Agenda

• Quotient Business
• Quotient Analytics Architecture
• Technology Stack
• Teams Involved
• Demo
• Challenges & Resolution
• Lessons Learned
• Q&A
**BUSINESS**

**Coupons.com to Change Corporate Name to Quotient**

Coupons.com will continue on as a consumer brand

*By Anne Steele*

Oct. 6, 2015 5:23 p.m. ET

**Coupons.com Inc. Coup -0.44%** said Tuesday that it would change its corporate name to Quotient Technology Inc., a move the digital discount distributor said better reflects the breadth of its business offerings.

The company's stock also will trade under a new ticker symbol, "QUOT." It currently trades under "Coup."
# Quotient Retailer iQ

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real-time Email/SMS Engagement</td>
<td>Provides real-time engagement through email and SMS messages.</td>
</tr>
<tr>
<td>Digital Offers</td>
<td>Offers are delivered digitally as promotions or discounts.</td>
</tr>
<tr>
<td>Digital Shopping List</td>
<td>Facilitates digital shopping lists for creating personalized shopping lists.</td>
</tr>
<tr>
<td>Digital Receipts</td>
<td>Offers digital receipts to track purchases and offers conveniently.</td>
</tr>
<tr>
<td>Digital Circular</td>
<td>Sends circulars to customers with targeted offers and promotions.</td>
</tr>
<tr>
<td>Targeted Media</td>
<td>Uses data and analytics to target specific audiences with relevant offers.</td>
</tr>
<tr>
<td>Reporting &amp; Analytics</td>
<td>Provides reporting and analytics on customer engagement and offer performance.</td>
</tr>
</tbody>
</table>

### Personalization...

Data on Shoppers Transactions/Digital Use, Products, Promotions, Pricing
Coupoms.com & Mobile App
Our Clients & Partners

CPGs

Retailers
Quotient – Data Points

Consumer Demand for Digital Coupons

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>917M</td>
</tr>
<tr>
<td>2013</td>
<td>1.3B</td>
</tr>
<tr>
<td>2014</td>
<td>1.6B</td>
</tr>
<tr>
<td>2015</td>
<td>1.7B</td>
</tr>
<tr>
<td>2016</td>
<td>2.4B</td>
</tr>
<tr>
<td>2017E</td>
<td>2.6B</td>
</tr>
</tbody>
</table>
Quotient – Data Points

~ 100 TB / Year

$3.6 Billion
Savings Delivered in 2016

700+ Employees
Mountain View, Cincinnati, NY, Europe, India

50 million shoppers
~40% of US households registered to digital savings programs we power

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Quotient Analytics
Quotient Analytics Architecture

Data Sources

API / SDK
Microstrategy 10.4
iCubes
Reports / Dashboards

SSO

Quotient Insights Portal
## Technology Stack

### Hadoop / Spark 2.0
- 28 Impala & 43 ETL Data Nodes
- 256 GB RAM/Node
- 14 TB Disk/Node
- 365 TB Raw Data
- 14.2 TB Aggregated Data

### Impala 2.7

### Microstrategy 10.4
- 2 IServer Nodes
- 4 Web Servers
- 256 GB RAM/Node
- 1 TB Disk/Node
- Apache Tomcat 8.0
- 8 Core CPUs

### AngularJs 1.4
- 2 Web Servers
- 256 GB RAM/Node
- 1 TB Disk/Node
- Java 8
- SQL Server 2008
Intuitive user experience
Demo
(In Close Beta)
How did we do it?

AGGREGATE TABLES

CUBES WHEREVER POSSIBLE

CLOUDERA IMPALA PARTITIONING GUIDELINES

OPTIMIZE SQL QUERIES

TBs of Data & Under 15 sec response SLAs
### Performance Issues

#### Live Query VS Cubes & Partitions

<table>
<thead>
<tr>
<th>#</th>
<th>MSTR CUBE</th>
<th>Details</th>
<th>Machine Used</th>
<th>Prime?</th>
<th># of rows</th>
<th>Duration (Total)</th>
<th>Dur (Impala)</th>
<th>Dur (Cube)</th>
<th>Cube Size (MB)</th>
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<tr>
<td>1</td>
<td>ICUBE - Cross Coupon</td>
<td>Bounded by campaign. No exclusions</td>
<td>New Staging Box</td>
<td>No</td>
<td>322M</td>
<td>71m</td>
<td>50m</td>
<td>29m</td>
<td>14,000</td>
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<tr>
<td>2</td>
<td>ICUBE - Cross Coupon (Campaign Partition)</td>
<td>Bounded by campaign. No exclusions. Prime partitions on Campaign</td>
<td>New Staging Box</td>
<td>Yes</td>
<td>331M</td>
<td>59m</td>
<td>2.5m</td>
<td>56.5m</td>
<td>15,000</td>
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<td>3</td>
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<td>New Staging Box</td>
<td>Yes</td>
<td>331M</td>
<td>22m</td>
<td>2.5m</td>
<td>19.5m</td>
<td>15,300</td>
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</table>

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<thead>
<tr>
<th>#</th>
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<tr>
<td>12</td>
<td>ICUBE - Offer Performance Detail</td>
<td></td>
<td>New Staging Box</td>
<td>No</td>
<td>5.57M</td>
<td>20.38m</td>
<td>19m</td>
<td>1.3m</td>
<td>1,400</td>
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<tr>
<td>13</td>
<td>ICUBE - Offer Performance Detail (Brand Partition)</td>
<td>Partitions on Brand</td>
<td>New Staging Box</td>
<td>Yes</td>
<td>5.57M</td>
<td>46m</td>
<td>41m</td>
<td>5m</td>
<td>1,400</td>
</tr>
<tr>
<td>14</td>
<td>ICUBE - Offer Performance Detail (Campaign Partition)</td>
<td>Partitions on Campaign</td>
<td>New Staging Box</td>
<td>Yes</td>
<td>5.57M</td>
<td>42m</td>
<td>41m</td>
<td>1m</td>
<td>1,400</td>
</tr>
<tr>
<td>15</td>
<td>ICUBE - Offer Performance Detail (Category Partition)</td>
<td>Partitions on Category</td>
<td>New Staging Box</td>
<td>Yes</td>
<td>5.57M</td>
<td>46m</td>
<td>41m</td>
<td>0m</td>
<td>1,400</td>
</tr>
</tbody>
</table>
Customizing the Portal & Dashboards

Dynamic resizing of dashboards
Filters & Prompts with High Cardinality
Customization & Choices

Repositioning of grid report columns on Dashboard
Lessons Learned

• Determine the Audience (Internal or External or Both)
• Adopt Data Security Model as early as possible
• Alpha & Beta launch
• Integrating the Portal with Microstrategy & SSO
  • Custom prompt API framework implementation
  • Handling of Data Filtering between Portal & Microstrategy
  • OKTA & Salesforce SSO Authentication using oAuth Protocol
  • Authorization implementation with custom security feature
Q&A

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