

AMENDED Exhibit 951

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR

MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

1/12/2017, 9:00 PM UTC

Labels

type: document

Quip

Broadcast Ranking team

Welcome to Broadcast Ranking team!

The Broadcast ranking team is responsible for providing the most relevant content in front of users on the stories page and reducing barriers to consumption. This includes Live Stories, Discover content and User stories. This includes infrastructure, editorial programming and quality aspects.

Team Mission

Provide the right content to the right people at the right time, leveraging as many signals as we can from users and internal curators.

Team Objectives

Note: Team objectives hold steady through the quarter and across more than one quarters.

- **Objective:** Increase positive engagement with content
- **Objective:** Decrease negative engagement with content
- **Objective:** Cut costs by increasing utilization and improving serving latencies

Team goals for 2017

Sheet1

	Objective	Key Result	EOY 2016	Target EOY 2017
1	Increase positive engagement	Content DAU as a % of app DAU	17%	30%
2		Daily Unique Content Snaps viewed	0.97B	1.5B
3		Content stories and editions consumed per DAU	2.7	3.5
4		Time spent per Content DAU (mins)	5.5	7.2
5	Decrease negative engagement	Number of support tickets related to content quality a week	372	60

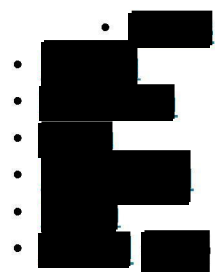
6		Total number of hide stories	N/A	To be baselined after launch
7		Loading screens a user sees in Discover	8%	5%
8		Loading screens a user sees in Live Stories	7%	5%
9	Decrease cost	Utilization on WWAN for Discover	35%	60%
10		Utilization on WWAN for Live Stories	8%	60%
11		Utilization on WWAN for User Stories	70%	80%
12		Utilization on Wifi for Discover	14%	18%
13		Utilization on Wifi for Live Stories	9%	18%
14		Utilization on Wifi for User Stories	70%	80%
15		Broadcast init instance cost	14000\$/day	7000\$/day

Current workstreams

Broadly speaking the team's workstreams break out into:

- Programming tools (includes soft promotions, soft demotions of live-stories and Discover content, targeting of the promotions etc)
- Ranking of content
- Precaching of content
- Infrastructure pipeline for putting signals into the ranking function.

Current engineering team members



The team works closely with members of the Search ([REDACTED], [REDACTED]) and Research teams ([REDACTED]) for ranking as well as the Discover team for programming tools. The team works closely with client engineers to get the right signals flowing for use in ranking.

Product and Design

- **Design:** [REDACTED]

- **Product:** [REDACTED]

Operational

- [Broadcast Ranking Runbook](#) for oncalls
- [Broadcast Programming Runbook](#) for oncalls
- [Ranking Dashboard](#)

Ranking onboarding

- [Broadcast Ranking Onboarding](#)
- [Broadcast Ranking Cookbook](#)
- [Guide to add new online ranking feature data in feelinsonice](#)
- **Ranking reading list**
 - [Multi-armed bandits and UCB \(similar ideas are used in Tile Optimization; though we use a Thompson Sampling approach\)](#)
 - [Rules of ML](#)
 - [ML Model that is powering predicted taps](#)

Metadata of Broadcast Ranking team

Thread class

document

Created

2017-01-12T21:00:08+00:00

Updated

2021-06-26T13:28:49+00:00

Link

<https://snapchat.quip.com/LirNAPMa2GaH>

Shared folders

—

Expanded users

[REDACTED]

Users

[REDACTED]

Urls

- <https://quip.com/TclAEAr0i36>
- <https://quip.com/XEIAEAogLK3>
- <https://quip.com/ddDAEA7qdFp>
- <https://quip.com/DTPAEA19UsG>
- <https://quip.com/RJEA EAkxrLP>

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- <https://quip.com/aRIAEAcRbXU>
 - <https://quip.com/flcAEARns1m>
 - <https://quip.com/WJfAEALWNV6>
 - <https://quip.com/WNdAEAGv7mz>
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 - <https://snapchat.quip.com/sLxIAFbE5yil>
 - <https://snapchat.quip.com/UigkArpnQyd4>
 - <https://jeremykun.com/2013/10/28/optimism-in-the-face-of-uncertainty-the-ucb1-algorithm/>
 - http://martin.zinkevich.org/rules_of_ml/rules_of_ml.pdf
 - <https://pdfs.semanticscholar.org/bb07/ff4b407a48436624837e9547c43501530475.pdf>

Chat

- [REDACTED]
- [REDACTED] can we add loading screen metrics in this section?
1/13/2017, 8:18 PM UTC

Edits

[REDACTED] edited at 2017-04-13T16:55:03.886Z

- Ranking Dashboard
- Broadcast Ranking Onboarding
- Multi-armed bandits and UCB (used (similar ideas are used in tile optimization) Tile Optimization; though we use a Thompson Sampling approach)

[REDACTED] edited at 2017-03-23T15:31:05.693Z

- Ranking onboarding
- Broadcast Ranking Cookbook
- Guide to add new online ranking feature data in feelinsonice
- **Ranking reading list**
- Multi-armed bandits and UCB (used in tile optimization)
- Rules of ML
- ML Model that is powering predicted taps

[REDACTED] edited at 2017-03-09T01:54:43.187Z

- [REDACTED]
- [REDACTED]
- [REDACTED]
- Design: [REDACTED]
- Product: [REDACTED]

- Operational
- Broadcast Ranking Runbook for oncalls
- Broadcast Programming Runbook for oncalls
- Ranking reading list
- Multi-armed bandits and UCB (used in tile optimization)
- Rules of ML
- ML Model that is powering predicted taps
-

edited at 2017-03-02T21:19:25.753Z

- Sheet1 updated
- Programming tools (includes soft promotions, soft demotions of live-stories and Discover content, targeting of the promotions etc)
 - Ranking of content
 - Precaching of content
 - Infrastructure pipeline for putting signals into the pipeline ranking function.

edited at 2017-02-17T05:55:44.495Z

- **Objective:** Increase positive engagement with content
- **Objective:** Decrease negative engagement with content
- **Objective:** Increase Cut costs by increasing utilization
- **Objective:** Decrease costs
- and improving serving latencies
- Sheet1 updated
- **Objective:** Increase positive engagement with content
- **Content:**
- **Key Results:** Increase content DAU as a % of app DAU
- **Key Results:** Increase snaps consumed per Content DAU
- **Key Results:** Increase minutes per Content DAU
- **Key Results:** Keep user retention as a result of unsolicited content flat
- **User Stories:**
- TBD
- **Objective:** Decrease negative engagement with content
- **Key Result:** Reduce number of support tickets related to content quality
- **Key Result:** Start collecting a negative engagement metric directly from users
- **Key Result:** Reduce number of loading screens a user sees
- **Objective:** Increase utilization and reduce costs
- **Key Result:** Latency, Utilization, Cost, (new metrics?)
- **Objective:** Provide publishers with actionable feedback from rankings that improve content quality
- **Key Result:** ---
-
- The team works closely with members of the Search (,) and Research teams () for ranking as well as the Discover team for programming tools. The team works closely with client engineers to get the right signals flowing for use in ranking.

edited at 2017-02-17T00:42:56.611Z

- **Welcome to Broadcast Relevance and Ranking team!**

- The Broadcast R&R ranking team is responsible for providing the most relevant content in front of users on the stories page and reducing barriers to consumption. This includes Live Stories, Discover content and User stories. This includes infrastructure, editorial programming and quality aspects.

- **Objective:** Increase positive engagement with content
- **Objective:** Decrease negative engagement with content
- **Objective:** Increase utilization and reduce costs
- **Objective:** Decrease costs

- **Team Key Results goals for 2017 (WIP)**

- ~~Note: Key Results are in service of the team's objectives and may change every quarter.~~

- Sheet1 updated

edited at 2017-01-19T02:01:01.140Z

- **Objective:** Increase positive engagement with content
- **Objective:** Decrease negative engagement with content
- **Objective:** Increase utilization and reduce costs
- **Objective:** Enhance quality of content by providing editorial tools to allow for business input into curation of the content

- **Objective:** Increase positive engagement with content
- **Key Results Content:**
- **Discover:**
- Increase content viewership as a % of app DAU
- Increase snaps consumed per Discover DAU
- Maintain flat or improve time-spent
- **Key Results:** Increase content DAU as a % of app DAU
- **Key Results:** Increase snaps consumed per Content DAU
- **Key Results:** Increase minutes per
- Discover
- Content DAU
- **User stories:**
- Increase total user-stories snaps consumed
- **Live stories:**
- **Overall Key Results:** Do not decrease Keep user retention as a result of unsolicited content
- User retention metrics to be causally flat or positive
- flat
- **User Stories:**
- TBD
- **Objective:** Decrease negative engagement with content
- **Key Result:** Reduce number of support tickets related to content quality
- **Key Result:** Start collecting a negative engagement metric directly from users
- **Key Result:** Reduce number of loading screens a user sees
- **Objective:** Increase utilization and reduce costs
- **Key Result:** Latency, Utilization, Cost, (new metrics?)
- **Objective:** Enhance quality of content by providing editorial tools to allow for business input into curation of the content
- **Key Result:** Content that is not
- **Objective:** Provide publishers with actionable feedback from rankings that improve content quality

edited at 2017-01-18T18:19:23.869Z

- Broadcast Relevance and Ranking team: Mission and Objectives
- The Broadcast R&R team is responsible for providing the most relevant content in front of users on the stories page and reducing barriers to consumption. This includes Live Stories, Discover content and User stories. This includes infrastructure, editorial programming and quality aspects.
- **Team Key Results for Q1/17 2017 (WIP)**
 - Current workstreams
 - Broadly speaking the team's workstreams break out into:
 - Programming tools (includes soft promotions, soft demotions of live-stories and Discover content, targeting of the promotions etc)
 - Ranking of content
 - Precaching of content
 - Infrastructure pipeline for putting signals into the pipeline.
- **Team Members Current engineering team members**
 - The team works closely with members of the Search (,) and Research teams for ranking as well as the Discover team for programming tools. The team works closely with client engineers to get the right signals flowing for use in ranking.

edited at 2017-01-13T20:18:01.700Z

edited at 2017-01-12T23:56:02.407Z

- The team is responsible for providing the most relevant content in front of users on the stories page and reducing barriers to consumption. This includes Live Stories, Discover content and User stories. This includes infrastructure, programming and quality aspects.
- **Design:**
- **Product:**

at 2017-01-12T21:52:26.537Z

- **Objective:** Increase positive engagement with content
- **Key Results:**
- **Discover:**
 - Increase content viewership as a % of app DAU
 - Increase snaps consumed per...
 - of support tickets related to content quality
- **Key Result:** Start collecting a negative engagement metric
- **Objective:** Increase utilization and reduce costs
- **Key Result:** Latency, Utilization, Cost, (new metrics?)
- **Objective:** Enhance quality of content by providing editorial editorial tools to allow for business input into curation of the content
- **Key Result:** Content that is not
- **Objective:** Provide publishers with actionable feedback from rankings that improve content quality
- **Key Result:** ---

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

