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# Changes in the Power of Ratings Over Time

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Trial Exhibit No.

**P-00469**

# Predictive Power of Ratings



# Predictive Power of Ratings : Full Study

Full Dataset covers *over 2 years* of U.S. trip data with:

- Over **7.6 Billion** trip miles
- Over **1.2 Billion** trips
- Over **1.5 Million** Safety Tickets
- Over **20,000** Accident Claims
- Ratings calculated for each driver at time of trip based on 500 previous trips

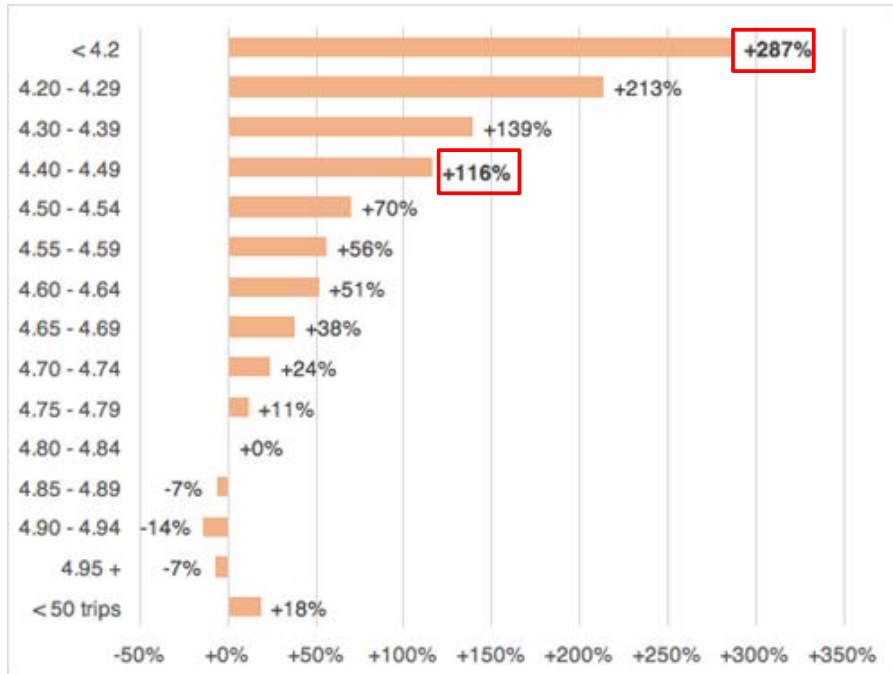


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# Predictive Power of Ratings

Ratings provide a strong signal for accident propensity



At time of trip:

Drivers below 4.5 are **at least twice as likely** to get into an accident

Drivers below 4.2 are **4x as likely** to get into an accident

Rating bands are based on the 500 previous rated trips at time of trip

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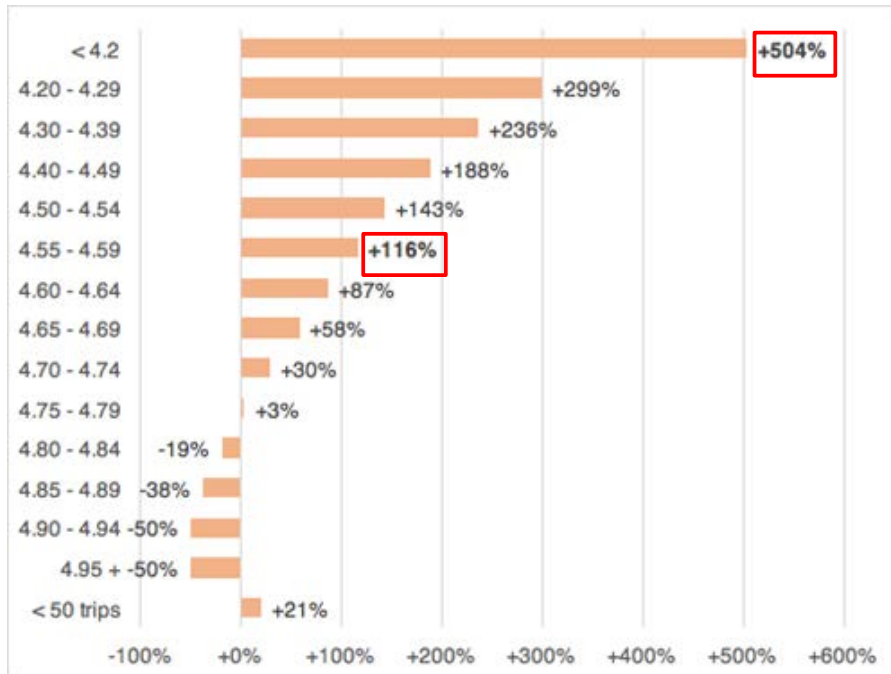
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# Predictive Power of Ratings

Ratings provide a strong signal for safety incidents



At time of trip:

Drivers below 4.6 are **at least twice as likely** to have a safety incident

Drivers below 4.2 are **6x as likely** to have a safety incident

Rating bands are based on the 500 previous rated trips at time of trip



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# Predictive Power of Ratings

Due to their predictive power, ratings are one of the primary inputs for initiatives to reduce costs and stand for safety.

Rating-based  
deactivation

Low-rated drivers receive warnings and are deactivated if their ratings do not improve

Ticket- and rating-  
based deactivation

Ratings and safety incident history are used to identify and deactivate drivers with a pattern of dangerous driving behavior

Insurance Cost  
KPI Metric

Central Operations and Finance use ratings as a factor in computing insurance savings from initiatives

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# Changes in the Power of Ratings Over Time

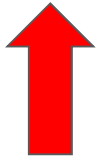


# Changes in the Power of Rating Over Time

Over three years, the predictive power of ratings has decreased.



Less signal:  
**DECREASE** in rated trips



More noise:  
**INCREASE** in “junk ratings”

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# Impact on Safety and Insurance

Drivers who should be deactivated remain on the platform longer



Less signal:  
DECREASE in rated trips



It takes *two to three times as many trips* to identify bad drivers



More noise:  
INCREASE in “junk ratings”



The predictive power of ratings has been *greatly diluted* by 5-star “junk ratings”, driver ratings become inflated

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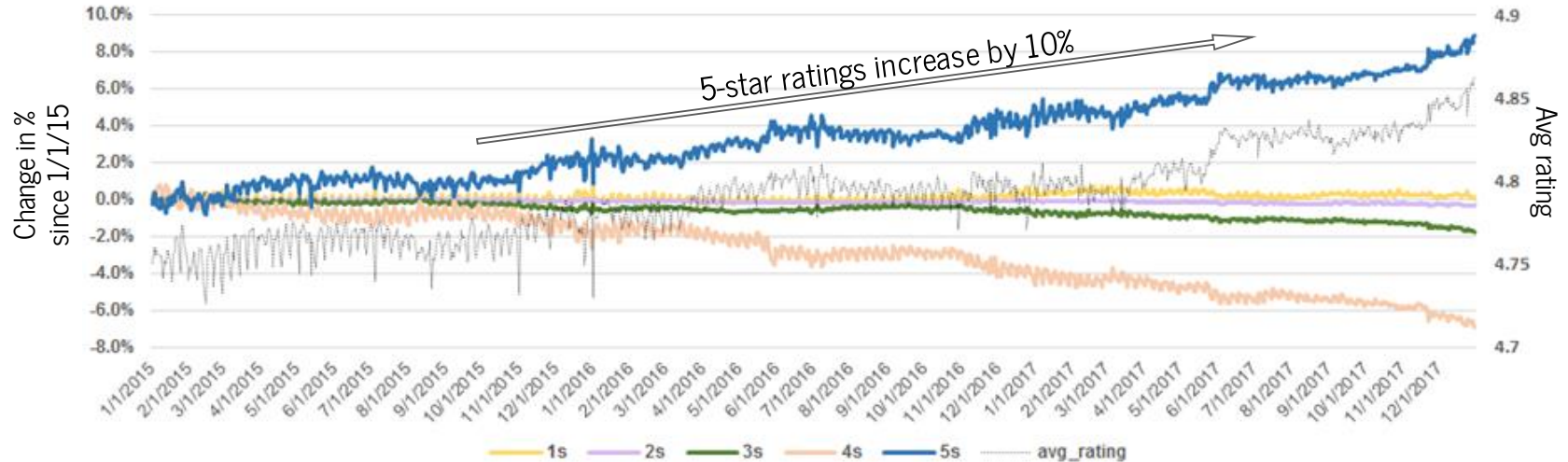
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# Change in Ratings (U.S. Only)

Massive Change in Distribution of 1-, 2-, 3-, 4-, 5-star Ratings Over Time



A lot more 5-star ratings, a lot fewer 4- and 3-star ratings.

The average rating given (*black dotted line*) increased from **4.75** to **4.85** over the same period



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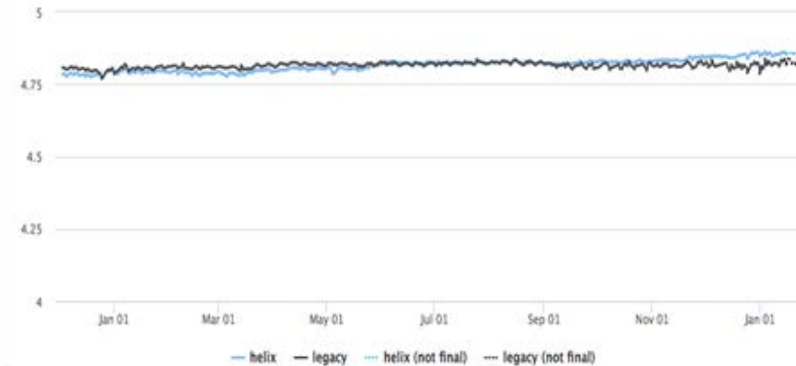
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# Change in Ratings (U.S. Only)

Increase in average rating and in 5-star ratings driven by changes in app

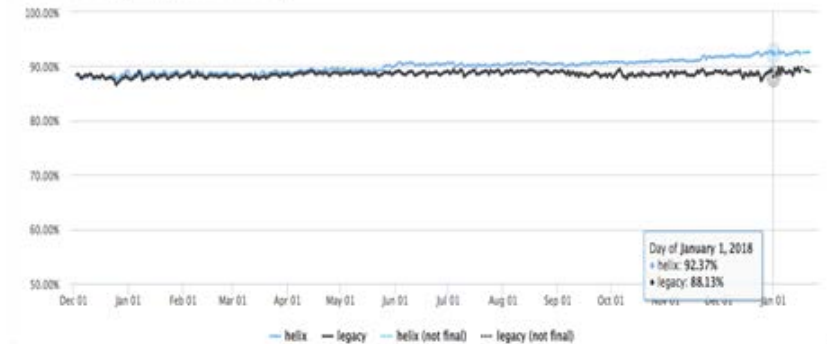
Average Rating (Helix vs ERA)

Definition: Total rating / # completed trips (Global excludes India)



% Trips Rated 5-stars (Helix vs ERA)

Definition: # 5-star trips / # rated trips (Global excludes India)



No change in ERA, clear change in Helix

Source: [https://shiny-prod.uberinternal.com/apps/dr\\_helix\\_ratings/](https://shiny-prod.uberinternal.com/apps/dr_helix_ratings/)

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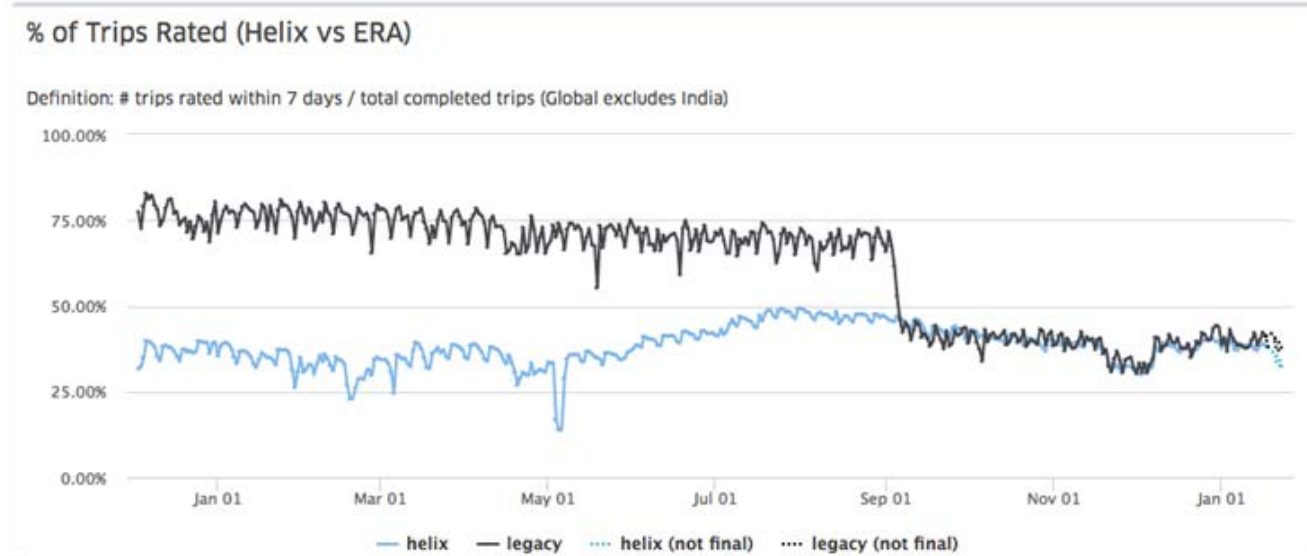
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# Change in Ratings (U.S. Only)

Volume of rated trips is now nearly one-third of ERA



Source: [https://shiny-prod.uberinternal.com/apps/dr\\_helix\\_ratings/](https://shiny-prod.uberinternal.com/apps/dr_helix_ratings/)

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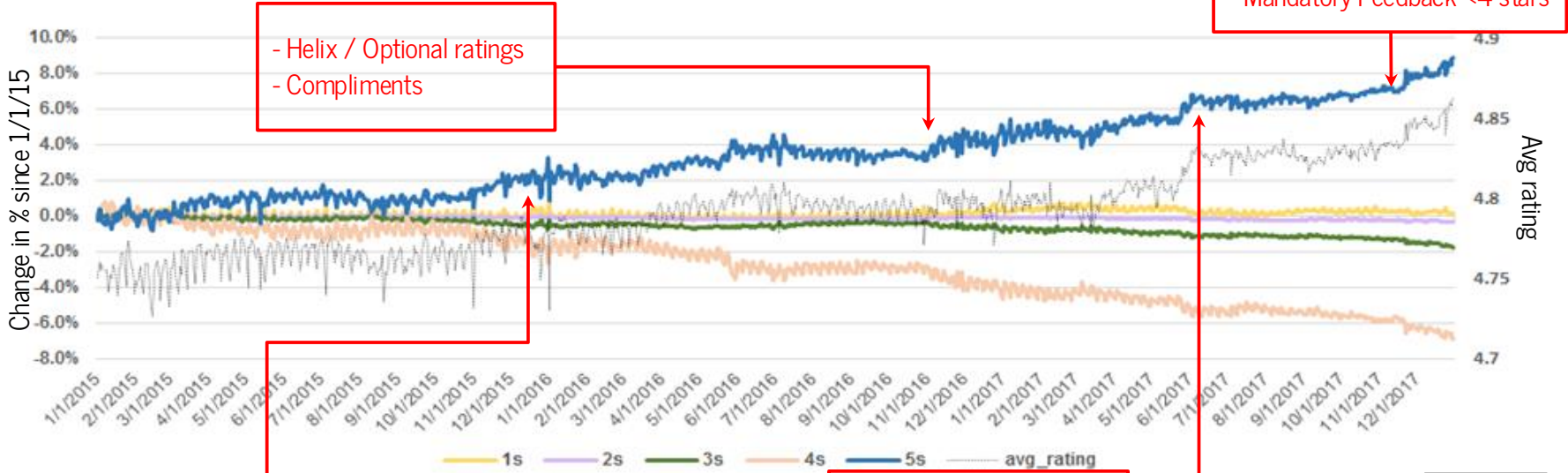
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# Change in Ratings (U.S. Only)

App Feature rollouts create quantum leaps in 5-star ratings given



- Mandatory feedback <3 stars  
- Rider receipt redesign

- Helix / Optional ratings  
- Compliments

- Push Notifications  
- Tipping  
- Ratings Protection v1

- Ratings Protection v2  
- Mandatory Feedback <4 stars



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# Impact of Nov 2015 Octane Change

<u>Week of Trip</u>	<u>1-star</u>	<u>2-star</u>	<u>3-star</u>	<u>4-star</u>	<u>5-star</u>
10/15/2015 - 10/21/2015	1.4%	0.9%	2.8%	10.0%	85.0%
10/22/2015 - 10/28/2015	1.4%	0.9%	2.7%	9.9%	85.1%
10/29/2015 - 11/4/2015	1.5%	0.9%	2.7%	9.7%	85.2%
11/5/2015 - 11/11/2015	1.3%	0.8%	2.6%	9.7%	85.5%
11/12/2015 - 11/18/2015	1.3%	0.8%	2.6%	9.6%	85.6%
11/19/2015 - 11/25/2015	1.3%	0.8%	2.6%	9.3%	86.0%
11/26/2015 - 12/2/2015	1.4%	0.8%	2.6%	9.3%	85.9%
12/3/2015 - 12/9/2015	1.3%	0.8%	2.5%	9.3%	86.2%
12/10/2015 - 12/16/2015	1.3%	0.8%	2.5%	9.3%	86.1%
12/17/2015 - 12/23/2015	1.6%	0.8%	2.5%	8.9%	86.2%
12/24/2015 - 12/30/2015	1.6%	0.8%	2.6%	9.1%	85.9%
12/31/2015 - 1/6/2016	1.7%	0.8%	2.6%	9.0%	85.9%
1/7/2016 - 1/13/2016	1.3%	0.8%	2.4%	9.0%	86.5%

In late November 2015:

1. **Mandatory Feedback** and a **Rider Receipt Redesign** were launched in Octane
2. The proportion of 5-star ratings jump from 85% to 86% and continue to increase
3. Simultaneously, the proportion of 4-star ratings drop from 10% to 9% and continue to decrease

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# Impact of Nov 2016 Helix / Optional Ratings

<u>Week of Trip</u>	<u>1-star</u>	<u>2-star</u>	<u>3-star</u>	<u>4-star</u>	<u>5-star</u>
10/6/2016 - 10/12/2016	14%	0.7%	2.6%	7.8%	87.5%
10/13/2016 - 10/19/2016	14%	0.7%	2.6%	7.8%	87.5%
10/20/2016 - 10/26/2016	14%	0.7%	2.6%	7.8%	87.4%
10/27/2016 - 11/2/2016	16%	0.8%	2.6%	7.7%	87.3%
11/3/2016 - 11/9/2016	15%	0.8%	2.5%	7.5%	87.7%
11/10/2016 - 11/16/2016	13%	0.7%	2.4%	7.3%	88.1%
11/17/2016 - 11/23/2016	15%	0.8%	2.4%	7.1%	88.2%
11/24/2016 - 11/30/2016	15%	0.8%	2.4%	7.0%	88.2%
12/1/2016 - 12/7/2016	15%	0.8%	2.4%	7.0%	88.4%
12/8/2016 - 12/14/2016	15%	0.8%	2.4%	6.9%	88.4%
12/15/2016 - 12/21/2016	1.7%	0.8%	2.4%	6.9%	88.2%
12/22/2016 - 12/28/2016	1.8%	0.8%	2.4%	6.8%	88.2%
12/29/2016 - 1/4/2017	1.7%	0.8%	2.3%	6.5%	88.7%

In November 2016:

- Optional Rating** was launched 100% in Helix
- The proportion of 5-star ratings jump from 87.5% to 88.5% and continue to increase
- Simultaneously, the proportion of 4-star ratings drop from 7.8% to 6.5% and continue to decrease

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# Impact of May 2017 Ratings Protection

<u>Week of Trip</u>	<u>1-star</u>	<u>2-star</u>	<u>3-star</u>	<u>4-star</u>	<u>5-star</u>
4/6/2017 - 4/12/2017	1.7%	0.7%	2.1%	6.2%	89.3%
4/13/2017 - 4/19/2017	1.7%	0.7%	2.1%	6.1%	89.4%
4/20/2017 - 4/26/2017	1.8%	0.7%	2.1%	6.0%	89.4%
4/27/2017 - 5/3/2017	1.8%	0.7%	2.0%	5.9%	89.6%
5/4/2017 - 5/10/2017	1.8%	0.7%	2.1%	6.0%	89.4%
5/11/2017 - 5/17/2017	1.8%	0.7%	2.1%	6.0%	89.4%
5/18/2017 - 5/24/2017	1.8%	0.7%	2.1%	6.0%	89.4%
5/25/2017 - 5/31/2017	1.7%	0.7%	2.0%	5.6%	90.1%
6/1/2017 - 6/7/2017	1.5%	0.7%	1.9%	5.4%	90.5%
6/8/2017 - 6/14/2017	1.5%	0.7%	1.9%	5.4%	90.6%
6/15/2017 - 6/21/2017	1.6%	0.7%	1.9%	5.4%	90.4%
6/22/2017 - 6/28/2017	1.5%	0.7%	1.9%	5.4%	90.5%
6/29/2017 - 7/5/2017	1.6%	0.7%	1.9%	5.3%	90.6%

In May 2017:

1. **Ratings Protection v1** was launched as part of driver forward
2. The proportion of 5-star ratings jump from 89.3% to 90.3% and continue to increase
3. Simultaneously, the proportion of ALL OTHER RATINGS drop as they are removed wholesale

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# Impact of Nov 2017 Ratings Protection

<u>Week of Trip</u>	<u>1-star</u>	<u>2-star</u>	<u>3-star</u>	<u>4-star</u>	<u>5-star</u>
10/5/2017 - 10/11/2017	16%	0.7%	1.8%	5.1%	90.8%
10/12/2017 - 10/18/2017	16%	0.7%	1.8%	5.1%	90.8%
10/19/2017 - 10/25/2017	16%	0.7%	1.7%	5.0%	90.9%
10/26/2017 - 11/1/2017	1.7%	0.7%	1.7%	4.9%	91.0%
11/2/2017 - 11/8/2017	16%	0.7%	1.7%	4.9%	91.2%
11/9/2017 - 11/15/2017	16%	0.6%	1.7%	4.9%	91.1%
11/16/2017 - 11/22/2017	16%	0.6%	1.7%	4.9%	91.2%
11/23/2017 - 11/29/2017	16%	0.6%	1.5%	4.5%	91.8%
11/30/2017 - 12/6/2017	15%	0.6%	1.5%	4.5%	91.9%
12/7/2017 - 12/13/2017	15%	0.6%	1.5%	4.4%	92.0%
12/14/2017 - 12/20/2017	16%	0.6%	1.5%	4.3%	92.0%
12/21/2017 - 12/27/2017	16%	0.6%	1.4%	4.1%	92.5%
12/28/2017 - 1/2/2018	15%	0.5%	1.3%	4.0%	92.7%

In November 2017:

1. **Ratings Protection v2, More Mandatory Feedback** was launched as part of driver forward
2. The proportion of 5-star ratings jump from 91.0% to 92.5% and continue to increase
3. Simultaneously, the proportion of ALL OTHER RATINGS drop as they are removed wholesale



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