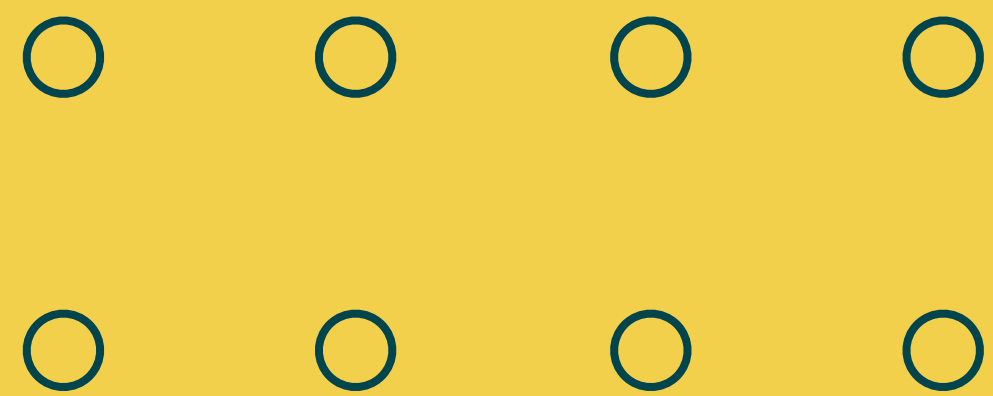zendesk
SHOWCASE

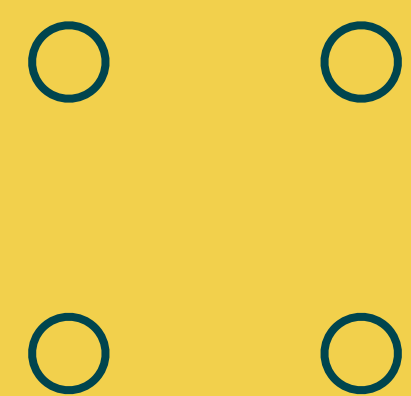# INVESTOR & ANALYST EVENT

MAY 22, 2019

MARC CABI

VP, Strategy & Head
of Investor Relations

● **Introduction**

zendesk

Safe Harbor

This presentation includes forward-looking statements, including, among other things, statements regarding Zendesk's future financial performance, its continued investment to grow its business, and progress towards its long-term financial objectives. The words such as "may," "should," "will," "believe," "expect," "anticipate," "target," "project," and similar phrases that denote future expectation or intent regarding Zendesk's financial results, operations, and other matters are intended to identify forward-looking statements. You should not rely upon forward-looking statements as predictions of future events.

The outcome of the events described in these forward-looking statements is subject to known and unknown risks, uncertainties, and other factors that may cause Zendesk's actual results, performance, or achievements to differ materially, including (i) adverse changes in general economic or market conditions; (ii) Zendesk's ability to adapt its products to changing market dynamics and customer preferences or achieve increased market acceptance of its products; (iii) Zendesk's ability to effectively expand its sales capabilities; (iv) Zendesk's ability to effectively market and sell its products to larger enterprises; (v) Zendesk's expectation that the future growth rate of its revenues will decline, and that, as its costs increase, Zendesk may not be able to generate sufficient revenues to achieve or sustain profitability; (vi) the intensely competitive market in which Zendesk operates and the difficulty that Zendesk may have in competing effectively; (vii) Zendesk's ability to introduce and market new products and to support its products on a shared services platform; (viii) Zendesk's ability to integrate acquired businesses and technologies successfully or achieve the expected benefits of such acquisitions; (ix) Zendesk's ability to effectively manage its growth and organizational change, including its international expansion strategy; (x) potential breaches in Zendesk's security measures or unauthorized access to its customers' data; (xi) Zendesk's ability to comply with privacy and data security regulations; (xii) the development of the market for software as a service business software applications; (xiii) potential service interruptions or performance problems associated with Zendesk's technology and infrastructure; (xiv) real or perceived errors, failures, or bugs in its products; (xv) Zendesk's substantial reliance on its customers renewing their subscriptions and purchasing additional subscriptions; and (xvi) Zendesk's ability to accurately forecast expenditures on third-party managed hosting services.

The forward-looking statements contained in this presentation are also subject to additional risks, uncertainties, and factors, including those more fully described in Zendesk's filings with the Securities and Exchange Commission, including its Quarterly Report for the quarter ended March 31, 2019 and its Annual Report on Form 10-K for the year ended December 31, 2018. Further information on potential risks that could affect actual results will be included in the subsequent periodic and current reports and other filings that Zendesk makes with the Securities and Exchange Commission from time to time.

Forward-looking statements represent Zendesk's management's beliefs and assumptions only as of the date such statements are made. Zendesk undertakes no obligation to update any forward-looking statements made in this presentation to reflect events or circumstances after the date of this presentation or to reflect new information or the occurrence of unanticipated events, except as required by law.

This presentation and the accompanying oral presentation include certain non-GAAP financial measures as defined by the Securities and Exchange Commission rules. These non-GAAP financial measures are in addition to, and not as a substitute for or superior to measures of financial performance prepared in accordance with GAAP. There are a number of limitations related to the use of these non-GAAP financial measures versus their nearest GAAP equivalents. For example, other companies may calculate non-GAAP financial measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison. As required by Regulation G, we have provided a reconciliation of those measures to the most directly comparable GAAP measures, which is available in the Appendix.

This presentation and the accompanying oral presentation include a number of operating metrics that Zendesk uses to evaluate its business, measure performance, identify trends, formulate business plans, and make strategic decisions. These operating metrics include the number of paid customer accounts, dollar-based net expansion rate, and the percentage of its annual recurring revenue from Zendesk Support originating from customers with more than 100 agents on Zendesk Support. Please see the Appendix for details regarding the definition and calculation of these operating metrics.

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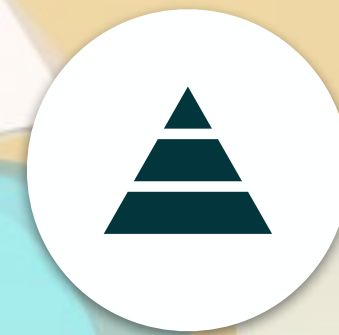
Zendesk is leading CRM innovation

- Rising customer expectations drive high demand across all organizations globally

- Expanding family of customer experience products fuels growth

- The Sunshine platform approach, open and on the cloud, is the future of CX

- Consistently deliver high-growth and scale

Agenda

Mikkel Svane, Founder, CEO

THE FUTURE OF CUSTOMER EXPERIENCE

Adrian McDermott, President of Products

Shawna Wolverton, SVP Product

PLATFORM & PRODUCTS FOR THE FUTURE OF CUSTOMER EXPERIENCE

Tom Keiser, COO

Norman Gennaro, SVP Worldwide Sales

Colleen Berube, CIO

ORGANIZATIONS TRANSFORMING THEIR CUSTOMER EXPERIENCES

Elena Gomez, CFO

SCALING TO BE A MULTIBILLION-DOLLAR REVENUE COMPANY

Q&A

MIKKEL SVANE

Founder & CEO,
Zendesk

- **The future of customer experience**

zendesk

Welcome
to the Showcase.
Ain't no conference
          like a Zendesk
conference...
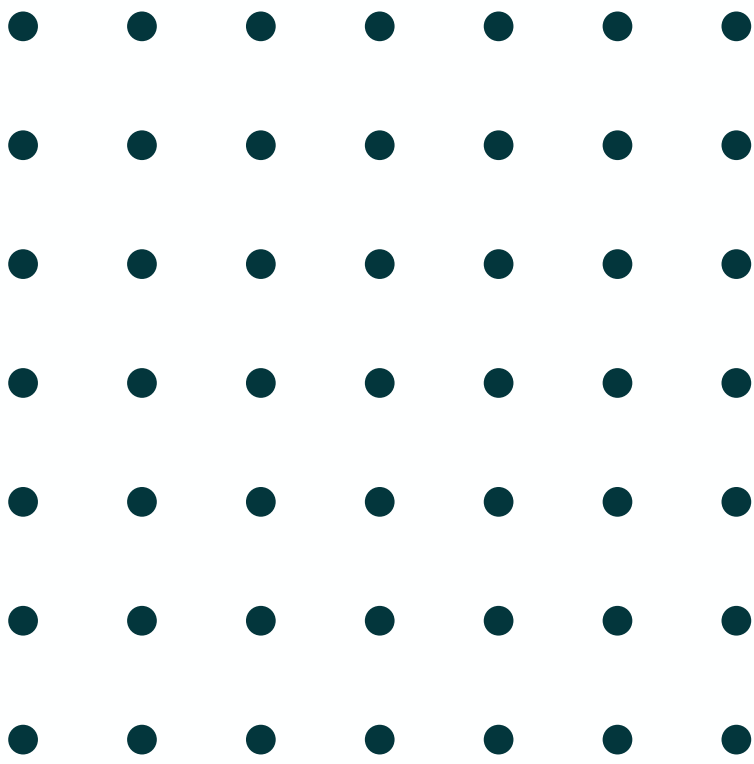
New York City
May 22, 2019

1200
ATTENDEES

16
SESSIONS

zendesk
SHOWCASE

zendesk

PRESENTING
COMPANIES

Betterment

✻BOMBAS

FRESHLY

HELLO Alfred

vimeo

⊙SPARTAN

zendesk

GLOBAL OFFICES

17

EMPLOYEES

3,000+

HEADQUARTERS

San Francisco

PAID CUSTOMER ACCOUNTS

145,000+

Y/Y REVENUE GROWTH IN Q1–2019

40%

COUNTRIES

160+

% OF ARR FROM 100+ SUPPORT AGENTS

40%

LANGUAGES

30+

The best customer experiences are built with Zendesk
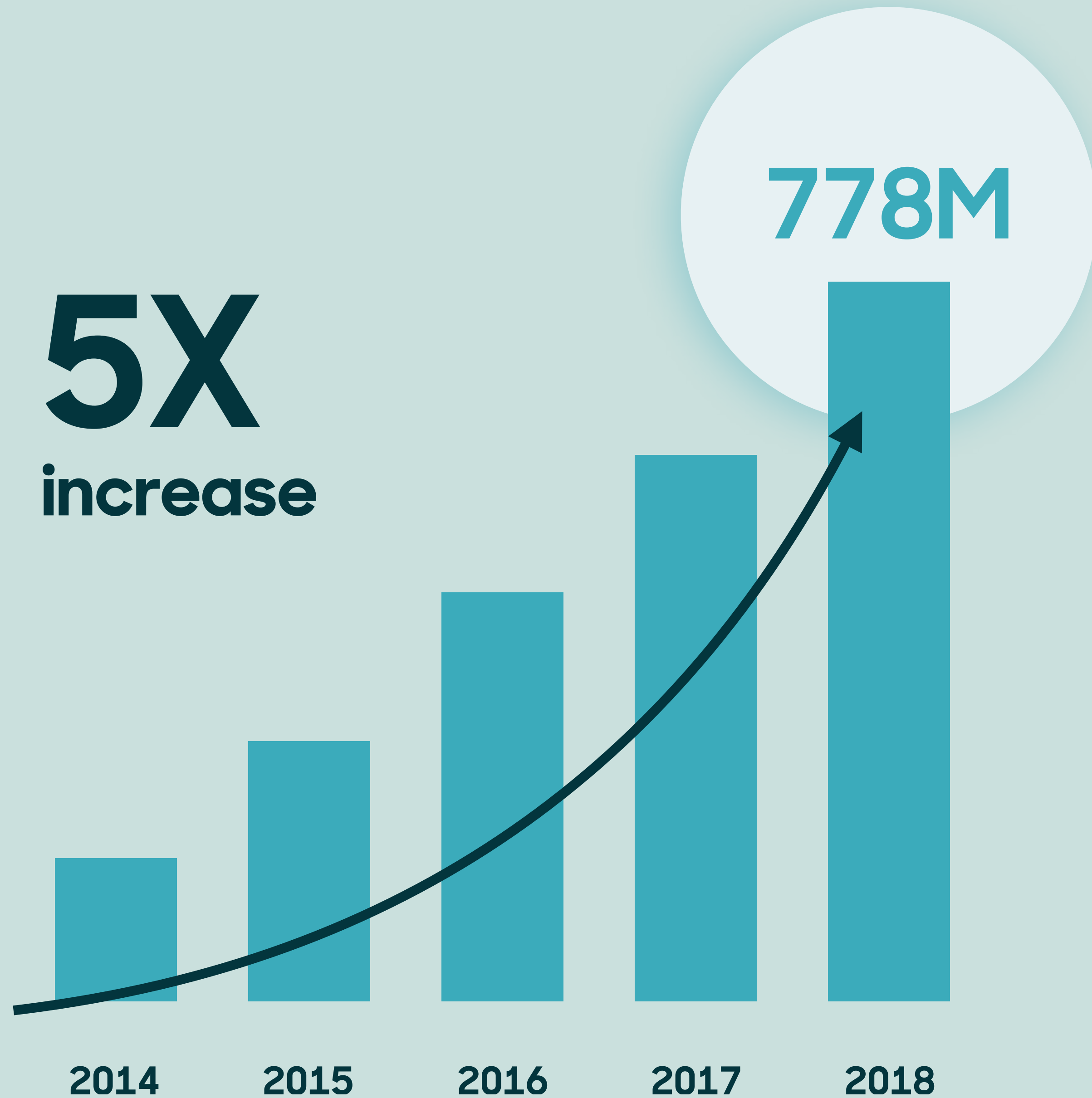
Interactions on the rise

Annual solved tickets

2.0B
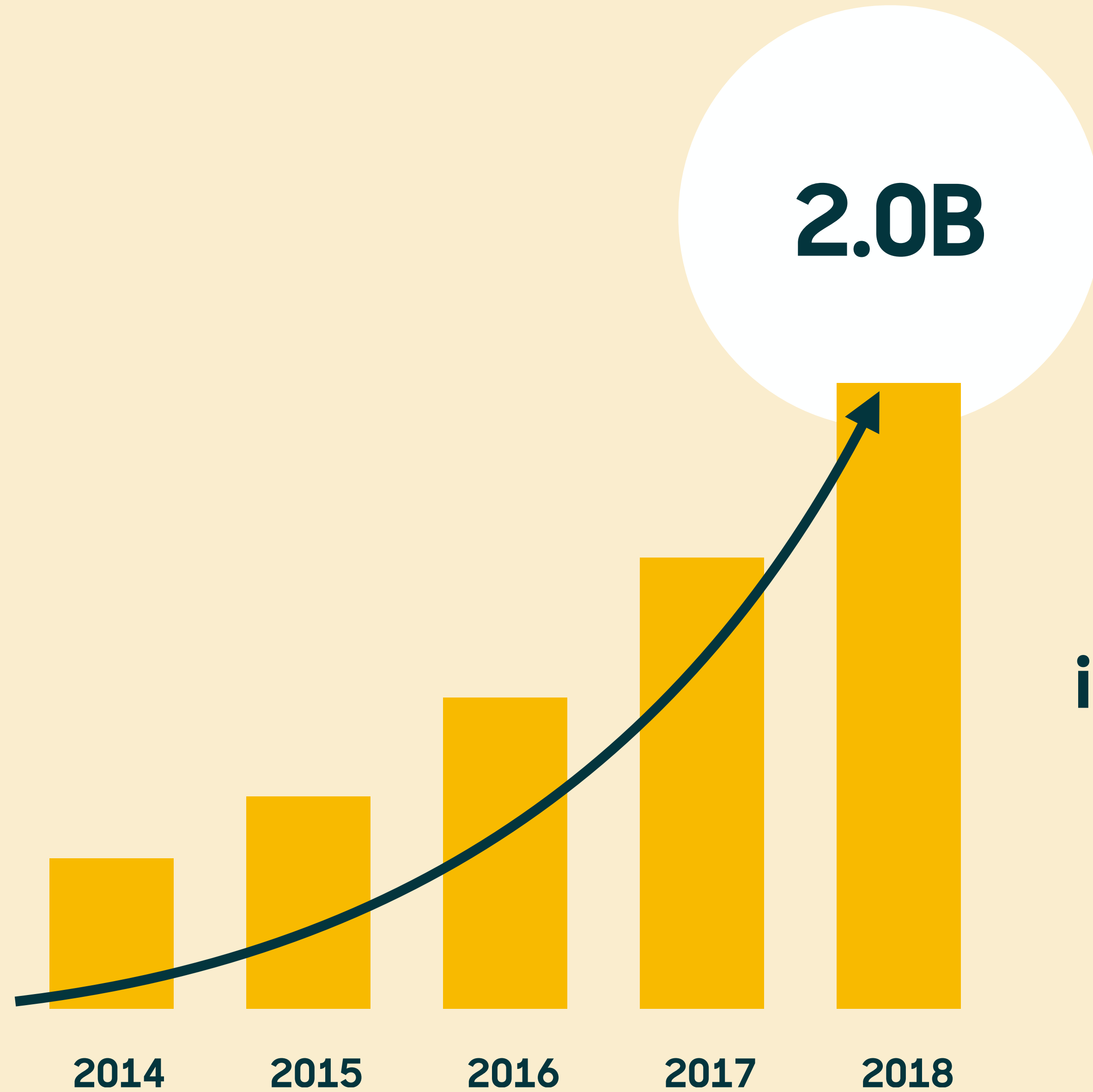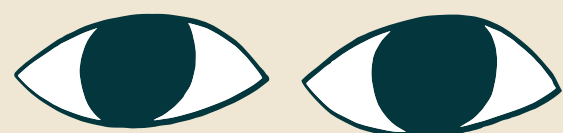
5X
increase

	2014	2015	2016	2017	2018

Y-axis: 0M, 200M, 400M, 600M, 800M, 1000M, 1200M, 1400M, 1600M, 1800M, 2.0B
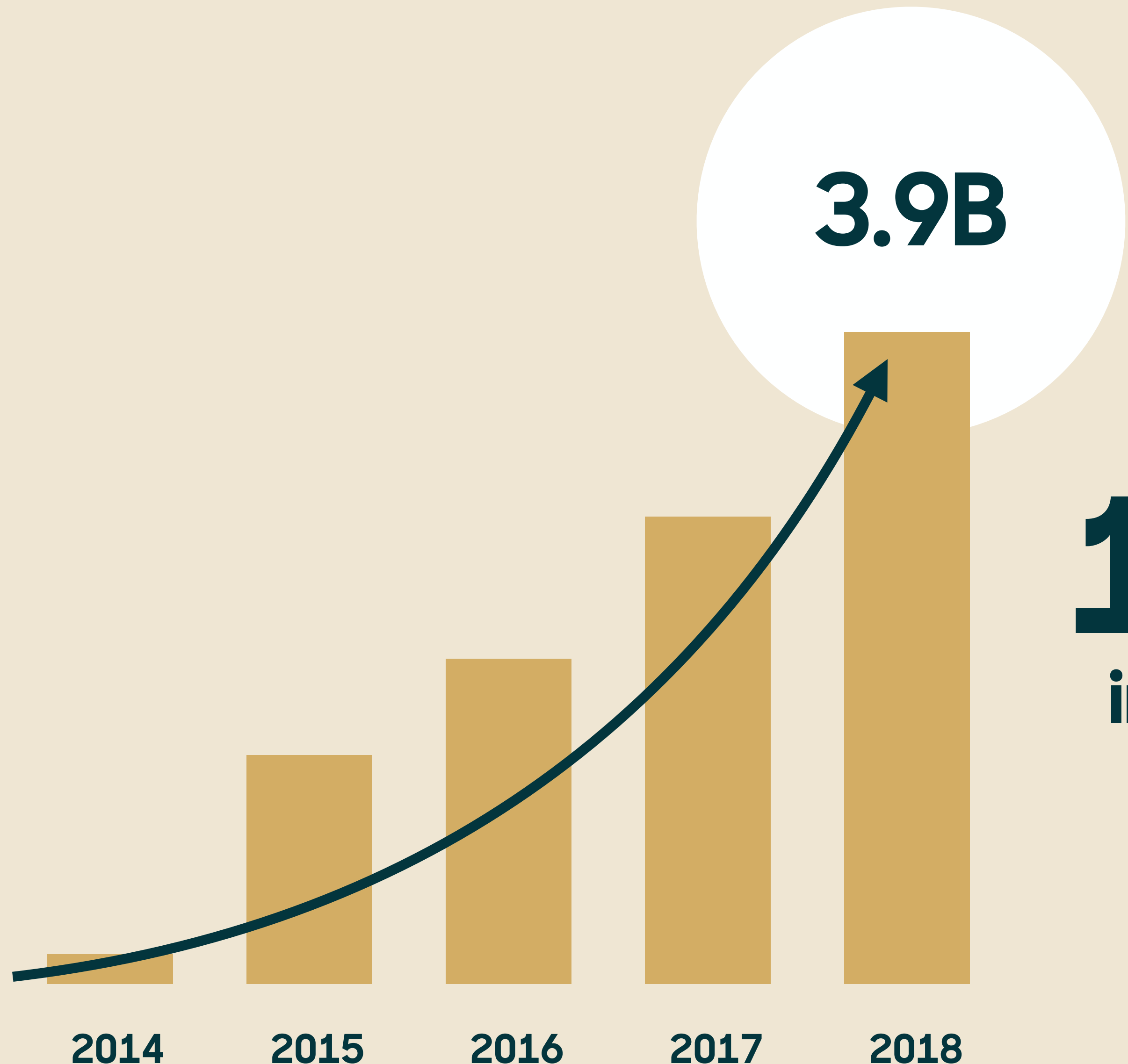
What's exceptional today will be mundane tomorrow
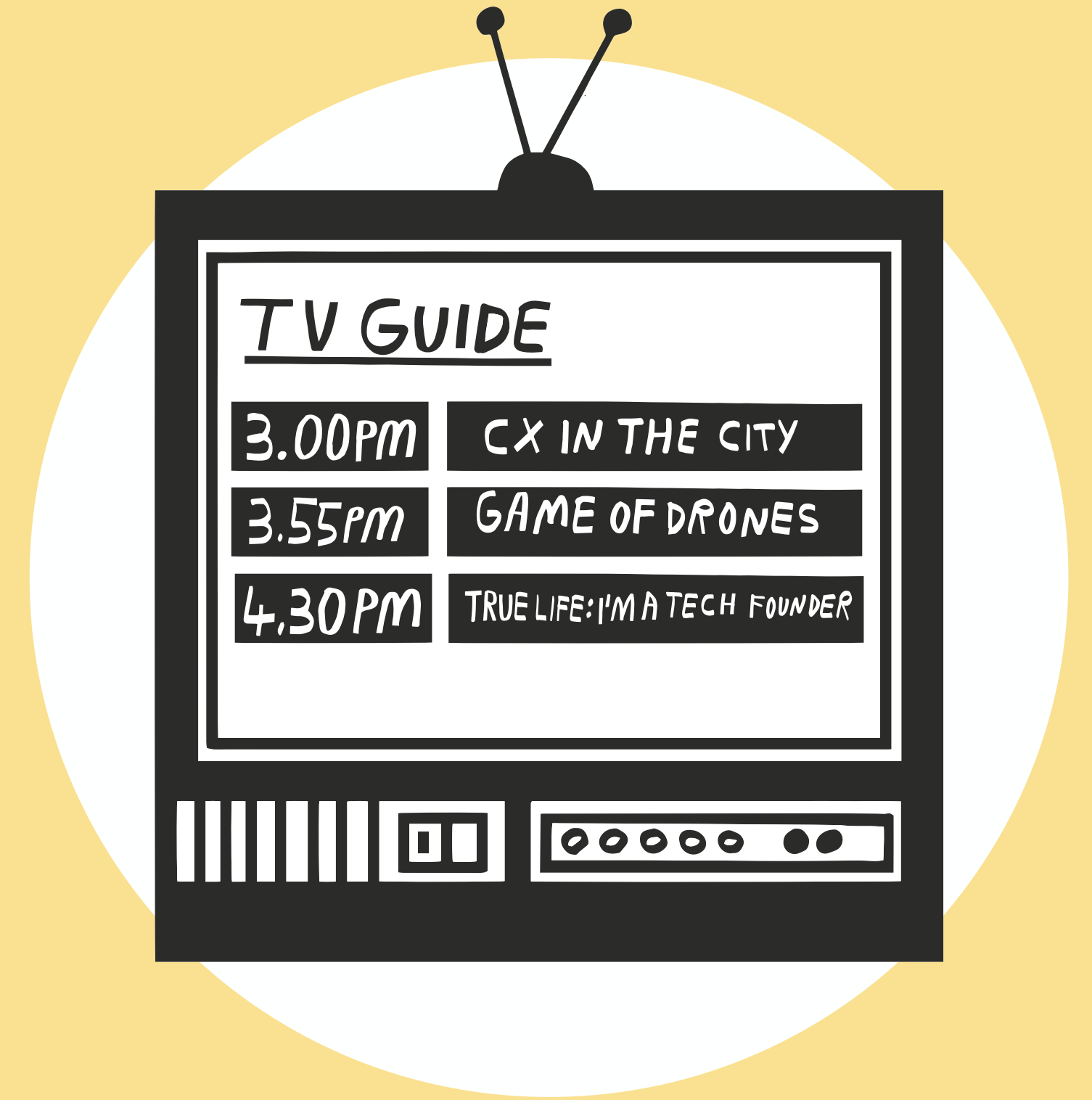
Multibillion-dollar journey
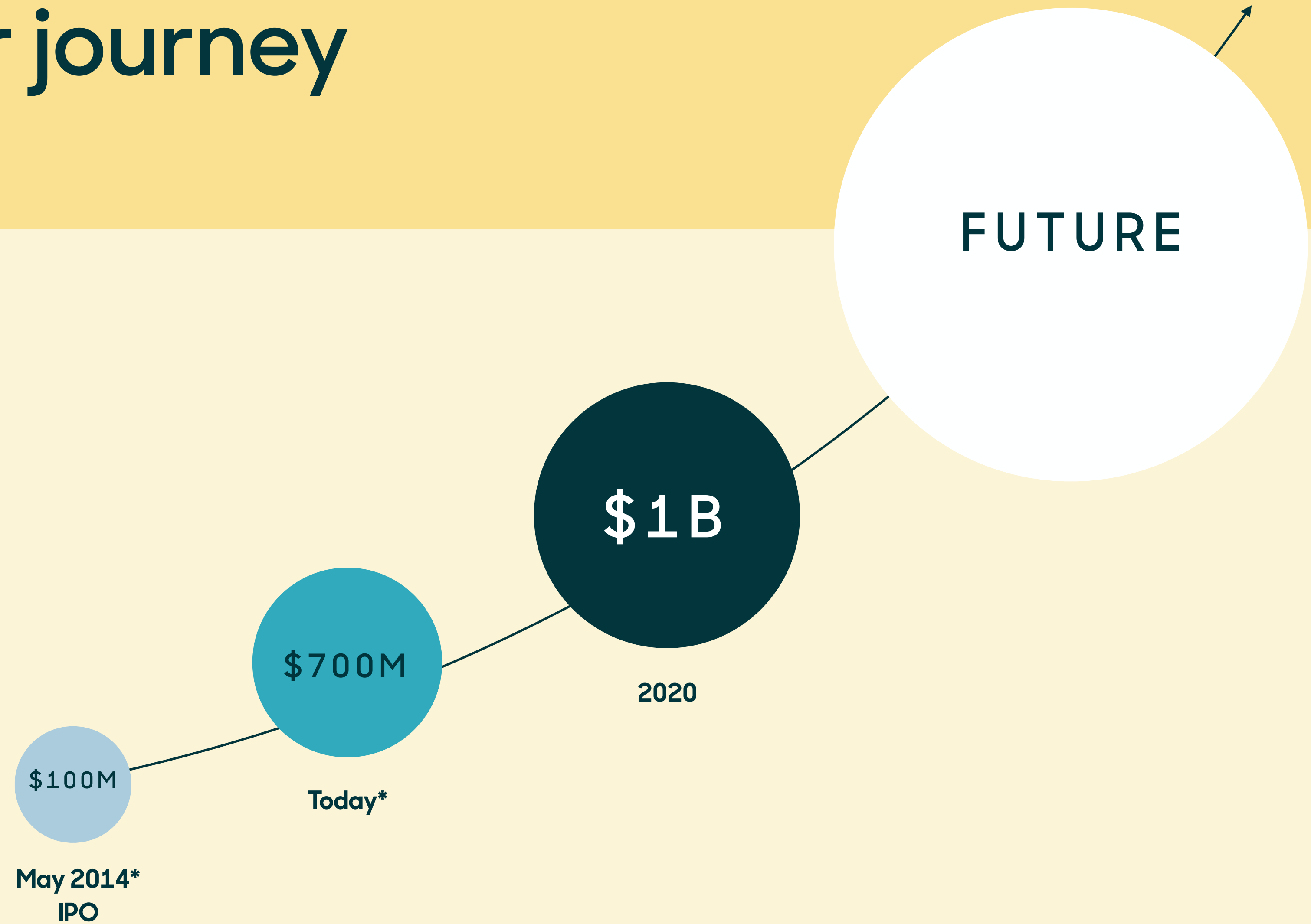
ANNUAL REVENUE

FUTURE

$1B

2020

$700M

Today*

$100M

May 2014*
IPO

*Annual revenue run rates for May 2014 and today
*Reached $100M annual revenue run rate with 3/31/14 quarterly results and exceeded $700M annual revenue run rate with 3/31/19 quarterly results.
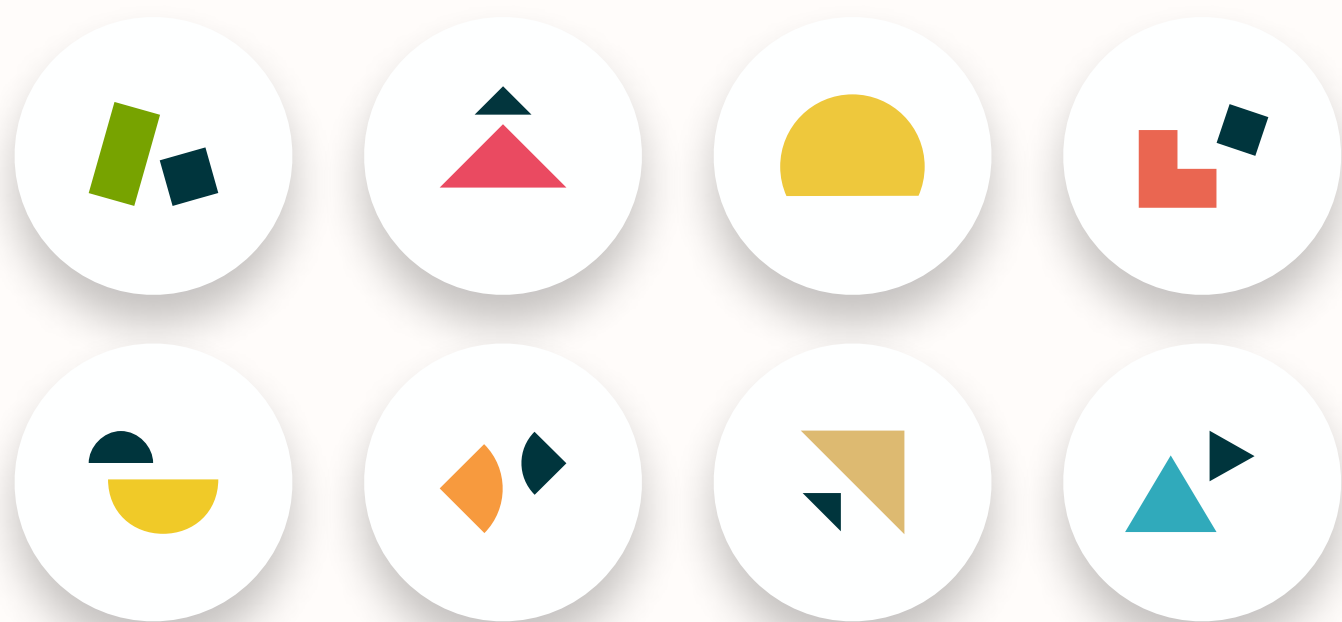
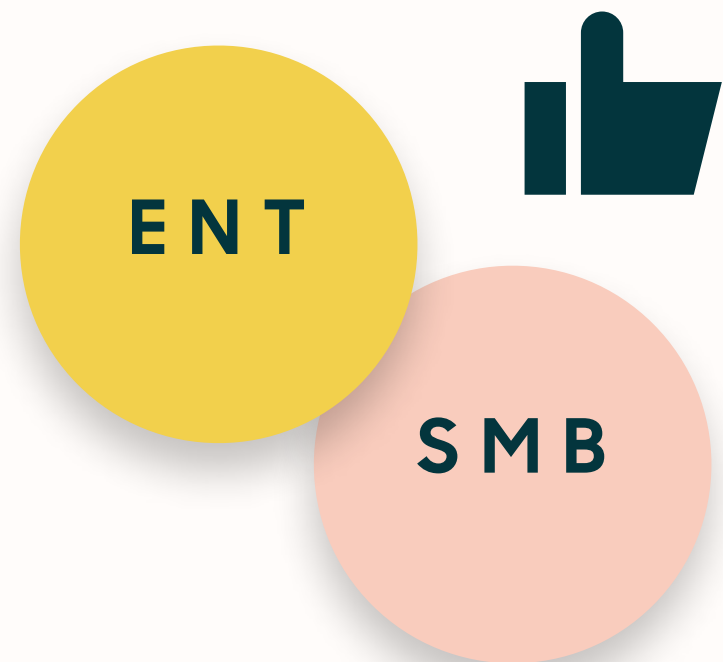| 2007	2014	2016	2018	2019+
Founded	**IPO**	**Rebrand**	**Transformative Launches**	
One product	Two products	Multiproduct Support Chat Talk Guide	Suite Sell Sunshine	LEADING CRM INNOVATION
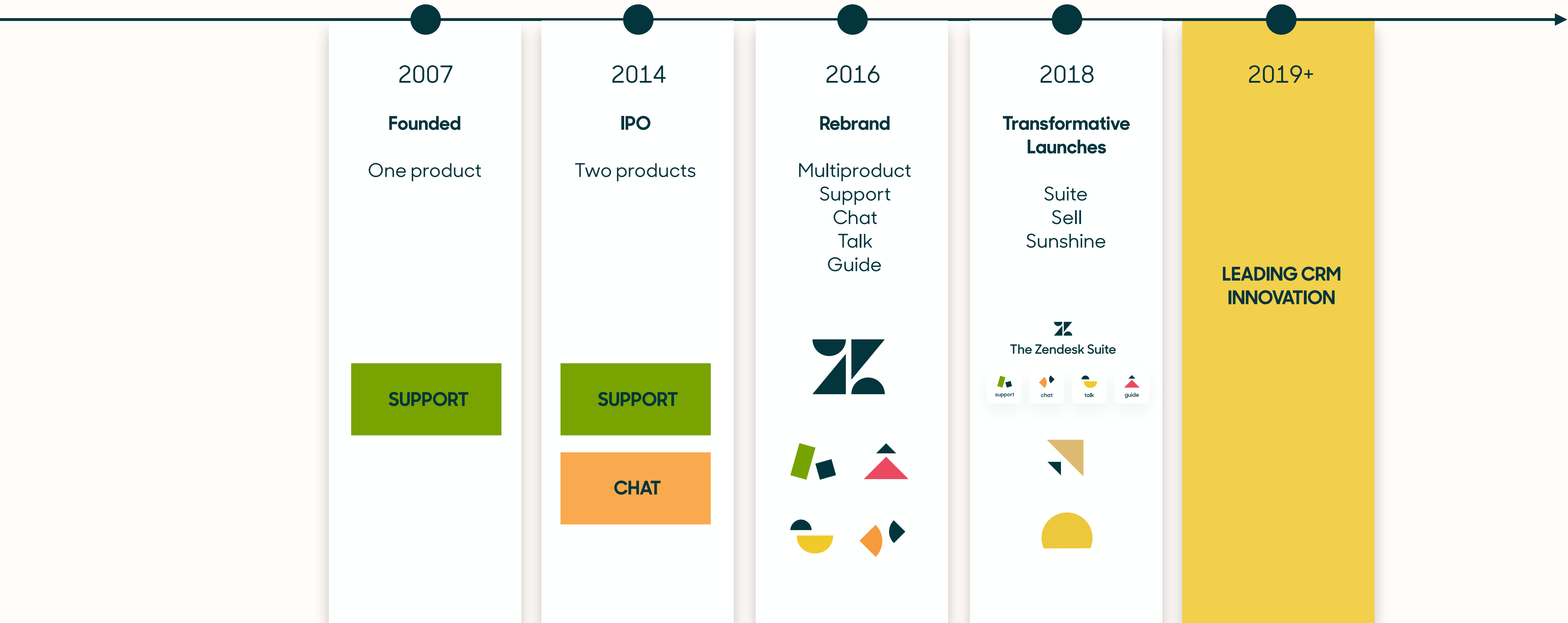
Expanding TAM

driven by market trends and Zendesk's broader reach in CRM

Product innovation

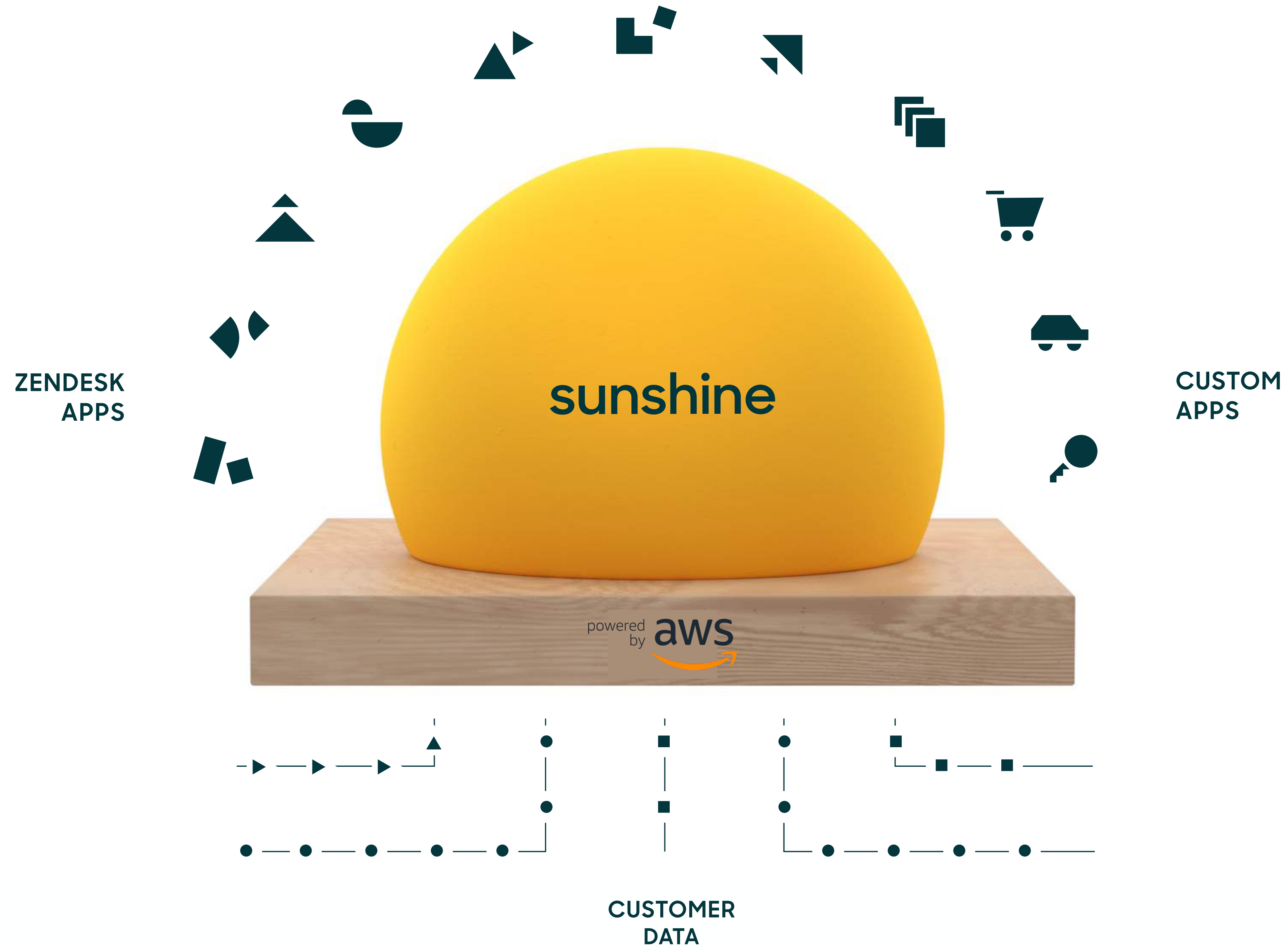opens up adjacent markets and new opportunities

Enterprise & SMB

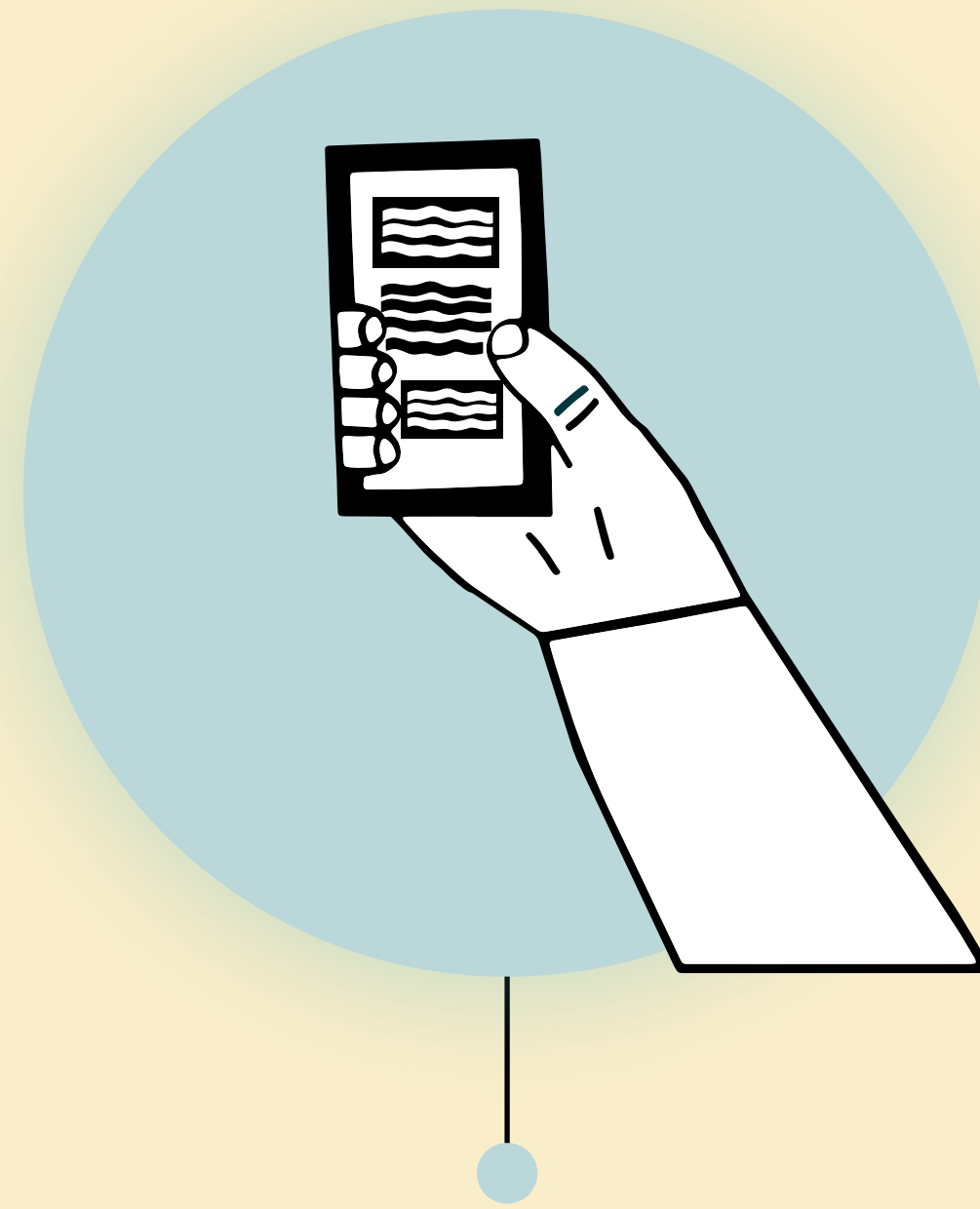momentum is strong

sunshine

Your CRM
platform,
not theirs.

ZENDESK
APPS

sunshine

CUSTOM
APPS

powered by aws

CUSTOMER
DATA

Sunshine sets you free

Open and flexible

Developer friendly

powered by aws

Lives in the public cloud

Connecting data of every kind

CAR BATTERIES

LEGAL REQUIREMENTS

PURCHASE HISTORY

SERVICE PARTNERS

DELIVERY HISTORY

AGENT ESCALATIONS

POWER DRILL USAGE

REPAIRS

039481

SERIAL NUMBERS

SOFTWARE USAGE

WARRANTIES

FILM SCHEDULES

Software companies joining the movement

ATLASSIAN

ZAIUS

qualtrics

Segment

EZ Office Inventory

pagerduty

Magento
An Adobe Company

Stella CONNECT

moltin

narvar

Particular.

vidyard

oomnitza

pendo

DOMO

Cloud SOLUTIONS SET

Partners seeing the light

accenture

slalom

wipro

SUTHERLAND

sopra steria

clearscale

zerviz

capventis Digital Solutions

eclect

AKTIE NOW

ENVOY

tyfone

Appamondo

premium plus

dmit DEMETER ICT

vernelabs

729SOLUTIONS

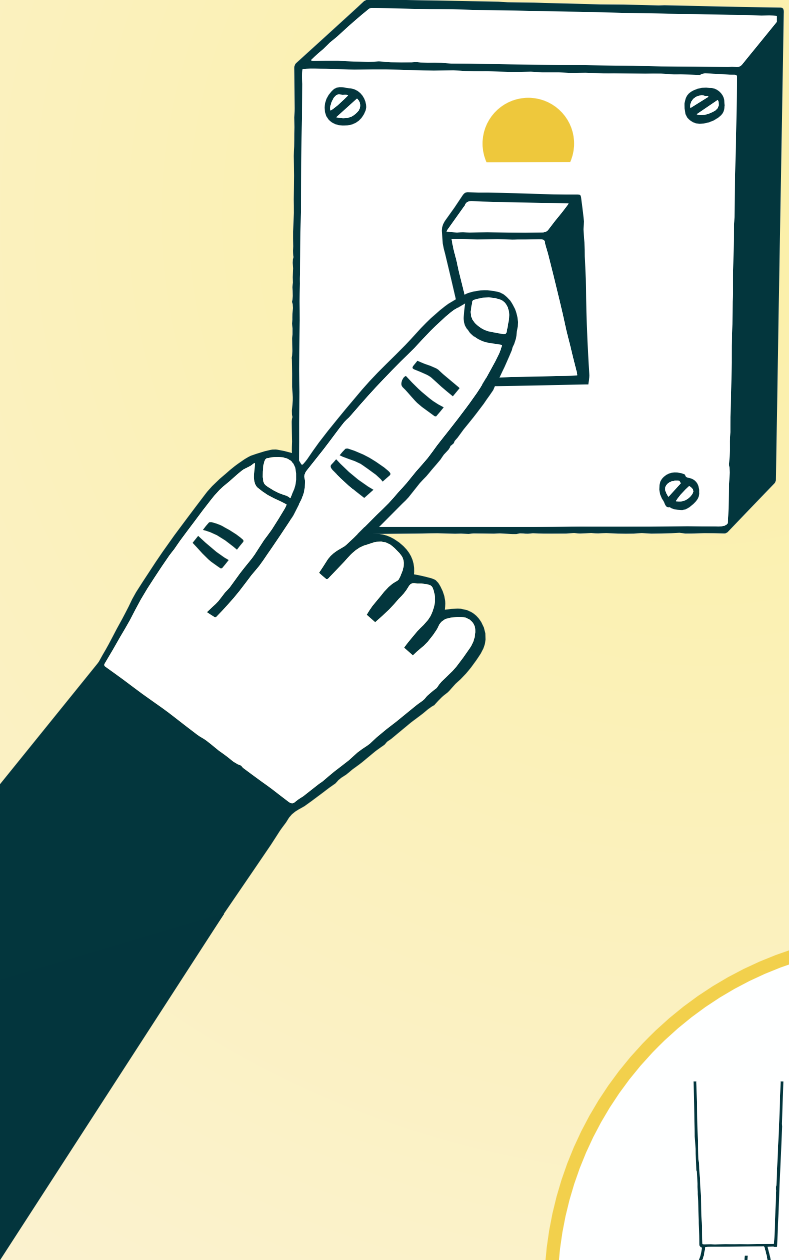TECNA sistemas

next id quality communication
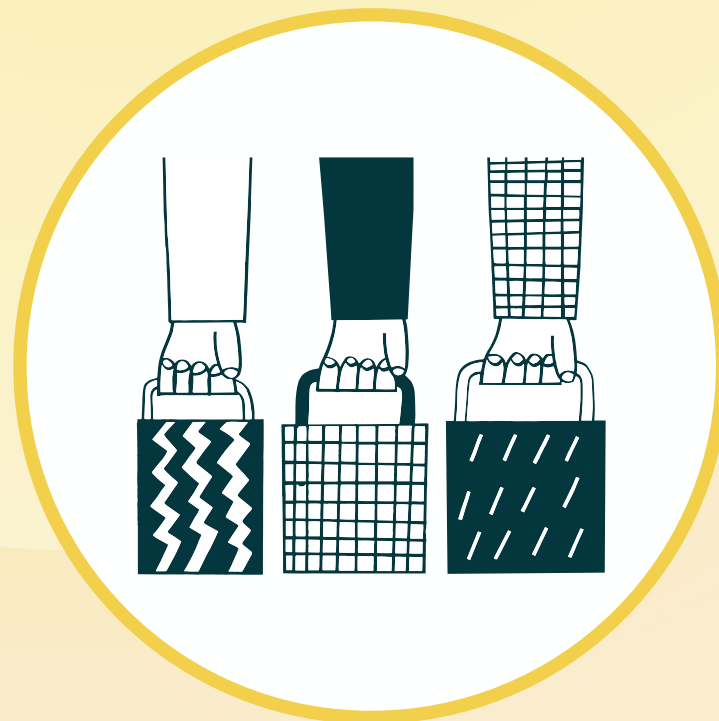
TOPI

FOUR FUSION

VAIMO CORE OF COMMERCE

RC

DATAFOX

UNWIRED LOGIC

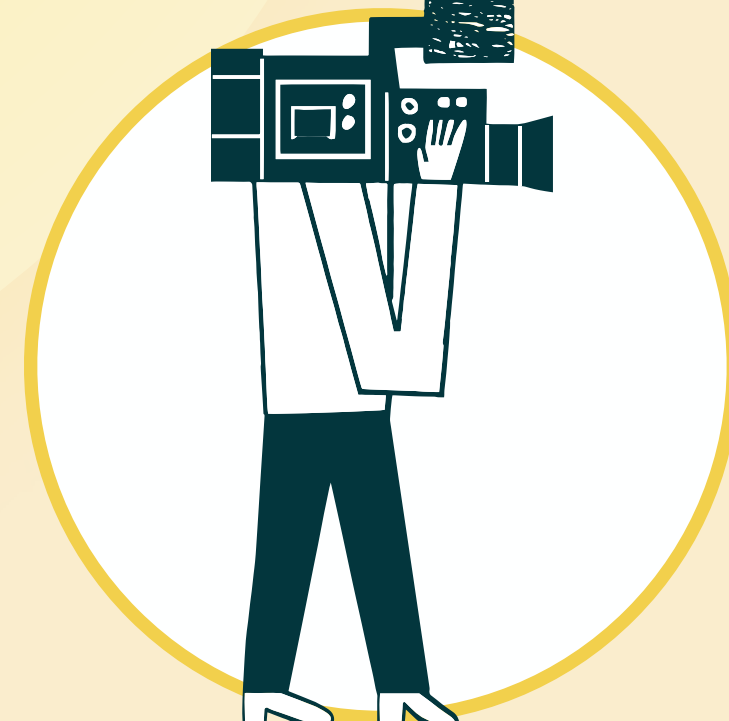TREES SOLUTIONS

1,000+ customers

flipped the switch

Consumer products

Entertainment
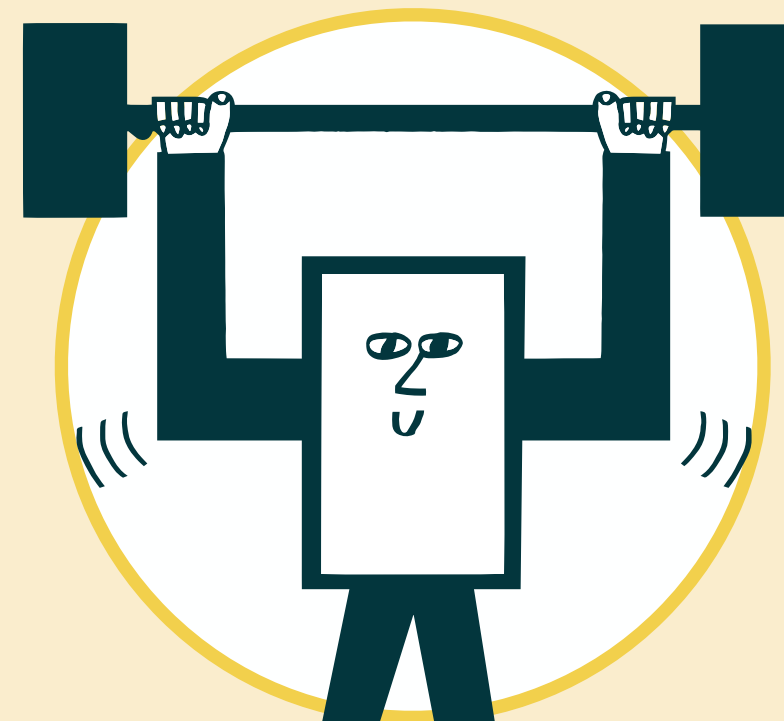
Internet of things
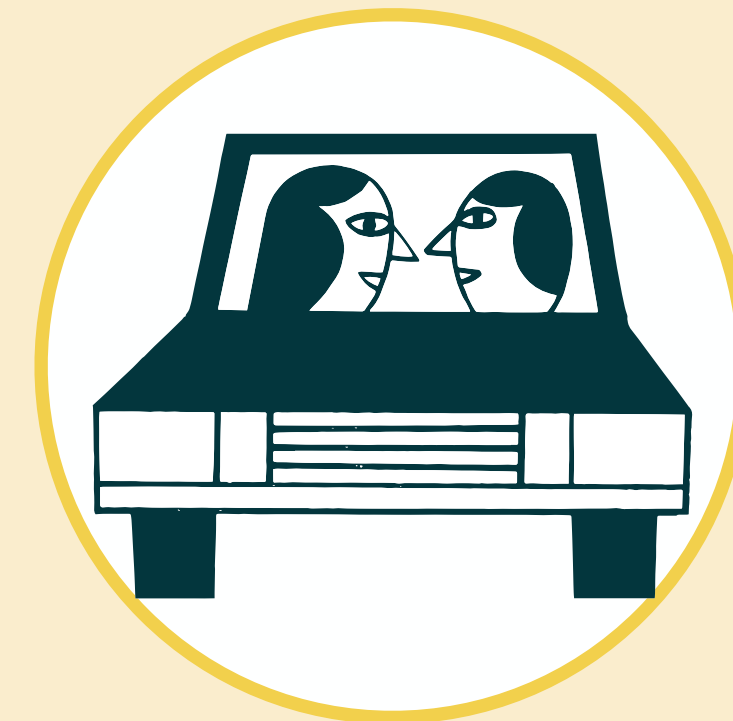
Sharing economy

Software

More than a thousand customers have turned on access to explore Sunshine.

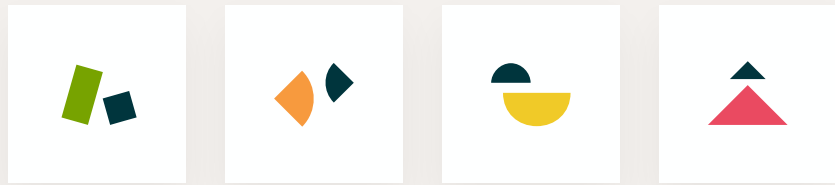# The Zendesk Suite

THE SUITE

Omnichannel

Return question

Yeah for sure! You do this, this and this.

Thanks,
Sam

Hey there — I had a quick question about the sizing of the wool sweaters and I need some help.
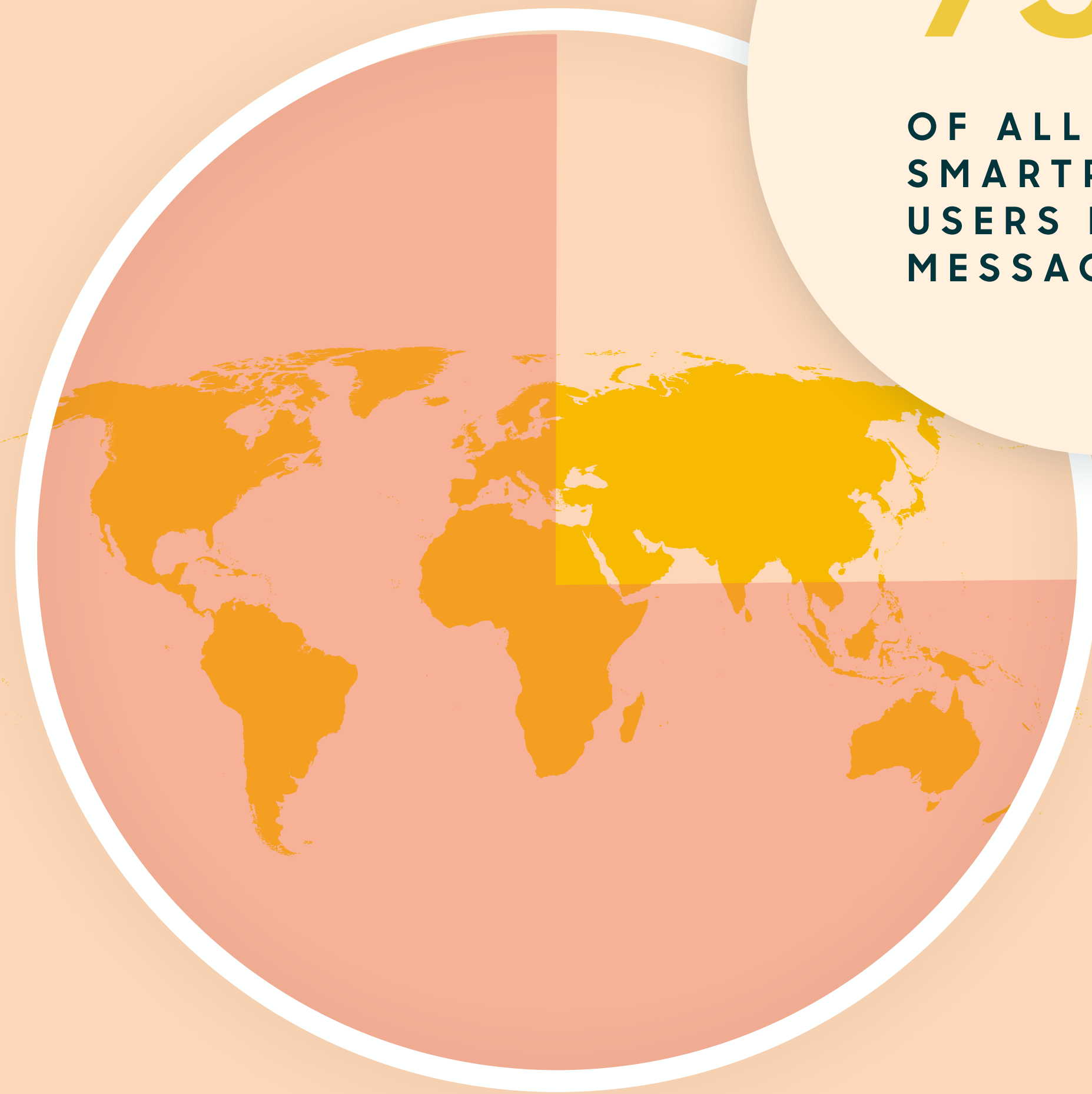
GUIDE

SUPPORT

CHAT

TALK
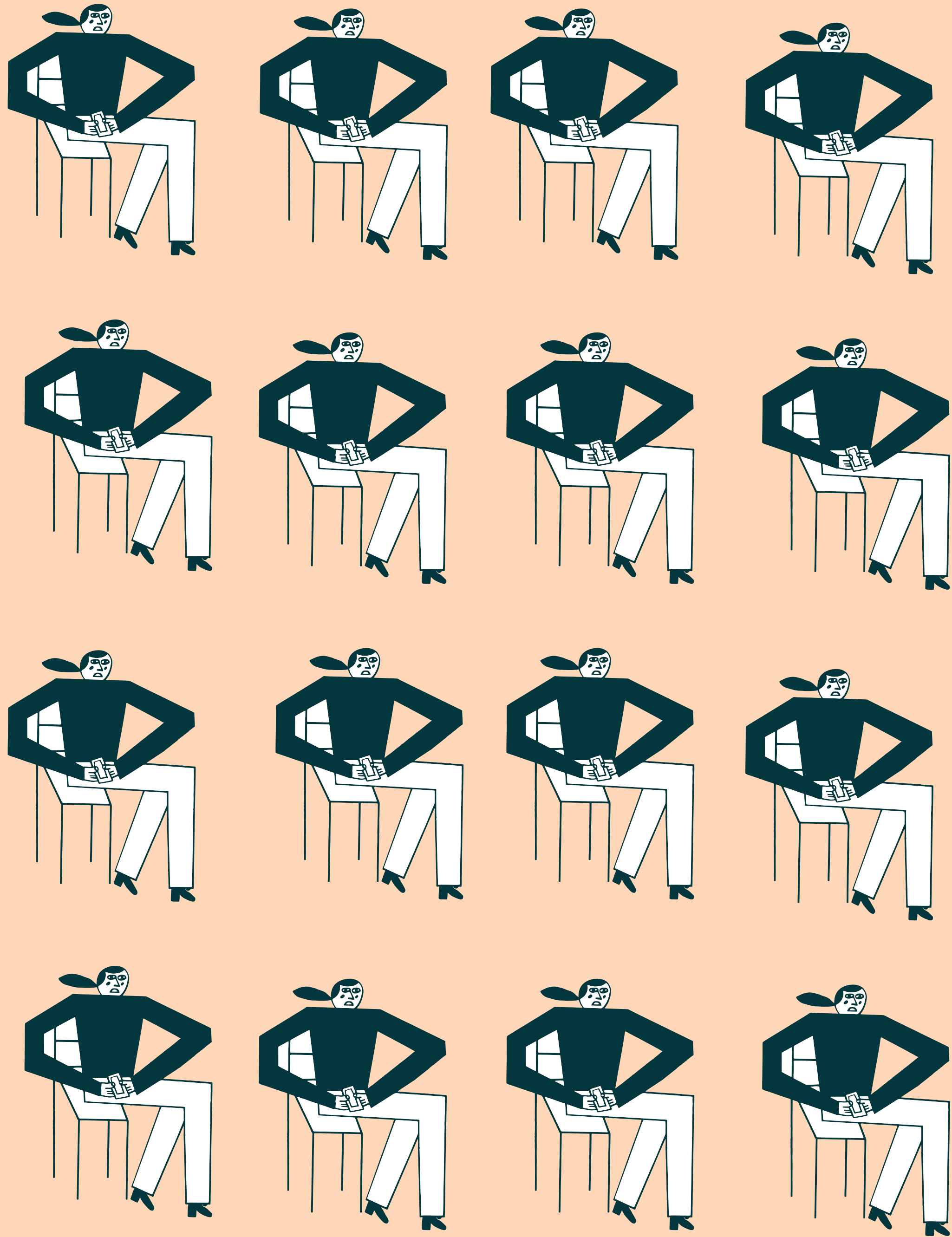
75%

OF ALL
SMARTPHONE
USERS NOW USE
MESSAGING APPS

Zendesk acquires Smooch

We put a ring on it!
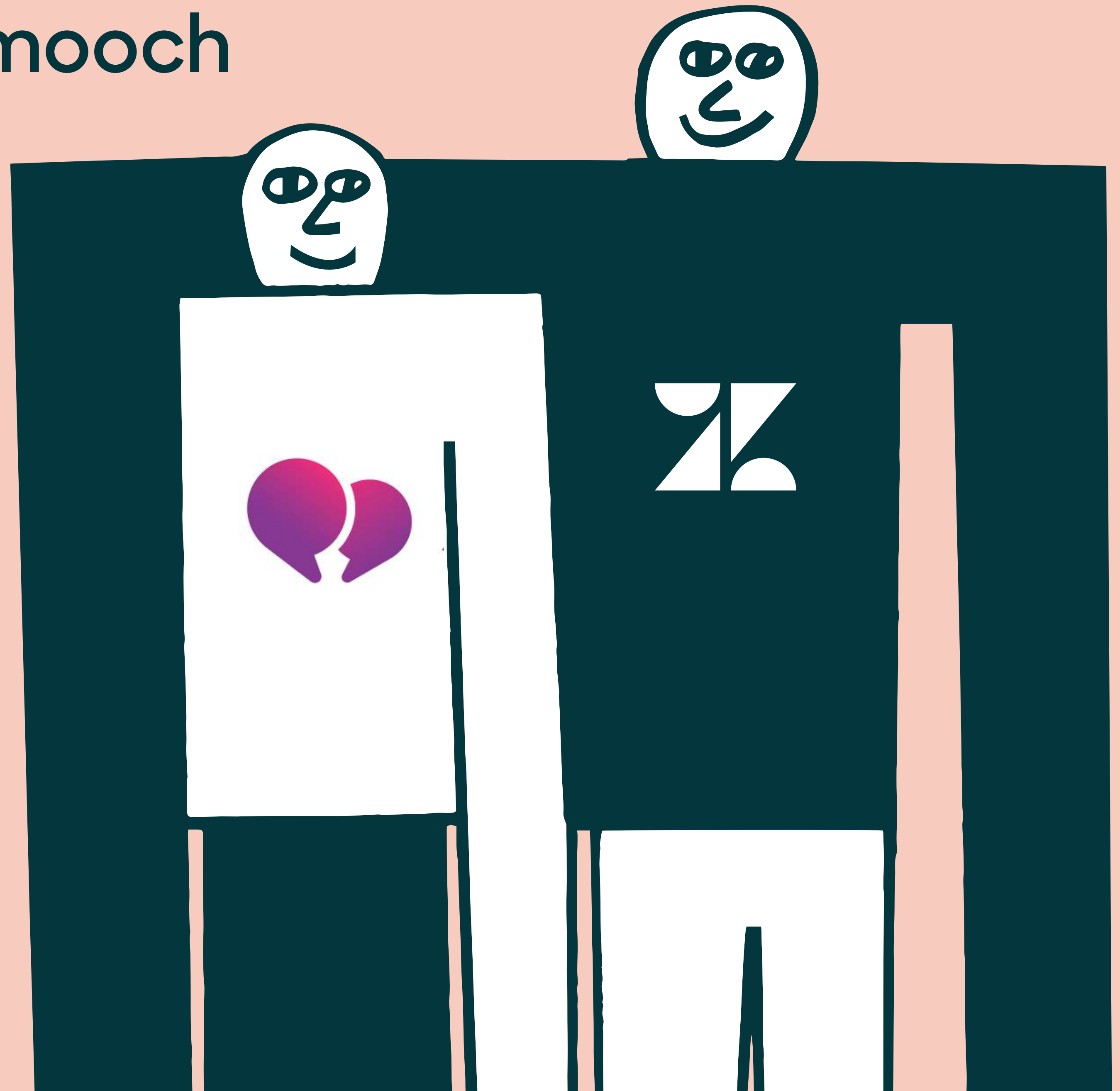
Messaging open for business

SOCIAL
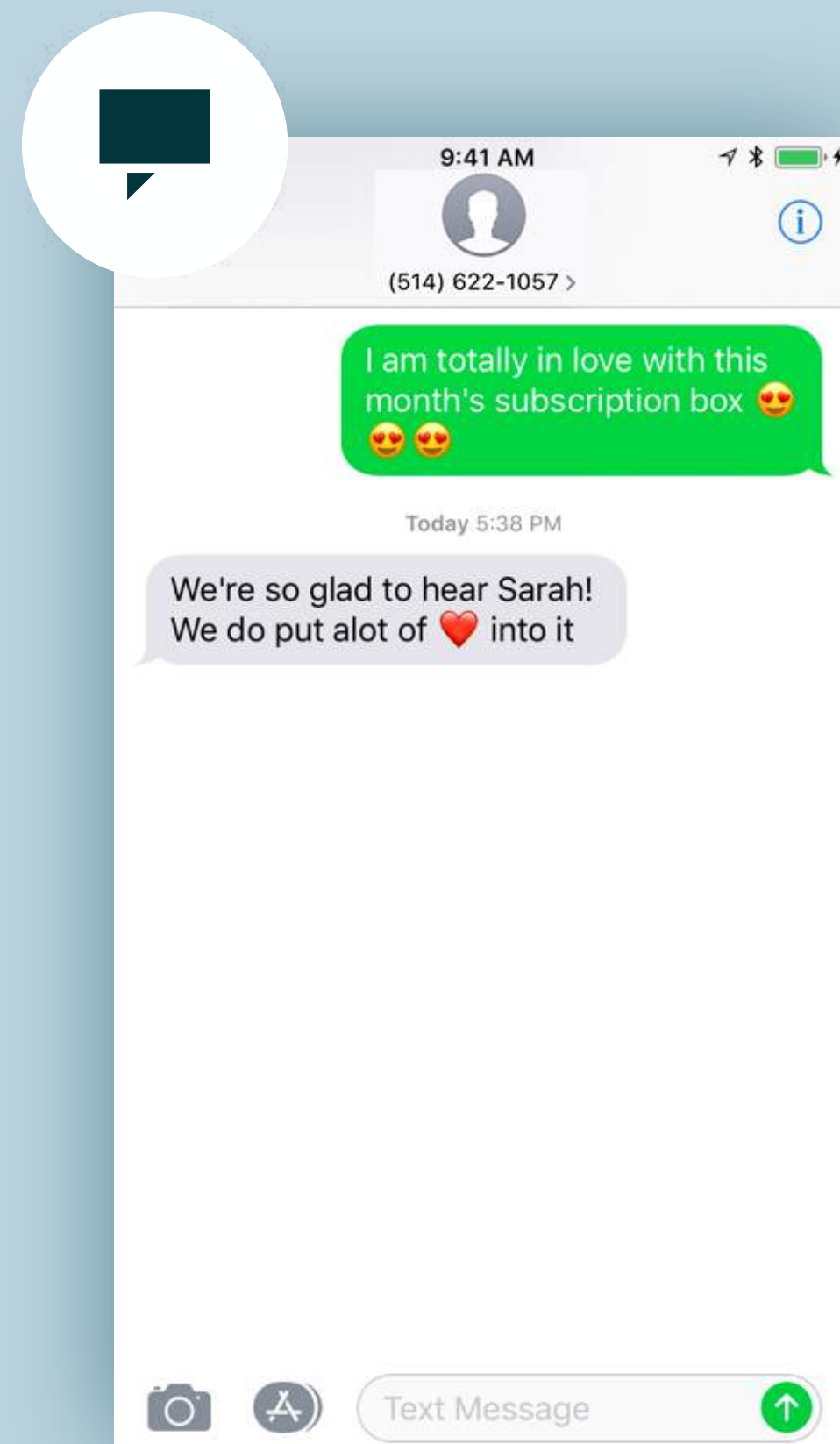
EMBEDDED
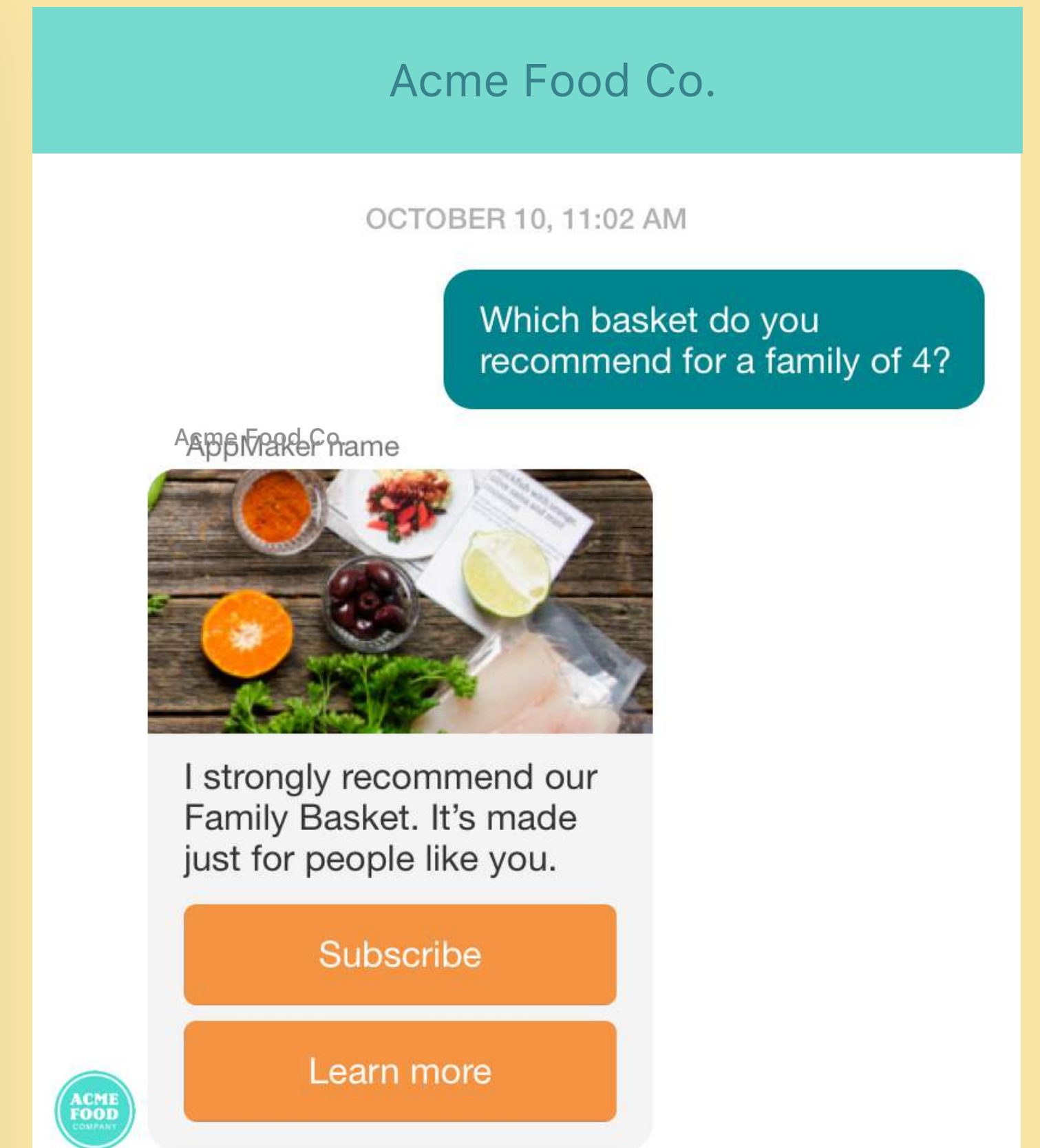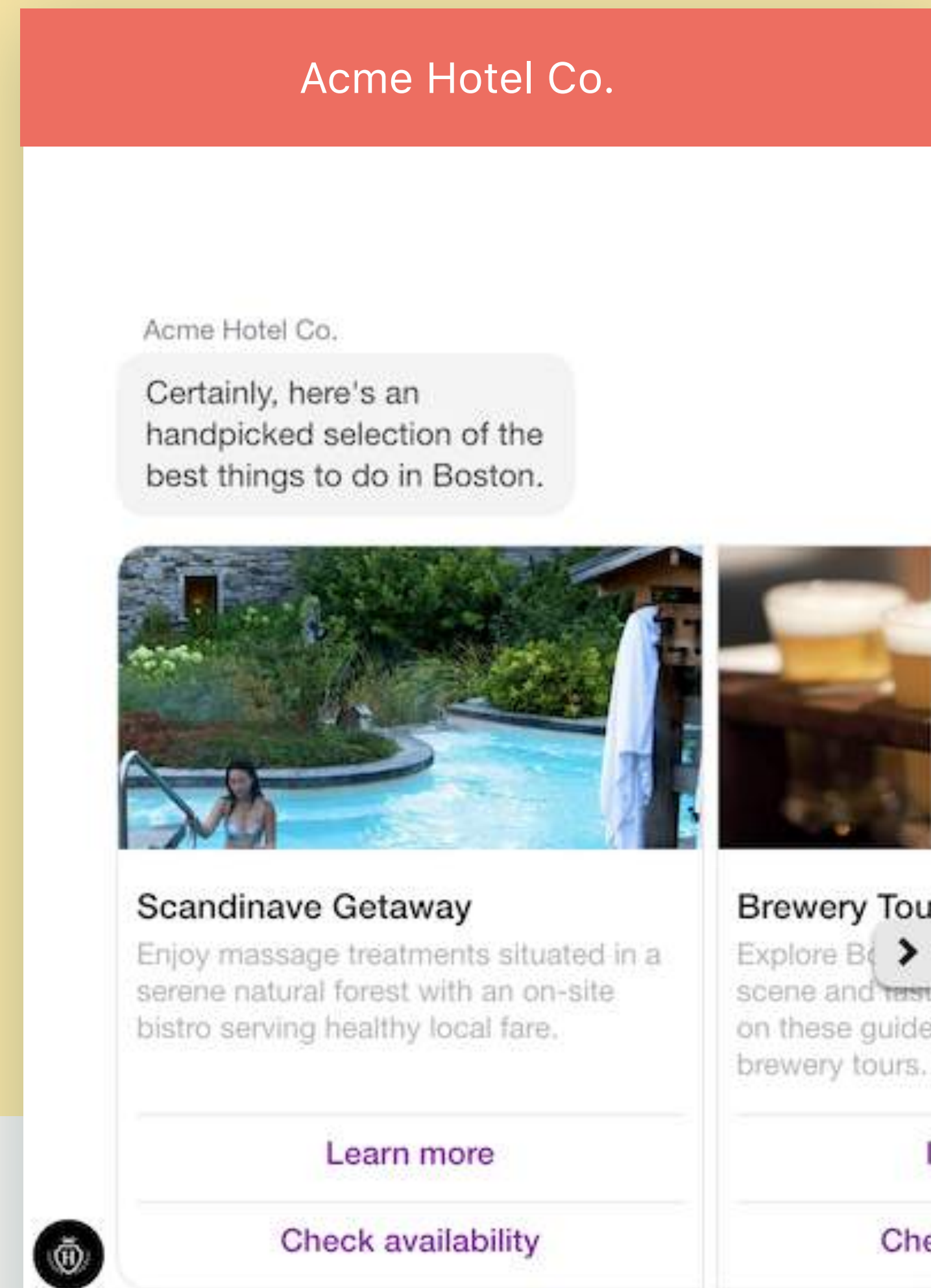
ADRIAN MCDERMOTT

President of Products

SHAWNA WOLVERTON,

SVP Product

Platform & products for the future of customer experience

zendesk

OUR GROWTH IS FUELED BY OUR PRODUCT INVESTMENTS

Powering every customer-facing conversation for our customers

- Messaging
- Omnichannel

Redefining CX through our open CRM platform

- Sunshine

Extending our footprint in support and beyond

- Explore
- Sell
- Support

Leveraging smarter, faster technologies to enable better CX

- Answer Bot/AI
- Guide

Powering every customer-facing conversation for our customers

Messaging

Omnichannel

Start messaging

SOCIAL

Switch channels, stay tuned
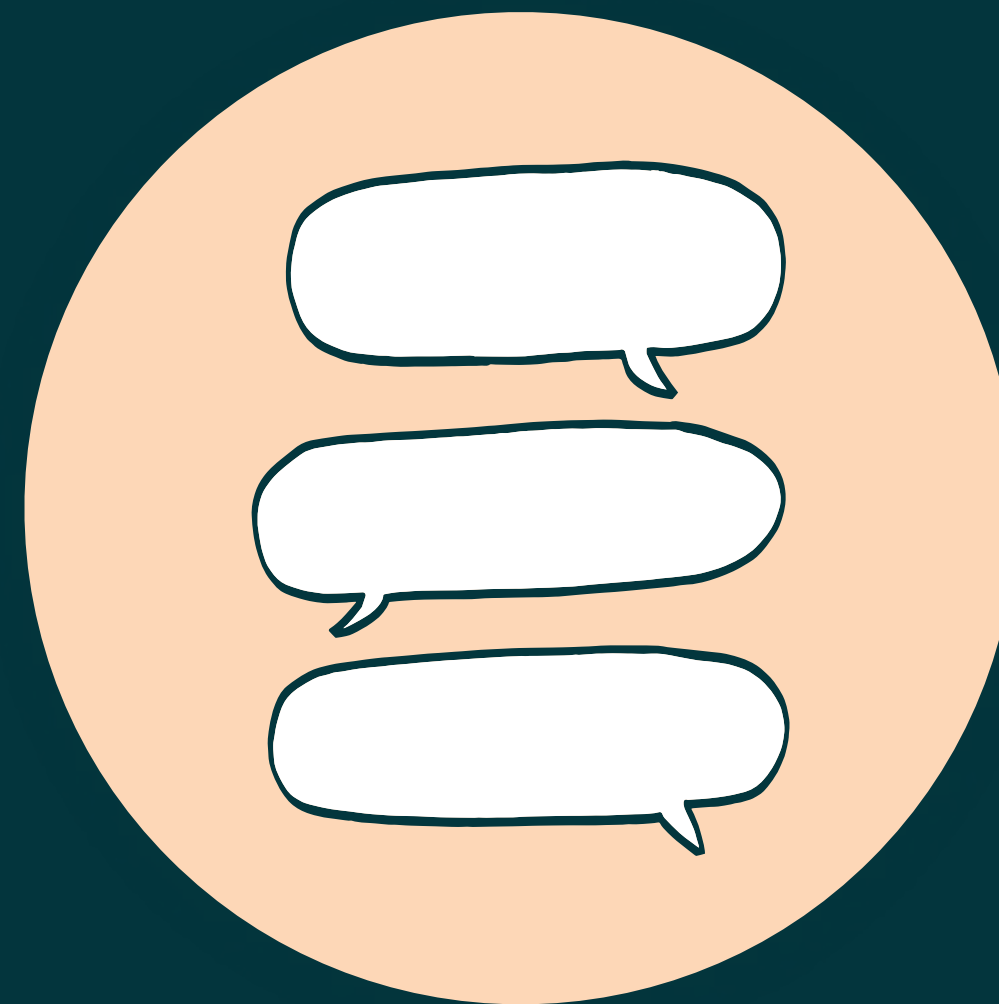
WEB AND MOBILE

Create more natural conversations
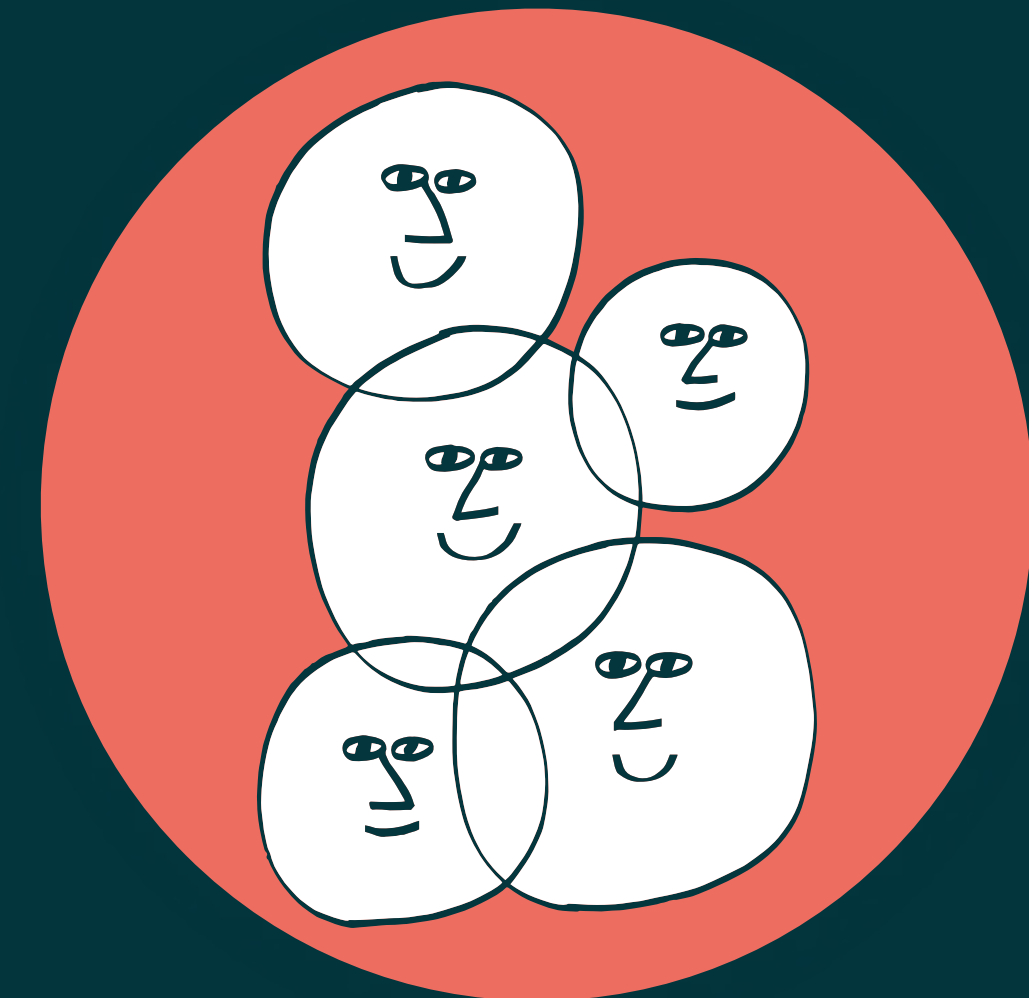
MULTI-PARTY

Bring everyone in

ZENDESK AGENT WORKSPACE
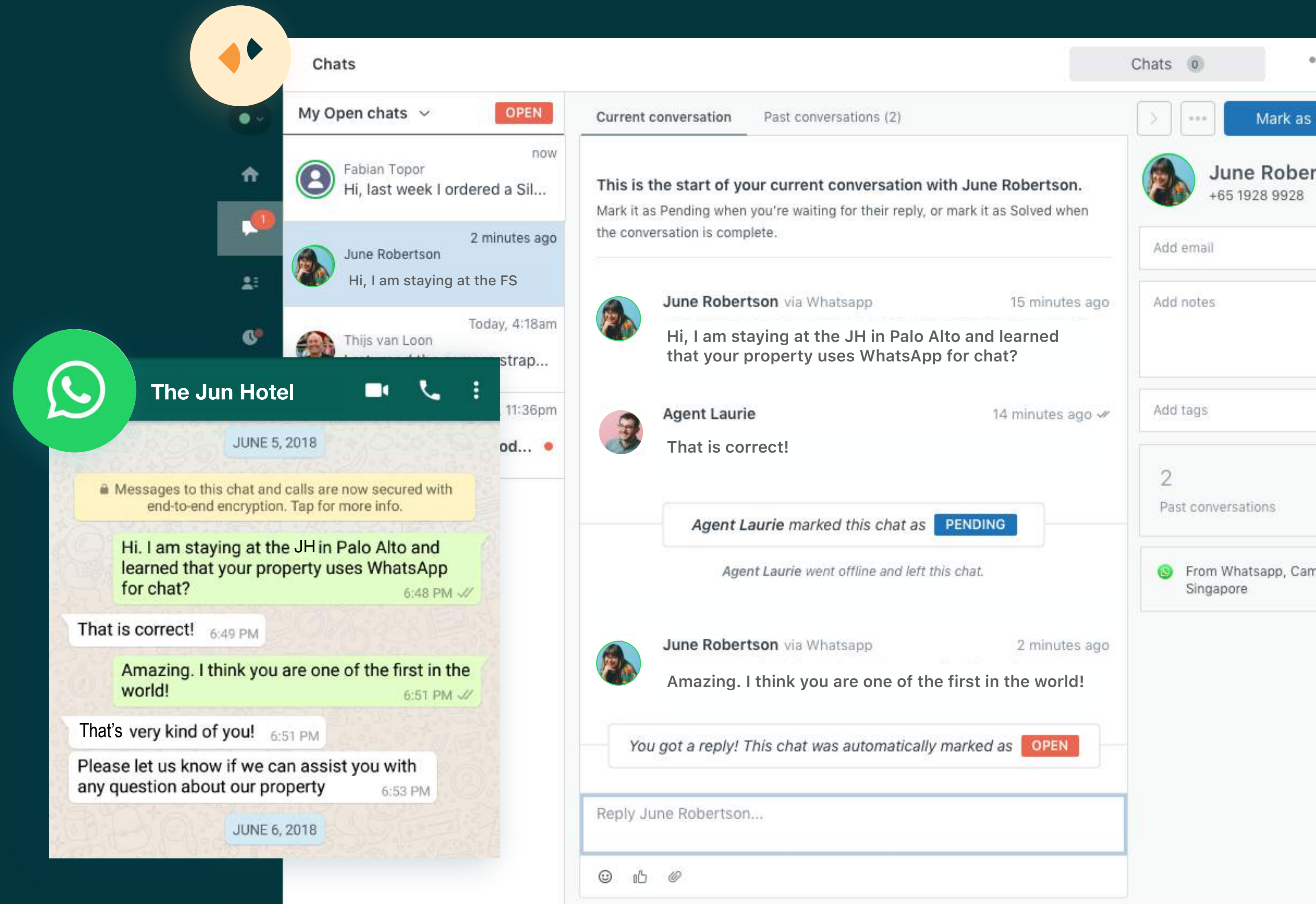
Powers the Suite for omnichannel conversations with customers

CONVERSATIONAL INTERFACE

CUSTOMER CENTRICITY

OMNICHANNEL COMPOSER

Maggie Chung
#234 Chat with Maggie...

Sarah Flynn
#454 Refund

Ryan Cochran
#844 Receipt for order...

Chats   0

OPEN   Ticket #234

SOLVE

Form

Regular Form

Tags

Search

Priority

High

Chat with Maggie Chung

End chat

● Active now · 🟢 via Whatsapp

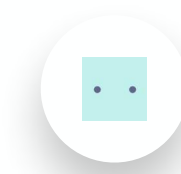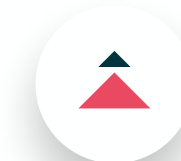Conversations ⌄

Okay, thank you. Bye!

Session restored

Maggie Chung via whatsapp   9:00 AM

Me again! Can you email me my latest order receipt? I lost mine

Agent Joe via email   9:08 AM

To: mchung@gmail.com

Hi Maggie. Here's the info you requested. Looks like your a... ›

Maggie Chung via whatsapp   < 1 minute ago

I got the email, thanks!

Whatsapp | Email | Call | +

Reply via Whatsapp

😊   Send

👤 **Maggie Chung**

✉ mchung@work.com

📞 +1 (415)123-4567

🕐 (GMT+08:00) Beijing

🌐 English

Add user notes

4 interactions

Chat with Maggie Chung
Active now

Refund Policy
5 mins ago

Refund for bag order
Feb 12 · 7 comments

Where is my bag?
Nov 5, 2017 · 5 comments

Web and mobile messaging is growing rapidly

31% OF ZENDESK SUPPORT CUSTOMERS ARE USING WEB MESSAGING*

6,155 APPS HAVE USED THE ZENDESK SDK TO EMBED MESSAGING

79 Million+ CONVERSATIONS OVER MOBILE APPS

Source: Zendesk usage data

*As measured by the number of active web widgets in the past 30 days.

Redefining CX through our open CRM platform
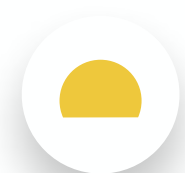
Sunshine

INTERACTIONS ARE BECOMING CONVERSATIONAL

CONNECTED CUSTOMER DATA IS IMPROVING CX

Your support platform

should be open, flexible, and powered by connected customer data

70%

of customers expect businesses to have context on their prior interactions so they don't have to repeat themselves

Get a complete view of your customer experience

Maintenance required

Helios API

Diagnosis
Battery failure, please replace

Interactions
- Maintenance required
- Reservation start
- Reservation made
- Plan upgrade to Helios Pro
- Lead Conversion

Helios Pro

Twitter

Scooter Manager

BATTERY LIFE
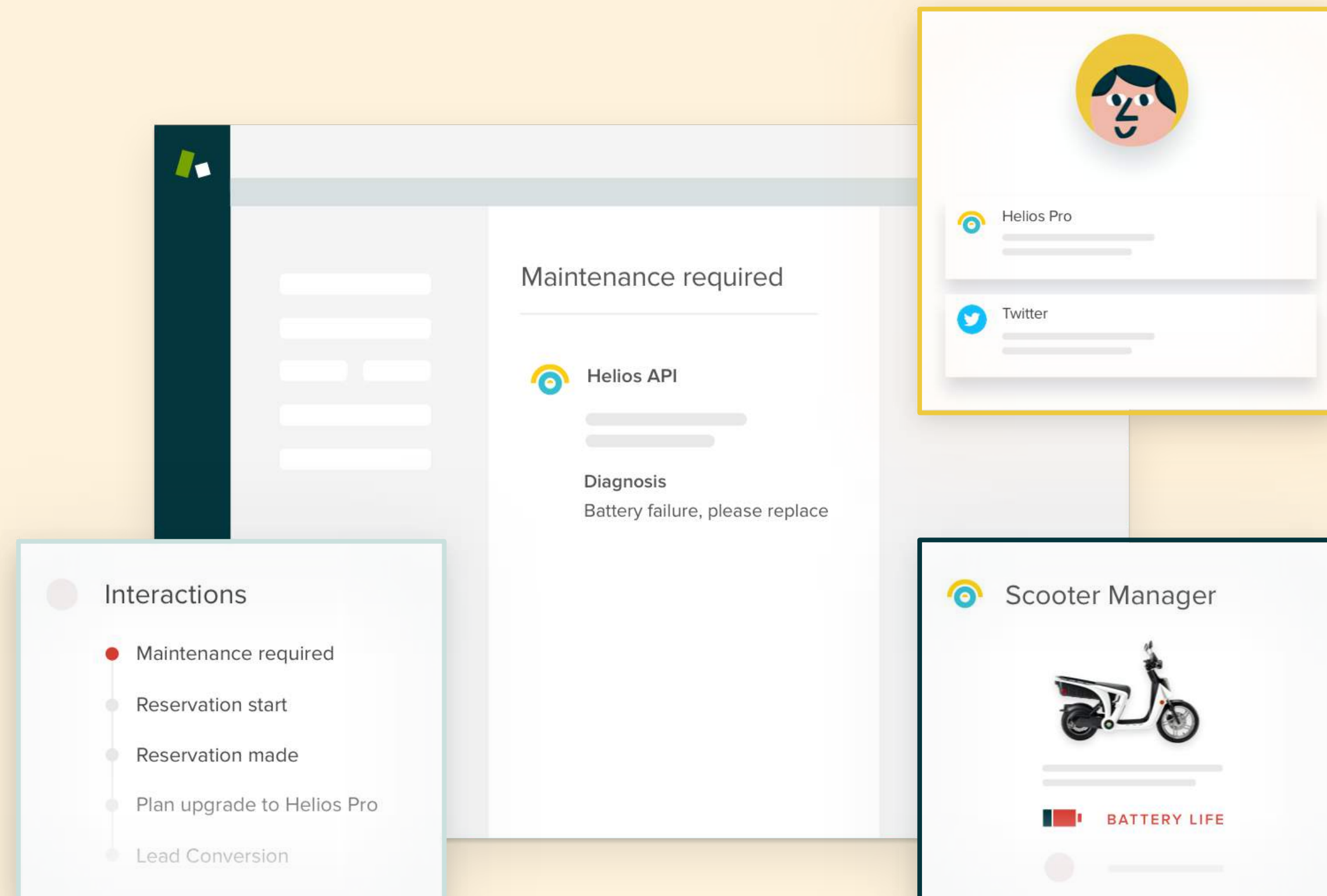
Events

Capture every customer interaction, like shopping cart or web activity

LIMITED AVAILABILITY (BETA)

LIMITED AVAILABILITY (BETA)

Profiles

Build complete customer profiles with information from internal and third-party apps

AVAILABLE TODAY

Objects

Store and connect new data sources, from purchase history to asset management

Enhancing the customer experience with better context
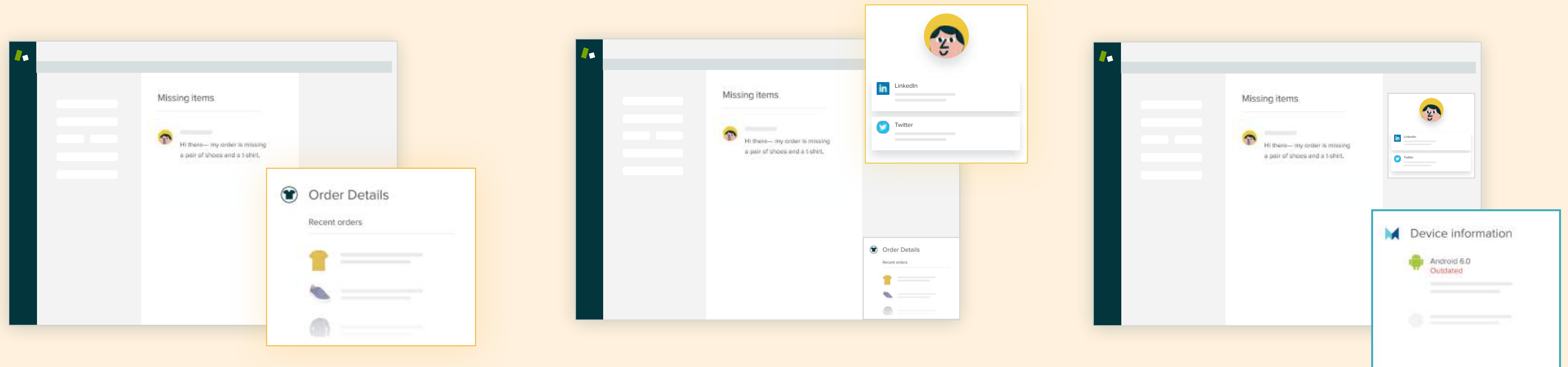
MANAGE CUSTOMER ORDERS AND PRODUCTS

Connect data about products services, warranties and returns

TRACK ALL CUSTOMER INTERACTIONS

Track interactions across store, website and mobile app all through Sunshine

BE PROACTIVE WITH CONNECTED DEVICES

Use Sunshine to create proactive experiences triggered by data from their assets or connected devices.

100%

of Zendesk customers have been migrated to cloud infrastructure

powered by aws

Sunshine being built on AWS gives us a leg up
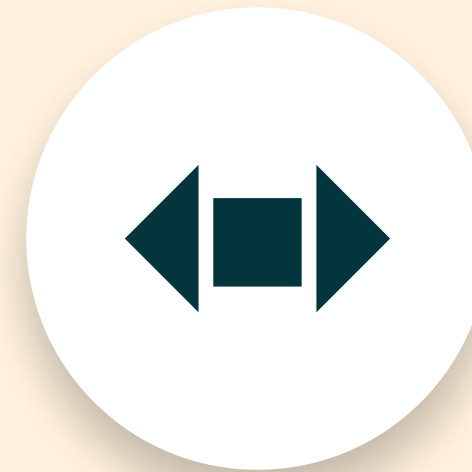
Scalable
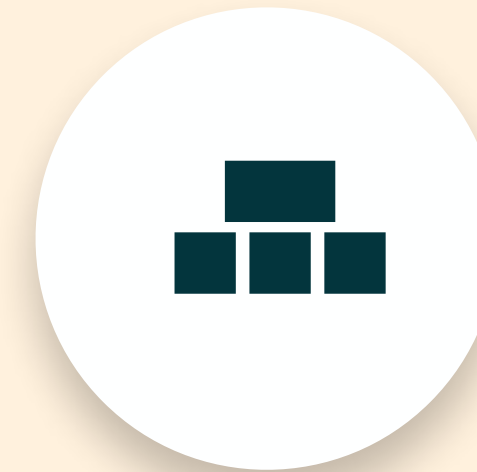
Reliable

Flexible

Secure

Compliant
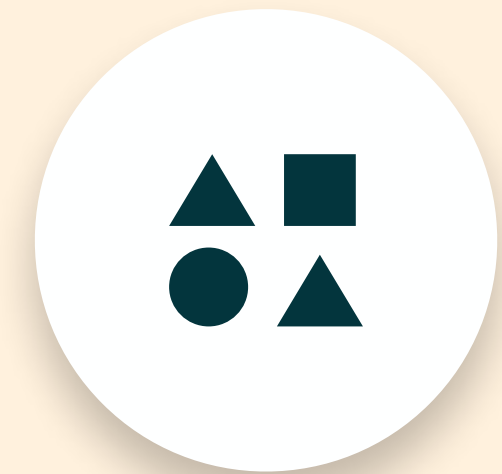
Developer Friendly

Developers love building on Zendesk

36k

OF ENGAGED DEVELOPERS

Using Developer portal and
Slack group

72 %

APIS

Support customers have
integrations with APIs

222k

APPS AND INTEGRATIONS

Public and private
app installs

We'll continue to enhance our Sunshine Platform in 2019

MAKE IT EASIER TO GET DATA IN AND OUT

Build AWS connectors to enable new use cases and leverage strategic partnerships for easier data integration
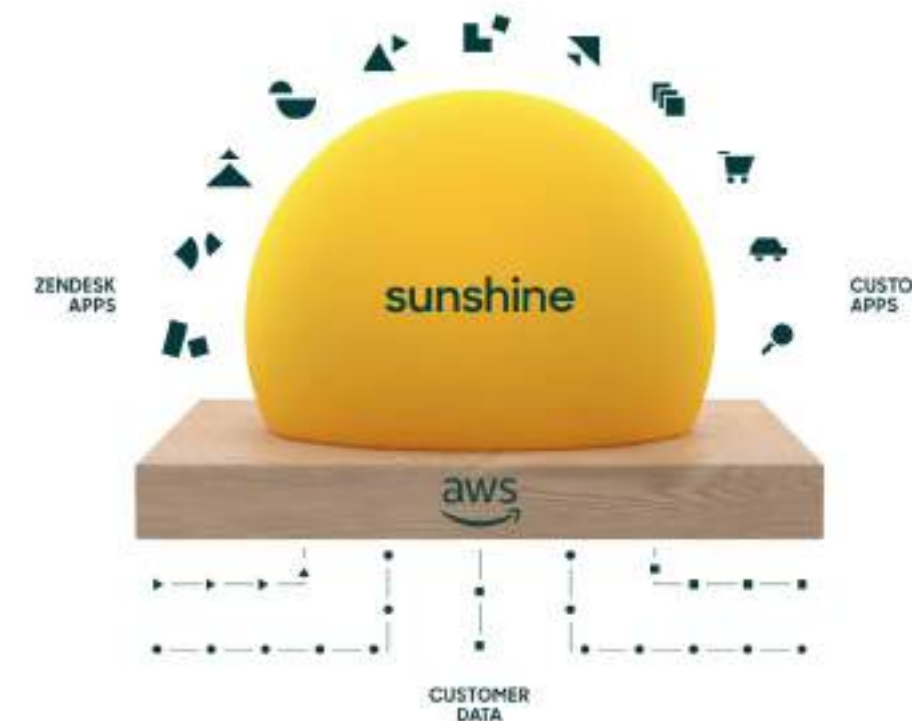
DO MORE WITH SUNSHINE DATA

Extend Sunshine to other product areas, starting with reporting on Custom Objects in Explore
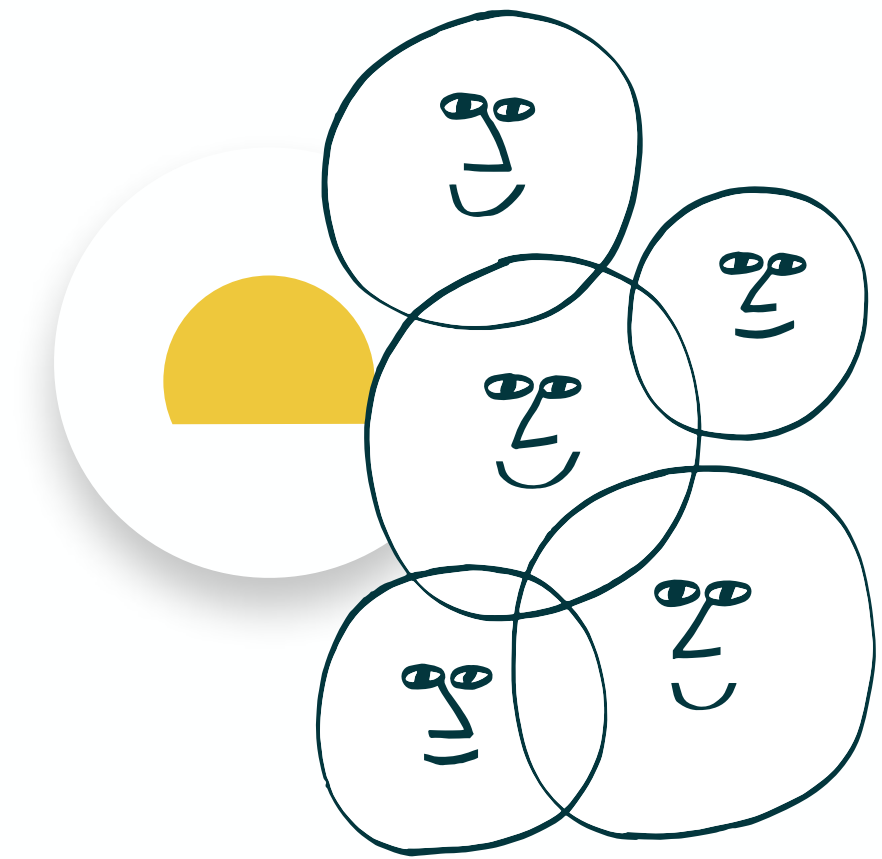
CREATE WORLD-CLASS DEVELOPER EXPERIENCES

Engage developer community with improved portal and apps marketplace; better content, training, and events; and expanded point-and-click functionality

Extending our footprint in support and beyond

Explore

- INTERACTIONS ARE BECOMING **CONVERSATIONAL**
- CONNECTED **CUSTOMER DATA** IS IMPROVING CX
- **ANALYTICS** ARE DRIVING OBJECTIVE DECISION MAKING

Last year we launched best practice dashboards and custom reporting with Explore

Approx

100k
DASHBOARDS CREATED

35%+
SALES-ASSISTED ATTACH RATE
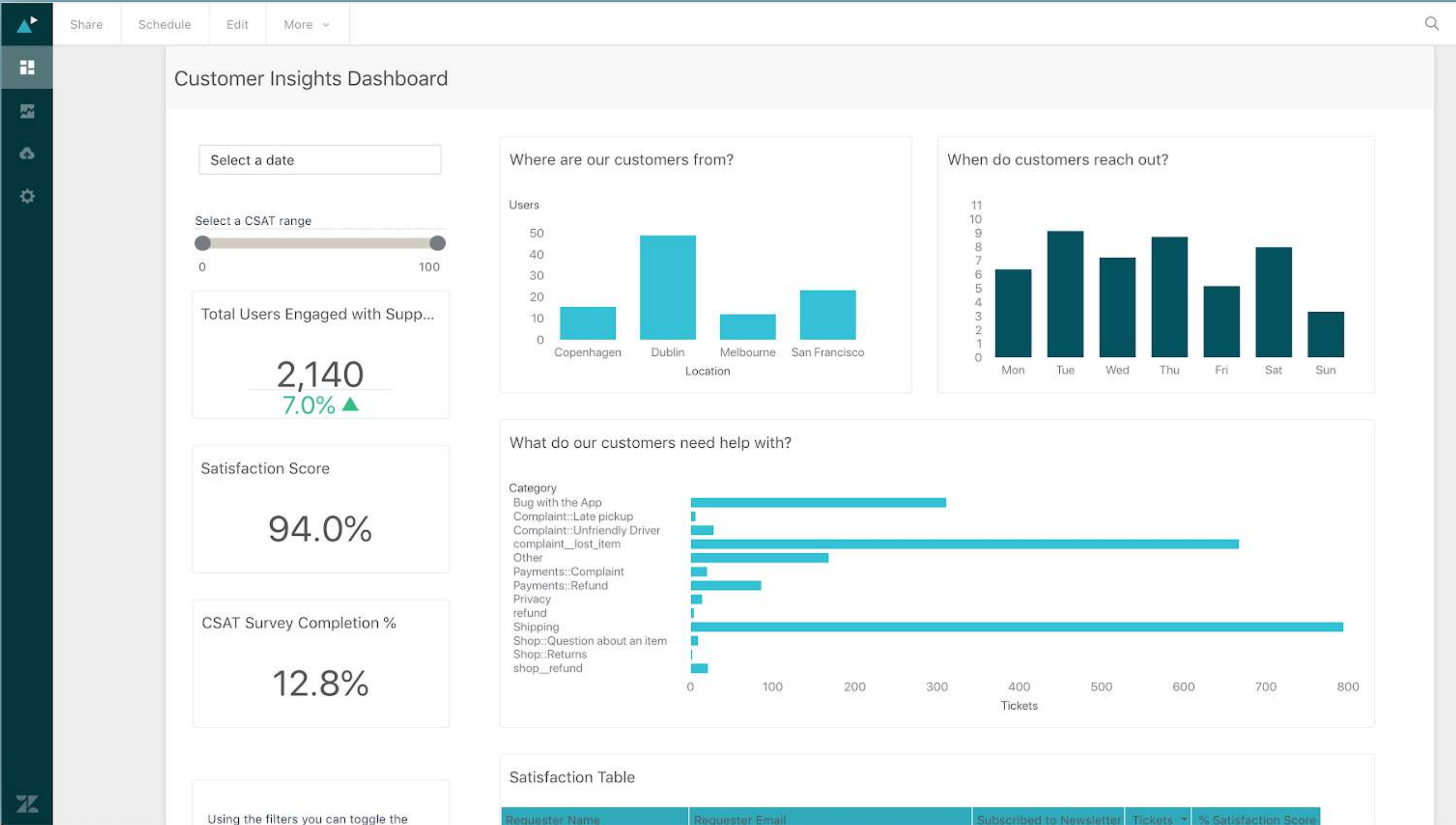
*For Support professional and enterprise subscriptions.

Scalability and Availability Improvements

Sharing and Collaboration Improvements

Real-Time Dashboards
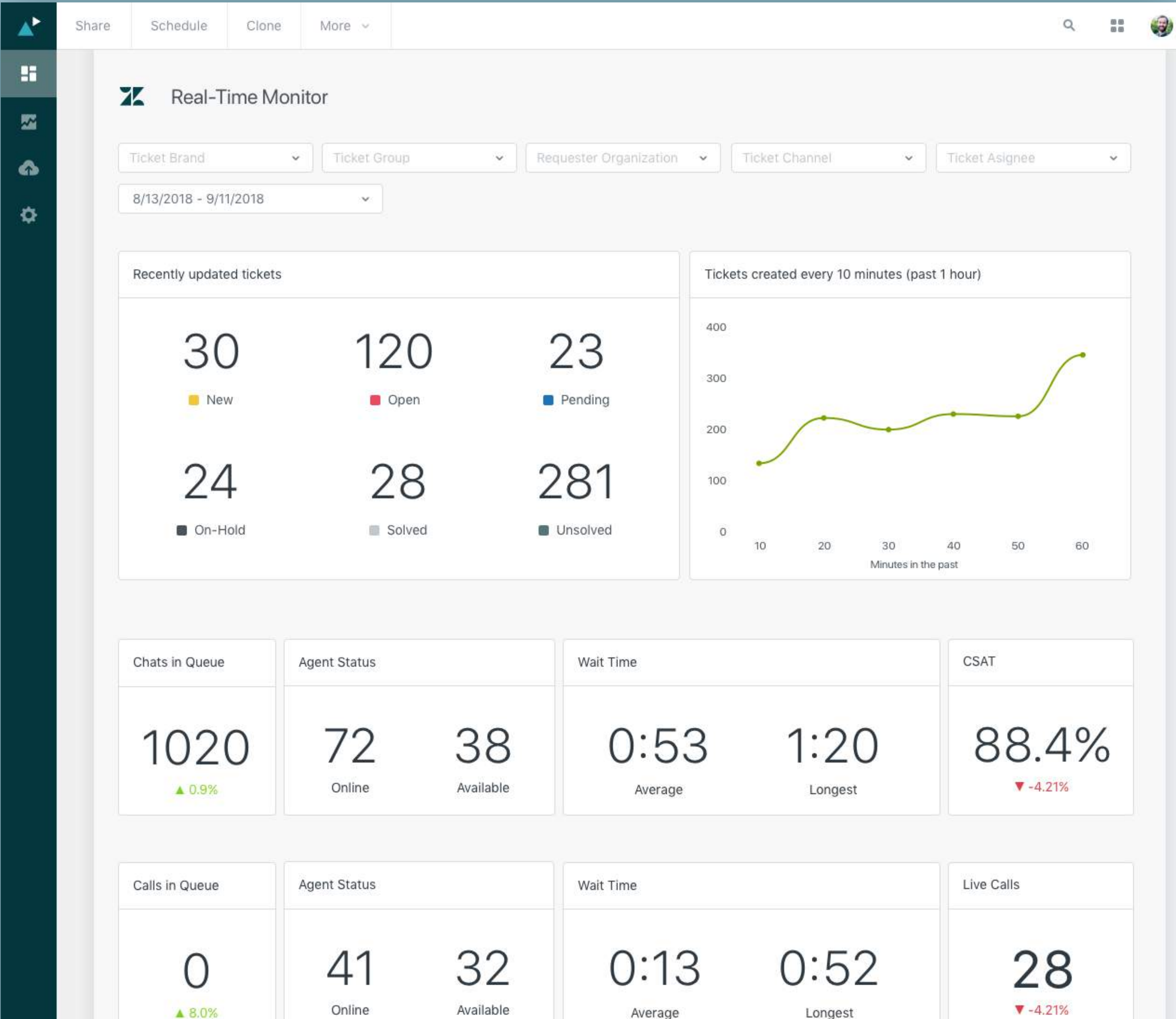
Extending our footprint in support and beyond
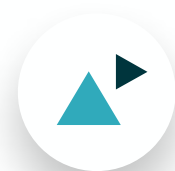
Explore

Sell

- INTERACTIONS ARE BECOMING **CONVERSATIONAL**
- CONNECTED **CUSTOMER DATA** IS IMPROVING CX
- **ANALYTICS** ARE DRIVING OBJECTIVE DECISION MAKING
- **ALIGNED SALES AND SUPPORT** TEAMS CREATE BETTER SERVICE

Sales performance Dashboards

Surface, learn from, and act on your sales data.
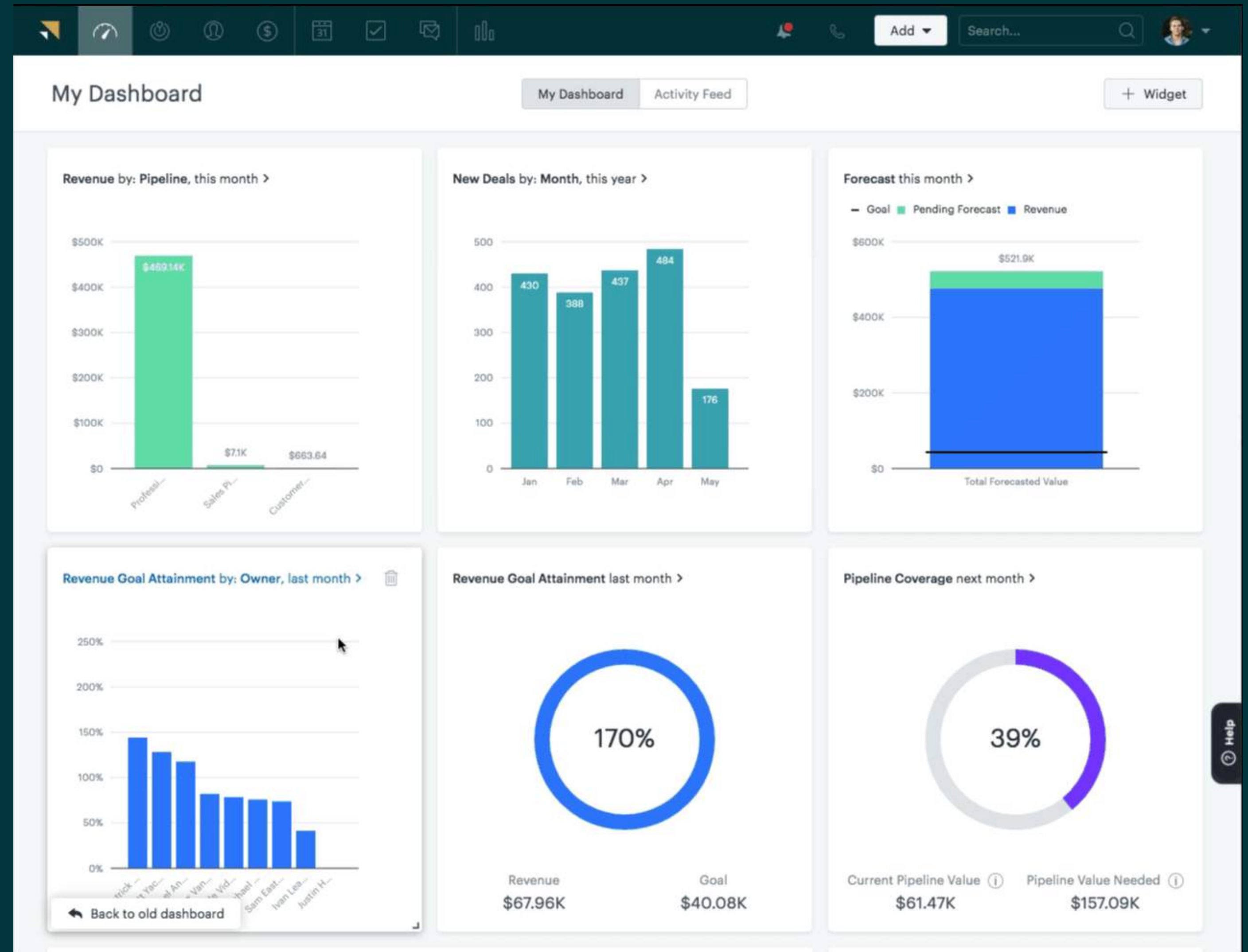
Extending our footprint in support and beyond

- Explore
- Sell
- Support

INTERACTIONS ARE BECOMING CONVERSATIONAL

CONNECTED CUSTOMER DATA IS IMPROVING CX

ANALYTICS ARE DRIVING OBJECTIVE DECISION MAKING

ALIGNED SALES AND SUPPORT TEAMS CREATE BETTER SERVICE

SOLVING PROBLEMS REQUIRES A TEAM EFFORT

COLLABORATION ADD-ON

Involve teams outside your support org to help solve problems

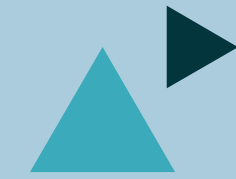# Leveraging smarter, faster technologies to enable better CX

Answer Bot/AI

- **INTERACTIONS ARE BECOMING CONVERSATIONAL**
- **CONNECTED CUSTOMER DATA IS IMPROVING CX**
- **ANALYTICS ARE DRIVING OBJECTIVE DECISION MAKING**
- **ALIGNED SALES AND SUPPORT TEAMS CREATE BETTER SERVICE**
- **SOLVING PROBLEMS REQUIRES A TEAM EFFORT**
- **AUTOMATION IS MAKING CX BETTER**
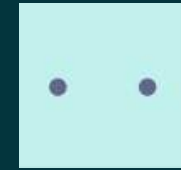
Answer Bot everywhere

Automatically respond conversationally to customer queries in every channel

WEB WIDGET

APIS

SLACK

MOBILE

z3nstaging ˅
🔹 Mike

🔍 Jump to...

⊜ All Threads

Channels   ⊕
answerbot
customer-service
general
random

Direct Messages   ⊕

+ Invite People

Apps   ⊕

+ Add Apps

#customer-service
☆ | 👤 1 | 💬 0 | 🔗 Add a topic

🔒 freshly.com

≡   FRESHLY   SIGN UP

CHEF-COOKED, HEALTHY MEALS DELIVERED TO YOU

esh · Healthy · Convenient

Email

customer-service

You created this channel today. This is the very beginning of the # customer-service channel.

🖉 Set a purpose   + Add an app   👤 Invite others to this channel

Today

Mike 10:38 PM
joined #customer-service.

+   What is the knowledge capture app and how do I use it?   @ ☺

bold _italics_ ~strike~ `code` ```preformatted``` >quote

#1

Ease of resolution is the #1 factor that influences CSAT

For the best teams, **AI is used to drive faster and more seamless support** experiences through self-service
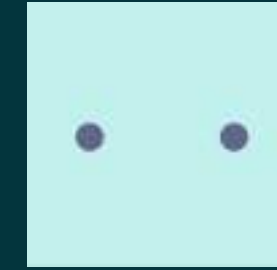
1.8M
Answer Bot resolutions

356K
Agent hours saved

4,500
years given back to customers

Source: The Zendesk Customer Experience Trends Report 2019

Leveraging smarter, faster technologies to enable better CX
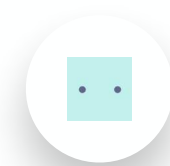
Answer Bot/AI
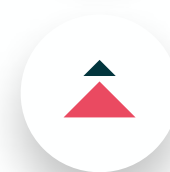
Guide

INTERACTIONS ARE BECOMING CONVERSATIONAL

CONNECTED CUSTOMER DATA IS IMPROVING CX

ANALYTICS ARE DRIVING OBJECTIVE DECISION MAKING

ALIGNED SALES AND SUPPORT TEAMS CREATE BETTER SERVICE
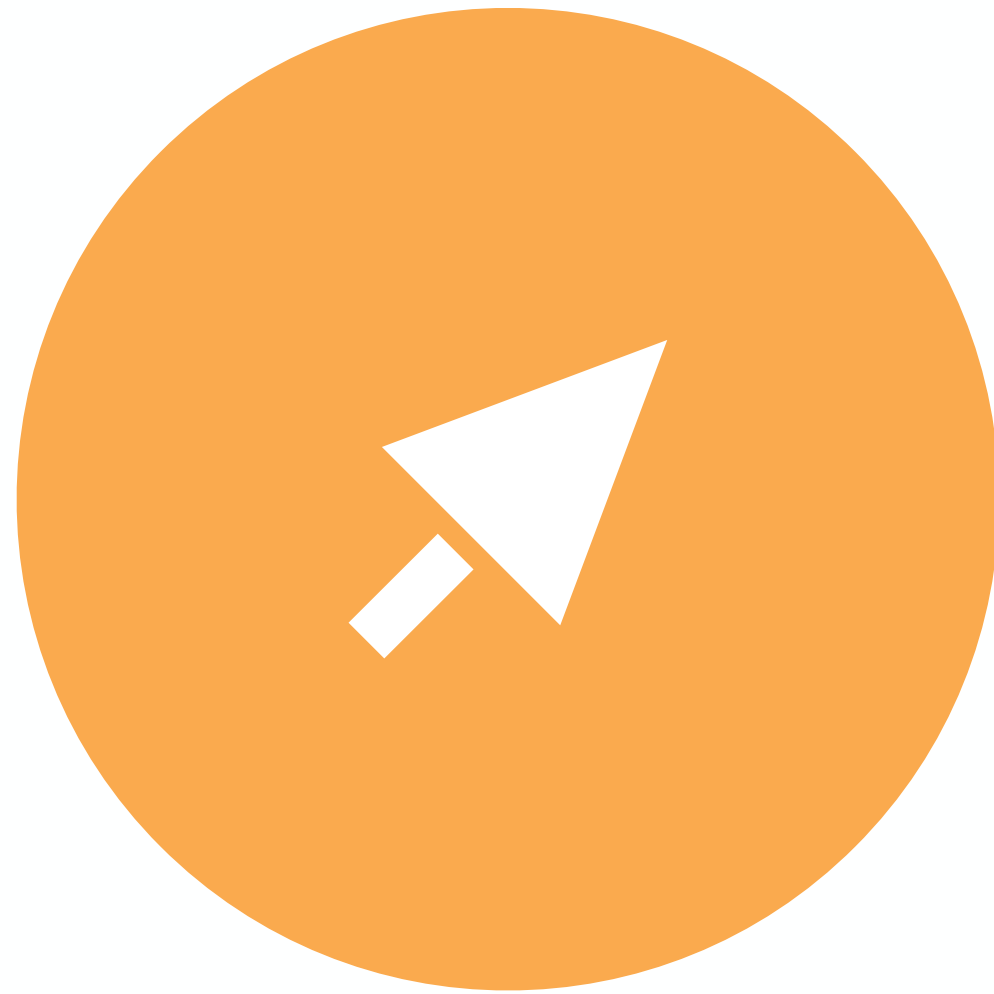
SOLVING PROBLEMS REQUIRES A TEAM EFFORT

AUTOMATION IS MAKING CX BETTER

SELF-SERVICE HAS BECOME THE PREFERRED CHANNEL
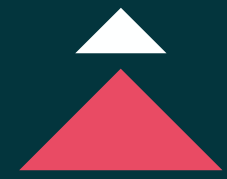
Customers increasingly turn to self-service for support

How do you typically resolve your issues with a company?

Legend:
- GEN Z
- MILLENNIALS
- GEN X
- BABY BOOMERS

Bar chart with y-axis labeled 80%, 60%, 40%, 20% and x-axis categories: PHONE CALL, A SEARCH ENGINE OR FAQ/HELP CENTER, CHAT, SOCIAL MEDIA

Keep knowledge up-to-date
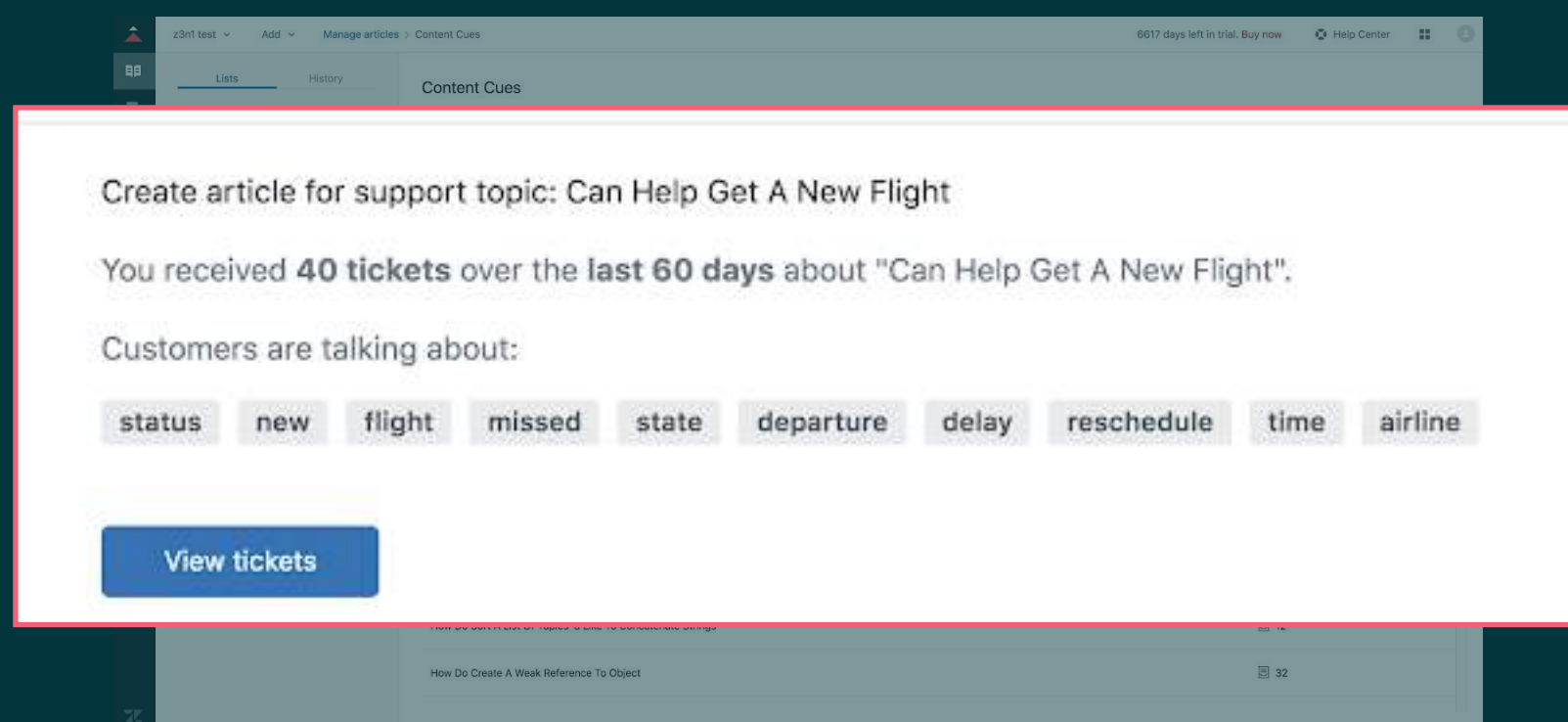
Content Cues
Update the best content and archive the worst
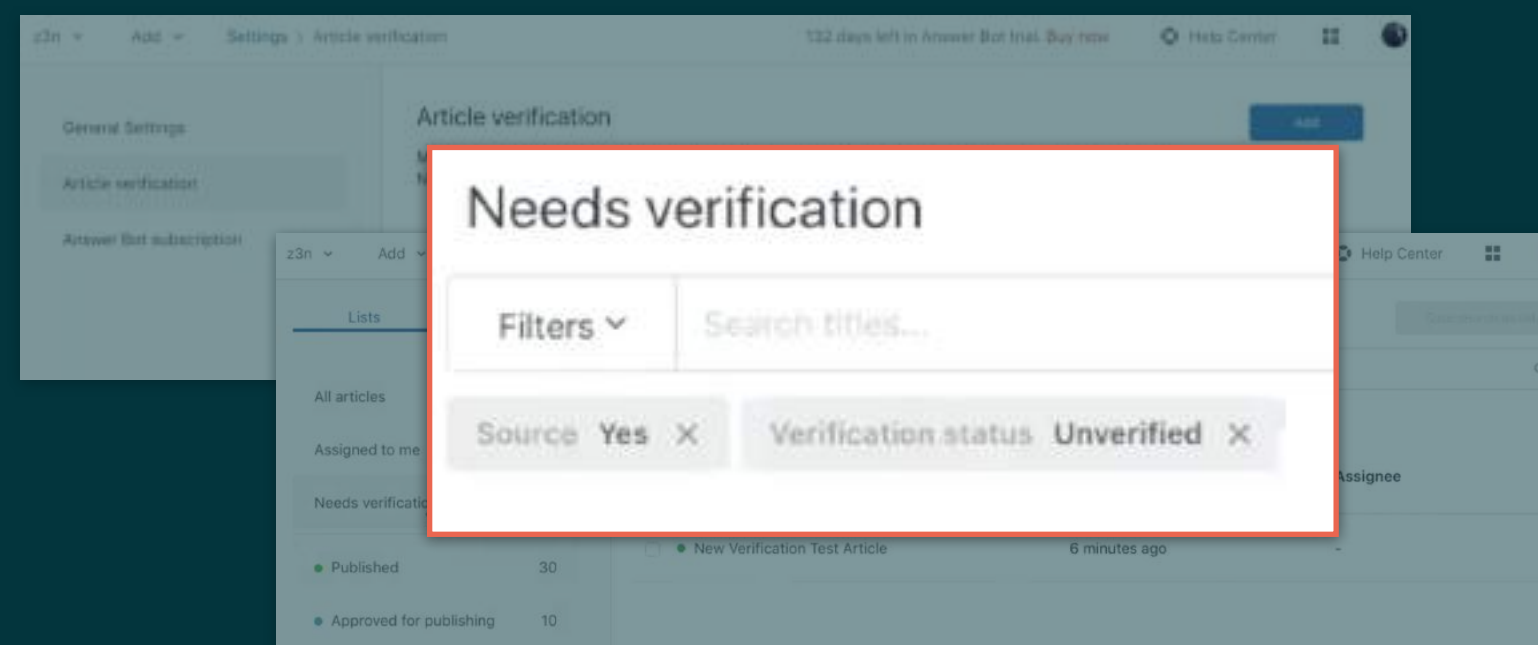
Article Events: Verification
Keep content up-to-date with an assigned owner and scheduled verification
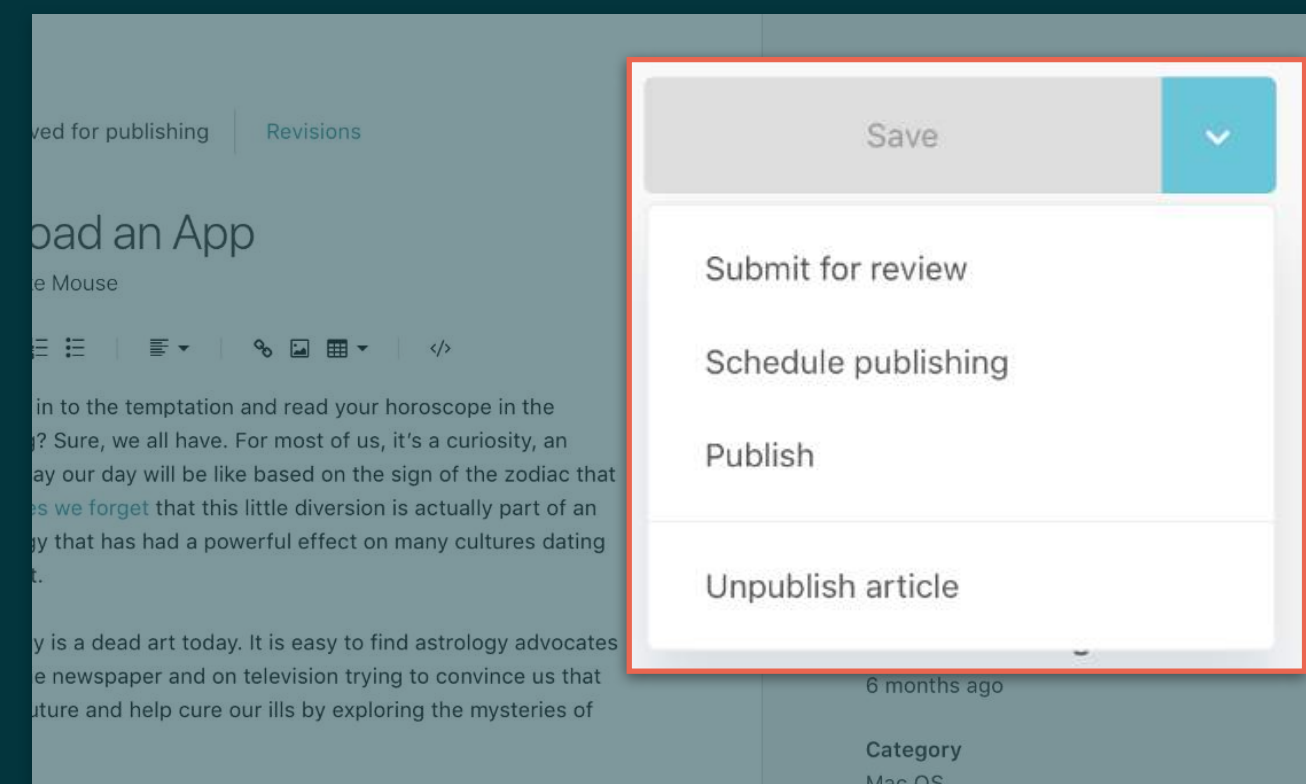
Article Events: Publishing
Schedule content to be published in advance

Deliver multi-brand, product and service experiences
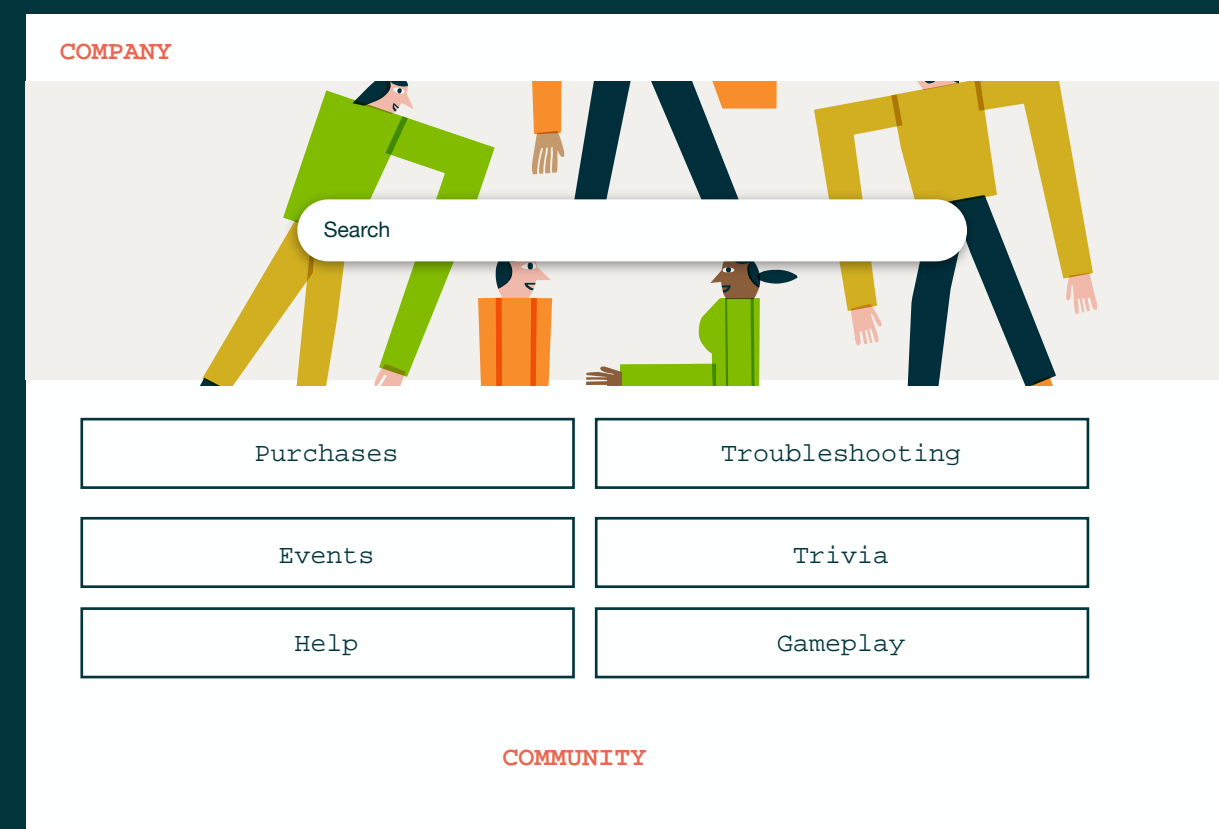
Theming Enhancements
Uniquely brand knowledge base levels with multiple templates and easy integration with GitHub
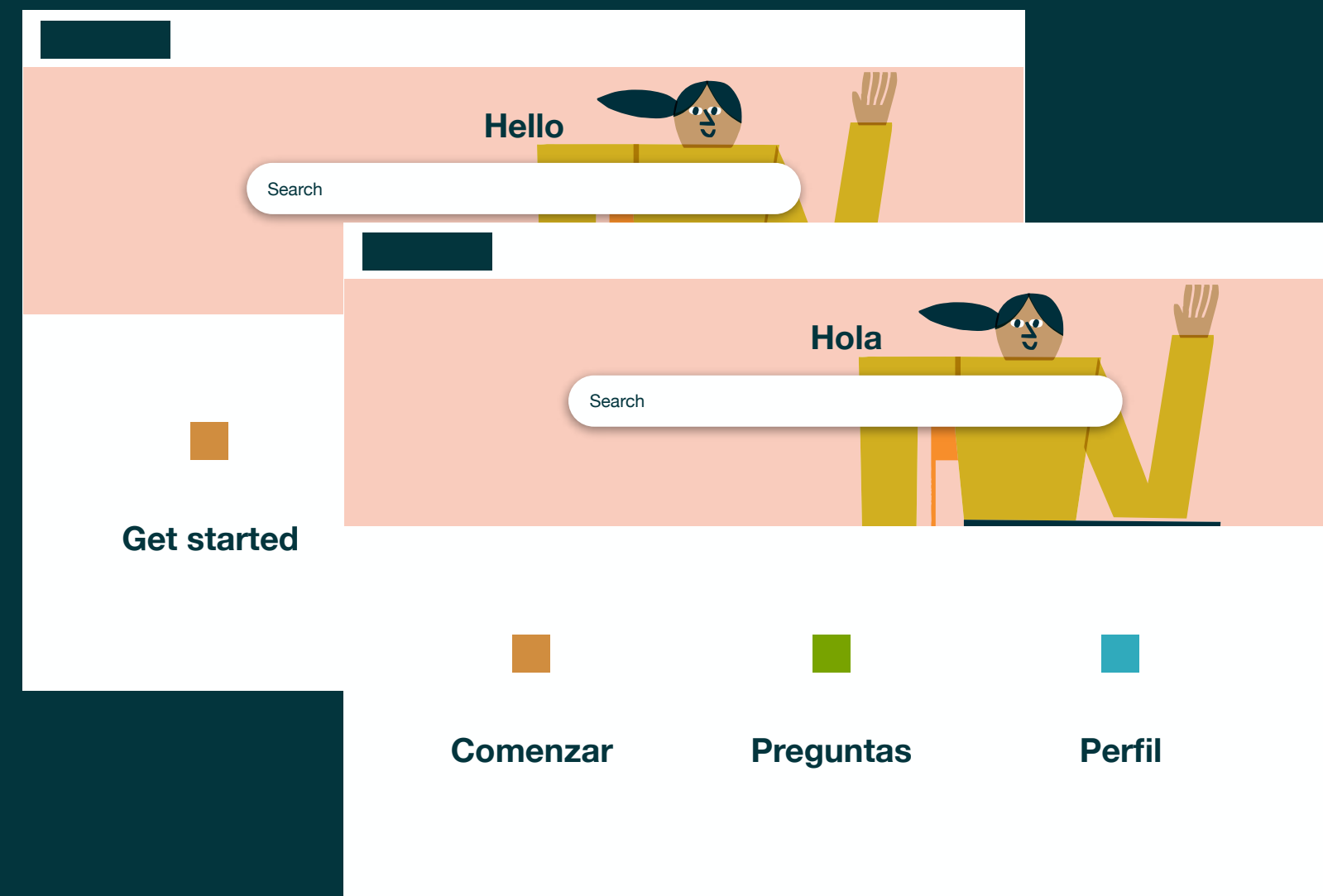
Search Enhancements
Provide strong search functionality for better results
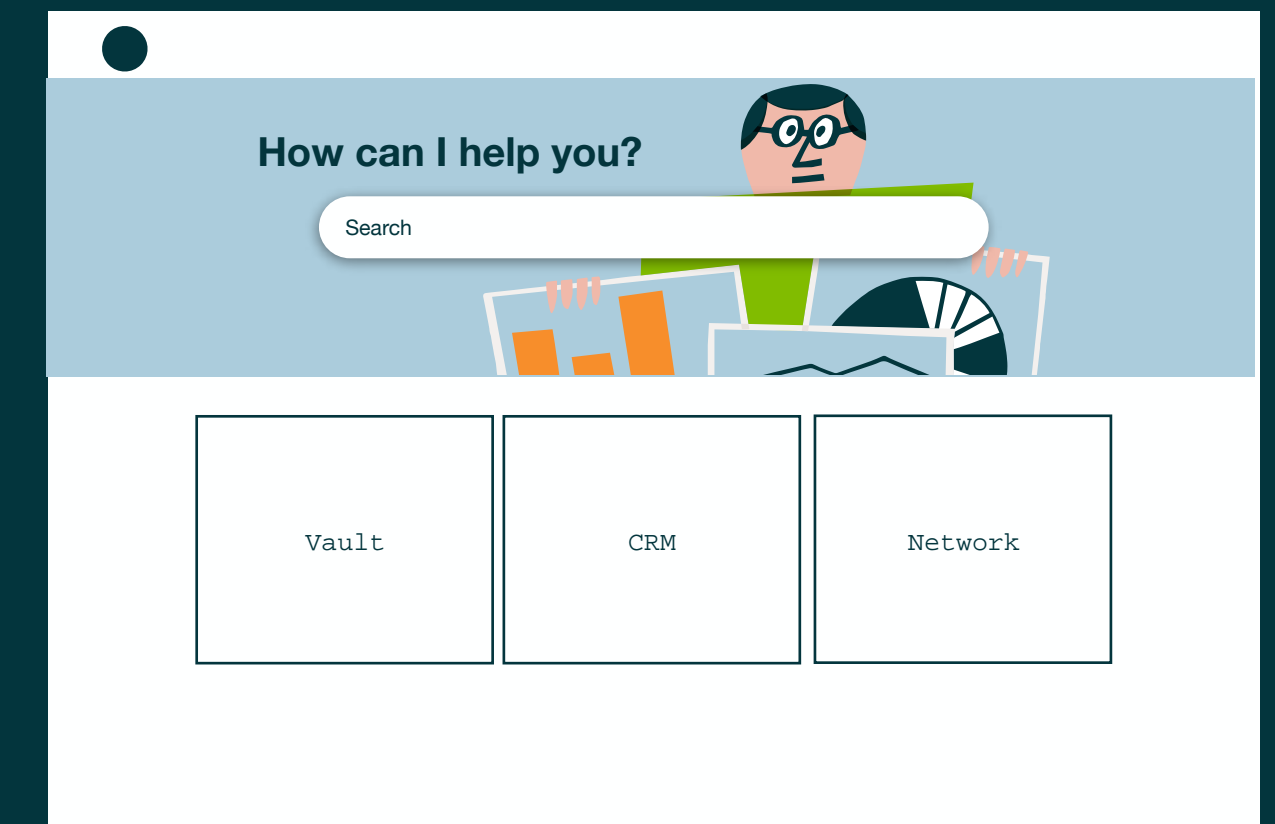
Flexible Hierarchies
Organize knowledge so it's easy for customers to find exactly what they need when they need it

Powering every customer-facing conversation for our customers

- Messaging
- Omnichannel

Redefining CX through our open CRM platform
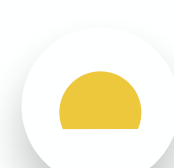
- Sunshine

Extending our footprint in support and beyond

- Explore
- Support
- Sell

Leveraging smarter, faster technologies to enable better CX
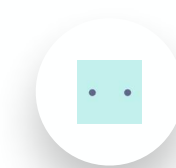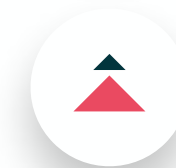
- Answer Bot/AI
- Guide

Organizations transforming their customer experiences

MARC CABI

VP, Strategy & Head of Investor Relations

TOM KEISER

Chief Operating Officer

NORM GENNARO

SVP, Worldwide Sales

COLLEEN BERUBE

Chief Information Officer
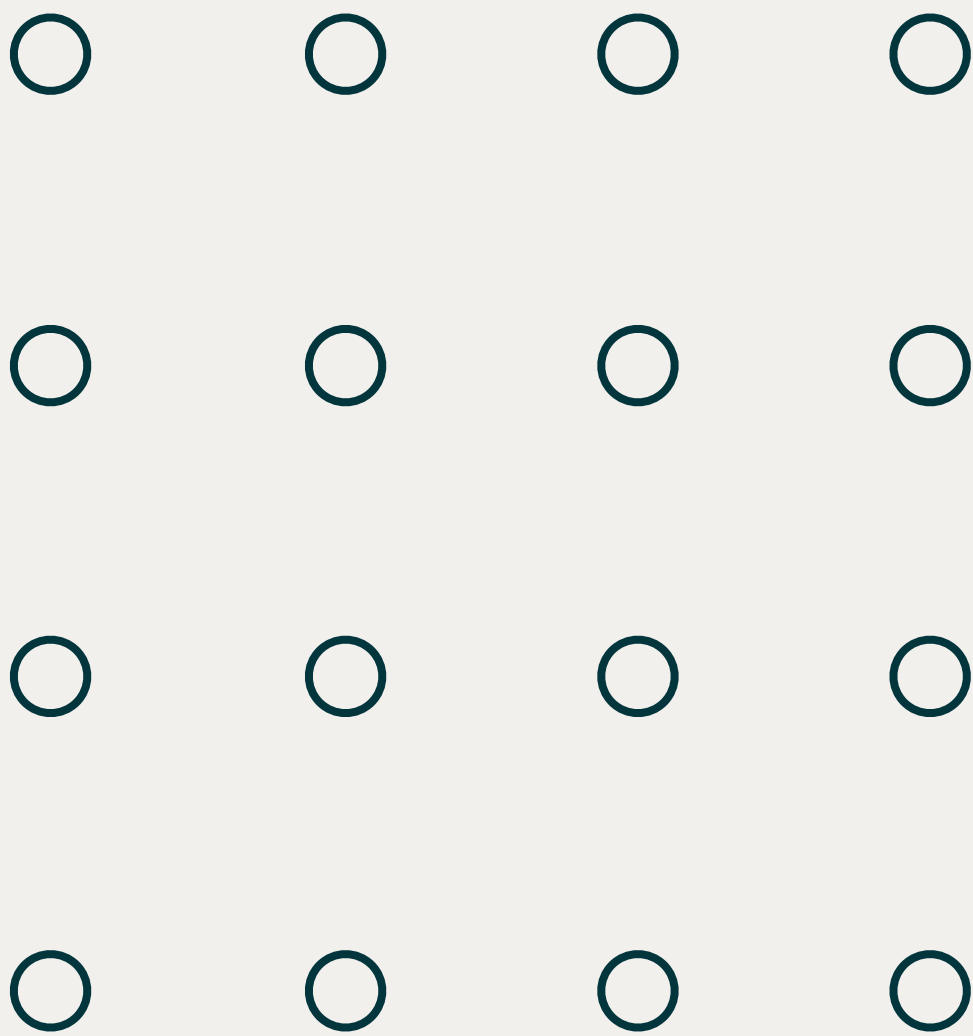
zendesk

WE ARE SCALING TO BE A

high-growth, multibillion-dollar revenue company

Multibillion-dollar journey
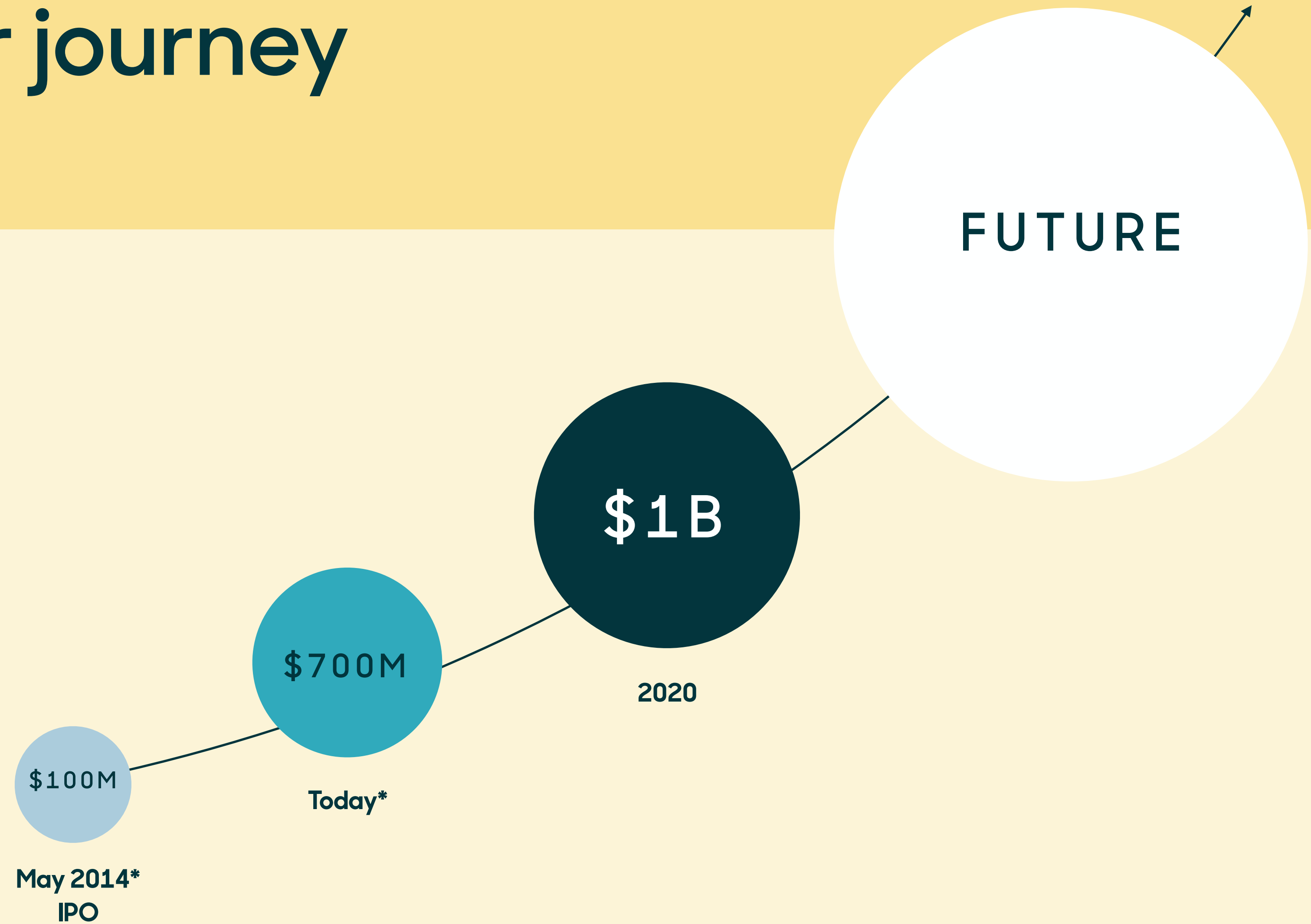
ANNUAL REVENUE

FUTURE

$1B

2020

$700M

Today*

$100M

May 2014*
IPO

*Annual revenue run rates for May 2014 and today
*Reached $100M annual revenue run rate with 3/31/14 quarterly results and exceeded $700M annual revenue run rate with 3/31/19 quarterly results.

DELIVERING HIGH GROWTH AND SCALE

REVENUE IN $ MILLIONS

47% CAGR (2014 – 2018)

- 2014: $127
- 2015: $209
- 2016: $313
- 2017: $430
- 2018: $599
- 2019 E*: $806
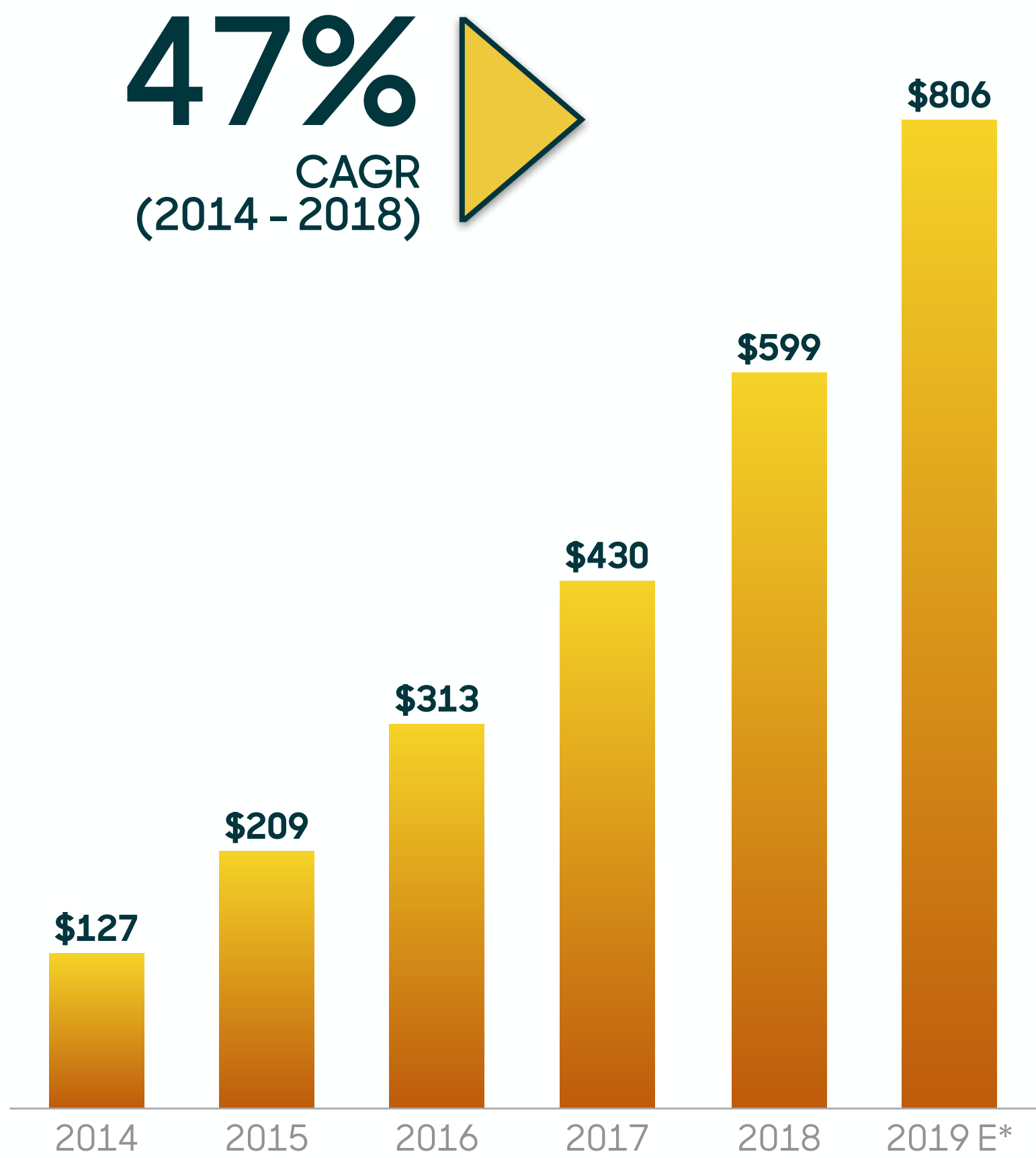
FREE CASH FLOW IN $ MILLIONS

- 2014: $-28
- 2015: $-22
- 2016: $-2
- 2017: $18
- 2018: $36
- 2019 E*: $60
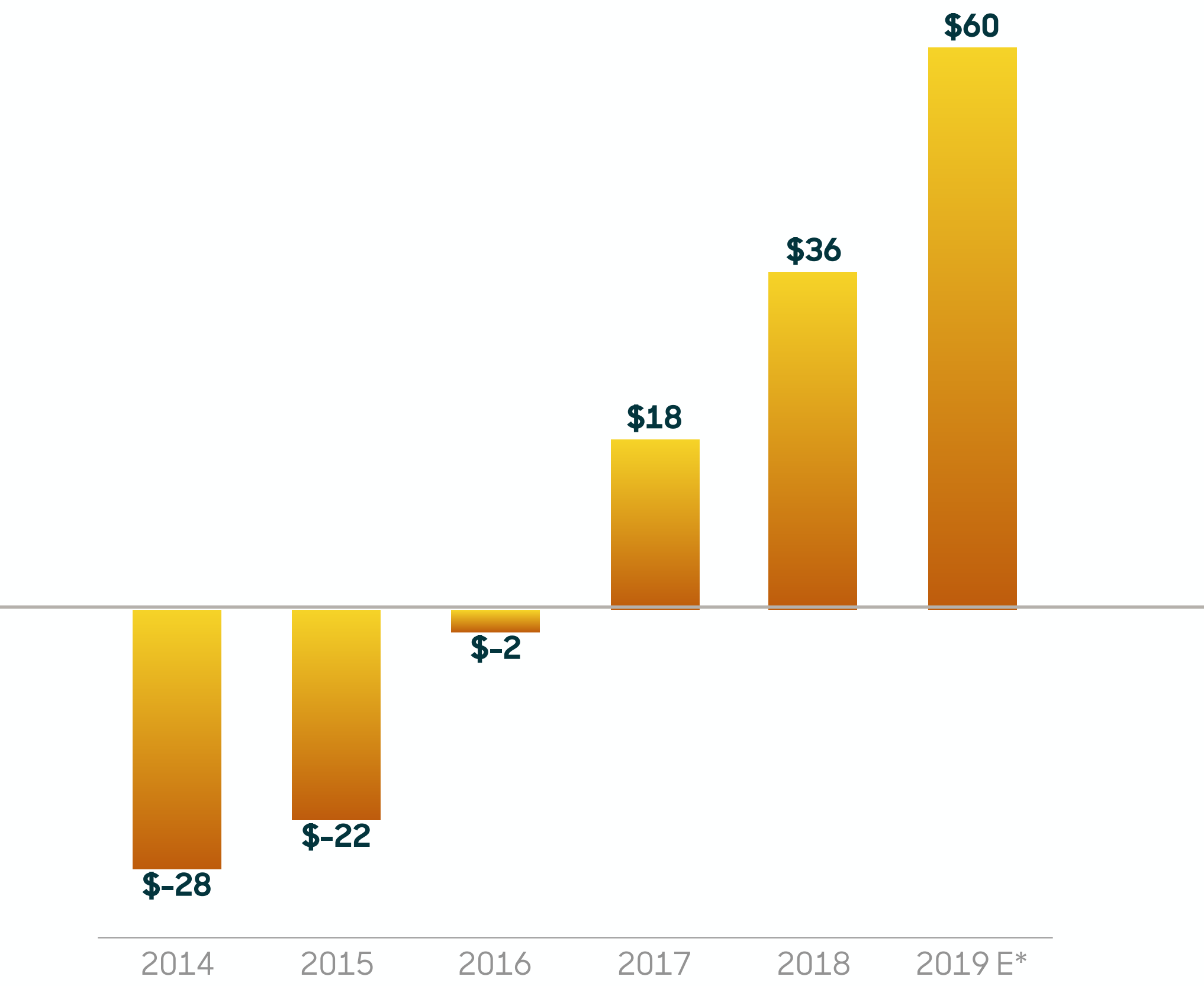
*Midpoint of guidance provided on April 30, 2019. These objectives are forward-looking and subject to significant risks and uncertainties. See the Safe Harbor for additional information.
2014-2015 reflect ASC 605. 2016-2019 reflect ASC 606.
Free cash flow is a non-GAAP measurement. See appendix for discussion of non-GAAP measurements.

Non-GAAP gross margin in 2018 impacted by duplicated infrastructure costs as we migrated customers to cloud infrastructure while maintaining co-located data centers

Long-term non-GAAP gross margin target >78% to be driven by:

- Shutdown of co-located data centers
- AWS optimization
- Customer Success
- Scale and operating efficiency
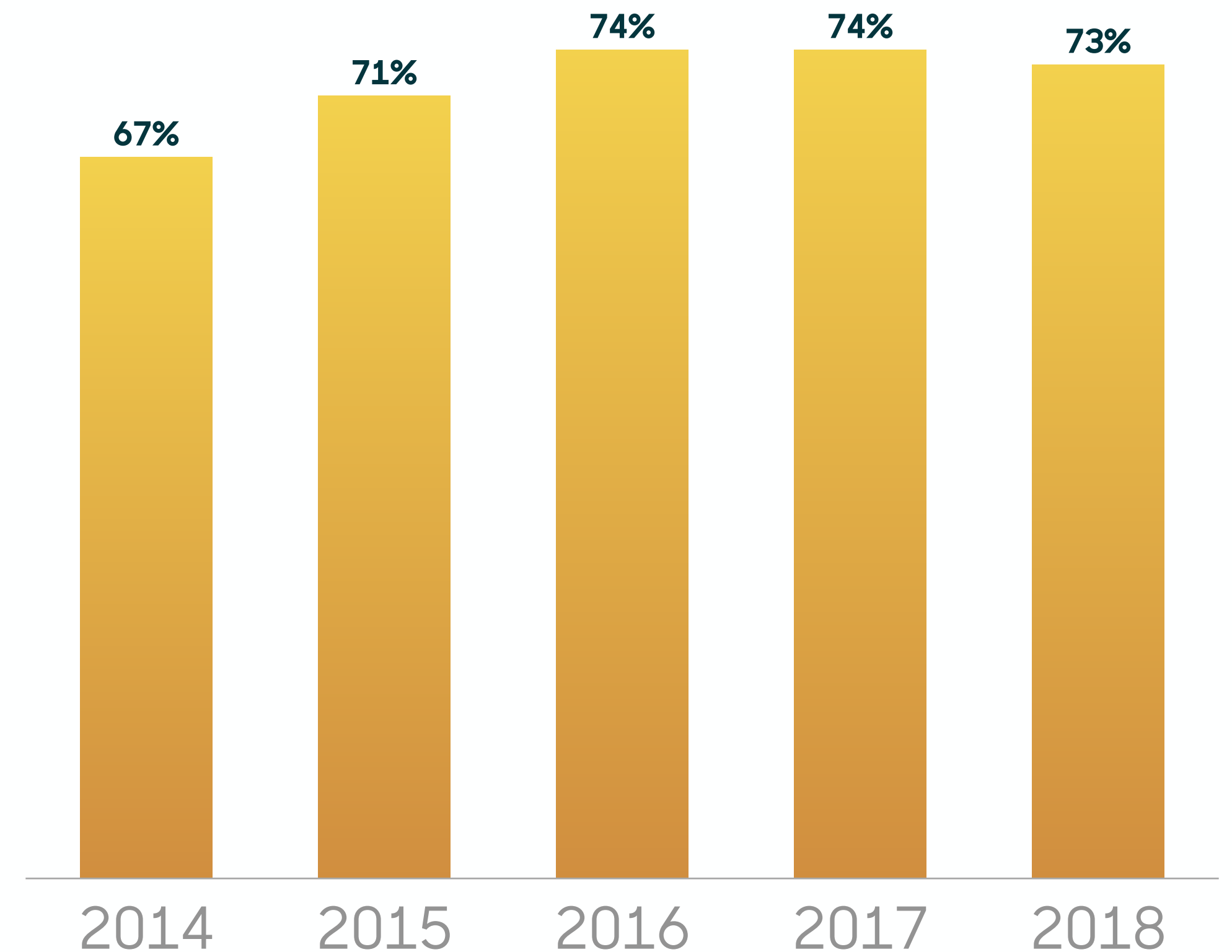
2014-2015 reflect ASC 605. 2016-2018 reflect ASC 606.
See appendix for non-GAAP reconciliation.

Year	Non-GAAP Gross Margin
2014	67%
2015	71%
2016	74%
2017	74%
2018	73%

INVESTING IN GROWTH WHILE ACHIEVING OPERATING LEVERAGE

DRIVING GROWTH WITH
INNOVATION IN R&D

Non-GAAP
Research and Development

Year	Value
2014	20%
2015	20%
2016	20%
2017	19%
2018	19%
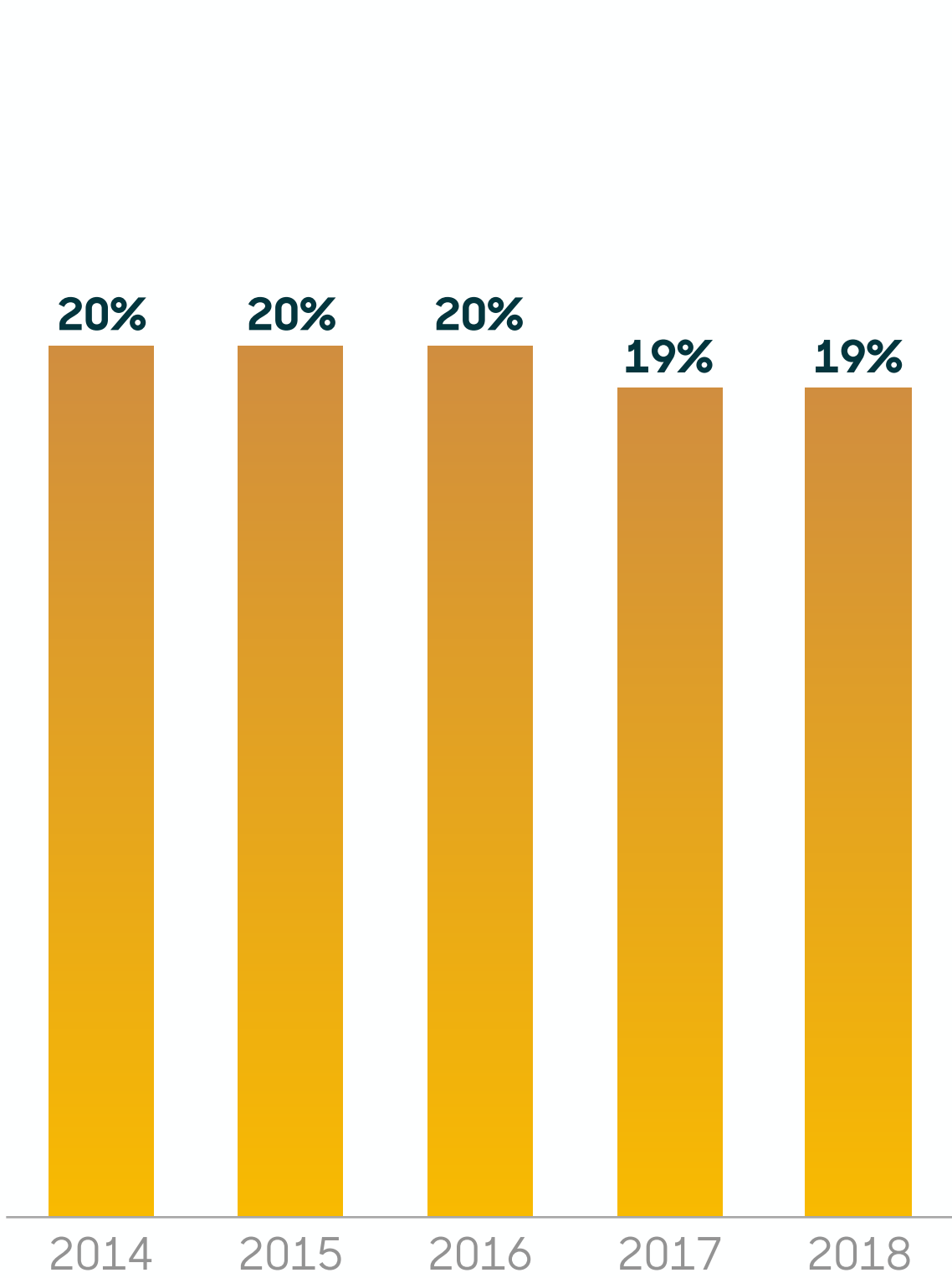
REALIZING LEVERAGE IN
S&M AND G&A

Non-GAAP
Sales and Marketing
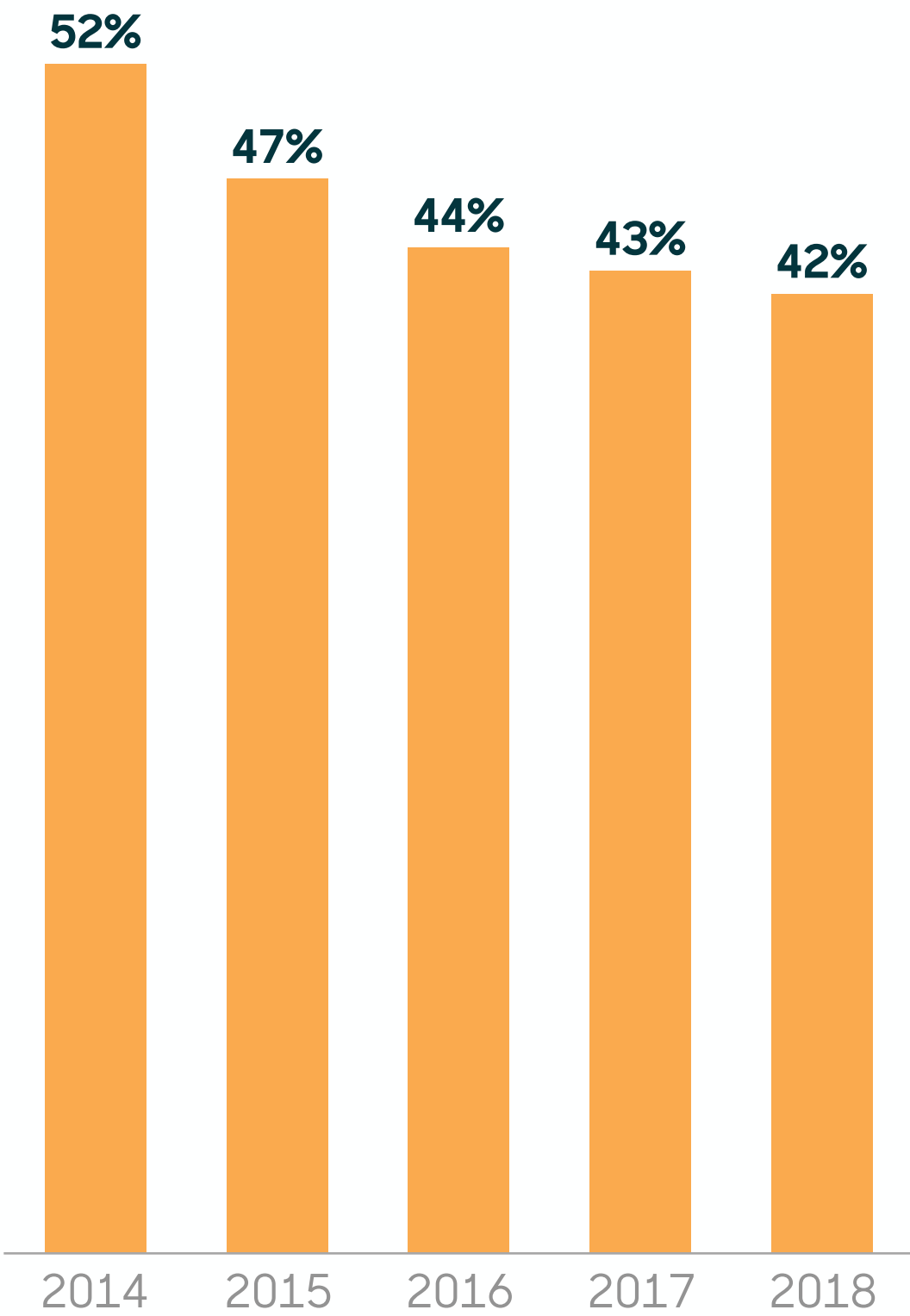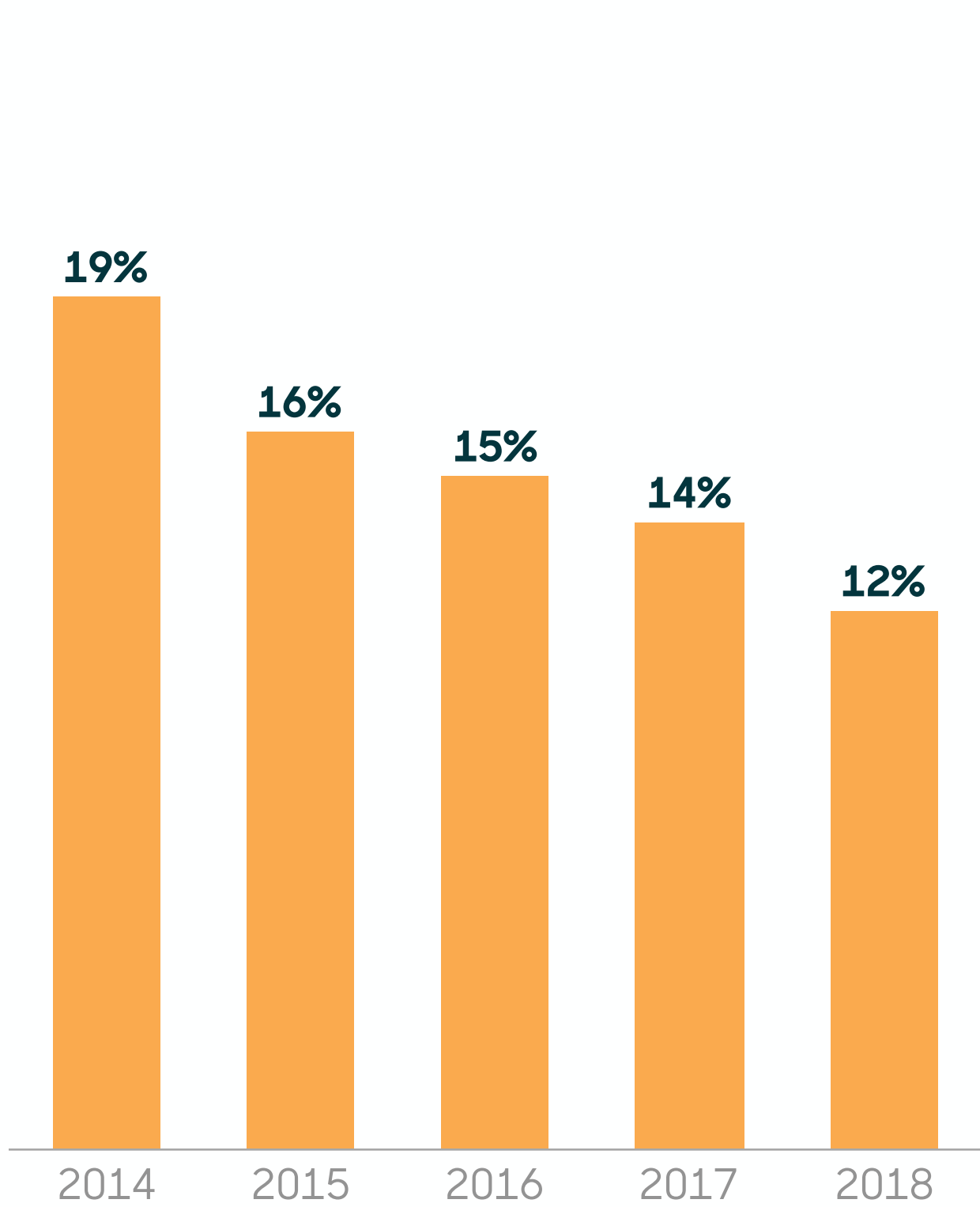
Year	Value
2014	52%
2015	47%
2016	44%
2017	43%
2018	42%

Non-GAAP
General and Administrative

Year	Value
2014	19%
2015	16%
2016	15%
2017	14%
2018	12%

*2014-2015 reflect ASC 605. 2016-2018 reflect ASC 606. See appendix for non-GAAP reconciliation and discussion of non-GAAP measurements.

- Omnichannel is a key competitive advantage

- Broader product adoption

- Great traction in SMB

- Opens up strategic conversation with mid-market and enterprise

The Zendesk Suite

support | chat | talk | guide

MULTIPRODUCT IS FUELING OUR GROWTH
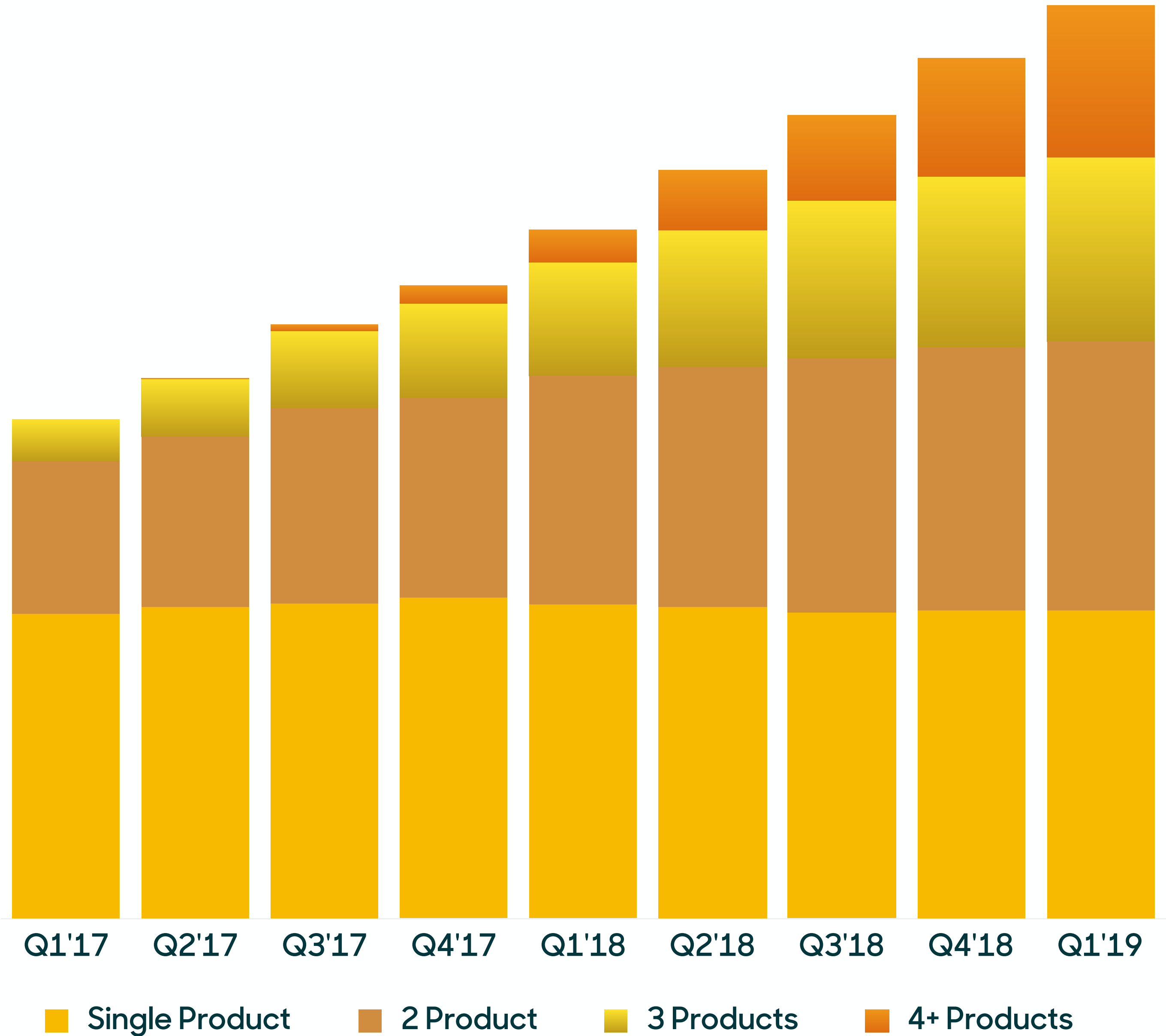
ARR from logos with:

2 products > 1.5x growth*

3 products > 4.0X growth*

4+ products > 15% ARR mix

*Growth comparison for Q1'19 vs. Q1'17.

Q1'17 Q2'17 Q3'17 Q4'17 Q1'18 Q2'18 Q3'18 Q4'18 Q1'19

■ Single Product ■ 2 Product ■ 3 Products ■ 4+ Products

Dollar-Based Net Expansion Rate
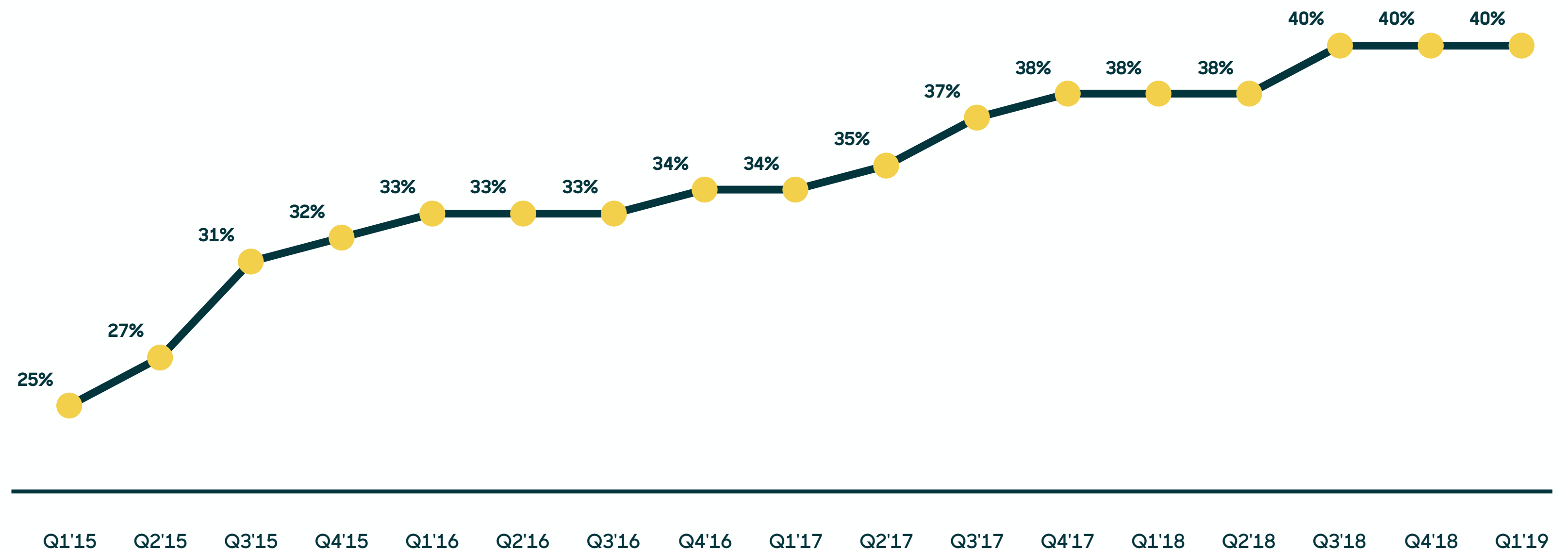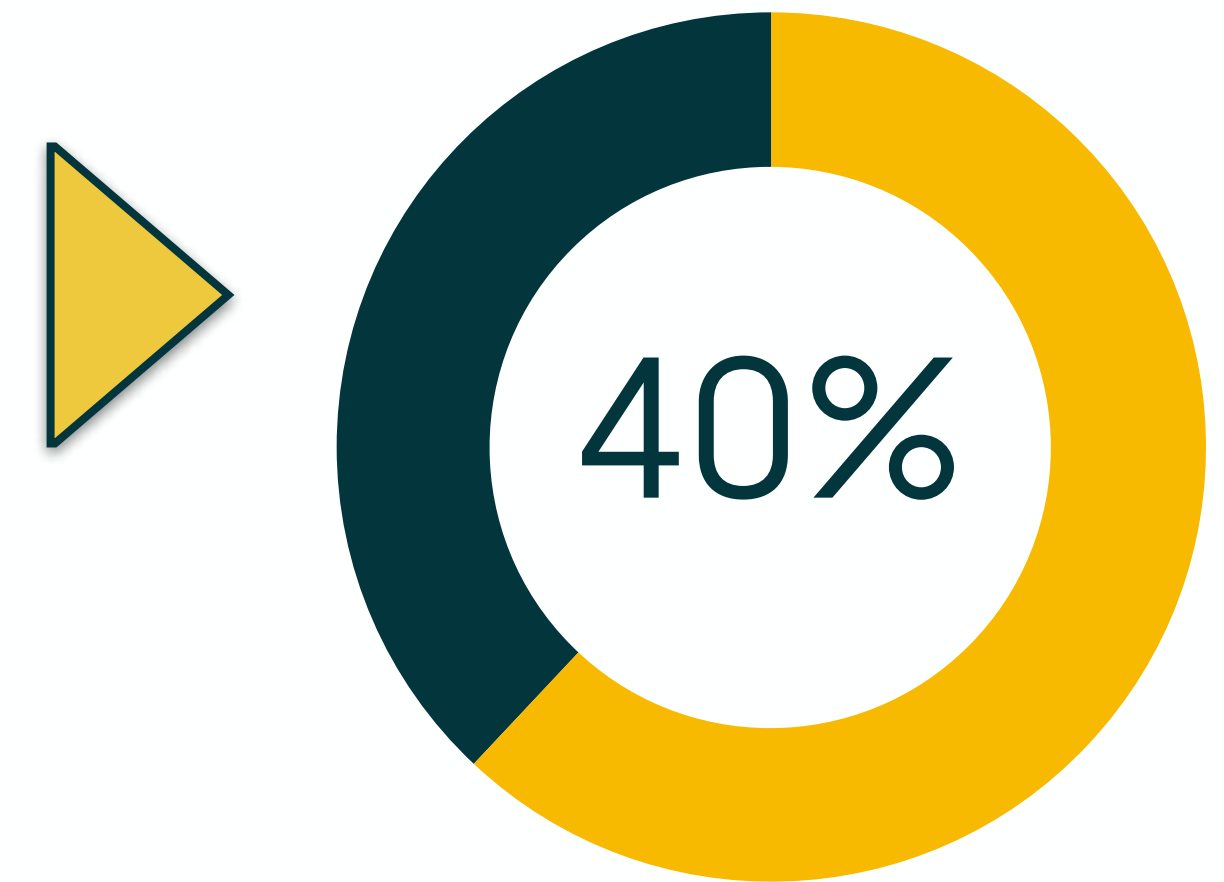
See appendix for a description of this operating metric.

In Q1-2019

RPO grew 54% y/y

- Short-term +47% y/y
- Long-term +83% y/y

Remaining Performance Obligation (RPO)

in $ millions

	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19
Total	$287	$326	$360	$407	$441
Long-term RPO	$52	$60	$69	$78	$95
Short-term RPO	$235	$266	$290	$329	$346

■ Short-term RPO   ■ Long-term RPO

STRONG GLOBAL GROWTH AND REACH
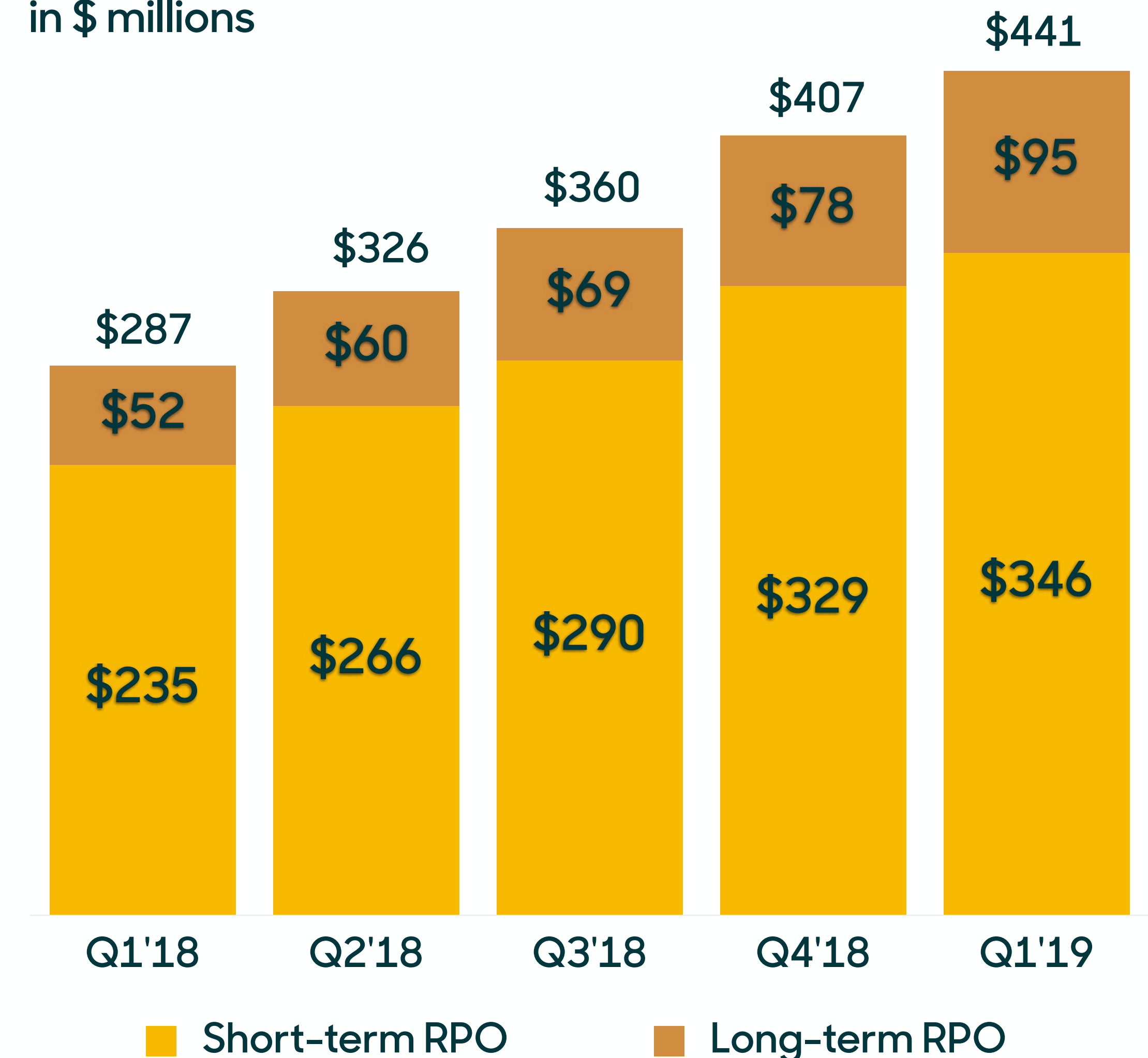
REVENUE GROWTH BY GEOGRAPHIC AREA

Outside the US **+41%**

US **+39%**

160+ COUNTRIES AND TERRITORIES

REVENUE MIX BY GEOGRAPHIC AREA

48% Outside the US

52% US

EMPLOYEE MIX

48% Outside the US

52% US
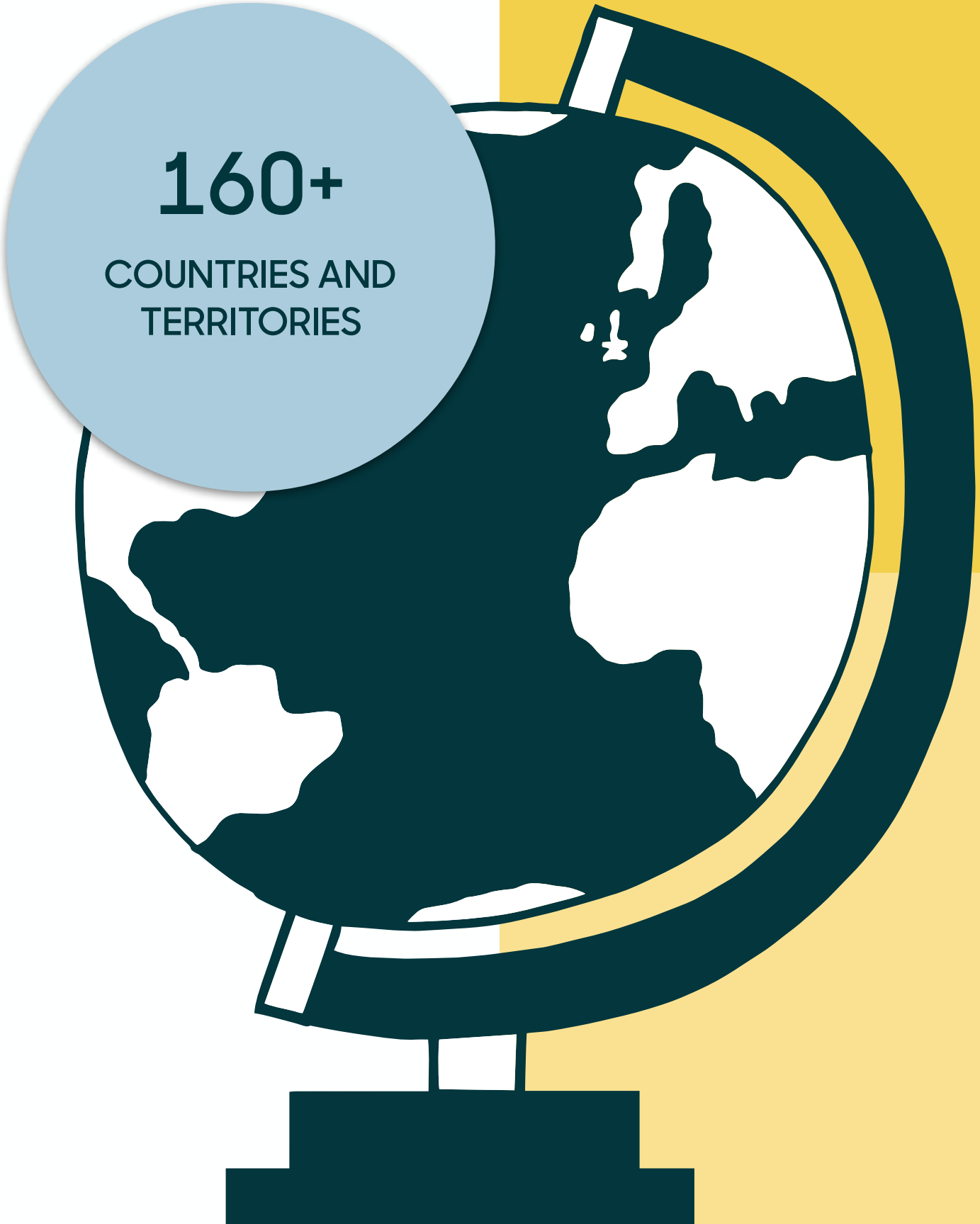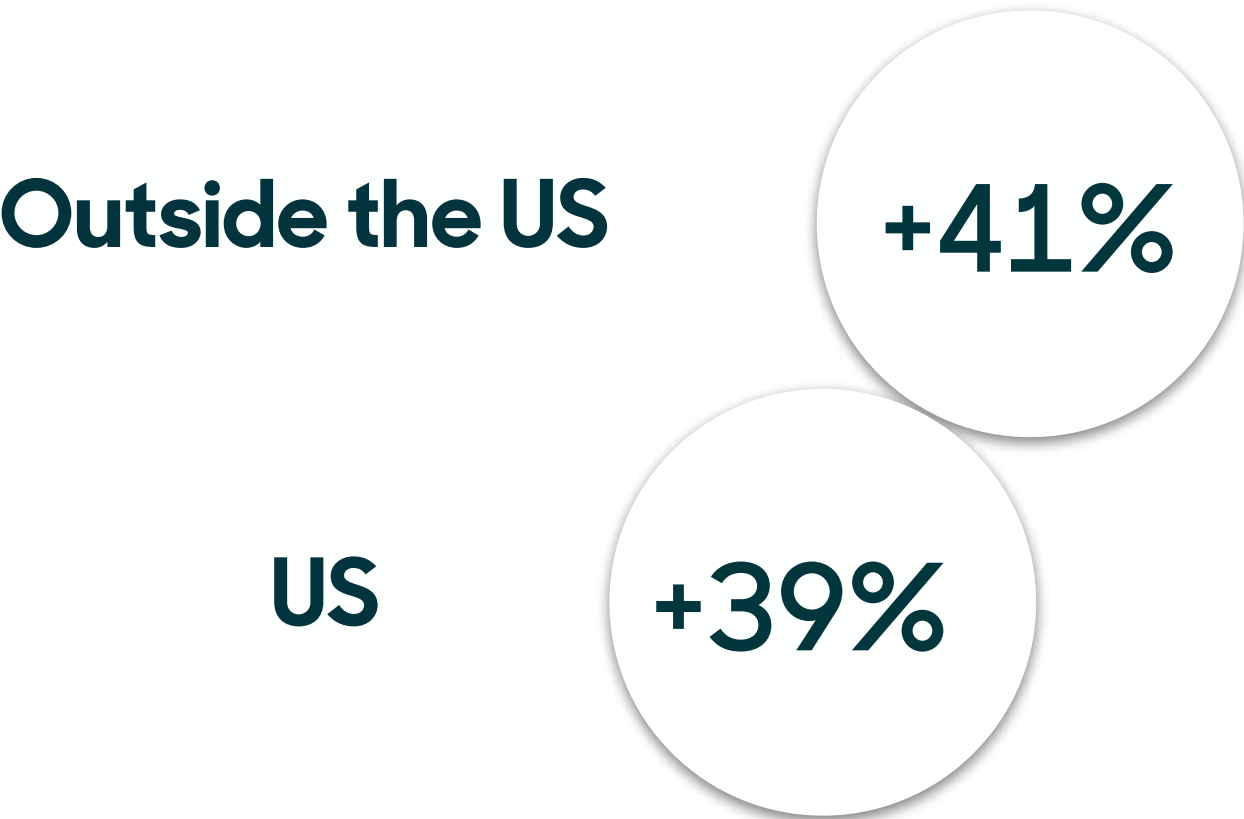
For the quarter ended March 31, 2019
compared to the quarter ended March 31, 2018
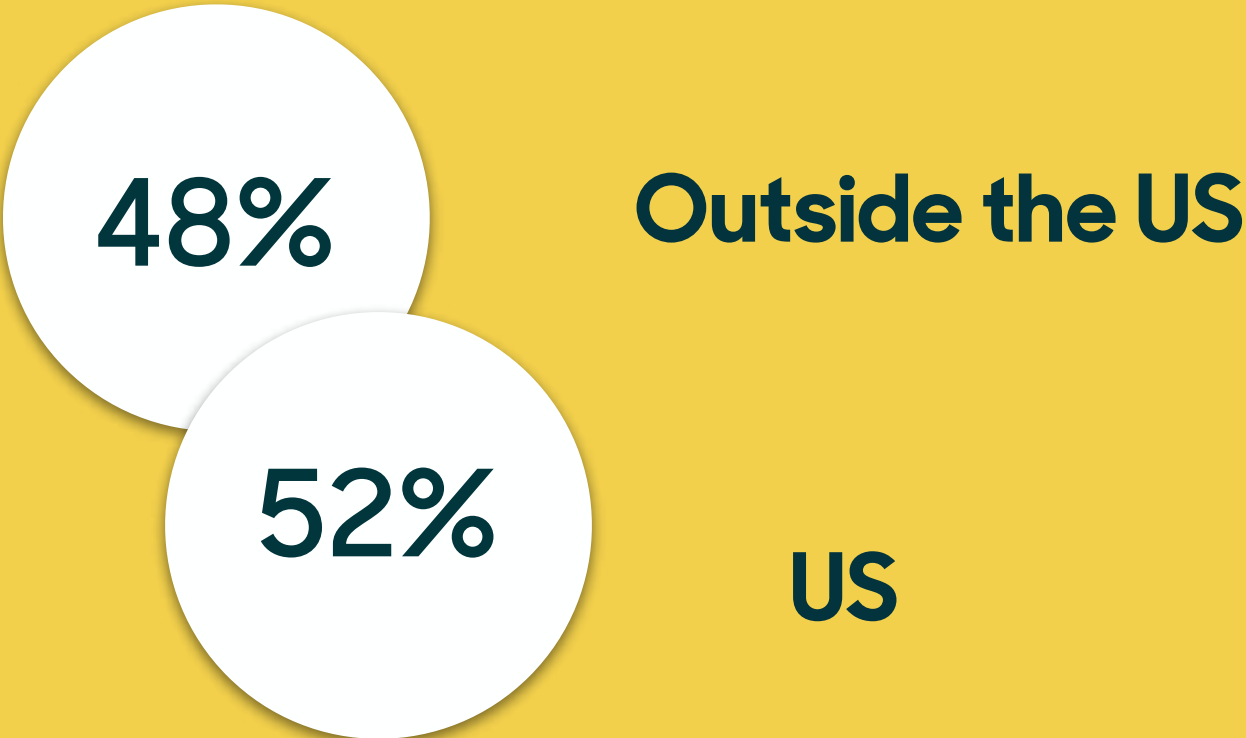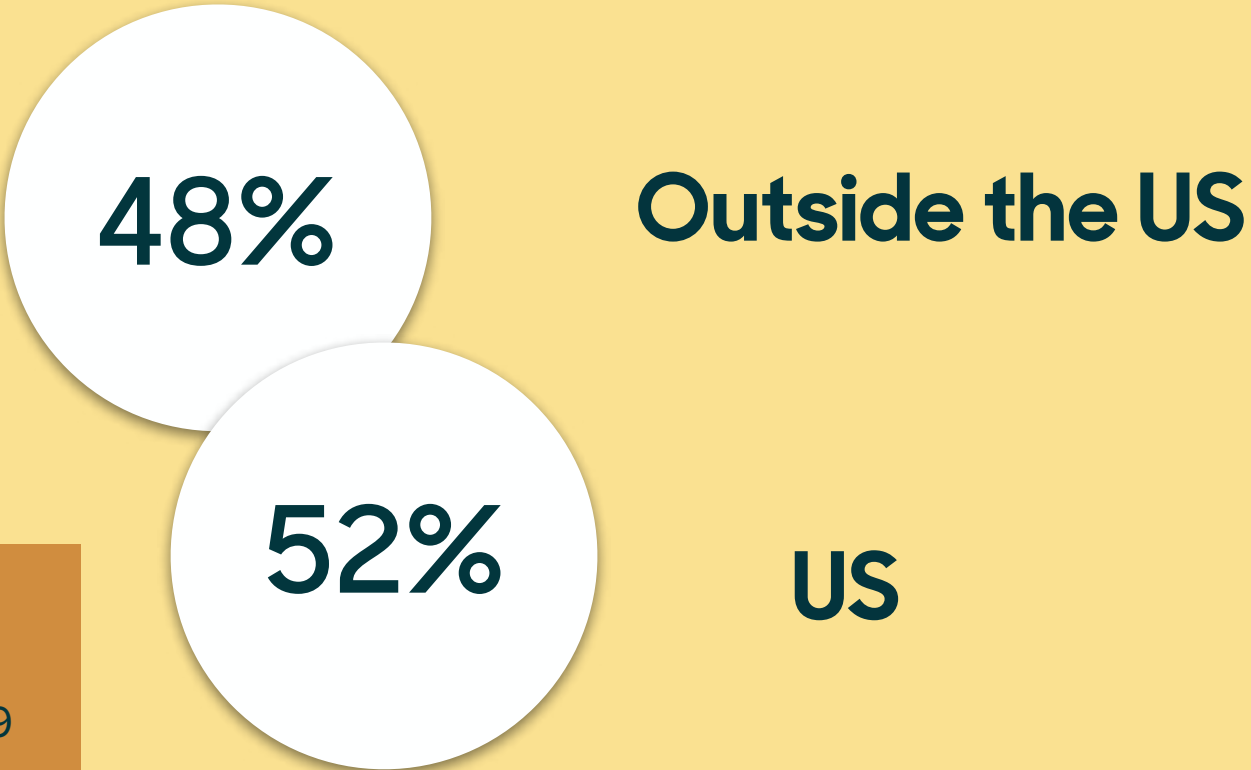
For the quarter ended March 31, 2019

EXPANDING IN ADJACENT
CUSTOMER EXPERIENCE MARKETS

zendesk

estimates

>$20B opportunity

$13.2B

Customer Service
Application (2022)

$10.4B

Contact Center
(2022)

$15.6B

Sales Applications
(2022)

$18.2B

Marketing Applications
(2022)

Path to multibillion-dollar revenue

PARTNERS

PLATFORM

BEYOND
SUPPORT

LAND &
EXPAND /
MOVE
UPMARKET

$1B
(2020)
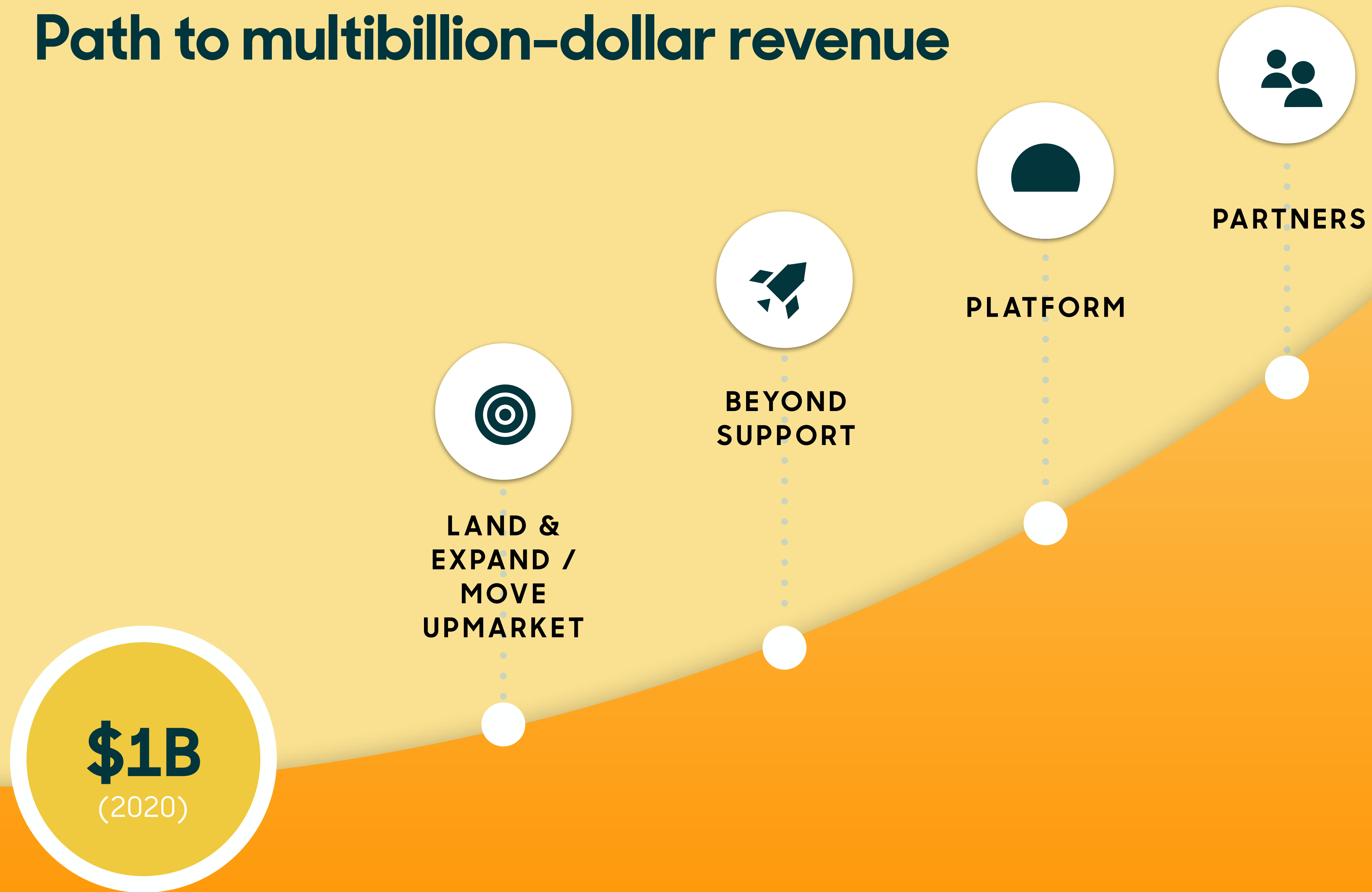
	Accelerated Growth	High Growth	Mature Growth
Annual Revenue Growth	> 35%	30% – 35%	< 30%
Annual Non-GAAP Operating Margin Improvement	1% – 3%	3% – 5%	5%

Please see appendix for a discussion of Non-GAAP financial measures.

Expanding TAM

driven by market trends and Zendesk's broader reach in CRM

Product innovation

opens up adjacent markets and new opportunities
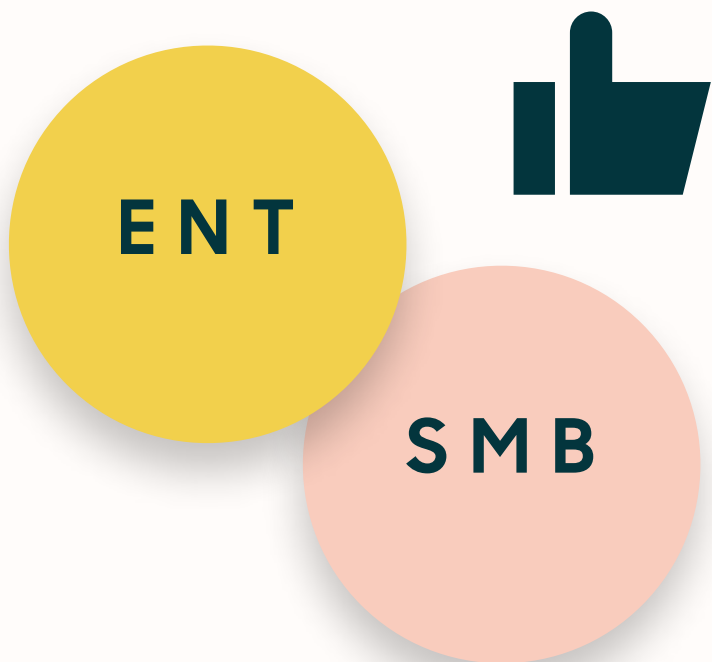
Enterprise & SMB

momentum is strong

MIKKEL SVANE
Founder, CEO

ADRIAN MCDERMOTT
President of Products

TOM KEISER
Chief Operating Officer

ELENA GOMEZ
Chief Financial Officer

NORMAN GENNARO
SVP, Worldwide Sales

SHAWNA WOLVERTON
SVP, Product

COLLEEN BERUBE
Chief Information
Officer

MARC CABI
VP, Strategy & IR

Q&A

zendesk

Zendesk is leading CRM innovation

- Rising customer expectations drive high demand across all organizations globally

- Expanding family of customer experience products fuels growth

- The Sunshine platform approach, open and on the cloud, is the future of CX

- Consistently deliver high-growth and scale

Appendix

Non-GAAP Results
(In thousands)
The following table shows Zendesk's GAAP results reconciled to non-GAAP results.

	Year ended December 31, 2018	Year ended December 31, 2017	Year ended December 31, 2016	Year ended December 31, 2015	Year ended December 31, 2014
Reconciliation of gross profit and gross margin					
GAAP gross profit	$ 417,491	$ 302,743	$ 218,944	$ 141,584	$ 81,002
Plus: Share-based compensation	14,835	9,040	7,045	4,541	2,464
Plus: Employer tax related to employee stock transactions	1,036	530	383	175	29
Plus: Amortization of purchased intangibles	3,789	3,209	3,362	1,890	1,167
Plus: Amortization of share-based compensation capitalized in	1,487	1,774	1,821	1,065	402
Plus: Acquisition-related expenses	152	—	—	—	—
Non-GAAP gross profit	$ 438,790	$ 317,296	$ 231,555	$ 149,255	$ 85,064
GAAP gross margin	70%	70%	70%	68%	64%
Non-GAAP adjustments	3%	4%	4%	3%	3%
Non-GAAP gross margin	73%	74%	74%	71%	67%
Reconciliation of operating expenses					
GAAP research and development	$ 160,260	$ 115,291	$ 91,067	$ 62,615	$ 36,403
Less: Share-based compensation	(41,365)	(29,970)	(27,083)	(19,414)	(10,918)
Less: Employer tax related to employee stock transactions	(3,884)	(1,971)	(1,559)	(415)	(129)
Less: Acquisition-related expenses	(2,335)	(843)	—	—	—
Non-GAAP research and development	$ 112,676	$ 82,507	$ 62,425	$ 42,786	$ 25,356
GAAP research and development as percentage of revenue	27%	27%	29%	30%	29%
Non-GAAP research and development as percentage of revenue	19%	19%	20%	20%	20%
GAAP sales and marketing	$ 291,668	$ 211,918	$ 161,653	$ 114,052	$ 77,875
Less: Share-based compensation	(37,882)	(24,279)	(22,693)	(14,759)	(10,680)
Less: Employer tax related to employee stock transactions	(2,158)	(1,164)	(1,342)	(474)	(314)
Less: Amortization of purchased intangibles	(975)	(495)	(418)	(346)	(303)
Less: Acquisition-related expenses	(1,259)	(750)	—	—	—
Non-GAAP sales and marketing	$ 249,394	$ 185,230	$ 137,200	$ 98,473	$ 66,578
GAAP sales and marketing as percentage of revenue	49%	49%	52%	55%	61%
Non-GAAP sales and marketing as percentage of revenue	42%	43%	44%	47%	52%
GAAP general and administrative	$ 103,491	$ 81,680	$ 64,371	$ 47,902	$ 32,869
Less: Share-based compensation	(25,401)	(21,263)	(16,608)	(13,842)	(8,077)
Less: Employer tax related to employee stock transactions	(1,837)	(1,184)	(586)	(387)	(113)
Less: Acquisition-related expenses	(3,073)	(566)	—	(998)	(649)
Non-GAAP general and administrative	$ 73,180	$ 58,667	$ 47,177	$ 32,675	$ 24,030
GAAP general and administrative as percentage of revenue	17%	19%	21%	23%	26%
Non-GAAP general and administrative as percentage of revenue	12%	14%	15%	16%	19%
Reconciliation of operating loss and operating margin					
GAAP operating loss	$ (137,928)	$ (106,146)	$ (98,147)	$ (82,985)	$ (66,145)
Plus: Share-based compensation	119,483	84,552	73,429	52,556	32,139
Plus: Employer tax related to employee stock transactions	8,915	4,849	3,870	1,451	585
Plus: Amortization of purchased intangibles	4,764	3,704	3,780	2,236	1,470
Plus: Acquisition-related expenses	6,819	2,159	—	998	649
Plus: Amortization of share-based compensation capitalized in	1,487	1,774	1,821	1,065	402
Non-GAAP operating income (loss)	$ 3,540	$ (9,108)	$ (15,247)	$ (24,679)	$ (30,900)
GAAP operating margin	(23%)	(25%)	(31%)	(40%)	(52%)
Non-GAAP adjustments	24%	23%	26%	28%	28%
Non-GAAP operating margin	1%	(2%)	(5%)	(12%)	(24%)
Computation of free cash flow					
Net cash provided by operating activities	$ 78,620	$ 42,228	$ 24,560	$ 5,333	$ 2,090
Less: purchases of property and equipment	(35,323)	(16,396)	(20,647)	(22,989)	(21,665)
Less: internal-use software development costs	(7,005)	(7,521)	(6,310)	(4,705)	(8,013)
Free cash flow	$ 36,292	$ 18,311	$ (2,397)	$ (22,361)	$ (27,588)

2014-2015 reflect ASC 605. 2016-2018 reflect ASC 606.

Appendix – About Non–GAAP Financial Measures
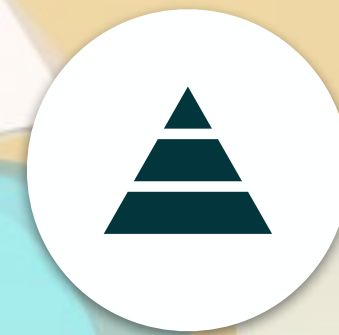
To provide investors and others with additional information regarding Zendesk's results, the following non-GAAP financial measures were disclosed: non-GAAP gross profit and gross margin, non-GAAP operating expenses, non-GAAP operating income (loss) and operating margin, non-GAAP net income (loss), non-GAAP net income (loss) per share, basic and diluted, free cash flow, and free cash flow margin.

Specifically, Zendesk excludes the following from its historical and prospective non-GAAP financial measures, as applicable:

Share-based Compensation and Amortization of Share-based Compensation Capitalized in Internal-use Software: Zendesk utilizes share-based compensation to attract and retain employees. It is principally aimed at aligning their interests with those of its stockholders and at long-term retention, rather than to address operational performance for any particular period. As a result, share-based compensation expenses vary for reasons that are generally unrelated to financial and operational performance in any particular period.

Employer Tax Related to Employee Stock Transactions: Zendesk views the amount of employer taxes related to its employee stock transactions as an expense that is dependent on its stock price, employee exercise and other award disposition activity, and other factors that are beyond Zendesk's control. As a result, employer taxes related to its employee stock transactions vary for reasons that are generally unrelated to financial and operational performance in any particular period.

Amortization of Purchased Intangibles: Zendesk views amortization of purchased intangible assets, including the amortization of the cost associated with an acquired entity's developed technology, as items arising from pre-acquisition activities determined at the time of an acquisition. While these intangible assets are evaluated for impairment regularly, amortization of the cost of purchased intangibles is an expense that is not typically affected by operations during any particular period.

Acquisition-Related Expenses: Zendesk views acquisition-related expenses, such as transaction costs, integration costs, restructuring costs, and acquisition-related retention payments, including amortization of acquisition-related retention payments capitalized in internal-use software, as events that are not necessarily reflective of operational performance during a period. In particular, Zendesk believes the consideration of measures that exclude such expenses can assist in the comparison of operational performance in different periods which may or may not include such expenses.

Amortization of Debt Discount and Issuance Costs: In March 2018, Zendesk issued $575 million of convertible senior notes due in 2023, which bear interest at an annual fixed rate of 0.25%. The imputed interest rate of the convertible senior notes was approximately 5.26%. This is a result of the debt discount recorded for the conversion feature that is required to be separately accounted for as equity, and debt issuance costs, which reduce the carrying value of the convertible debt instrument. The debt discount is amortized as interest expense together with the issuance costs of the debt. The expense for the amortization of debt discount and debt issuance costs is a non-cash item, and we believe the exclusion of this interest expense will provide for a more useful comparison of our operational performance in different periods.

Income Tax Effects: Zendesk utilizes a fixed long-term projected tax rate in its computation of non-GAAP income tax effects to provide better consistency across interim reporting periods. In projecting this long-term non-GAAP tax rate, Zendesk utilizes a financial projection that excludes the direct impact of other non-GAAP adjustments. The projected rate considers other factors such as Zendesk's current operating structure, existing tax positions in various jurisdictions, and key legislation in major jurisdictions where Zendesk operates. For the year ended December 31, 2019, Zendesk has determined the projected non-GAAP tax rate to be 21%. Zendesk will periodically re-evaluate this tax rate, as necessary, for significant events, based on relevant tax law changes, material changes in the forecasted geographic earnings mix, and any significant acquisitions.

Zendesk provides disclosures regarding its free cash flow, which is defined as net cash from operating activities, less purchases of property and equipment and internal-use software development costs. Free cash flow margin is calculated as free cash flow as a percentage of total revenue. Zendesk uses free cash flow, free cash flow margin, and other measures, to evaluate the ability of its operations to generate cash that is available for purposes other than capital expenditures and capitalized software development costs. Zendesk believes that information regarding free cash flow and free cash flow margin provides investors with an important perspective on the cash available to fund ongoing operations.

Zendesk has not reconciled each of free cash flow and free cash flow margin to net cash from operating activities for the year ending December 31, 2019 because Zendesk does not provide guidance on the reconciling items between net cash from operating activities and each of free cash flow and free cash flow margin as a result of the uncertainty regarding, and the potential variability of, these items. The actual amount of such reconciling items will have a significant impact on Zendesk's free cash flow and free cash flow margin and, accordingly, a reconciliation of net cash from operating activities to each of free cash flow and free cash flow margin for the year ending December 31, 2019 is not available without unreasonable effort.

Appendix – About Non-GAAP Financial Measures

Zendesk does not provide a reconciliation of its non-GAAP operating margin guidance to GAAP operating margin for future periods beyond the current fiscal year because Zendesk does not provide guidance on the reconciling items between GAAP operating margin and non-GAAP operating margin for such periods, as a result of the uncertainty regarding, and the potential variability of, these items. The actual amount of such reconciling items will have a significant impact on Zendesk's non-GAAP operating margin and, accordingly, a reconciliation of GAAP operating margin to non-GAAP operating margin guidance for such periods is not available without unreasonable effort. Zendesk's disclosures regarding its expectations for its non-GAAP gross margin include adjustments to its expectations for its GAAP gross margin that exclude share-based compensation and related expenses in Zendesk's cost of revenue, amortization of purchased intangibles primarily related to developed technology, and acquisition-related expenses. The share-based compensation and related expenses excluded due to such adjustments are primarily comprised of the share-based compensation and related expenses for employees associated with Zendesk's infrastructure and customer experience organization.

Zendesk does not provide a reconciliation of its non-GAAP gross margin guidance to GAAP gross margin for future periods because Zendesk does not provide guidance on the reconciling items between GAAP gross margin and non-GAAP gross margin, as a result of the uncertainty regarding, and the potential variability of, these items. The actual amount of such reconciling items will have a significant impact on Zendesk's non-GAAP gross margin and, accordingly, a reconciliation of GAAP gross margin to non-GAAP gross margin guidance for the period is not available without unreasonable effort.

Zendesk uses non-GAAP financial information to evaluate its ongoing operations and for internal planning and forecasting purposes. Zendesk's management does not itself, nor does it suggest that investors should, consider such non-GAAP financial measures in isolation from, or as a substitute for, financial information prepared in accordance with GAAP. Zendesk presents such non-GAAP financial measures in reporting its financial results to provide investors with an additional tool to evaluate Zendesk's operating results. Zendesk believes these non-GAAP financial measures are useful because they allow for greater transparency with respect to key metrics used by management in its financial and operational decision-making. This allows investors and others to better understand and evaluate Zendesk's operating results and future prospects in the same manner as management.

Zendesk's management believes it is useful for itself and investors to review, as applicable, both GAAP information that may include items such as share-based compensation and related expenses, amortization of debt discount and issuance costs, amortization of purchased intangibles, and acquisition-related expenses, and the non-GAAP measures that exclude such information in order to assess the performance of Zendesk's business and for planning and forecasting in subsequent periods. When Zendesk uses such a non-GAAP financial measure with respect to historical periods, it provides a reconciliation of the non-GAAP financial measure to the most closely comparable GAAP financial measure. When Zendesk uses such a non-GAAP financial measure in a forward-looking manner for future periods, and a reconciliation is not determinable without unreasonable effort, Zendesk provides the reconciling information that is determinable without unreasonable effort and identifies the information that would need to be added or subtracted from the non-GAAP measure to arrive at the most directly comparable GAAP measure. Investors are encouraged to review the related GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable GAAP financial measure as detailed above.

Appendix – About Operating Metrics

Zendesk reviews a number of operating metrics to evaluate its business, measure performance, identify trends, formulate business plans, and make strategic decisions. These include the number of paid customer accounts on Zendesk Support, Zendesk Chat, and its other products, dollar-based net expansion rate, and the percentage of its annual recurring revenue from Support originating from customers with 100 or more agents on Support.

Zendesk defines the number of paid customer accounts at the end of any particular period as the sum of (i) the number of accounts on Support, exclusive of its legacy Starter plan, free trials, or other free services, (ii) the number of accounts using Chat, exclusive of free trials or other free services, and (iii) the number of accounts on all of its other products, exclusive of free trials and other free services, each as of the end of the period and as identified by a unique account identifier. In the quarter ended June 30, 2018, Zendesk began to offer an omnichannel subscription which provides access to multiple products through a single paid customer account, The Zendesk Suite. All of the Suite paid customer accounts are included in the number of accounts on all of Zendesk's other products and are not included in the number of paid customer accounts using Support or Chat. Existing customers may also expand their utilization of Zendesk's products by adding new accounts and a single consolidated organization or customer may have multiple accounts across each of Zendesk's products to service separate subsidiaries, divisions, or work processes. Other than usage of Zendesk's products through its omnichannel subscription offering, each of these accounts is also treated as a separate paid customer account.

Zendesk's dollar-based net expansion rate provides a measurement of its ability to increase revenue across its existing customer base through expansion of authorized agents associated with a paid customer account, upgrades in subscription plans, and the purchase of additional products as offset by churn, contraction in authorized agents associated with a paid customer account, and downgrades in subscription plans. Zendesk's dollar-based net expansion rate is based upon annual recurring revenue for a set of paid customer accounts on its products. Zendesk determines the annual recurring revenue value of a contract by multiplying the monthly recurring revenue for such contract by twelve. Monthly recurring revenue for a paid customer account is a legal and contractual determination made by assessing the contractual terms of each paid customer account, as of the date of determination, as to the revenue Zendesk expects to generate in the next monthly period for that paid customer account, assuming no changes to the subscription and without taking into account any platform usage above the subscription base, if any, that may be applicable to such subscription. Monthly recurring revenue is not determined by reference to historical revenue, deferred revenue, or any other GAAP financial measure over any period. It is forward-looking and contractually derived as of the date of determination.

Zendesk calculates its dollar-based net expansion rate by dividing the retained revenue net of contraction and churn by Zendesk's base revenue. Zendesk defines its base revenue as the aggregate annual recurring revenue across its products for customers with paid customer accounts as of the date one year prior to the date of calculation. Zendesk defines the retained revenue net of contraction and churn as the aggregate annual recurring revenue across its products for the same customer base included in the measure of base revenue at the end of the annual period being measured. The dollar-based net expansion rate is also adjusted to eliminate the effect of certain activities that Zendesk identifies involving the consolidation of customer accounts or the split of a single paid customer account into multiple paid customer accounts. In addition, the dollar-based net expansion rate is adjusted to include paid customer accounts in the customer base used to determine retained revenue net of contraction and churn that share common corporate information with customers in the customer base that are used to determine the base revenue. Giving effect to this consolidation results in Zendesk's dollar-based net expansion rate being calculated across approximately 102,200 customers, as compared to the approximately 145,600 total paid customer accounts as of March 31, 2019.

To the extent that Zendesk can determine that the underlying customers do not share common corporate information, Zendesk does not aggregate paid customer accounts associated with reseller and other similar channel arrangements for the purposes of determining its dollar-based net expansion rate. While not material, Zendesk believes the failure to account for these activities would otherwise skew the dollar-based net expansion metrics associated with customers that maintain multiple paid customer accounts across its products and paid customer accounts associated with reseller and other similar channel arrangements.

Zendesk does not currently incorporate operating metrics associated with its legacy analytics product, its legacy Outbound product, Sell, its legacy Starter plan, free trials, or other free services into its measurement of dollar-based net expansion rate.

For a more detailed description of how Zendesk calculates its dollar-based net expansion rate, please refer to Zendesk's periodic reports filed with the Securities and Exchange Commission.

Appendix – About Operating Metrics

Zendesk's percentage of annual recurring revenue from Support that is generated by customers with 100 or more agents on Support is determined by dividing the annual recurring revenue from Support for paid customer accounts with 100 or more agents on Support as of the measurement date by the annual recurring revenue from Support for all paid customer accounts on Support as of the measurement date. Zendesk determines the customers with 100 or more agents on Support as of the measurement date based on the number of activated agents on Support at the measurement date and includes adjustments to aggregate paid customer accounts that share common corporate information. For the purpose of determining this metric, Zendesk builds an estimation of the proportion of annual recurring revenue from Suite attributable to Support and includes such portion in the annual recurring revenue from Support.

Zendesk does not currently incorporate operating metrics associated with products other than Support into its measurement of the percentage of annual recurring revenue from Support that is generated by customers with 100 or more agents on Support.

Zendesk determines its annual revenue run rate by multiplying the revenue generated over its most recently completed quarter by four.