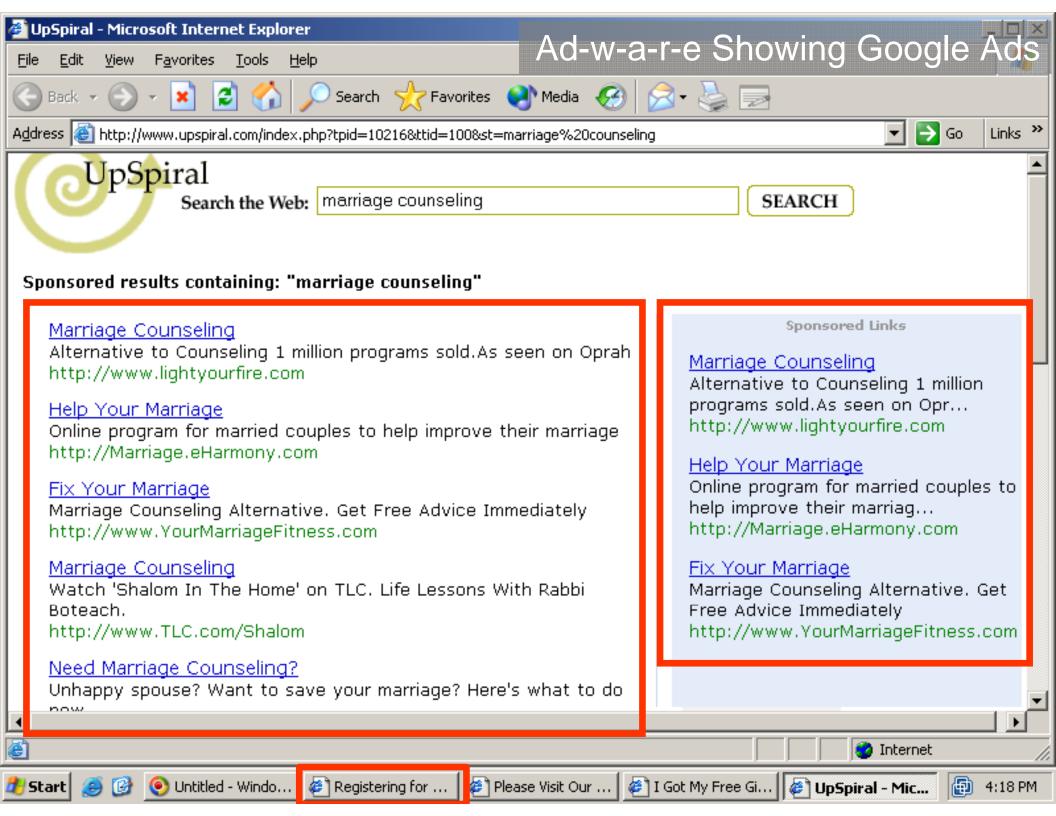
Click fraud



Tracing the redirects

```
→POST /showme.aspx?keyword=%2esmartbargains%2ecom+...
Host: tv.180solutions.com
←ad_url: ... value=http://popsearch.nbcsearch.com/metricsdomains
 .php?search=smartbargains.com
→GET /metricsdomains.php?search=smartbargains.com
Host: popsearch.nbcsearch.com
\leftarrowHTTP/1.1 302 Found
Location: http://ww2.ditto.com/red.php?mc=T%2FgSdHBNM%2Bg2%2
→GET /red.php?mc=T%2FgSdHBNM%2Bg2%2B3AyiyVWsqV5cRprOptbkiRRrZ.
Host: ww2.ditto.com
\leftarrowHTTP/1.1 302 Found
Location: http://ww2.ditto.com/click.php?mc=T%2FgSdHBNM%2Bg2.
←Location: http://www24.overture.com/d/sr/?xargs=15KPjg1%2DpS...
→GET /d/sr/?xargs=15KPjg1%2DpSgJXyl%5FruNLbXU6TFhUBPycz2tpk%5..
Host: www24.overture.com
\leftarrowHTTP/1.1 302 Found
Location: http://www.smartbargains.com/default.aspx?aid=47&t...
```

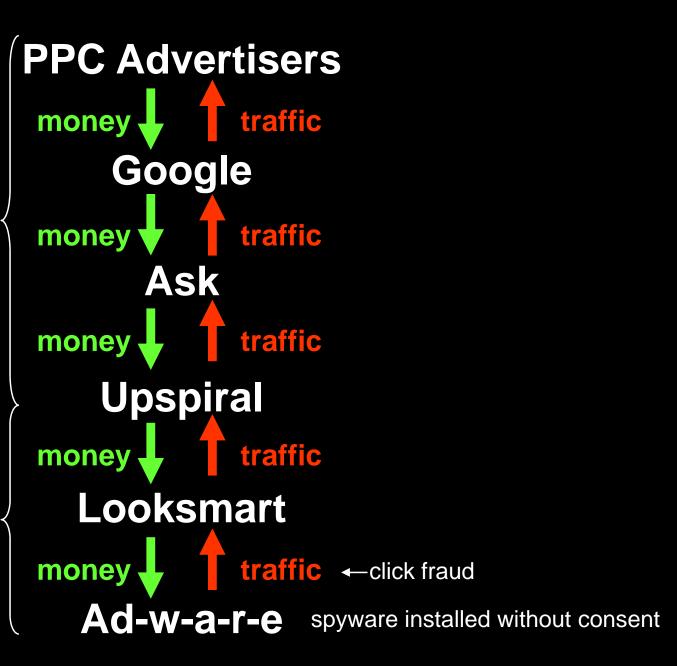
Syndication fraud



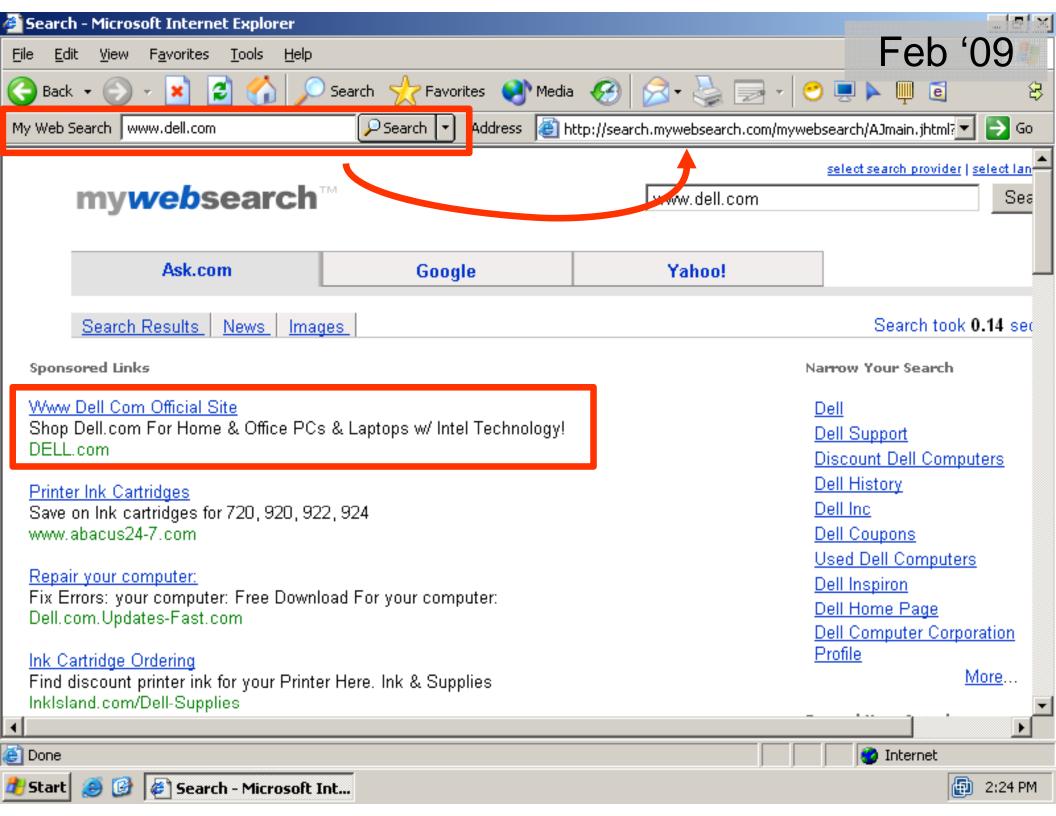
Ad-w-a-r-e Showing Google Ads

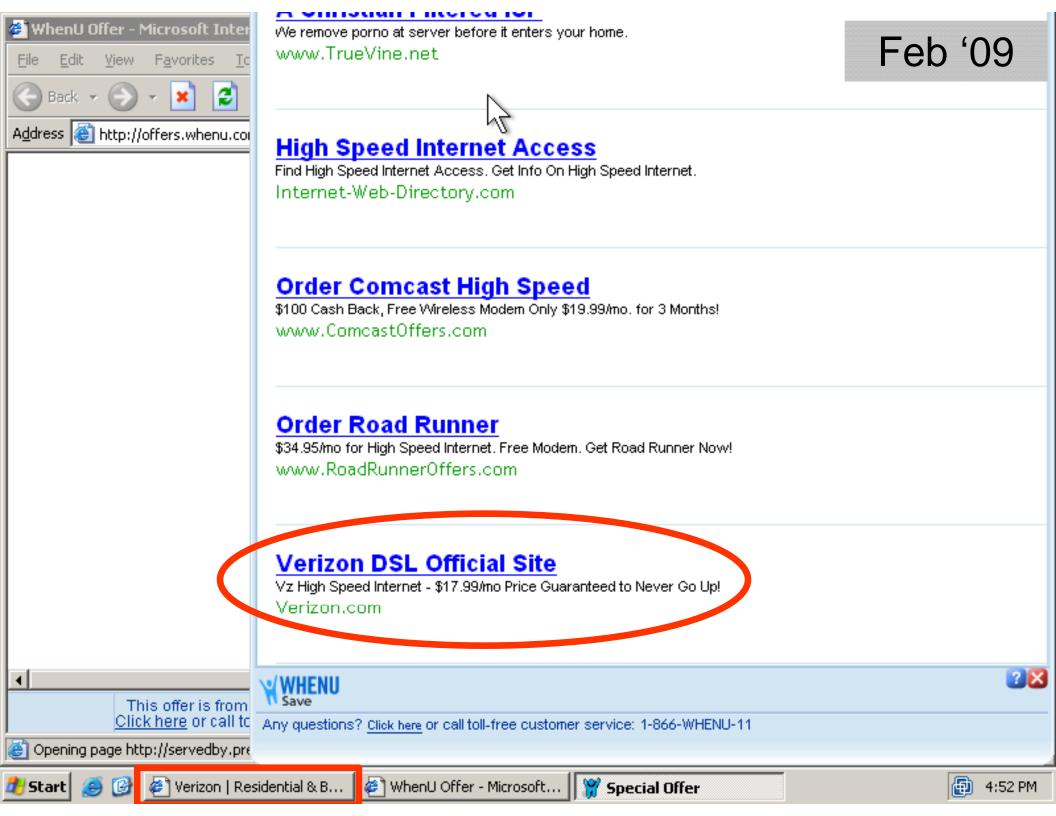
How Upspiral gets paid for showing the ads

How Upspiral gets ads onto users' screens



Inflating CPC conversion rates





WhenU-Google Relationship

Google Advertisers e.g. Verizon money traffic Google traffic money **J** Infospace Idearc Media / Superpages traffic money _ Localpages traffic money WhenU

AdWords Terms & Conditions

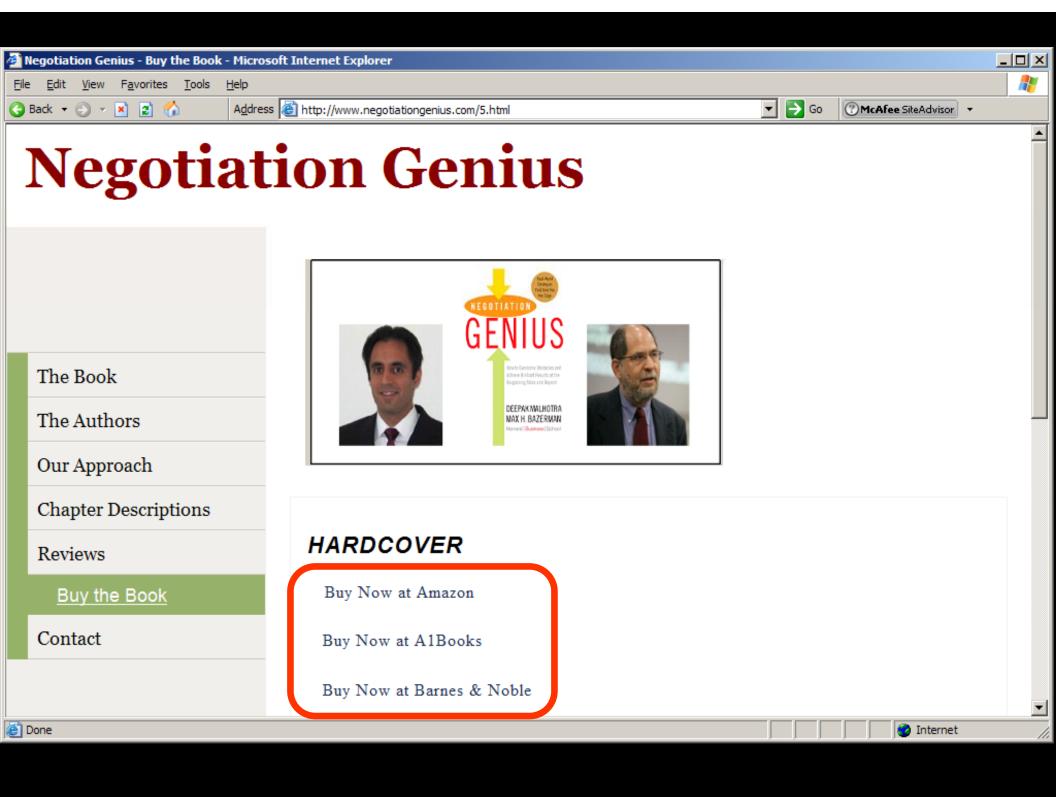
Customer understands and agrees that ads may be placed on any other content or property provided by a third party ("Partner") upon which Google places ads ("Partner Property"). Customer agrees that all placements of Customer's ads shall conclusively be deemed to have been approved by Customer unless Customer produces contemporaneous documentary evidence showing that Customer disapproved such placements in the manner specified by Google.

Customer understands that third parties may generate impressions or clicks on Customer's ads for prohibited or improper purposes, and Customer accepts the risk of any such impressions and clicks. Customer's exclusive remedy, and Google's exclusive liability, for suspected invalid impressions or clicks is for Customer to make a claim for a refund in the form of advertising credits for Google Properties within the time period required under Section 7 below. To the fullest extent permitted by law, refunds (if any) are at the discretion of Google and only in the form of advertising credit for only Google Properties. Nothing in these Terms or an IO may obligate Google to extend credit to any party.

Protecting CPC advertisers

- Click-fraud detection services
- Contract & insertion order specificity
 - Limit syndication and subsyndication
 - Identify and reject improper placements
- Pay per conversion, not per click

Paying per conversion

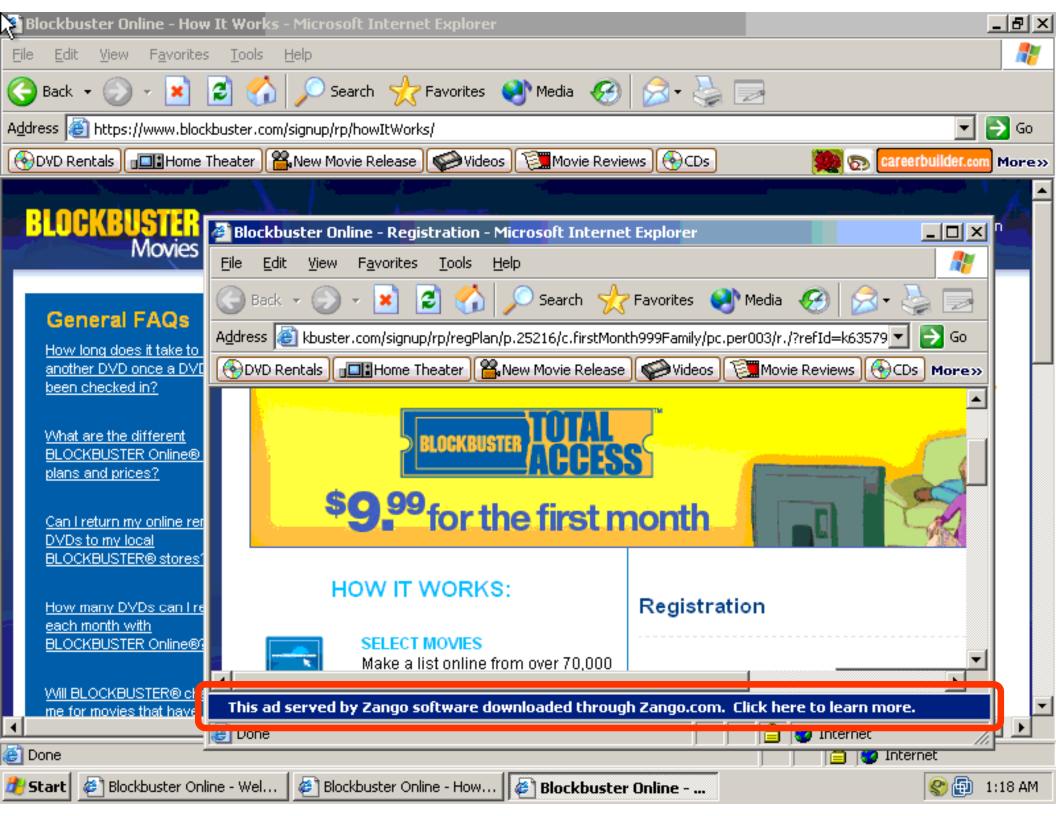


Affiliate earns commission if ...

- User requests affiliate web site
- User clicks affiliate's link to merchant /and/
- User makes a purchase

Merchant can safely partner with <u>anyone?</u>

CPA / affiliate fraud



```
POST /showme.aspx?&SID=XEHON...&CD=www.blockbuster.com &keyword=%2eblockb%2aster%2ecom+%2eblockbu%2ater%2e... Host: tvf.zango.com ...
```

```
HTTP/1.1 200 OK ... ad_url: ... http://ads.roundads.com/ads/clickcash.aspx keyword=.blockbuster.com><br> ...
```

```
GET /ads/clickcash.aspx?keyword=.blockbuster.com ...

Host: ads.roundads.com ...

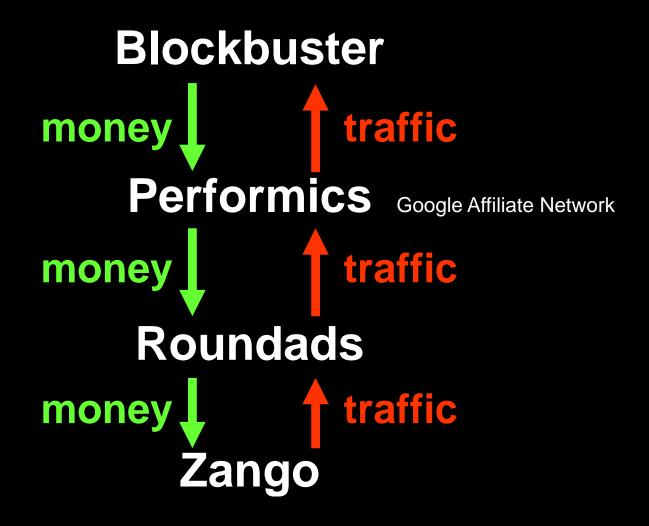
Performics / Google Affiliate Network
```

HTTP/1.1 301 Moved Permanentl,
Location: http://clickserve.cc-dt.com/link/tplclick?
lid=41000000005307215&pubid=21000000000063579&mid=...

GET /link/tplclick?lid=41000000005307215&pubid=2100...
Host: clickserve.cc-dt.com ...

HTTP/1.1 302 Found ...
Location: https://www.blockbuster.com/signup/rp/reg...

Blockbuster self-targeting adware fraud



```
All @ Brands
```

```
GET /iframe3? ...
```

Host: ad.yieldmanager.com ...

HTTP/1.1 200 OK

Date: Mon, 29 Sep 2008 05:36:02 GMT

• • •

<iframe src="http://allebrands.com/allebrands.jpg"</pre>

. . .

```
GET /allebrands.jpg HTTP/1.1 ...
Host: allebrands.com ...
```

. . .

```
<a href='http://allebrands.com'>
<imq src='images/allebrands.JPG'></a>
<iframe src ='http://click.linksynerg</pre>
```

click?id=Ov83T/v4Fsg&offerid=144797.1 Microsoft OneCare 3&

subid=0' width ='0' height = '0'>

<iframe src ='http://www.microsoftaffiliates.net/t.
aspx?kbid=9066&p=http%3a%2f%2fcontent.microsoftaffil
iates.net%2fWLToolbar.aspx%2f&m=27&cid=8' width='0'
height='0'>

<iframe src ='http://send.onenetworkdirect.net/z/41/
CD98773' width ='0' height = '0'>

Symantec

McAfee

Affiliate earns commission if ...

- User requests affiliate web site
- User clicks affiliate's link to merchant /and/
- User makes a purchase sometime after
 - Visiting a web page
 - Visiting a discussion forum
 - Seeing a banner ad /or/
 - Becoming infected with spyware/adware

Guarding CPA campaigns

- Know your affiliates.
- Question your affiliate network.
 - Hold your network accountable for its shortfalls.
- Do not assume perfection or infallibility.

Why advertising fraud?

- Strong financial incentives
 - Pay is in USD
- Easy pseudonymity
- Limited investigations of partners
- Limited incentives to uncover fraud
 - Ad agencies
 - Ad networks
 - Affiliate managers

"10% of spend"

"10% of year-over-year growth"

Limited actions to obtain restitution

What is being done

- Nothing / cost of doing business
- Revising Terms & Conditions rules
- Auditing
- Litigation
- Compare ad networks based on quality

What more could be done

- Demand repayment. Sue. (Feasible?)
- Push back on ad networks' one-sided T&C's.
- Pay more slowly -> penalties when caught

Takeaways

- Every ad metric is targeted.
 - Paying per impression
 - Paying per click
 - Paying per conversion
- Incentives impede efforts at fraud prevention.
- Litigation and threatened litigation do not solve the problem.
- Good publishers lose when others cheat.