From: Chalmers Wang [Redacted @google.com]
Sent: 10/23/2019 4:20:59 PM
To: Ads-quality-notes [Redacted @google.com]; Saeed Alaei [Redacted @google.com]; Michael Zwibelman Redacted @google.com]; Igor Stassiy [Redacted @google.com]; Mohammad Mahdian [Redacted @google.com]; Thomas Iljic [Redacted @google.com]; Jean-François Crespo [Redacted @google.com]; Xi Chen [Redacted @google.com]; Tom Ferriss [Redacted @google.com]; Guru Guruganesh [Redacted @google.com]; Uri Nadav [Redacted @google.com]; Kay Brodersen | Redacted @google.com]; Aranyak Mehta Redacted @google.com]; Omkar Muralidharan Redacted @google.com]; Ying Wang [Redacted @google.com]; Daniel Sabanés Bové Redacted @google.com]; Sunita Verma Redacted @google.com]; Ankur Jain Redacted @google.com]
CC: Ads Quality Eng Review Redacted @google.com]
Subject: [Ads-quality-notes] AQER Notes: rGSP (10/17/2019)

AQER Notes: rGSP Launch (slides)

Date: Oct 17, 2019
Presenters: iljic
Attendees: shivav, juda, srikant, sunitav, srikant

Feedback summary:

-
  - Proceed with candidate exploration
-
-
  - Come back to decide between option 1 vs option 2 (option 3 set aside for now).
-
-
  - Additional analysis results to support choice

Notes:

-
  - What is rGSP?
-
-
  - Introduces a probability of swapping when two LTV ad scores are close
  -
  -
  - As advertisers raise/lower bids, there are additional points along the curve ("virtual positions" analogy)
-
-
  - Good properties
-
-
  -
  - Not attached to specific ads features (like, e.g. format pricing)
  -
  -
  - Avoids winner takes all problem

Redacted

-
-
  - shivav: is there any component of quality?
  -
  -
-
- It helps with discovering the right performance. Does not directly touch quality.
-
- Quality is part of LTV formulation.
-
- shivav: Does exploration lead to better quality?
-
- omuralidharan: haven't seen that it does
-
- toddphillips: The randomization in rGSP creates more "natural experiments" of showing ads in their not-usual positions. This exploratory data is generally beneficial for pCTR since it helps separate intrinsic quality/clickability from the effect of position on the page.
-
- juda: should we be randomizing things across PLA and text ads?
-
- toddphillips: working on it this quarter
-
- rGSP x Format Pricing
-
  - Compared multiple format pricing schemes against each other
  -
  - sunitav: which line on the graph corresponds to the candidate?
  -
- The red line here would be rGSP + FF. It reflects this generally high RPM/ExcessCPC trade-offs compared to other approaches we've been looking at.
  -
  - juda: how different are these curves in practice? Eg. if we tuned for blindness do they look similar?
  -
- No, they are still significantly different
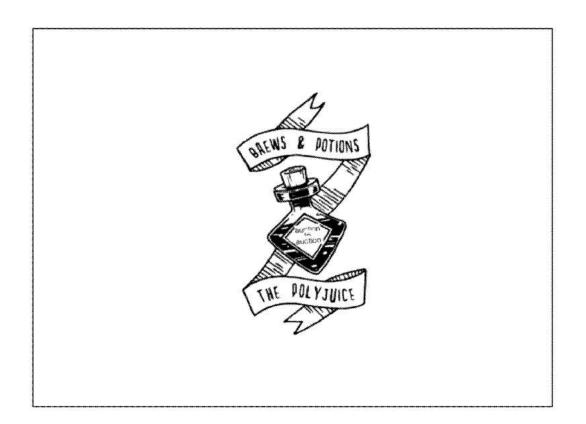
rGSP AQER

10/17/2019

In a nutshell

- Introduces a probability of swapping between two ads when LTV scores are "close".

- Where FP defined a click cost curve by selling uplift, rGSP defines a click-cost curve by selling a winning probability

- Creates "Virtual positions": as advertisers raise and lower their bids they get more or less clicks by moving from one position to another.

$\Rightarrow$ *We'll spend the second half of the talk on mechanism walk-through.*
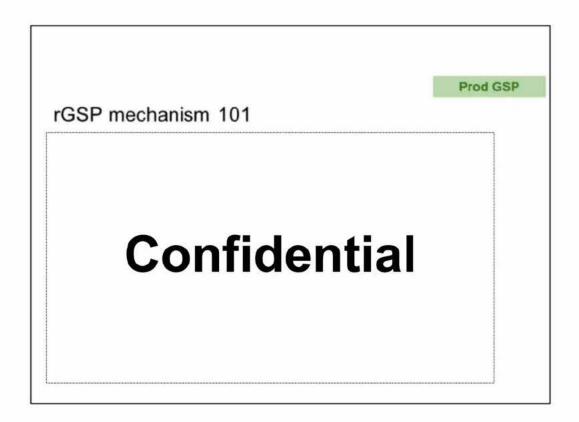
Good properties

- Pricing embedded in the auction, not attached to specific ad features
  - More principled; can price all ads; no feature opt-out incentives

- Avoids "winner takes all" problem <=> Better performance discovery

- Pricing derives from this allocation rule

- Great pricing range and efficiency (comparison to FP)

BREWS & POTIONS

THE POLYJUICE

rGSP mechanism 101
(which might take time considering all the subtleties)

rGSP mechanism 101

Confidential

rGSP mechanism 101

Confidential

rGSP mechanism 101

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Note on reserve pricing

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