



how SREs found more than \$100 million using
failed customer interactions (fcis)

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by the numbers...

227M

Consumer Accounts

18M

Merchant Accounts

We are a trusted part of people's financial lives and a partner to merchants in 200+ markets around the world.

PayPal's global customer service team provide support in more than **20** languages.

Our customers can accept payments in **100+** currencies, withdraw funds to their bank accounts in **56** currencies, shop cross-border across **19K +** corridors, and hold balances in their PayPal accounts in **25** currencies.

\$13.06B[†]

REVENUE

\$451B

TOTAL PAYMENT VOLUME¹

7.6B

PAYMENT TRANSACTIONS²

\$155B

MOBILE PAYMENT VOLUME

2.7B

MOBILE PAYMENT TRANSACTIONS



[†]Non-GAAP.

¹Total Payment Volume is the value of payments, net of payment reversals, successfully completed through our Payments Platform, excluding transactions processed through our gateway and Paydiant products.

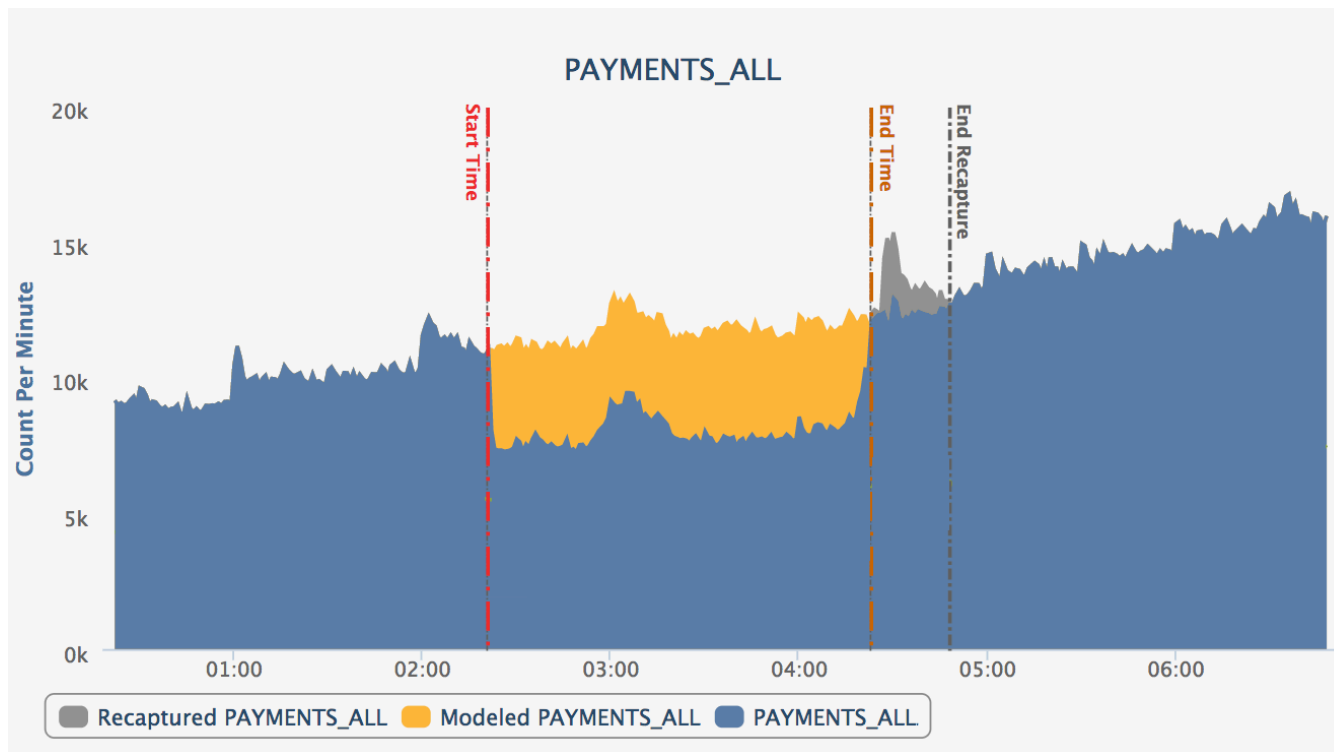
²Payment Transactions is the total number of payments, net of payment reversals, successfully completed through our Payments Platform, excluding transactions processed through our gateway and Paydiant products.

More than
\$16,537
processed by PayPal every second.*

when you are dealing with
people's money, it's bad when
stuff doesn't work...

...availability is very important!

so....how did we used to measure this?



$$\text{availability} = \frac{(\text{total time} - \text{impact})}{\text{total time}}$$

with some less than perfect attribution!

what's wrong with this?

- it assumes the rest of the time we're at 100%
- it was only calculated for major site issues
(and not the death of 1,000 cuts!)
- it only factors in payment-impacting issues
- it did not reflect merchant & consumer sentiment

we needed a new measurement which would:

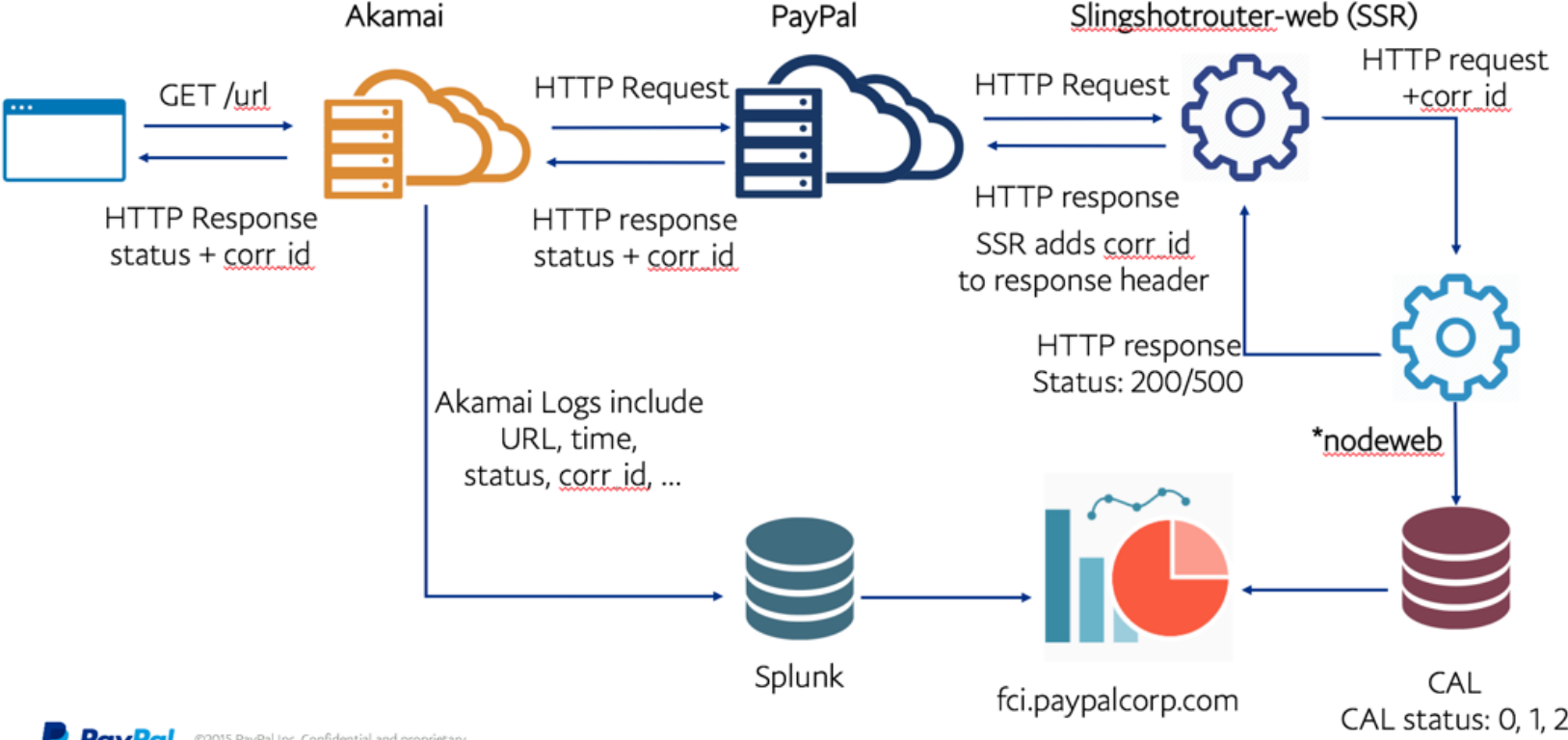
- account for all of our experiences
- be highly actionable
- have proper attribution for ownership of failures
- not require us to ask 5,000+ developers to do something different

failed customer interactions (fcis)

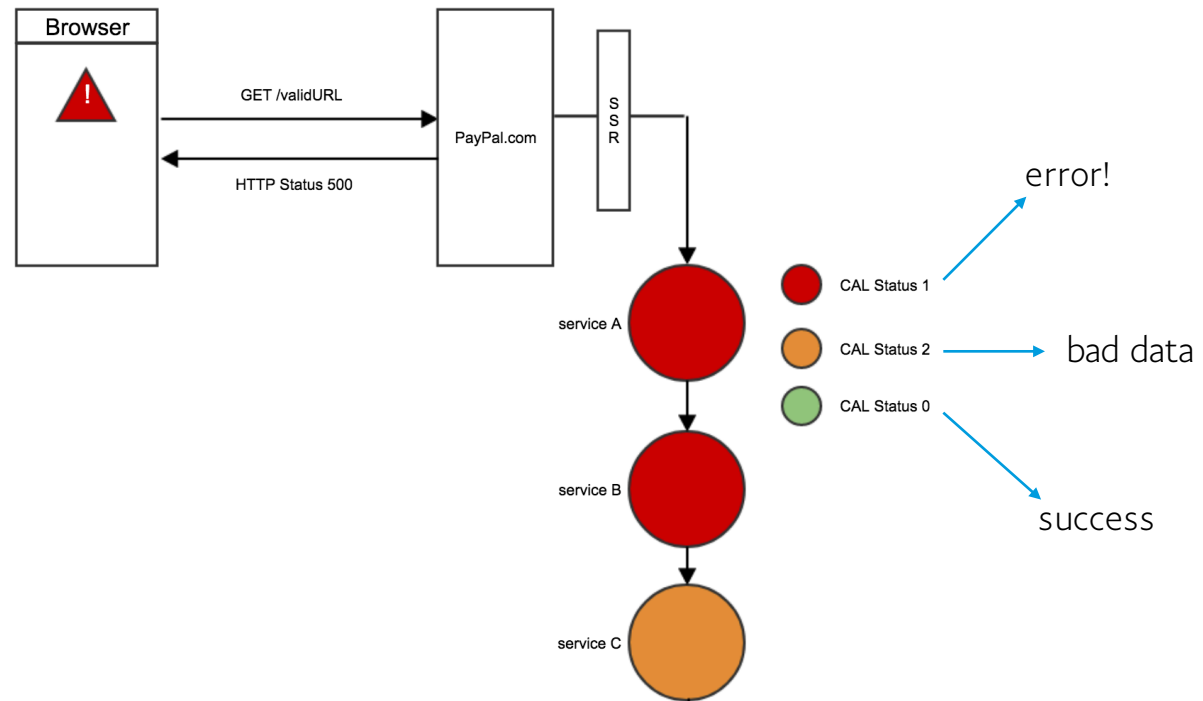
definition:

intended actions that a customer is unable to complete using functionality offered by paypal and allowed by paypal policies

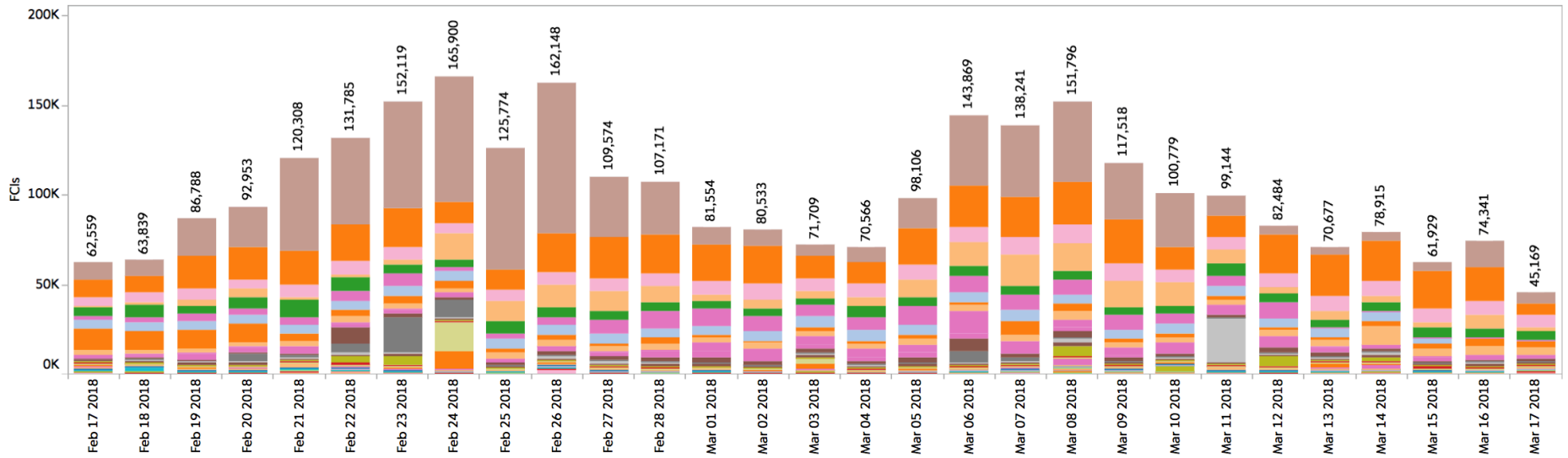
implementation



implementation



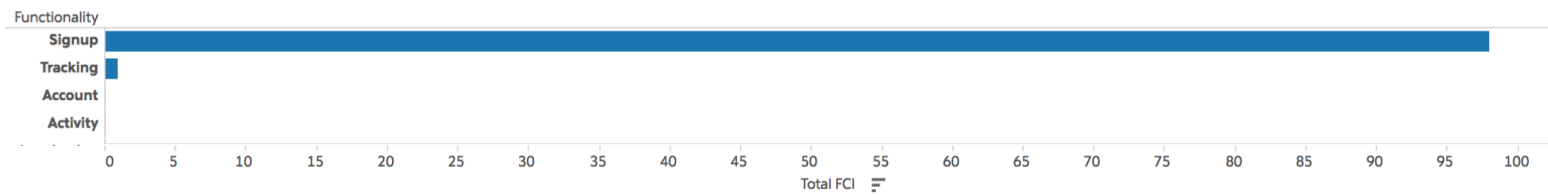
fcis by owner



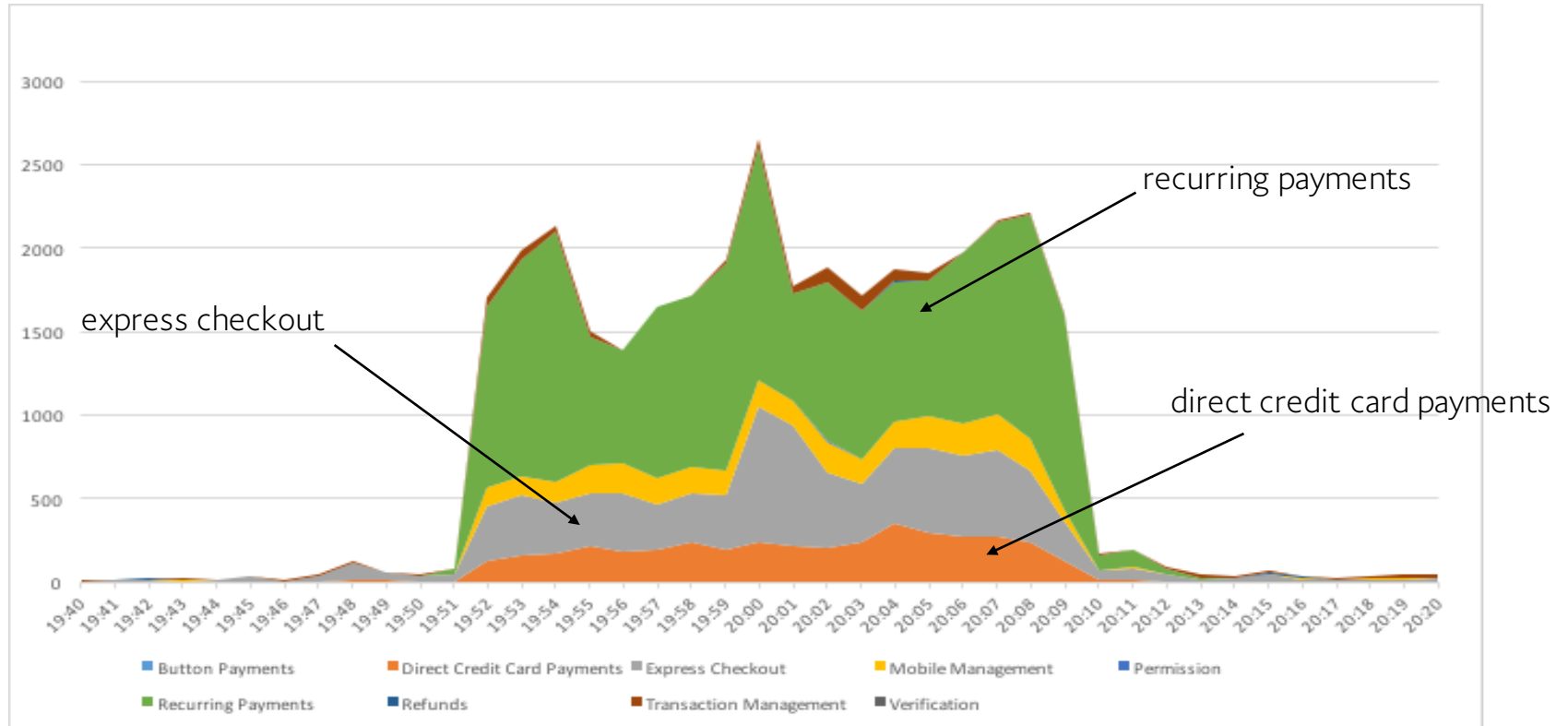
fcis by region



fcis by region

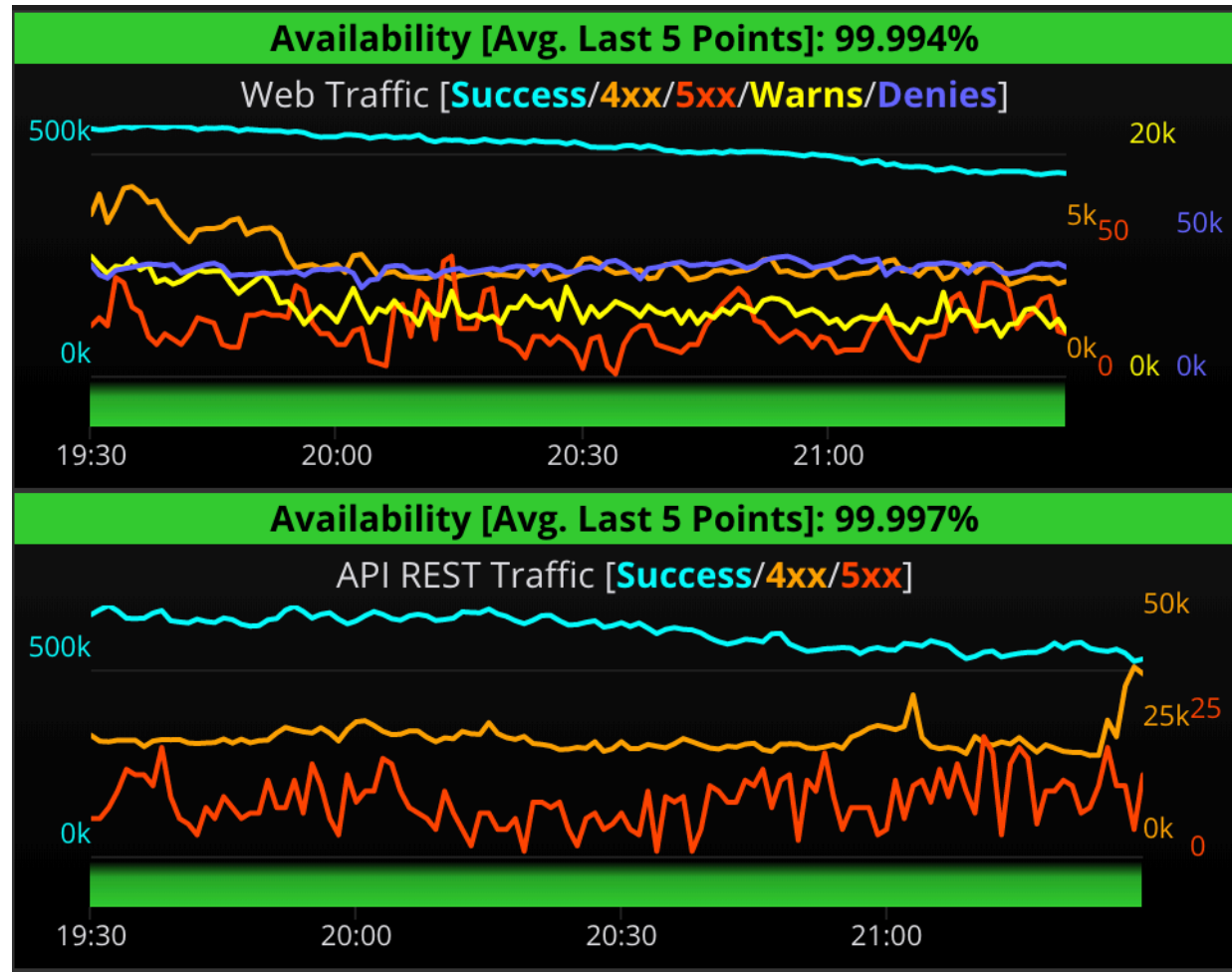


exact impact of issues



fcis - 34,222

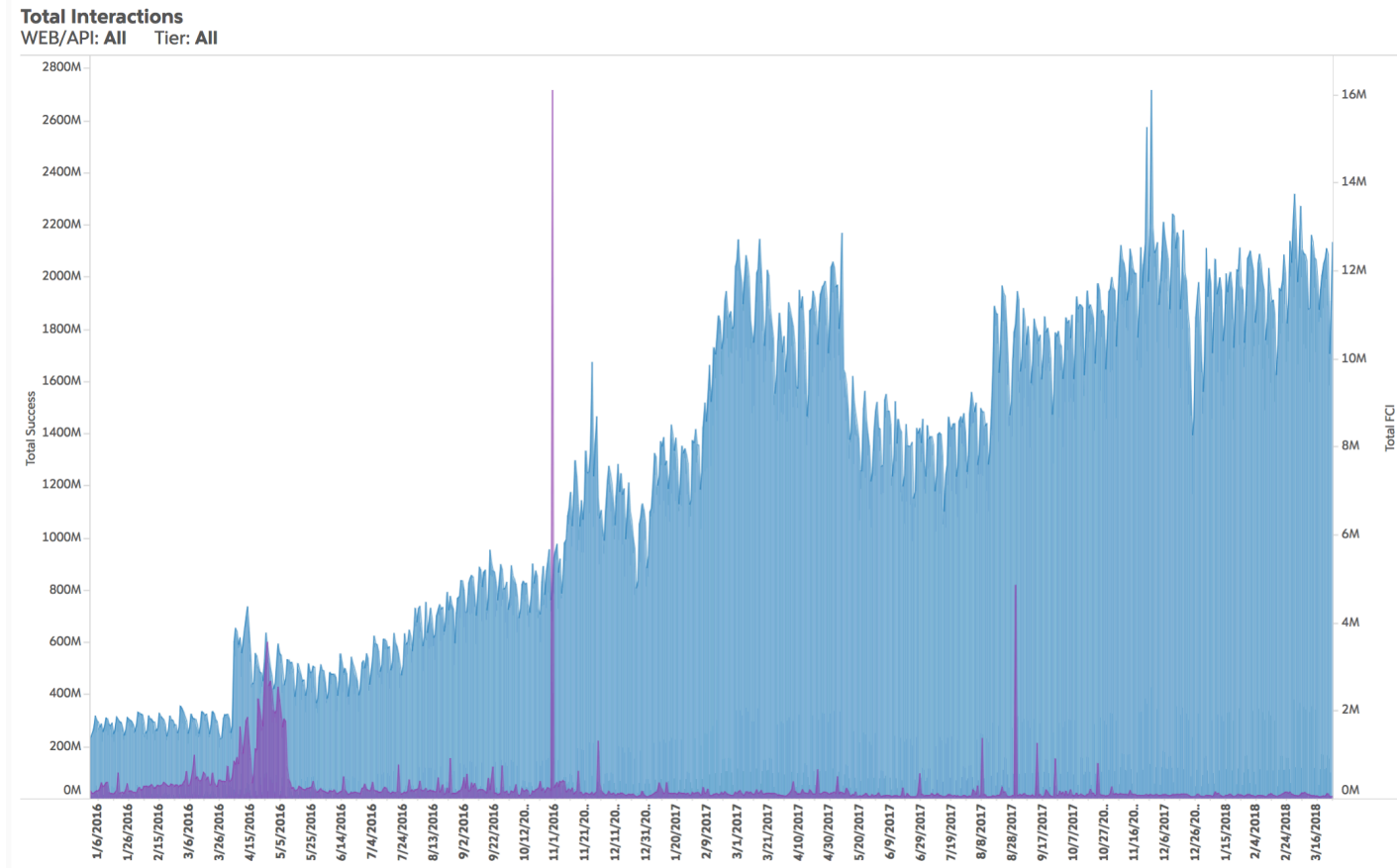
real time fcis



what makes this successful?

- customer view
- accountability (by service, by owner, by vp)
- actionability
- logging hygiene is as important as fixing real issues
- tactical team to drive down fcis
- real-time – rollback code if fcis introduced

healing the 1,000 cuts



results

- systemic fcis reduced by over 95%
- in 2017, we only had one day @ < 99.9% availability – this resulted in ~750k fcis – fewer than almost every day in the first half of 2016
- 31 green (99.99%+) days in 2016; 39 non-green days in 2017
- ~1% lift in revenue in 2017 (>\$100m)
- ~\$20m annual reduction in call center costs



questions?
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