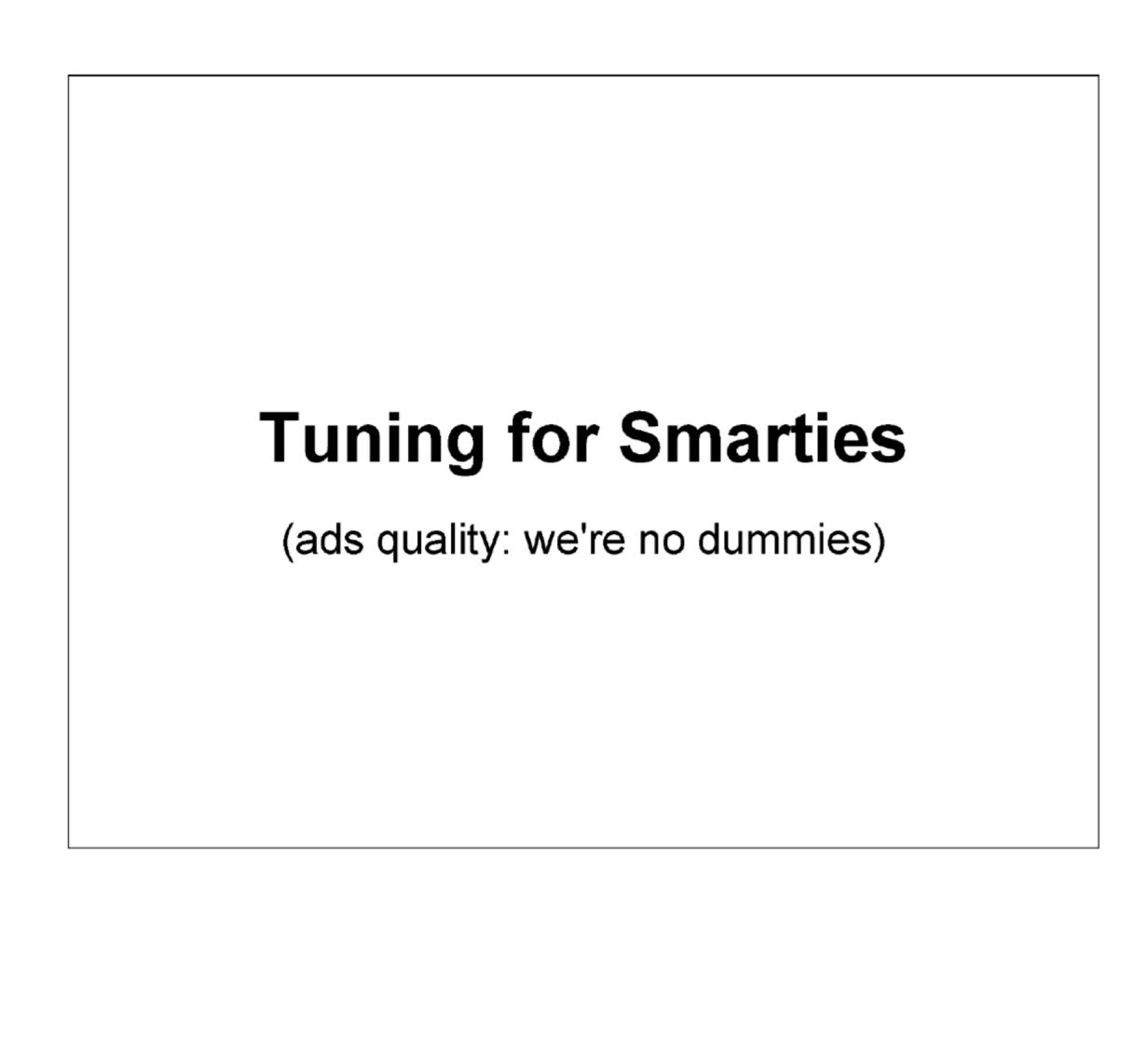
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Ex. No. UPX0043 1:20-cv-03010-APM



### Tuning in a Nutshell:

- 1. Measure Things
- 2. Do Math
- 3. Profit!!!

#### What are we tuning again? Prices!

- For every ad (pctr, CQ, LQ), we set a price.
- If price <= bid, the ad can show</li>
- Tuning is just adjusting ranking / pricing

### The Long Term Value Function (I)

 "Tuning" == adjusting the cost of different types of clicks and impressions

### The Long Term Value Function (II)

 These functions use "auction pctr" which is at best a consensual hallucination

### The Long Term Value Function (III)

- Adjusting Gamma has been contentious Redacted
- Since we tune at country granularity, it is the only mechanism to significantly reward / penalize quality for high value queries within a country / tuning region