Ads Quality: From A - Z in 16 chapters

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Section A: Overview
Chapter 1: History & Vision
Our Vision

We believe that by consistently serving high quality ads, our users will continue to consider ads as a great source of information when they are searching for products and services.

Curtis Lee,
Product Marketing Manager, Ads Quality

I’m looking for a Citigroup quote here to use, if possible…
Our Core Beliefs on AQ

1. Google believes that anything short of us delivering high quality relevant ads to the user will harm the overall experience and our brand.

2. We feel responsible for ensuring ads served by Google are relevant and maintain a high standard for our results pages.

3. We closely monitor the quality of the ads we deliver and design ways to increase the quality of those ads.

4. Rather than showing ads which provide a low quality experience for users who click on them, we prefer to show no ads at all.

5. Serving the most relevant and highest quality ads is paramount to our company’s objective of delivering the most relevant information and it remains our chief objective.
A brief history of Ads Quality

- **Fall 2000**: AdWords is born as Google’s online advertising solution, allowing advertisers to buy traffic on Google.com on a CPM basis.

- **February 22, 2002**: The AdWords system receives a major overhaul and re-launches as a service that is closer to what we know today. All of the ads on the right hand side are now ranked on a pay-per-click basis. Keywords with a CTR below 0.5% are disabled and reps are allowed to disapprove keywords that don’t seem relevant.

- **January 2004**: The system changes once again, “sunsetting” the CPM ads that appeared at the top and integrating them into the pay-per-click auction. At this time, keywords are evaluated solely based on their CTR and are labeled active, slowed, or disabled based on their performance.

- **November of 2004**: Smarter Keyword Evaluation launches, removing the slowed status and creating “in trial” and “on hold”.

- **August 16, 2005**: In response to advertiser complaints about keyword disabling and to make the system more transparent, quality-based minimum bids - the system we use today - launches.

- **December 2006**: To enable quality analysis beyond the ad itself, Landing Page Quality is being introduced as part of Quality Based Bidding.
Core areas of constant improvement

1. Quality-based ranking improvements
2. Demotion or removal of low-quality ads
3. Higher placement of higher-quality ads
4. Better ad/query matching
5. General Ads UI improvements.
Chapter 2: Introduction
High-quality ads benefit the entire online advertising system:

Because Google AdWords serves high-quality ads:

[Entrance 1] Users learn to trust our ads as a relevant source of information. They click more often, which:

[Entrance 2] Brings advertisers more targeted leads.

[Entrance 3] Website publishers also benefit from increased ad traffic, since they gain revenue each time ads showing on their websites are clicked. More publishers seeking revenue join the Google Network. As the Google Network grows larger, ads show on more targeted websites and advertisers can obtain even more leads.

Because advertisers see a high return on investment from their advertising, they increase their spending with AdWords. This, in turn, gives Google a strong incentive to continue serving high-quality ads.

If one party doesn’t do its part, the entire system suffers. Our mission is to preserve the quality of all parties, and thus the health of the online advertising ecosystem.
How do we define quality?

- A high-quality ad:
  - Contains ad text that is extremely relevant to the user’s search query
  - Accurately describes the product or service offered
  - Leads to a relevant and well-organized landing page

- Quality Score:
  - Is an objective measurement of a keyword’s relevance to its ad text and to a given search query
  - There are two types of quality score for Search and one for Content:
    - Quality Score 1 (QS₁): Determines a keyword’s minimum bid
    - Quality Score 2 (QS₂): Influences a keyword’s ad position
    - Quality Score C (QS₃): Influences an ads position on a publisher page

-As shown in the previous slide, serving high-quality ads benefits all members of the advertising system. But what exactly is a high-quality ad?

- [Entrance 1] A high quality ad is extremely relevant to a user’s search query. It accurately describes the product or service offered on the website, and it leads to a relevant and well-organized landing page.

- [Entrance 2] To help ensure that our ads met these standards, we devised a metric called 'Quality Score.' Quality Score measures the relevance of each of your keywords to your ad text and to a given search query.

- Quality Score affects your ads in two ways: minimum cost-per-click (CPC) bid and ad position. If a keyword’s Quality Score improves, it will trigger ads at a higher position and its minimum bid will decrease.

- The formula for Quality Score differs depending on whether it’s calculating minimum bid or ad position. The next two slides will explain how.
How do we measure quality?

Performance data
- Ad Text
- Keywords
- Advertiser performance

Landing page
- Relevant?
- Unique content?
- User friendly?
How do we *use* quality?

1. **Ranking**: Show highest quality ads first
2. **Disabling**: Prevent low quality ads from showing at all
3. **Broadening**: Find opportunities to expand advertisers’ targeting to other highly relevant queries
4. **Display (UI)**: Show highest quality ads above search results. Show lower quality ads on right-hand-side
5. **Pricing**: Use economic incentives (discounts!) to encourage high quality ads and “Price out” low quality ads with QS / Min Bid.
Chapter 3: Development Process
General development process

1. Identify area of improvement
2. Develop potential solution
3. Run experiments
4. Analyse experiment results
5. Communicate appropriately and launch
Example: LPQ improvements

1. Improve core LPQ algorithm
2. Run algorithm against a sample
3. Compare results with human eval
4. Analyse external impact
5. Communicate launch appropriately
6. Launch

**Bad eval results**

**Strong pushback**

**Technical issues**

**Negative impact**
Section B: Technical Details
Chapter 4a: The Serving System
Google's Ad Serving System

Query, Geo-location, Language, Other user preferences

Ads to show, order to show them in, price to charge per click
This is a simple diagram of the ad serving system.
The AdWords advertiser on this end. Google users on this end.
And the arrows show the flow of information between all the parts of the system.
First: Capture the user query

Google

hotel dublin city centre

Search  Advanced Search  Preferences

Google Confidential and Proprietary

Redacted FOR PUBLIC FILING
2: Pre-process Input

Classify query
  • Geographical location
  • Language
  • Mobile criteria
  • IP address

Broaden the keywords for expanded matches
  • Check synonyms
  • Rewrite query

Forward for main processing
Primary targeting funnel
Gather adgroups with matching keywords
Check negatives
Drop adgroups that fail other targeting settings
Geo, language, network, …
Select the best keyword per adgroup
Match type, bid, …

Enforce business rules
Minimum bid/quality: QBB
Approval: both keyword and creative
Includes family status
Budget restrictions
Special rules (e.g one ad per account)
Forward result set for ranking
4: Determine Ad Ranking

Filter Duplicates
  • Best ad per visible URL
  • Best ad per CID

Run auction
  • Determine ranking based on QS₂ * MaxCPC
  • Apply AdWords Discounter
  • Write stats to accounts

Forward final results
System Challenges

- Scale
  - Hard to predict advertiser growth
- Synchronicity
  - Hard to keep a system with hundreds of components in synch
- Limitations of components
- Add more machines. More sharding.
- Difficult to maintain.
- Back-up machines, replaceable parts.
- Unforeseen problems
- Constant demand for resources.
- Better and smoother communications about ads system.
Chapter 4b: Core Technologies
Core Technologies in Ads Quality

1. QBB (Quality Based Bidding)
2. SmartAss (Smart Ad Serving System)
3. UBAQ (User-based Ads Quality)
4. LPQ (Landing Page Quality)
1. Quality Based Bidding
2. SmartASS
3. User Based Ads Quality
Chapter 5a: Quality Based Bidding
### Quality Based Bidding (QBB)

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
<th>Bid</th>
<th>Position Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td></td>
<td>$5.03</td>
<td>3-5</td>
</tr>
<tr>
<td>Inactive</td>
<td>Increase quality or bid $5.12 to activate</td>
<td>$5.12</td>
<td>3-5</td>
</tr>
<tr>
<td>OK</td>
<td>Minimum bid: $5.12</td>
<td>$5.12</td>
<td>3-5</td>
</tr>
</tbody>
</table>

*Settings: $5.10 Max CPC, Position preference: 3-5 [edit]*
Quality Score 1 (QS₁): Impacts Minimum CPC

- Static elements determine QS₁
  - Keyword performance and relevance
  - Ad text performance and relevance
  - Account performance
  - Landing page quality

- QS₁ determines the minimum bid for a keyword
  - active / inactive keyword status
  - more granular min CPC

- QS₁ is updated frequently for each active keyword
Main Factors of QS₁

\[ QS₁ = \text{Keyword's historical CTR on Google} + \text{Keyword's relevance to its ad text} + \text{Landing page quality} + \text{Other relevance factors} \]
Main QS1 Factors Uncovered

- Keyword CTR
  - CTR of exact matches on Google.com
  - Mostly from the advertiser, but also from systemwide data
  - Most important factor of QS1

- Adtext relevance
  - Adtext performance (key factor: relevance)
  - If multiple ad variations are being used we look at all of them
  - Changing an adtext will reset performance data

- Account performance
  - Historic CTR of all keywords and adtexts in an account

- Other relevancy factors
  - Secret sauce!
Relationship Between Min Bid and QS

- We have different graphs for developed, intermediate and emerging markets
- To prevent min bids from fluctuating wildly, we limit the number of possible min bids, i.e. no keyword has a US$0.19 min bid.
Let’s see how minimum bid and maximum bid interact. In Scenario 1, a keyword’s maximum CPC bid is $2, which is higher than its minimum CPC bid of $1. The keyword is therefore active for search. In Scenario 2, on the other hand, the keyword’s maximum CPC bid is $0.75, which is lower than its minimum bid of $1. The keyword, in this case, is inactive for search.
Minimum Bids and Cost

Actual CPC = \[
\max \left\{ \frac{\text{Ad Rank to beat}}{\text{QS}_2} + 0.01, \text{minimum bid} \right\}
\]

Imagine an auction with four advertisers:

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max bid x QS2</th>
<th>Min bid = AdRank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>$0.20 x 5</td>
<td>$0.03 = 1</td>
<td>#1</td>
<td>$0.11</td>
</tr>
<tr>
<td>Tom(^*)</td>
<td>$1.00 x 0.5</td>
<td>$0.50 = 0.5</td>
<td>#2</td>
<td>$0.50 (&gt; $0.09)</td>
</tr>
<tr>
<td>Frank</td>
<td>$0.10 x 4</td>
<td>$0.05 = 0.4</td>
<td>#3</td>
<td>$0.09</td>
</tr>
<tr>
<td>Jane(^**)</td>
<td>$0.05 x 6</td>
<td>$0.01 = 0.3</td>
<td>#4</td>
<td>$0.01</td>
</tr>
</tbody>
</table>
Frequent Questions

- Why does my registered Trademark has a high Min Bid?
  - Historical performance of KW is low and/or
  - Low actual performance (low CTR) because user is clicking on organic search result instead of ad (users tend to only want to go to the Brand's official site)
  - DS/Win Bid not linked to competition?

- Why do I suddenly see a high Min Bid for my existing KW?
  - Exact KW CTR on Google is low (CTR in UJ is good indicator)
  - Ad Text Relevance is low (Ad Text has low CTR)
  - LPO is bad / very bad / terrible
  - Account performance is low (average Account CTR)
  - Ad Text changes can cause Min Bids to spike

- Why do I see high Min Bids for my new KW?
  - CPC scores for suspended keywords. Once these keywords start seeing more searches across AdWords, they will be automatically unsuspended.
  - Performance of KW is low and/or
  - Ad Text Relevance is low or

- Why don’t my minimum bids don’t change?
  - Keywords are suspended:
    - KWs have a low search volume and aren’t showing any of your ads.
    - If more users start searching for your keyword, your ad will begin to show.
    - Google does not update min. bid and the min. CPA will be updated based on keyword performance.
Chapter 5b: Landing Page Quality
Landing Page Quality

Goal

• To measure the quality of an ad in ways that go beyond CTR - which is merely a proxy of quality that can be manipulated.

History

• Search results pages were sometimes filled with ads from a single advertiser
• The affiliate policy changed this - but advertisers found loopholes like making bridge pages
• LPQ measures signals about the quality of a website so that we can impact advertisers whose CTR is good even though they have a bad site
Landing Page and QS

Relevance of a landing page can be measured 2 ways

- How relevant does the visible URL look to users?
  - We can measure this through CTR, just like we do for keywords
  - This is a factor of QS that impacts both the min bid and the ad rank
- How relevant and useful is the actual page the user lands on?
  - This cannot be measured through CTR
  - We have a separate algorithm that evaluates this: LPQ
  - LPQ only impacts the min bid and NOT the ad rank on search
LPQ Evaluation Process

1. Crawl landing pages and store content
2. Analyse stored content
3. Compute LPQ score
4. Add LPQ score to keyword-based QS
5. Apply QS to each keyword
Impact of Landing Page Quality

1. Landing Page Quality applies a minimum bid penalty for all keywords relating to a URL.
2. Different levels of LPQ will carry different penalties.
LPQ Business Models

Ask yourself the following to gauge the value of your business model

- Would you recommend this site to an unsavvy user, like your grandma?
- Would this business exist without PPC ads?
- Would you bookmark this site?
- Could the user have gotten the same information directly from the source?

Business models to avoid

- Data collection sites that offer free items in order to collect private information
- Arbitrage sites that are designed for the purpose of showing ads
- Malware sites that knowingly or unknowingly install software on a visitor’s computer

Grey area business models

- eBooks that show frequent ads or install malware
- ‘Get rich quick’ sites
- Comparison shopping sites
- Travel aggregators
- Affiliates that don’t comply with our affiliate guidelines
Chapter 6: Ad Ranking & Promotion
Quality Score 2 (QS₂): Impacts Ad Rank

- The unique properties of a query let us refine Quality Score
  - Example: If I sell Arctic cruises and I have the keyword ‘cruises’, I'll get a better score for the query "Arctic cruises" than for "Caribbean cruises".
  - QS₂ is refined for every query

- QS₂ on Search
  - With maximum CPC, determines ad rank
  - Determines promotion to top of page

- Factors influencing QS₂
  - QS₁
  - Keyword Matching
  - Query location
  - Query time
  - Other factors
**QS2 - Example 1**

![Arctic Cruises](image)

*Arctic Cruises*
Book your cold water cruise today.
Alaska, Antarctica, Norway and more
[www.ArcticCruises.com](http://www.ArcticCruises.com)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Query</th>
<th>Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>cruise</td>
<td>arctic cruise</td>
<td>High</td>
</tr>
<tr>
<td>cruise</td>
<td>alaska cruise</td>
<td>Medium</td>
</tr>
<tr>
<td>cruise</td>
<td>hawaiian cruise</td>
<td>Low (ad may not show)</td>
</tr>
</tbody>
</table>
The Simple Magic of Ad Ranking

\[ QS_2 \times \text{MaxCPC} = \text{AdRank} \]
### Example: Advertiser Data

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>4</td>
<td>$0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example: AdRank

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<tr>
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<td>12</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td>8</td>
<td></td>
</tr>
<tr>
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<tr>
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<td>$0.30</td>
<td>2</td>
<td>5</td>
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<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>
1. Ads get promoted above the search results when the product of $QS_B$ and maximum CPC exceeds the promotion threshold.

2. The promotion formula weighs the quality component more heavily than the regular formula for ranking. Ads above the search results should meet a higher quality standard than ads in general.

3. When more than 3 ads are eligible for promotion, we rotate through them on the next page of results.

Show example of how 10% increase in QS has more than 10% impact on lower bid
Example of 7 ads that are eligible for promotion
The Simple Magic of Promotion

$Q_S \times \text{MaxCPC} \rightarrow \text{Query Threshold}$
### Example: Advertiser Data

<table>
<thead>
<tr>
<th>Advertiser</th>
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<td></td>
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<td></td>
<td></td>
</tr>
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<td>2</td>
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<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.5</td>
<td>$1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>$5.00</td>
<td>10</td>
<td>$0.05</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>$3.00</td>
<td>8</td>
<td>$0.06</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Example: AdRank

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
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<td>10</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td>10</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>12</td>
<td>$0.20</td>
<td>10</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>$5.00</td>
<td>10</td>
<td>$0.05</td>
<td>10</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>$3.00</td>
<td>8</td>
<td>$0.06</td>
<td>10</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>
## Example: Position

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Min CPC</th>
<th>Promotion Threshold</th>
<th>Ad Rank</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td>10</td>
<td>12</td>
<td>4 (prom)</td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td>10</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>12</td>
<td>$0.20</td>
<td>10</td>
<td>48</td>
<td>2 (prom)</td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>10</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>F</td>
<td>$5.00</td>
<td>10</td>
<td>$0.05</td>
<td>10</td>
<td>50</td>
<td>1 (prom)</td>
</tr>
<tr>
<td>G</td>
<td>$3.00</td>
<td>8</td>
<td>$0.06</td>
<td>10</td>
<td>24</td>
<td>3 (prom)</td>
</tr>
</tbody>
</table>
Top Ad Rotation

When more than 3 ads are eligible for promotion, we rotate through them on the next page of results.

Page 1:

Page 2:

Ads 1-5 meet the promotion threshold.
Chapter 7: Pricing
How much will I have to pay?

- Each advertiser pays the minimum amount required to maintain his position (AdWords Discounter)

\[ \text{Actual CPC} \leq \text{Max CPC} \]

- Actual CPC determined based on:
  - Your Quality Score (and the resulting minimum bid)
  - Competitors' Max CPC and Quality Score (their Ad Rank)

\[
\text{Actual CPC} = \max \left( \frac{\text{Ad Rank to beat}}{\text{QS}_2} + 0.01, \text{minimum bid} \right)
\]
The Simple Magic of Pricing

\[ \text{AdRank to beat} \div \text{QS}_2 = \text{Actual CPC}^* \]

* Unless the minimum bid is higher than the actual CPC needed
### Example 1: Review Data

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Min CPC</th>
<th>Ad Rank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td>12</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>4</td>
<td>$0.20</td>
<td>16</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Example 1: Actual CPC

Rule:
Every advertiser needs to pay exactly enough to keep a higher AdRank than his nearest competitor plus $0.01. If he occupies the last position, he pays $0.01. Alternatively, he pays his minimum bid if it should be higher than the discounted CPC.

Formula:
Actual CPC = AdRank of competitor / own QS

Scenario:
Advertiser D appears on position #5. He has no competitors below him so he is eligible to pay $0.01. However, his quality is low and he pays an actual CPC of $0.30.

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Win CPC</th>
<th>AdRank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td>12</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>$0.00</td>
<td>16</td>
<td>$0.02</td>
<td>6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>$0.00</td>
<td>4</td>
<td>$0.20</td>
<td>16</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>2</td>
<td>5</td>
<td>$0.30</td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Google Confidential and Proprietary
Example 1: Actual CPC

**Rule:**
Every advertiser needs to pay exactly enough to keep a higher AdRank than his nearest competitor - plus $0.01. If he occupies the last position, he pays $0.01. Alternatively he pays his minimum bid if it should be higher than the discounted GPC.

**Formula:**
Actual CPC = AdRank of competitor / own QS

**Scenario:**
Advertiser B appears on position #4.

**Formula:**
Actual CPC = AdRank of competitor D / own QS + $0.01
Actual CPC = 2 / 16 + $0.01
Actual CPC = $0.13 + $0.01
Actual CPC = $0.14
Example 1: Actual CPC

**Rule:**
Every advertiser needs to pay exactly enough to keep a higher AdRank than his nearest competitor - plus $0.01. If he occupies the last position, he pays $0.01. Alternatively he pays his minimum bid if it should be higher than the discounted CPC.

**Formula:**
Actual CPC = AdRank of competitor / own QS

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Win CPC</th>
<th>Ad Rank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td>12</td>
<td>2</td>
<td>1.44</td>
</tr>
<tr>
<td>B</td>
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<td>$0.52</td>
<td>8</td>
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<td>$0.14</td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>4</td>
<td>$0.20</td>
<td>16</td>
<td>1</td>
<td>0.14</td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>2</td>
<td>5</td>
<td>$0.30</td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1.00</td>
<td>10</td>
<td>3</td>
<td>$16.01</td>
</tr>
</tbody>
</table>

**Scenario:**
Advertiser E appears on position #3.

**Formula:**
Actual CPC = AdRank of competitor B / own QS + $0.01
Actual CPC = $16 + $0.01
Actual CPC = $16.01
Example 1: Actual CPC

**Rule:**
Every advertiser needs to pay exactly enough to keep a higher AdRank than his nearest competitor plus $0.01. If he occupies the last position, he pays $0.01. Alternatively, he pays his minimum bid if it should be higher than the discounted CPC.

**Formula:**
Actual CPC = AdRank of competitor / own QS

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Win CPC</th>
<th>Ad Rank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
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<td>2</td>
<td>$1.00</td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.50</td>
<td>6</td>
<td>4</td>
<td>$0.16</td>
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<tr>
<td>C</td>
<td>$4.00</td>
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<td>$0.20</td>
<td>16</td>
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<td>$0.30</td>
</tr>
<tr>
<td>D</td>
<td>$1.50</td>
<td>2</td>
<td>$0.30</td>
<td>2</td>
<td>5</td>
<td>$0.30</td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>3</td>
<td>$10.01</td>
</tr>
</tbody>
</table>

**Scenario:**
Adverser A appears on position #2.

**Formula:**
Actual CPC = AdRank of competitor E / own QS + $0.01
Actual CPC = 10 / 6 + $0.01
Actual CPC = $1.00 + $0.01
Actual CPC = $1.00
Example 1: Actual CPC

Rule:
Every advertiser needs to pay exactly enough to keep a higher AdRank than his nearest competitor plus $0.01. If he occupies the last position, he pays $0.01. Alternatively he pays his minimum bid if it should be higher than the discounted CPC.

Formula:
Actual CPC = AdRank of competitor / own QS

Scenario:
Advertiser C appears on position #1.

Formula:
Actual CPC = AdRank of competitor A / own QS + $0.01
Actual CPC = 12 / 4 + $0.01
Actual CPC = $3.00 + $0.01
Actual CPC = $3.01

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Max CPC</th>
<th>QS</th>
<th>Win CPC</th>
<th>Ad Rank</th>
<th>Position</th>
<th>Actual CPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.00</td>
<td>6</td>
<td>$0.15</td>
<td>12</td>
<td>2</td>
<td>$1.02</td>
</tr>
<tr>
<td>B</td>
<td>$0.50</td>
<td>16</td>
<td>$0.02</td>
<td>8</td>
<td>4</td>
<td>$0.14</td>
</tr>
<tr>
<td>C</td>
<td>$4.00</td>
<td>4</td>
<td>$0.30</td>
<td>16</td>
<td>1</td>
<td>$3.01</td>
</tr>
<tr>
<td>D</td>
<td>$1.00</td>
<td>2</td>
<td>$0.30</td>
<td>2</td>
<td>5</td>
<td>$0.30</td>
</tr>
<tr>
<td>E</td>
<td>$20.00</td>
<td>0.5</td>
<td>$1</td>
<td>10</td>
<td>3</td>
<td>$10.01</td>
</tr>
</tbody>
</table>
Chapter 8: Keyword Matching
Goal: Relevant Keyword Targeting

Advertisers can specify how a keyword should be used in targeting an ad:

1. Exact Match: Only the exact search query will trigger the ad
2. Phrase Match: The keyword has to be within the search query, but can have additional words before or after
3. Broad Match: We show an ad for the keyword and related variations of it
   1. We have lists of similar words with scores for how close those words are related
   2. We measure effectiveness of each expansion for each advertiser
   3. High quality advertisers will show more often and on wider matches
   4. Broad and expanded match impressions are not being used for quality evaluation
4. Negative Match: Queries containing this word will not trigger the ad
Matching Priority and Stats

Priority (within an account)
- The keyword that matches the query exactly always wins
- Otherwise the broad or phrase match with the highest ad rank wins

Move slide higher – closer to the query slides
Special Cases

Non-English latin letters:
• The AdWords system treats KWs with and without diacriticals as 2 different KWs
  • Example: Belgie ≠ België / meteo ≠ météo
• They are closely related and will regularly expand on broad match

Special characters:
• All punctuation characters except "&" and "_" are stripped out of the search terms and treated as spaces:
  • Example: ! @ % ^ * () : ~ `< > , ? \ | - # $ + [ ] : ; / 
• Apostrophes are treated differently:
  • Example: Tom's -> Tom's, To'm's -> To ms, Tom's -> Tom s

Case-sensitivity:
• KW matching is case insensitive
  • Example: "Toyota" and "toyota" is the same Keyword
Keyword Match Types and QS₁

- QS₁ is based on the performance data for ad impressions on Google.com only.
- A keyword’s minimum CPC bid is the same for each match type of the keyword in an account.
- QS₁ for broad- and phrase-matched keywords is not affected when a keyword variation triggers an ad.

Example for the keyword Electric Guitar:

- Exact Match
  - [Electric Guitar]
- Phrase Match
  - “Electric Guitar”
- Broad Match
  - “Electric Guitar”

Same QS₁ - Match type does NOT affect Quality Score or minimum bid
• Match types do however determine the actual CPC, i.e. the actual amount an advertiser pays.

• Why? Since broad and phrase match captures and encompasses many more queries than exact, any one of those queries could be more competitive (and hence expensive) than others and this is what drives the difference in average CPC.

• With exact, there’s only one CPC. It could theoretically be higher or lower in CPC than the queries that are derived from phrase or broad.

• Go over example to demonstrate.
<table>
<thead>
<tr>
<th>Id</th>
<th>Date</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2</td>
<td>10/18/2007 21:04:46</td>
<td>Any way you can add some sample CPCs in here to clarify the point even further. It's not the number of queries that defines the actual CPC but more the fact that certain keywords are more competitive (and hence expensive) than others and this is what drives the difference in average CPC.</td>
</tr>
</tbody>
</table>
Chapter 9: User Based Ads Quality
User Based Ads Quality (UBAQ)

Our system uses a variety of user-based information, like Previous Query, to ensure that we’re showing users the most relevant ads. This means that in some cases, the same ad may sometimes show in a different position for different users.

Tip: Use the Ad Preview Tool
• this shows the ad position without user based signals and ensures the advertiser is not hurting their own ad's performance

Unfortunately, advertisers have become accustomed to searching for their ads on Google.com as a way to monitor their performance and may think something is “wrong” if they see their ad in a lower or higher position than expected. Due to the many factors we take into consideration when determining which ads to show a user, searching for ads on Google.com should not be used to troubleshoot or monitor ads. Instead, advertisers and CSRs should use the ad preview page — this page will show ads the way most users see them. To use the ad preview page:
Previous Query

- When a user does back-to-back searches on Google, the second result set may include supplemental ads related to the first query

<table>
<thead>
<tr>
<th>Query done by user</th>
<th>Query as seen by Google</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Spain vacations</td>
<td>Spain vacations</td>
</tr>
<tr>
<td>2 weather forecast</td>
<td>Spain vacations weather forecast</td>
</tr>
<tr>
<td></td>
<td>AND</td>
</tr>
<tr>
<td></td>
<td>weather forecast</td>
</tr>
<tr>
<td>3 book flights</td>
<td>weather forecast book flights</td>
</tr>
<tr>
<td></td>
<td>AND</td>
</tr>
<tr>
<td></td>
<td>book flights</td>
</tr>
</tbody>
</table>
Section C: What the users see
Chapter 10: The Ads UI
Chapter 11: Issues & Myths
Some Quality Score Misconceptions Uncovered

- Using different match types can improve your Quality Score
- High position = high Quality Score
- High CTR = high Quality Score
- Quality Score is reset when you optimize your account
- Quality Score suffers when your ad is not running
- Low volume keywords always have a high min CPC
- There should be ads on all results pages
Keyword Match Types

**Misconception:** Changing keyword match types can alter my Quality Score

**Fact:** Quality Score is calculated using only data from queries that exactly match your keyword

- [red flowers], "red flowers", 'red flowers' may all have different CTRs but they all have the same Quality Score
- Because Quality Score doesn’t depend on the match type, you won’t get lower costs by using all 3 match types

**Tip:** Negative keywords help you eliminate irrelevant queries

- This helps improve your account’s performance
Impact of Position on Quality Score

**Misconception:** Showing up in a higher position will benefit my QS

**Fact:** Quality Score is normalized to compensate for differences in performance for ads in different positions

- An ad in a higher position is predisposed to get a better CTR
- An ad above the search results is predisposed to get a better CTR
The Relationship between CTR and QS

**Misconception:** I see a high CTR in my account statistics, that means that I should have a high Quality Score

**Fact:** Quality Score (for min CPC and for AdRank on search) is based on your ad’s performance on Google.com

- It is possible that your ad has a low Quality Score despite having a stellar CTR shown in the account stats because it does not perform well on Google properties
- There is a level playing field when all ads are judged on the same criteria

**Fact:** The CTR shown in the account stats can include the following:

- Performance of Exact KW on Google (used for determining QS)
- Performance of Exact KW on Search Partners
- Performance of KW expansions and variations on Google
- Performance of KW expansions and variations on Search Partners
Optimizations and Quality Score

Misconception: I'll lose my history if I optimize my account

Fact: History of keywords, ad texts and landing pages is preserved when the account is restructured
  - Visible history is reset
  - History to calculate Quality Score is preserved

Tip: Experiment with improved account structure, you can always go back if it wasn't a success
Paused Ads

Misconception: My Quality Score suffers when my ad/keyword is paused

Fact: Quality Score is partially based on the performance of that keyword and ad text within your account and pausing an ad does not impact this aspect of the Quality Score because no performance data is accrued
  • Use ad scheduling to only show your ads when they perform at their best
  • Pause keywords and creatives that are out of season and resume them next time they come in season

Fact: Quality Score is partially based on system-wide data so a paused ad’s Quality Score could change when it is resumed.
  • E.g. the keyword “Christmas Tree” will have a better Quality Score around the holidays. If you unpause it in March, it may have a worse Quality Score, however this is an external factor and not a penalty because your keyword was paused.
Low Volume Keywords

**Misconception:** Low volume keywords always have a high min CPC because Google finds them irrelevant.

**Fact:** The relevance factor used to calculate QS is a measure of how users react to the ad when we show it, hence CTR is a large component of QS. We do not consider the frequency that users search for a keyword to be a relevance factor.

- Delete keywords with extremely low search volume to keep your account more manageable.
- In 2006, 85% of all searches were for keywords of 5 words or less. (Jupiter)

**Fact:** QS is based on all the data Google has, so when the keyword is very specific and doesn’t get searched for very often, we have less data to determine the initial minimum bid. In some cases, we may set a pretty high minimum bid but if your ad proves its relevance, its QS can rise quickly and your minimum bid will drop.
Pages with Few Ads

**Misconception:** There should be ads on all results pages

**Fact:** Google wants to show users the most relevant results on search pages and sometimes the organic results are so relevant that few ads meet the relevance threshold required to be shown.

- There are few keywords left that are so unique that nobody has thought of buying them. When you don’t see ads, chances are these are bad keywords that others have unsuccessfully tried already.

**Fact:** Some queries are commercial in nature and others aren’t. Organic results tend to be more useful for non-commercial queries so any advertisers buying the keywords will have a hard time getting clicks and proving they are providing more value than the organic results.

- Some advertisers appear both in organic and paid results. When this is the case, enjoy the free traffic you’re getting and make sure you’re tracking it in your overall results.
Commercial vs. Non Commercial Queries

Compare the number and positioning of ads on the following 3 queries which go from non commercial to very commercial

[Google search results for champagne]
Section D: Beyond Search
The 4 big knobs and levers

1. QBB curves
   1. Defining the price advertisers need to pay for a certain level of quality
   2. Controlling number of active keywords in the system
   3. Defining the minimum bids paid for bottom ads

2. Threshold tuning
   1. Defining how many ads are disabled due to quality concerns
   2. Defining how many ads are being shown above the results

3. Reserve prices
   1. Defining the minimum price for a click of a promoted ad

4. Landing Page Quality
   1. Shaping the mix of advertisers able to profitably run ads on Google
The QBB Curve

1. Each Quality Score represents a certain minimum bid on a given curve
2. We have different curves for different markets to take market specifics into account
3. The more lenient the curve, the less keywords become "inactive for Search"
4. Basic principle: low quality ads should pay at least a CPC equal to the average CPC in a market.
Reserve Prices

Google

Dublin City Centre Hotel
Luxury Comfort and Style in the heart of Dublin City

€0.34 [€ - €2.34]

City Centre Hotel
All you need is in the room. Leave your international stay to us

€0.56 [€ - €1.56]

Flowbar Hotel Dublin

€1.12 [€ - €0.98]

Dublin City Centre Hotel

Dublin City Centre Hotel

Dublin City Hotels, Ireland Discount hotels in Dublin City

Luxury Dublin City Centre Hotel - The Clarence Hotel Dublin

Holiday Inn Dublin

Dublin Hotels

Dublin Hotel
Landing Page Quality

1. Landing Page Quality applies a minimum bid penalty for all keywords relating to a URL.
2. Different levels of LPQ will carry different penalties.
3. We don’t have „benefits“ at the current stage.
Potential results of AQ launches

- What
  - Change in # of impressions
  - Change in avg CTR
  - Change in avg ROI
  - Change in avg RPM

- Through
  - Change in depth (more/less ads per query)
  - Change in coverage (more/less queries with ads)
  - Shift of ad mix (e.g. less ebay)
  - More/less promoted ads
  - Higher/lower average CPCs
When things go wrong

Examples of things that may seem weird

- Min CPC seems out of whack
- Broad match is out of control
- Good landing pages have been impacted

Steps to consider

- Check the ads quality blog for launches around the time the issue started
- Research the details using reports
- Check in with CS Tech about possible bugs and with Product Specialist if you need confirmation about intended system behavior
Chapter 15: Resources
Yellow
When you have questions about ads quality

Prodcomm (http://go/osoprodcomm)
• The place to find official messaging for all ads quality questions

Ads quality blog (http://go/adsquality)
• Great for checking launch dates to see if some unusual behavior in account may be related to ads quality change

ICSKB (http://icskb)
• Great for getting common but hard questions answered
Chapter 16: Q&A

Yellow
Still to come...
Epilogue: The Future of Ads Quality
Red
Known issues that we are working on

- **Prediction confidence**
  - Trademark owners often pay high min CPCs initially

- More regular LPQ updates

- More transparency and actionable advice