

# Comment on Will the Internet Save the News Media? ...

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## Two kinds of tracking

- ➦ One person over time and sites to offer targeted ads. Issue: tradeoff between the “right” goods and services and high prices.
- ➦ One person during a day to ensure that he does not see the same advertisements too often.

# Panoptick

How Unique – and Trackable – Is Your Browser?

Your browser fingerprint appears to be unique among the 1,360,614 tested so far.

Currently, we estimate that your browser has a fingerprint that conveys at least 20.38 bits of identifying information.

The measurements we used to obtain this result are listed below. You can read more about our methodology, statistical results, and some defenses against fingerprinting in [this article](#).

Help us increase our sample size:

Browser Characteristic	bits of identifying information	one in x browsers have this value	value
User Agent	11.16	2286.75	Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0)
HTTP_ACCEPT Headers	16.13	71611.26	text/html, */* q=0.5, deflate en-US,fr;q=0.5
Browser Plugin Details	16.57	97186.71	QuickTime 7.6.6.0; Flash 10.1.102.84; WindowsMediaPlayer 12.0.7600.16987; Silverlight 4.0.51204.0; Adobe Acrobat version 7.?
Time Zone	2.22	4.65	-50
Screen Size and Color Depth	6.28	77.84	1366x768x32
System Fonts	20.38+	1360614	SWMacro.XITS.XITS Math, Linux Biotinum O, Linux Biotinum O Kb, Linux Libertine O, Linux Libertine O C, Mariett, Arial, Arabic Transparent, Arial Baito, Arial CE, Arial CYR, Arial Greek, Arial TUR, Basing, BatangChe, Gungsuh, GungsuhChe, Courier New, Courier New Batio, Courier New CE, Courier New CYR, Courier New Greek, Courier New TUR, DaurPenh, DocChampo, Estrangelo Eiesaa, Euphemia, Gaudans, Van, Gulim, GulimChe, Dolum, DotumChe, Impact, Iskolae Pota, Kalinga, Kartika, Khmer UI, Lao UI, Latha, Lucida Console, Malign Gothic, Mangal, Meiryo, Meiryo UI, Microsoft Himalaya, Microsoft JhengHei, Microsoft YaHei, MingLiU, PMingLiU, MingLiU_HKSCS, MingLiU_ExtB, MingLiU_ExtB, MingLiU_HKSCS_ExtB, Mongolian Baiti, MS Gothic, MS Pochoic, MS UI Gothic, MS Mincho, MS PMincho, My Sol, Microsoft New Tai Lue, Nyaas, Microsoft PhagsPa, Plantagenet Charokae, Raavi, Segoe Script, Segoe UI, Segoe UI Semibold, Segoe UI Light, Segoe UI Symbol, Shruti, SimSun, NSimSun, SimSun, SimSun_ExtB, Sylfaen, Microsoft Tai Le, Times New Roman, Times New Roman Batio, Times New Roman CE, Times New Roman CYR, Times New Roman Greek, Times New Roman TUR, Tunga, Vindia, Shonar Bangla, Microsoft Yi Baiti, Tahoma, Microsoft Sans Serif, Angsana New, Aparajita, Cordia New, Eltimes, Gatha, Iocika, Ladawadee, Microsoft Lignur, MoodBoran, Symbol, Utsaah, Vijaya, Wingdings, Arialuis, Arabic Typesetting, Simplified Arabic, Simplified Arabic Fixed, Sakka Majalla, Traditional Arabic, Aharoni, David, FrankRuehl, Levanim MT, Miriam, Miriam Fixed, Narkisim, Rod, FangSong, Simhei, Kalliti, AngsanaUPC, Browallia New, BrowalliaUPC, CordaUPC, DilleniaUPC, EurotraUPC, FressaUPC, InsaUPC, JasmineUPC, KadohangaUPC, LiyiUPC, DFKai-SB, Lucida Sans Unicode, Arial Black, Callibri, Candara, Comic Sans MS, Consolas, Constantia, Corbel, Franklin Gothic Medium, Gabriola, Georgia, Palatino Linotype, Segoe Print, Trebuchet MS, Verdana, Webdings, Guttman-Aharoni, Guttman-Aram, Guttman Calligraphic, Guttman David, Guttman Drogolin, Guttman Frank, Guttman Fmew, Guttman Adili, Guttman Adili-Light, Guttman Aharoni, Guttman Ham, Guttman Ham-Condensed, Guttman Kav, Guttman Kav-Light, Guttman Myanmii, Guttman Yed-Brush, Guttman Yed, Guttman Yed-Light, Monotype Hadasaan, Guttman Hobbies, Guttman Kenen, Guttman Logoi, Guttman Marotova, Guttman Mantova-Decor, Guttman Miryam, Guttman-CourMir, Guttman Rashi, Guttman-Sonoino, TopType Sonoino, Guttman Slam, Guttman Stam1, Guttman-Toledo, Guttman Hatzi, Guttman Vina, Heletterichweiler, Book Antiqua, Century Gothic, Garamond, Monotype Corvua, Agency FB, Arial Rounded MT Bold, Blackadder ITC, Bodoni MT, Bodoni MT Black, Bodoni MT Condensed, Bodoni Old Style, Bradley Hand ITC, Calisto MT, Gasteller, Century Schoolbook, Copperplate Gothic Bold, Copperplate Gothic Light, Curtz MT, Edwardian Script ITC, Elephant, Engravers MT, Eras Bold ITC, Eras Demi ITC, Eras Light ITC, Eras Medium ITC, Felix Teling, Forte, Franklin Gothic Book, Franklin Gothic Demi, Franklin Gothic Demi Cond, Franklin Gothic Heavy, Franklin Gothic Medium Cond, French Script MT, Gigi, Gill Sans MT, Gill Sans MT Condensed, Gill Sans Ultra Bold, Gill Sans Ultra Bold Condensed, Gill Sans MT Ext Condensed Bold, Glouchester MT Extra Condensed, Gloucy Old Style, Gloucy Slou, Imprint MT Shadow, Lucida Sans, Lucida Sans Typewriter, Malandra GD, OCR A Extended, Palace Script MT, Papyrus, Perpetua, Perpetua Tiling MT, Pristina, Rage Italic, Rockwell, Rockwell Condensed, Rockwell Extra Bold, Script MT Bold, Tw Cen MT, Tw Cen MT Condensed, Tw Cen MT Condensed Extra Bold, Algerian, Baskerville Old Face, Baskerville Old Face MT, Berlin Sans FB, Berlin Sans FB Demi, Bernard MT Condensed, Bodoni MT Poster Compressed, Bittern Bold, Broadway, Book Extra MT, Bookman Old Style, Bookman Old Style Condensed, Bookman Old Style Condensed Bold, Bookman Old Style Condensed Extra Bold, Bookman Old Style Condensed Extra Bold, Bookman Old Style Condensed Extra Bold

## Basic idea of the model

At the start with given capacity  $a_i$ .

- ☞ If monopolist:  $1 - F(p_i) = Ta_i$ .
- ☞ With competition: consumers choose site  $i$  with probability  $x_i$ , exogenous throughout the paper.
- ☞ Assume  $T = 2$ , with probability  $\rho$  consumers have the possibility of “switching” between “periods”:  
  
⇒ nb. loyal customers =  $x_i - x_i \times \rho \times (1 - x_i)$   
nb. switching customers =  $x_i \times \rho \times x_j + x_j \times \rho \times x_i = 2\rho x_i x_j$ .

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## Solution: exogenous capacity ( $a_i$ )

- ☞ Cournot competition:
  - Outlets charge  $P(2a_i)$  for access to loyal consumers
  - and  $P(a_i + a_j)$  for access to switching consumers.
- ⇒ Outlets with high  $a_i$ s like high  $\rho$ .
- ☞ (Perfect) ad tracking increases the profits of some outlets and reduce the profits of others.

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## Solution: endogenous capacity ( $a_i$ )

$x_i$ s are exogenous

Very difficult to solve

Solved with uniform distribution.

- ☞ The profits of symmetric firms ( $x_i \simeq x_j$ ) are decreasing in  $\rho$ .
- ☞ The profits of small firms are increasing in  $\rho$ .

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## Imperfect and endogenous tracking

**Proposition 7:** Perfect tracking leads to lower profits than profit without tracking.

“This suggests that perfect tracking technology might not be adopted despite their ability to generate efficient outcomes in advertising market”. Are we sure if many firms?

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## One last point

- Is the definition of efficiency appropriate when there is no model of what are the consequences of advertising?
- At the minimum stress that this is not social efficiency.