



**The Standard for Apple
in the Enterprise**

**Investor Presentation:
Second Quarter 2021**

Safe Harbor

Unless otherwise specified, financial information and other data presented in this presentation is presented as of June 30, 2021. The financial results contained herein as of June 30, 2021 and for the three months ended June 30, 2021, June 30, 2020 and June 30, 2019 are unaudited. These numbers are derived from Jamf’s unaudited interim consolidated financial statements. The unaudited interim consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, that are necessary for the fair presentation of Jamf’s unaudited interim consolidated financial statements. Jamf’s historical results are not necessarily indicative of the results that may be expected in the future, and our interim results are not necessarily indicative of the results that may be expected for the full fiscal year.

Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including but not limited to statements regarding our financial outlook and market positioning. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as ‘anticipate,’ ‘estimate,’ ‘expect,’ ‘project,’ ‘plan,’ ‘intend,’ ‘believe,’ ‘may,’ ‘will,’ ‘should,’ ‘can have,’ ‘likely’ and the negatives thereof and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating performance or other events, statements about the potential benefits of the acquisition, possible or assumed business strategies, potential growth opportunities, and the potential value creation as a result of combined offerings.

All forward-looking statements are subject to various risks and uncertainties that may cause actual results to differ materially from those that we expected, including: statements regarding our future financial and operating performance (including our financial outlook for future reporting periods); our ability to realize the potential benefits of the acquisition of Wandera; other risks related to our integration of Wandera’s business, team, and technology; the impact on our operations and financial condition from the effects of the current COVID-19 pandemic; the potential impact of customer dissatisfaction with Apple or other negative events affecting Apple services and devices, and failure of enterprises to adopt Apple products; the potentially adverse impact of changes in features and functionality by Apple on our engineering focus or product development efforts; changes in our continued relationship with Apple; the fact that we are not party to any exclusive agreements or arrangements with Apple; our reliance, in part, on channel partners for the sale and distribution of our products; the impact of reputational harm if users perceive our products as the cause of device failure; our ability to successfully develop new products or materially enhance current products through our research and development efforts; our ability to continue to attract new customers; our ability to retain our current customers; our ability to sell additional functionality to our current customers; our ability to meet service-level commitments under our subscription agreements; our ability to correctly estimate market opportunity and forecast market growth; risks associated with failing to continue our recent growth rates; our dependence on one of our products for a substantial portion of our revenue; our ability to scale our business and manage our expenses; our ability to change our pricing models, if necessary to compete successfully; the impact of delays or outages of our cloud services from any disruptions, capacity limitations or interferences of third-party data centers that host our cloud services, including Amazon Web Services; our ability to maintain, enhance and protect our brand; our ability to maintain our corporate culture; the ability of Jamf Nation to thrive and grow as we expand our business; the potential impact of inaccurate, incomplete or misleading content that is posted on Jamf Nation; our ability to offer high-quality support; risks and uncertainties associated with potential acquisitions and divestitures, including, but not limited to, disruptions to ongoing operations; diversions of management from day-to-day responsibilities; adverse impacts on our financial condition; failure of an acquired business to further our strategy; uncertainty of synergies; personnel issues; resulting lawsuits and issues unidentified in diligence processes; our ability to predict and respond to rapidly evolving technological trends and our customers’ changing needs; our ability to compete with existing and new companies; the impact of adverse general and industry-specific economic and market conditions; the impact of reductions in IT spending; our ability to attract and retain highly qualified personnel; risks associated with competitive challenges faced by our customers; the impact of our often long and unpredictable sales cycle; our ability to develop and expand our marketing and sales capabilities; the risks associated with sales to new and existing enterprise customers; the risks associated with free trials and other inbound, lead-generation sales strategies; the risks associated with indemnity provisions in our contracts; our management team’s limited experience managing a public company; the impact of any catastrophic events; the impact of global economic conditions; risks associated with cyber-security events; the impact of real or perceived errors, failures or bugs in our products; the impact of interruptions or performance problems associated with our technology or infrastructure; the impact of general disruptions to data transmission; risks associated with stringent and changing privacy laws, regulations and standards, and information security policies and contractual obligations related to data privacy and security; the risks associated with intellectual property infringement claims; our reliance on third-party software and intellectual property licenses; our ability to protect our intellectual property and proprietary rights; and the risks associated with our use of open source software in our products.

Additional information concerning these and other factors can be found in our filings with the Securities and Exchange Commission. Given these factors, as well as other variables that may affect our operating results, you should not rely on forward-looking statements, assume that past financial performance will be a reliable indicator of future performance, or use historical trends to anticipate results or trends in future periods. The forward-looking statements included in this presentation relate only to events as of the date hereof. Jamf undertakes no obligation to update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

Market and Industry Data

This presentation includes information concerning economic conditions, the Company’s industry, the Company’s markets and the Company’s competitive position that is based on a variety of sources, including information from independent industry analysts and publications, as well as Jamf’s own estimates and research. Jamf’s estimates are derived from publicly available information released by third party sources, as well as data from its internal research, and are based on such data and the Company’s knowledge of its industry, which the Company believes to be reasonable. The independent industry publications used in this presentation were not prepared on the Company’s behalf. While the Company is not aware of any misstatements regarding any information in this presentation, forecasts, assumptions, expectations, beliefs, estimates and projects involve risk and uncertainties and are subject to change based on various factors.

Non-GAAP Financial Measures

This presentation contains the financial measures Non-GAAP Gross Profit, Non-GAAP Gross Profit Margin, Non-GAAP Operating Income, Non-GAAP Operating Income Margin, Unlevered Free Cash Flow, Unlevered Free Cash Flow Margin, Non-GAAP Sales and Marketing, Non-GAAP Research and Development and Non-GAAP General and Administrative Expenses, which are not recognized under generally accepted accounting principles in the United States (“GAAP”).

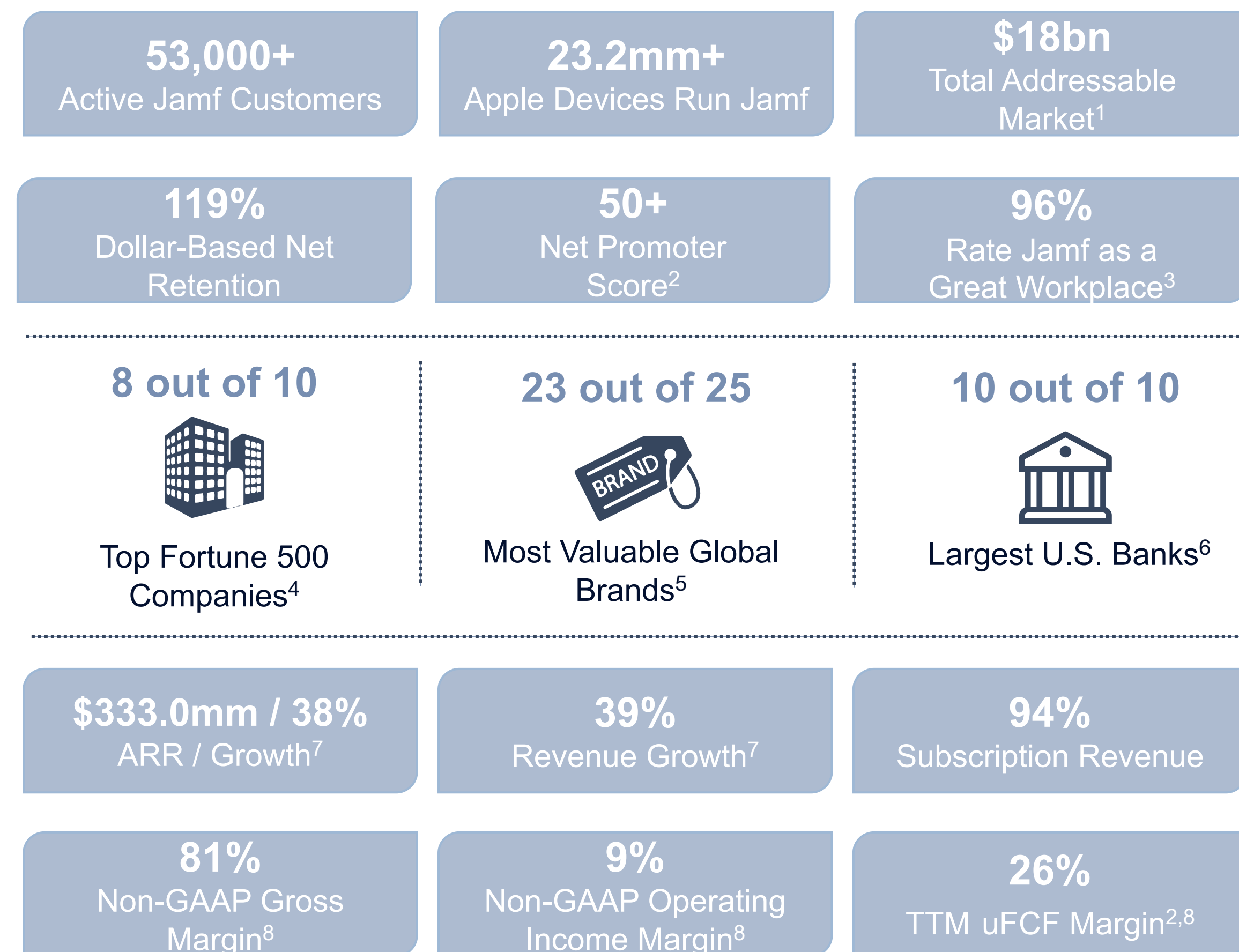
In addition to our results determined in accordance with generally accepted accounting principles in the United States (“GAAP”), we believe the non-GAAP measures are useful in evaluating our operating performance. Certain of these non-GAAP measures exclude stock-based compensation, amortization expense, acquisition-related expenses, acquisition-related earnout, costs associated with our secondary offerings, foreign currency transaction loss, payroll taxes related to stock-based compensation, legal reserve and discrete tax items. We believe that non-GAAP financial information, when taken collectively, may be helpful to investors because it provides consistency and comparability with past financial performance and assists in comparisons with other companies, some of which use similar non-GAAP financial information to supplement their GAAP results. The non-GAAP financial information is presented for supplemental informational purposes only, and should not be considered a substitute for financial information presented in accordance with GAAP and may be different from similarly-titled non-GAAP measures used by other companies. The principal limitation of these non-GAAP financial measures is that they exclude significant expenses that are required by GAAP to be recorded in the company’s financial statements. In addition, they are subject to inherent limitations as they reflect the exercise of judgment by the company’s management about which expenses are excluded or included in determining these non-GAAP financial measures. Jamf strongly encourages investors review our consolidated financial statements included in publicly filed reports in their entirety and not rely solely on any single financial measurement or communication.

Definitions of Non-GAAP Gross Profit, Non-GAAP Operating Income, Unlevered Free Cash Flow, Non-GAAP Sales and Marketing, Non-GAAP Research and Development and Non-GAAP General and Administrative Expenses and reconciliations of these non-GAAP financial measures to the most directly comparable GAAP financial measure can be found at the end of this presentation.



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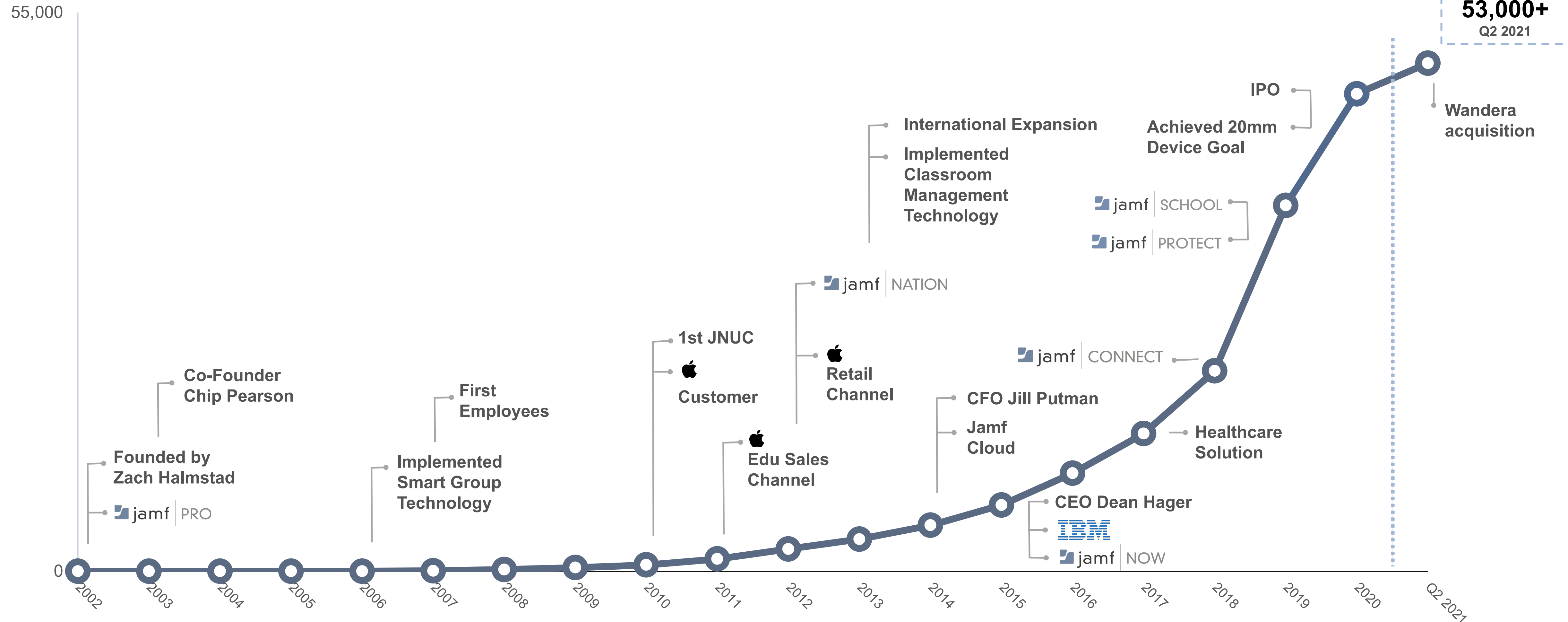
Jamf - Helping Organizations Succeed with Apple



Note: Company statistics and financial metrics are as of the period ended 6/30/2021 unless footnoted otherwise. ¹ Sourced from Frost & Sullivan. ² TTM as of June 30, 2021. ³ Based on 2020 Engagement Survey. ⁴ As ranked by Fortune as of 6/30/2021. ⁵ As ranked by Forbes Most Valuable Brands list as of 6/30/2021. ⁶ Based on total assets as of 6/30/2021. ⁷ Growth is compared to Q2 2020. ⁸ See appendix for reconciliation of GAAP to Non-GAAP measures.

The Jamf Story

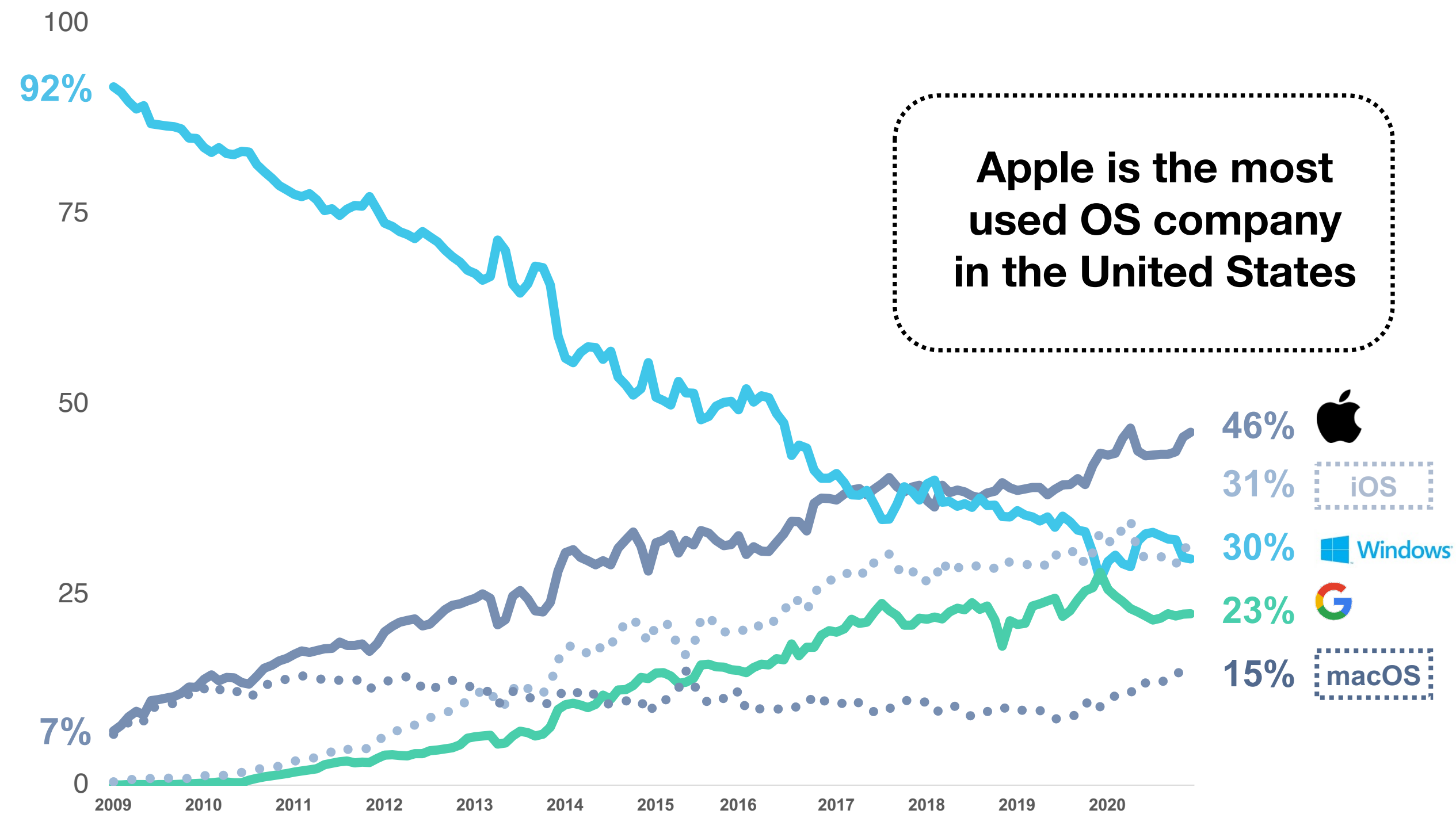
Customers



Apple Market Share in the U.S. and Beyond

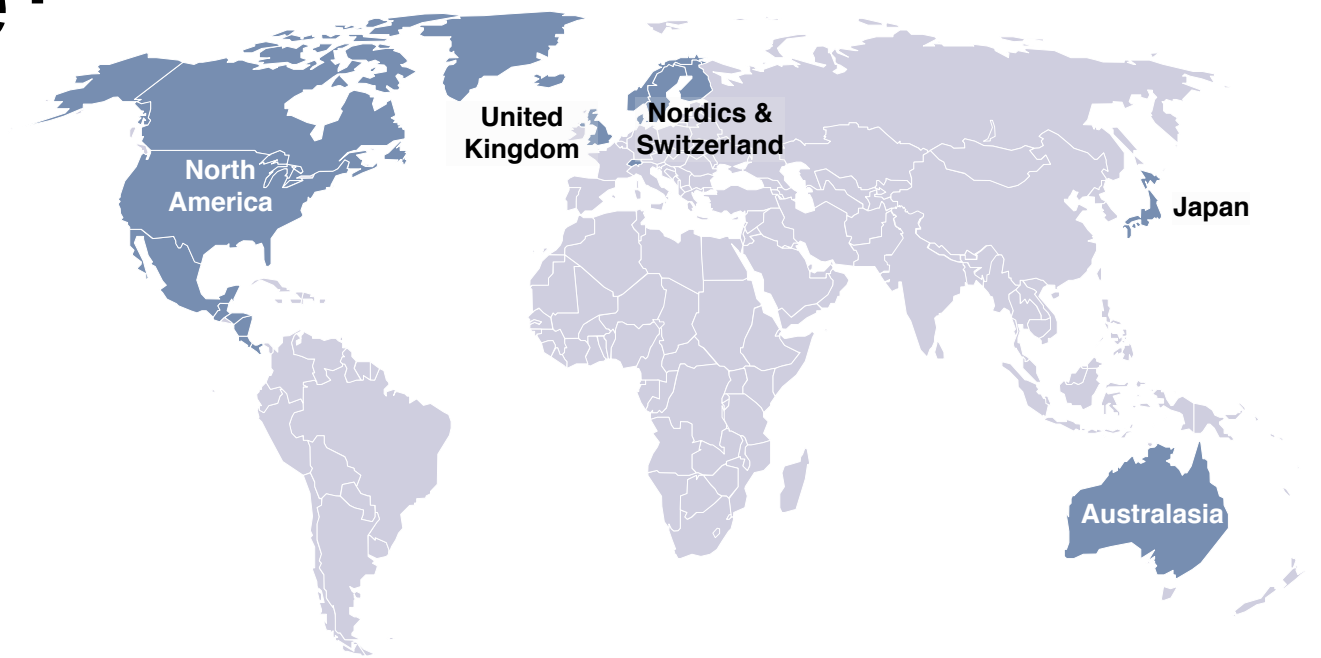
Strong Signs of Continued Growth

U.S. Share by OS¹



Apple #1 Share¹

- ☒ North America
- ☒ Oceania
- ☒ United Kingdom
- ☒ Nordics²
- ☒ Switzerland
- ☒ Japan



Next Gen. Workforce Chooses Apple



71% of college students surveyed would prefer a Mac at work³



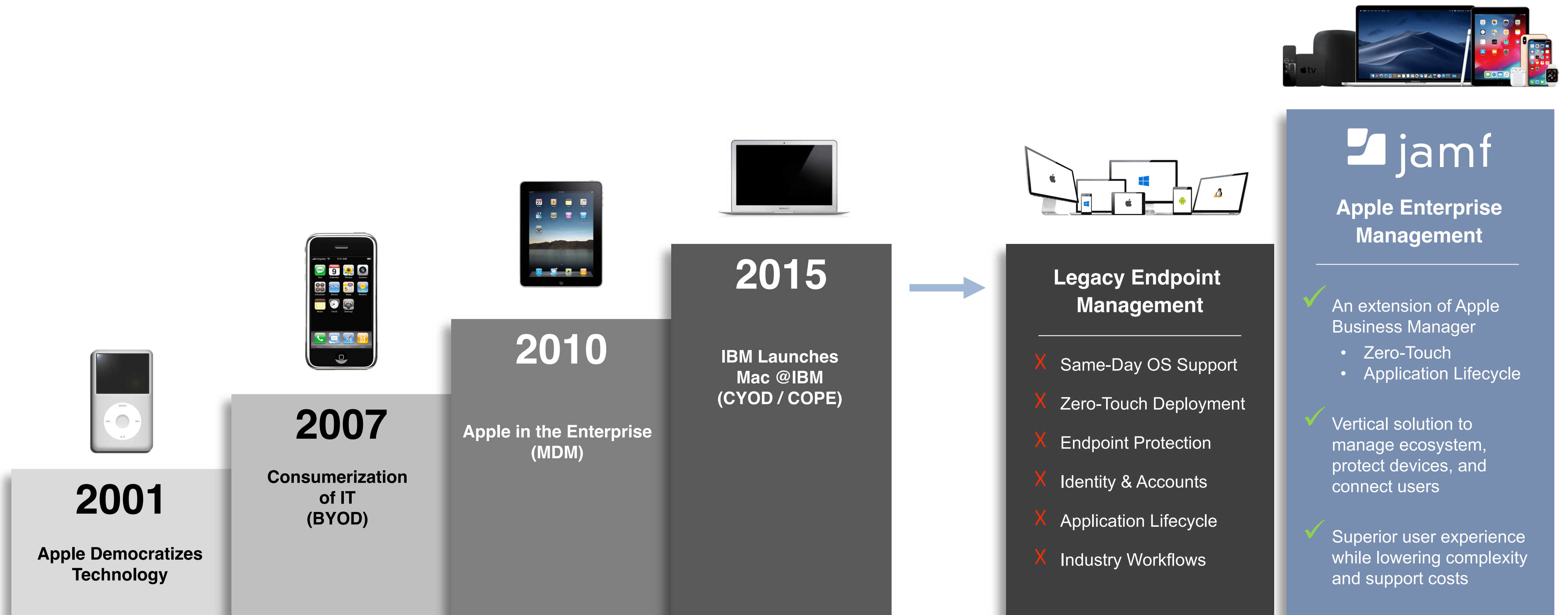
Calculated as total Internet traffic by operating system for both business and consumer. Data reflects market share within the United States over the time period 1/1/2009 to 12/20/2020.

¹ Source: Statcounter.






















² Apple has leading market share in the majority of the Nordic region.

³ Based on a 2019 survey conducted by Vanson Bourne and commissioned by Jamf Software, LLC.

Jamf Becomes Standard for Apple Enterprise Management



IT Solutions for the Modern Workplace

	Legacy Solutions	jamf	
	Provisioning and Deployment	 Manual, Time-intensive, Inflexible	 Zero-touch, Shrink-wrapped Deployment
	Identity-based Resource Access	 Device AD-bound or Decoupled from Identity	 Streamlined & Singular Cloud-based Identity
	Operating System Updates	 Delayed, Vulnerable	 Same-Day Compatibility & Features
	Network Risk Management	 Intrusive to Privacy, Ineffective for Hybrid Work	 Network-aware, Globally-available Content Filtering (Available Across Platforms)
	Application Lifecycle and Licensing	 IT-assisted, Resource-intensive, Complex, Middleware-wrapped	 Automated, Cloud-delivered, Privacy Preserving, Native with Enterprise App Store
	Endpoint Protection	 Windows-centric Facing Apple Deprecation	 Architected Apple-native
	Self-service	 IT Hands-on Service	 Empowered Employees Help Themselves

Jamf's Apple Enterprise Management Platform



 **NATION** Largest online community for Apple administrators

¹ Products and features acquired as part of the Wandera acquisition which closed on July 1, 2021. Further product details on the following slide.

Wandera Solutions Enhance the Jamf Platform

Advanced Security and Access Solution for Mobile Devices



THREAT DEFENSE

Mobile Threat Defense (MTD)

- Monitor endpoints for vulnerabilities, from escalated privileges to outdated OSs
- iOS+ app security with static and dynamic analysis; over 90mm total apps supported
- Zero-day phishing prevention with advanced threat intel engine MI:RIAM and in-network protection purpose built for iOS
- Monitor for data leaks and prevent sensitive data loss. Safeguard user privacy.
- Consumer-simple end user app for notifications and remediation

DATA POLICY

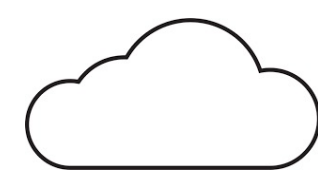
Acceptable Use & Data Limits

- Enforce acceptable use and safe internet policies in the cloud
- Real-time analytics and shadow IT discovery
- Unique context-based policy (by network interface, risk level, location, etc.)
- Zero-touch tamper-proof deployment
- Supports both managed and unmanaged devices
- Data capping provides savings for customers (mobile charges due to data overages)

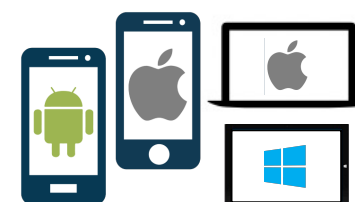
PRIVATE ACCESS

Zero Trust Network Access (ZTNA)

- Enables ZTNA for any app in corporate data center or private cloud
- Wireguard protocol optimized for high security and throughput
- Distributed global edge network for super-fast connectivity
- Supports unmanaged devices such as BYOD and contractors
- Lower total cost of ownership and significantly improve user experience vs. legacy VPN



Cloud- Based



Multi-Platform

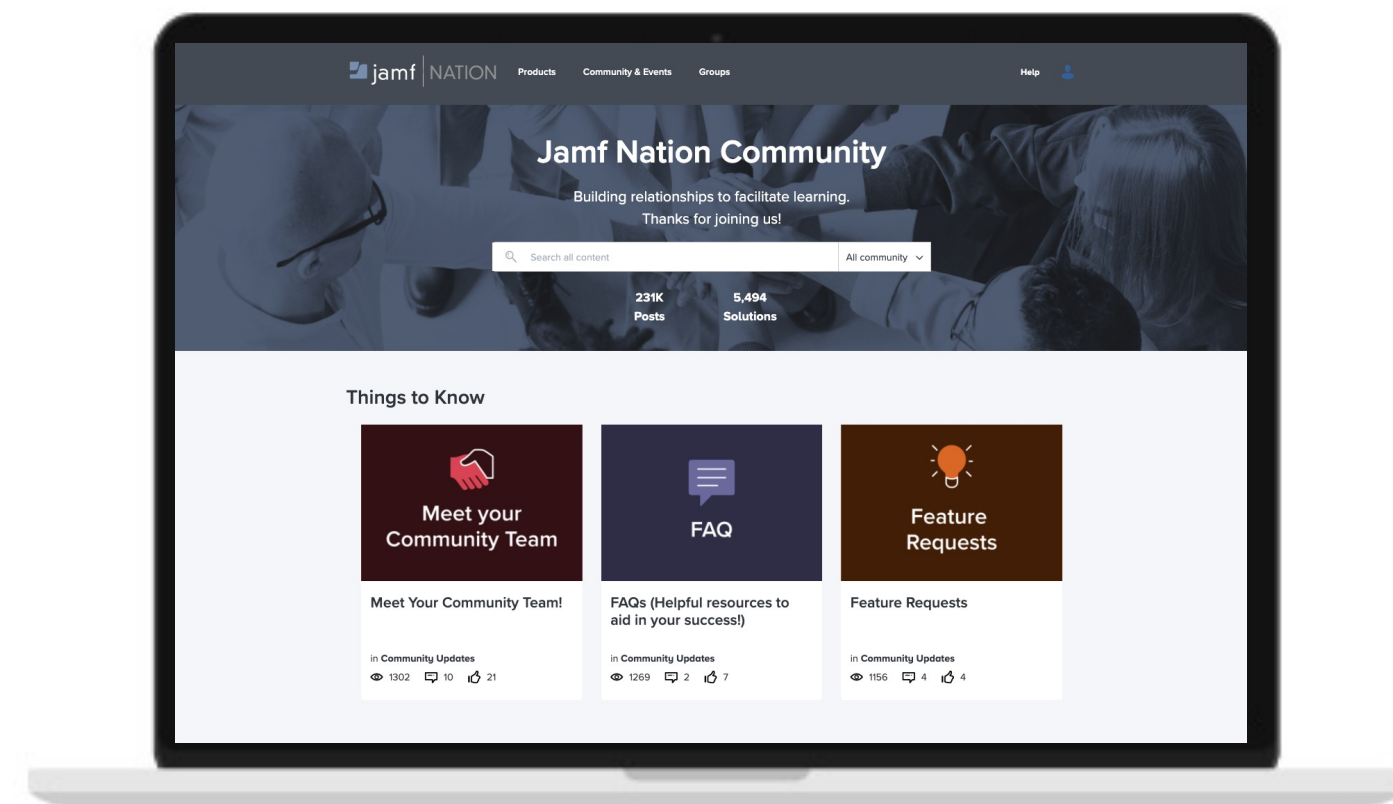


Apple First, Apple Best

Jamf Nation and Jamf Marketplace

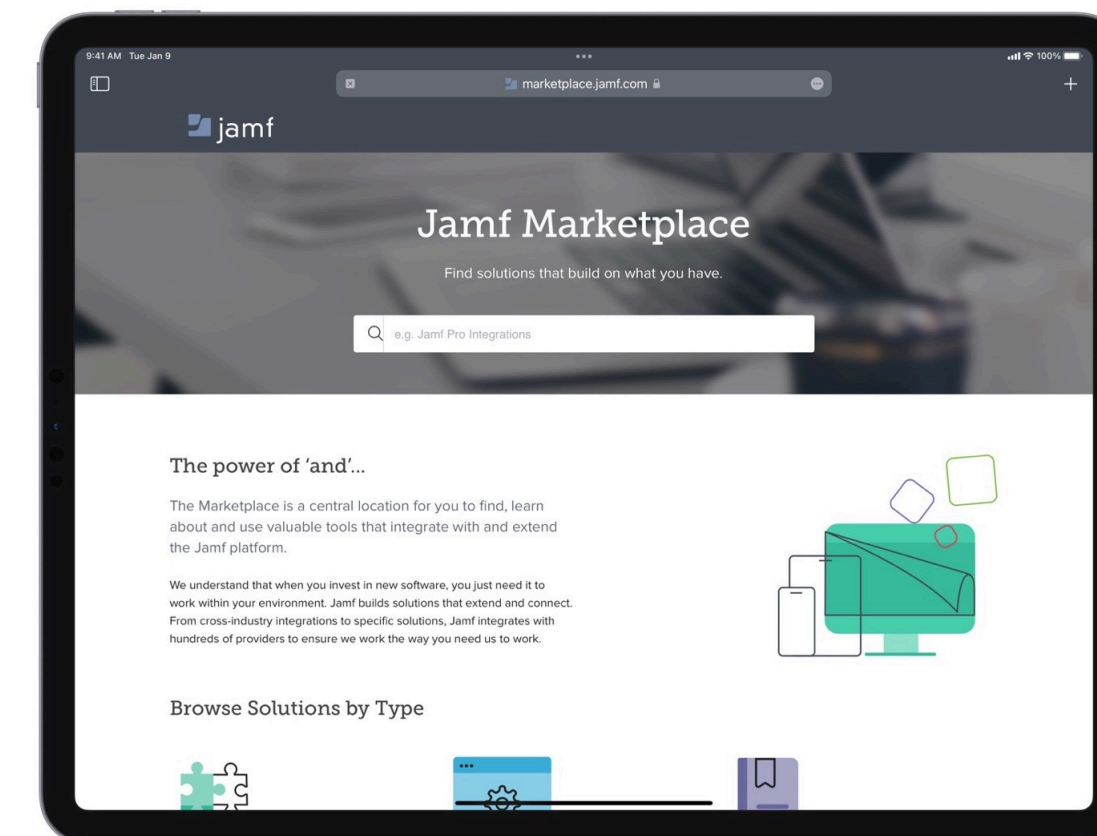
Expanded Ecosystem and Support Strengthen the Jamf Platform and Improve Jamf Efficiency

Jamf Nation

























- Largest online community of Apple IT administrators in the world
- Jamf Nation User Conference (JNUC) is largest Apple IT administrator event
- Builds a social community while improving Jamf efficiency

Jamf Marketplace



- Hundreds of applications, integrations, and partner deployment guides
- Enabled by Jamf APIs, custom configurations, and facilitated by Jamf developer relations
- Evidence of Jamf's market leadership, with significant, sustained traffic and listed application QoQ growth
- Builds a solution ecosystem that strengthens Jamf retention

Jamf Provides and Realizes Benefits of a Vertical Software Company by Focusing on the Apple Ecosystem

Community & Collaboration	  	  	Apple Vertical Jamf Nation
Identity Management	  		Jamf Connect
Zero Trust Network Access	 	Microsoft Tunnel VPN for Intune	Private Access
Network & Data Management	 	Microsoft Cloud Application Security	Data Policy
Endpoint Protection	   		Jamf Protect Threat Defense
Device Management	  	Microsoft Endpoint Manager	Jamf Pro Jamf Now Jamf School

Key Benefits of Vertical Approach

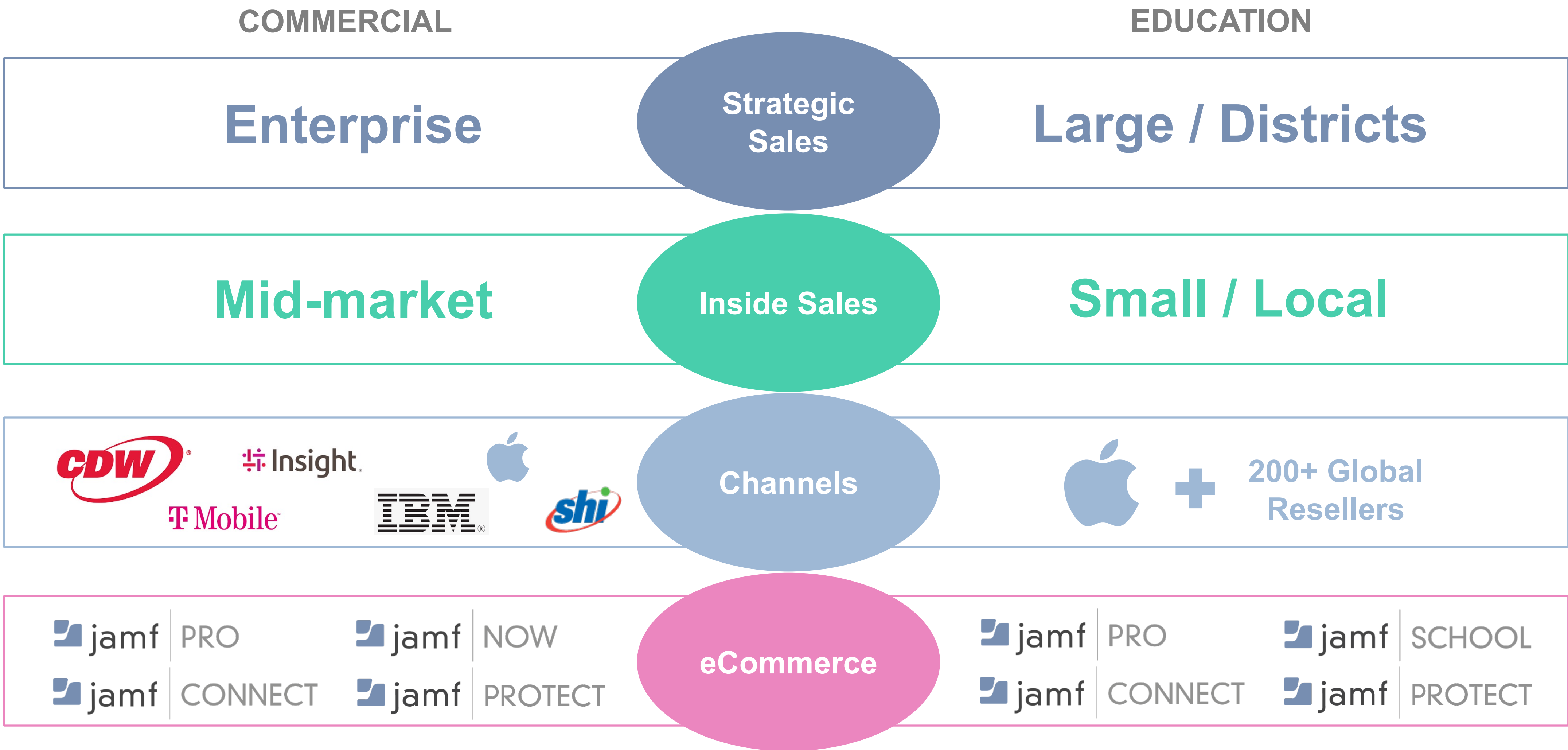
- **Efficient go to market / higher unit economics**
- **Efficient R&D spend** by not being “all things to all people”
- **Greater focus** and **ability to “super serve”** a market segment
- **Market leader** with **minimal competition**

Jamf takes a “Vertical Slice” of Apple in the Enterprise

Our Relationship with Apple



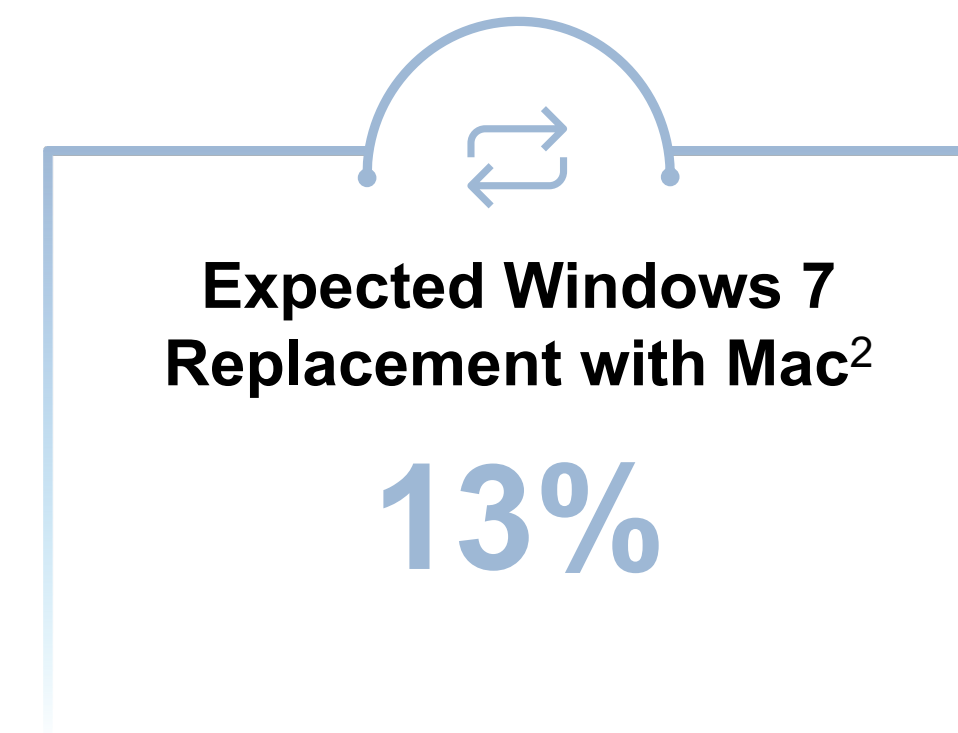
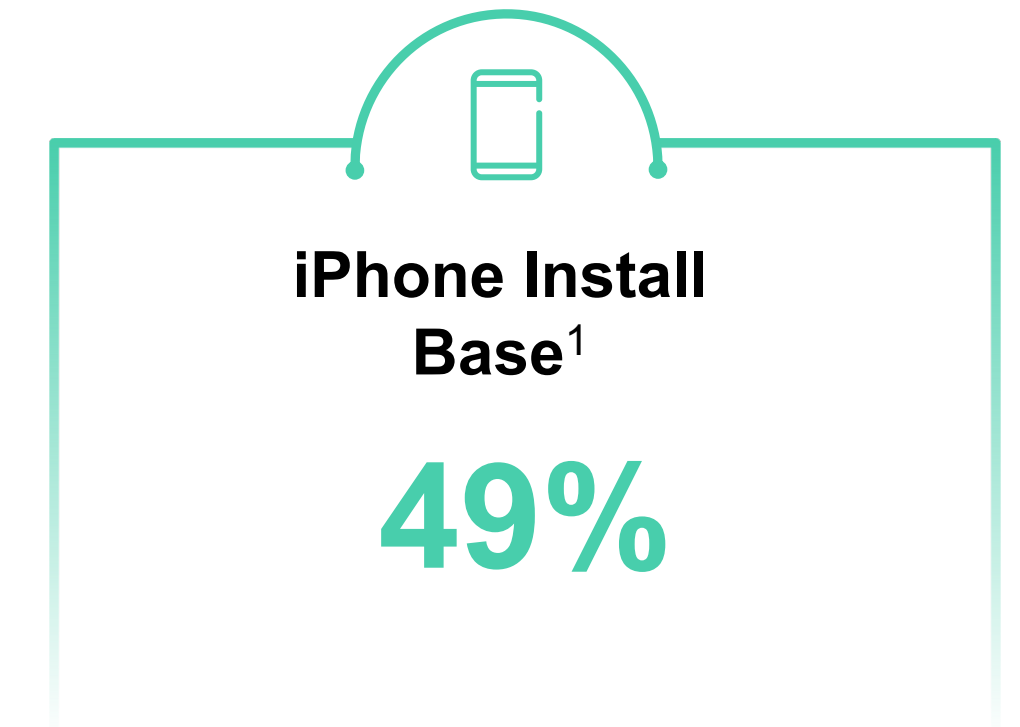
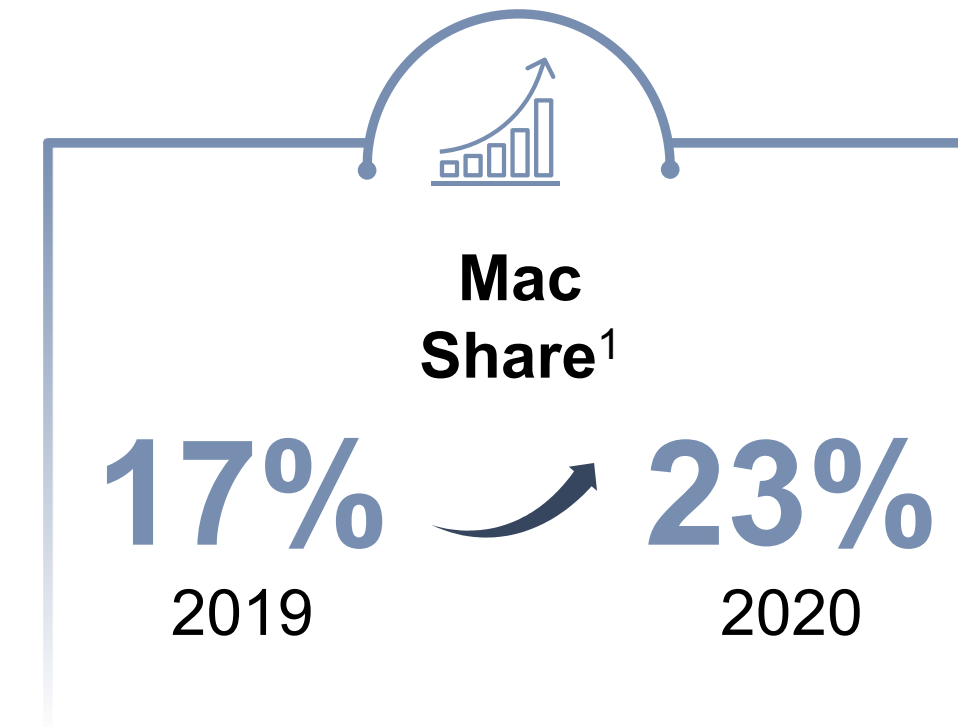
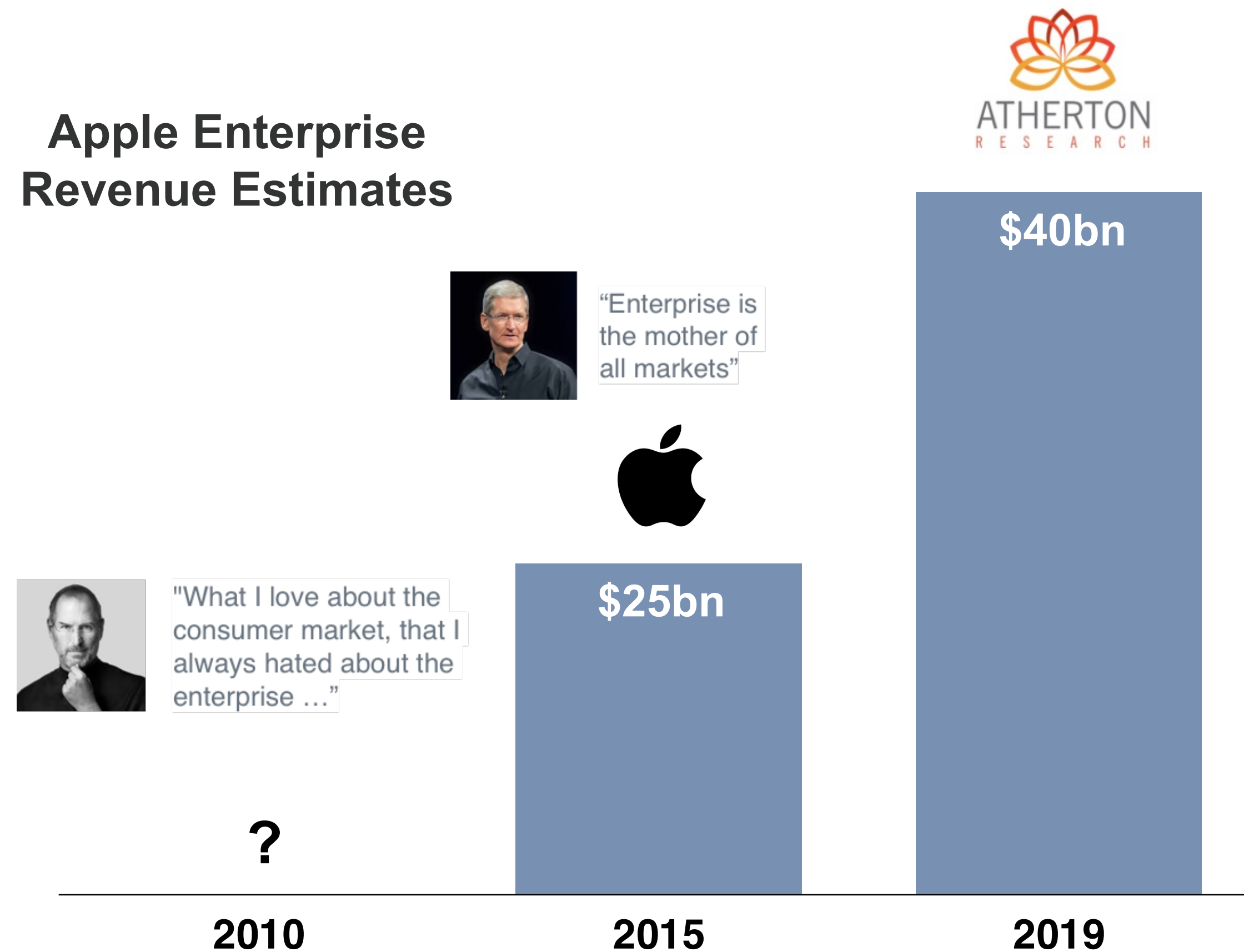
Effective Go To Market Model



Apple in the Enterprise

Impact of IT Consumerization, Changing Demographics and User Preference

Apple Enterprise Revenue Estimates



¹ Source: IDC MarketScape: Worldwide Unified Endpoint Management Software for Apple Devices 2021 Vendor Assessment.

² Source: IDC 2019 U.S. Commercial PCD Survey.

Digital Transformation Trends

Mobile Work



Shipping Apple devices directly to employee homes without IT ever touching them

Education Technology



Enabling learning both in the classroom and at home, while providing control to teachers and parents

Digital Health



Using Apple devices to connect care providers to patients in hospital and home in a compliant manner

The COVID-19 pandemic has only added urgency to several fundamental digital transformation trends that already had strong momentum

Customer Base



Valuable Brands
23 of top 25

1



U.S. Banks
10 of top 10

2



Top Global Universities
10 of top 10

3



Top Fortune 500 Technology
7 of top 10

4



U.S. Media
8 of top 10

4



U.S. School Districts
7 of top 10

5



Best U.S. Hospitals
15 of top 20

3



Top Fortune 500
8 of top 10

4



WW Apparel
8 of top 10

6



U.S. Retailers
8 of top 10

7



Consulting Firms
8 of top 10

8



UEM Providers
3 of 3 Gartner
MQ Leaders

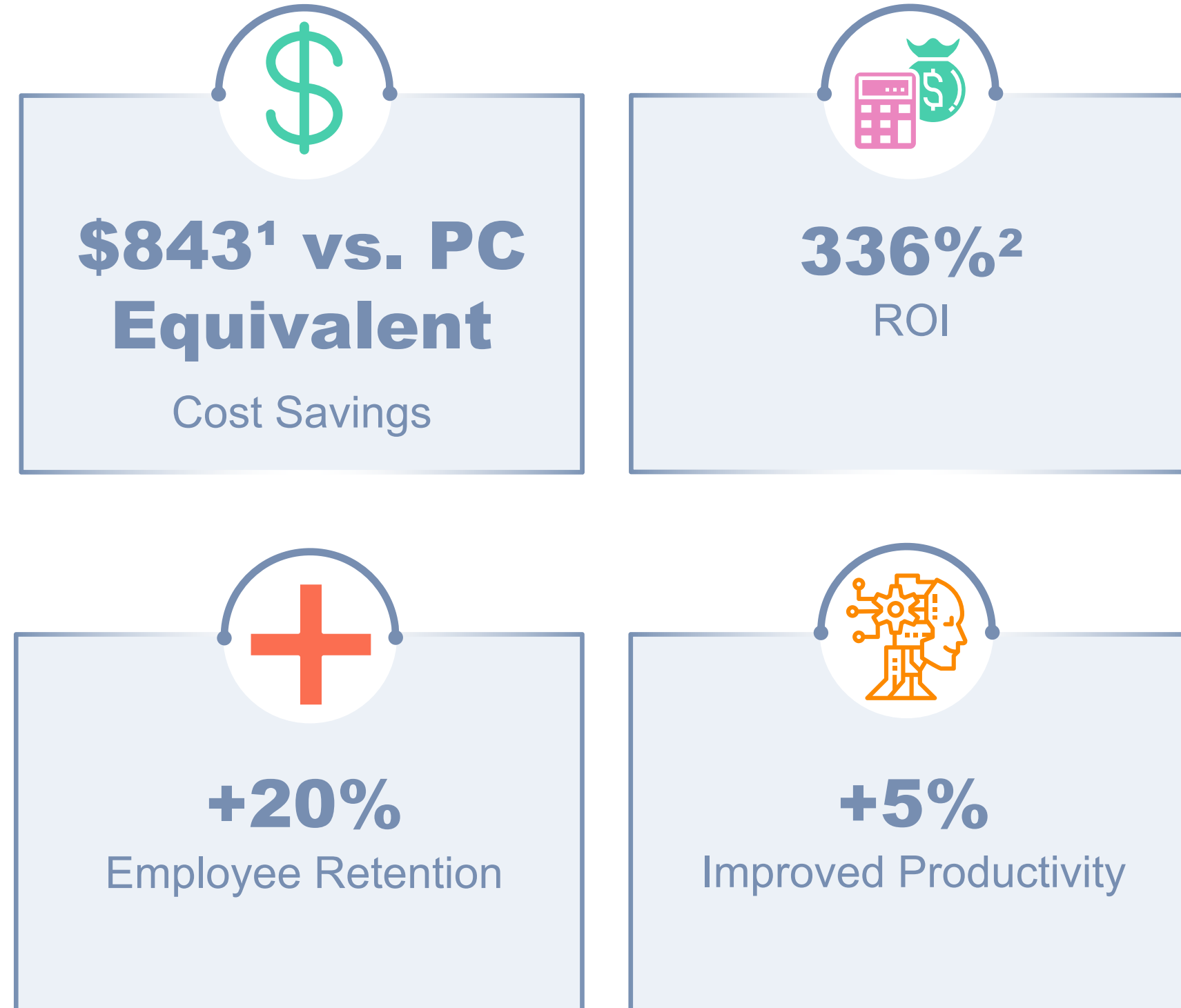
9

¹ As ranked by Forbes Most Valuable Brands list as of 6/30/2021. ² Based on total assets as of 6/30/2021. ³ As ranked by U.S. News and World Report. ⁴ As ranked by Fortune as of 6/30/2021. ⁵ As ranked by Niche. ⁶ As ranked by BizVibe. ⁷ As ranked by National Retail Federation. ⁸ As ranked by Vault. ⁹ As ranked by Gartner.

Substantial Benefits to Enterprises

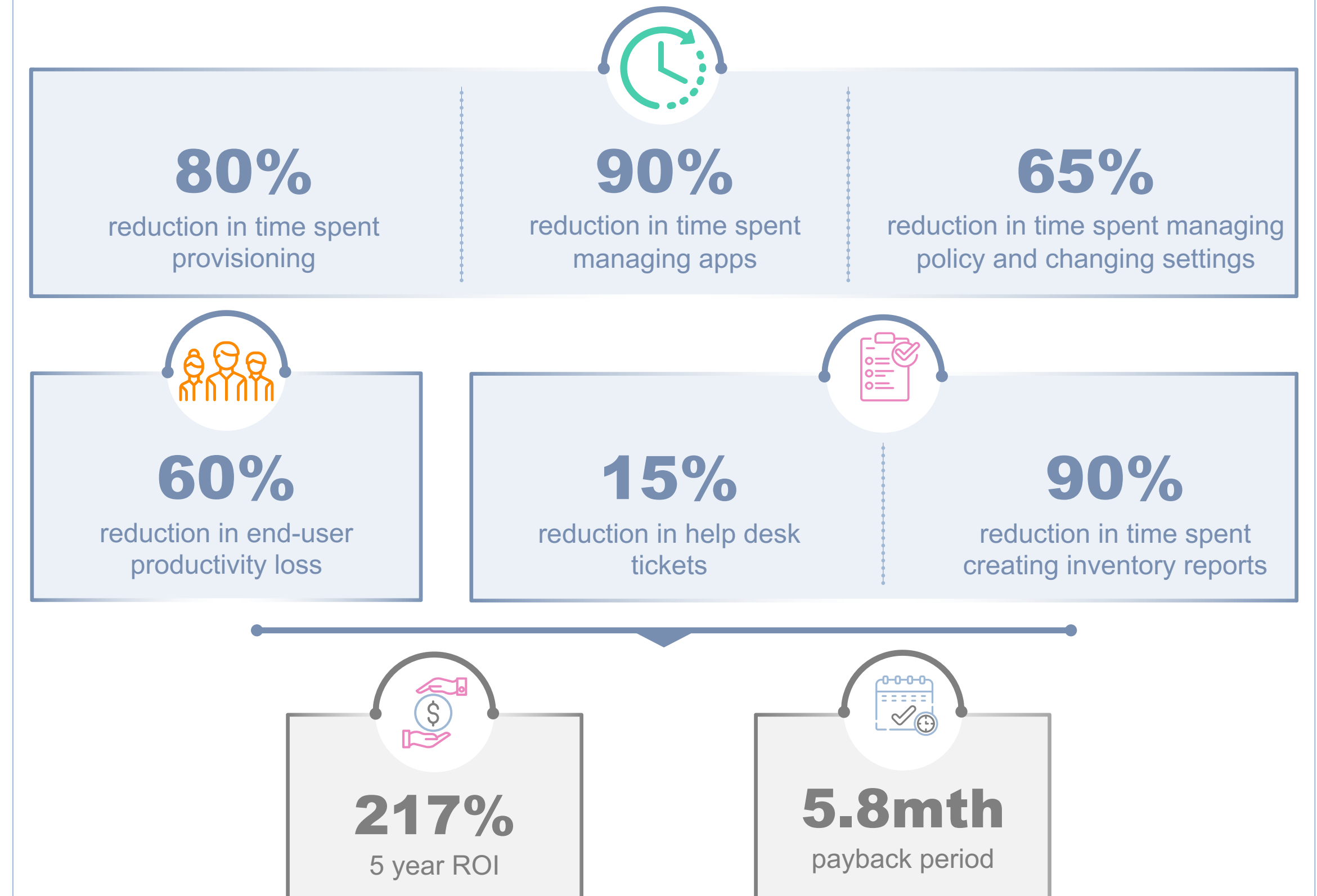
FORRESTER®

Benefits of Mac M1 in the enterprise



HOBSON & COMPANY

On benefits of using Jamf



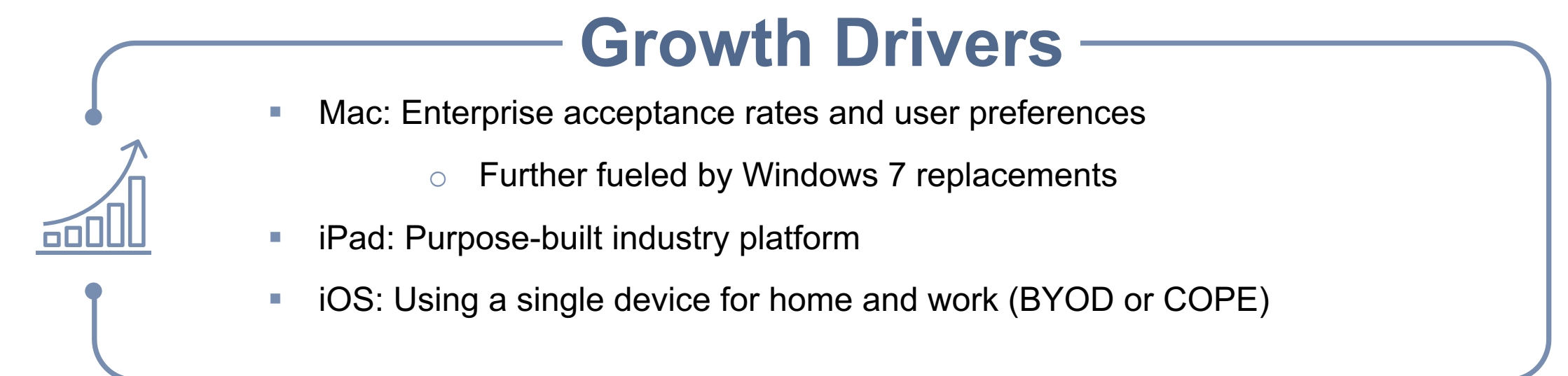
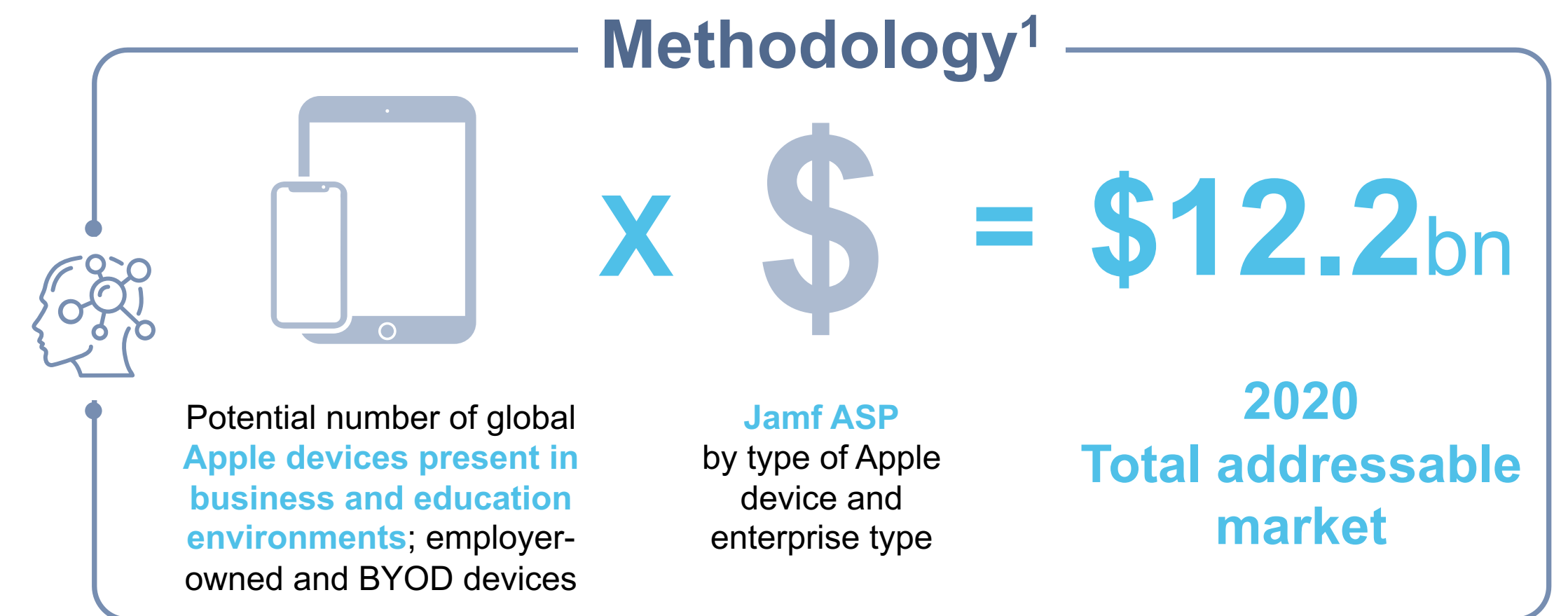
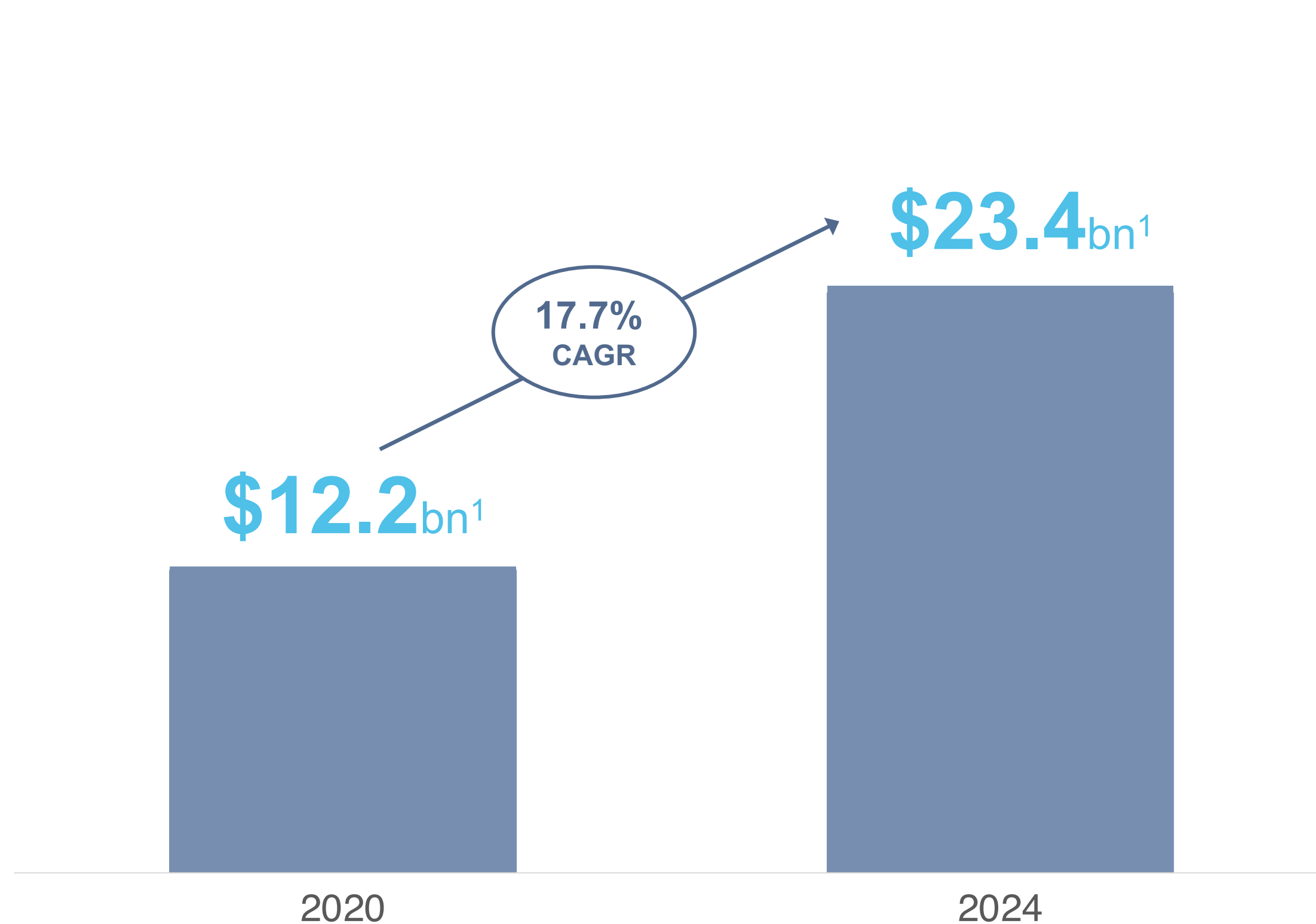
Note: Based on a 2021 study.

¹ Over a 3 year time period, when considering 3-year hardware, software, support and operational costs.

² Over 3 years.

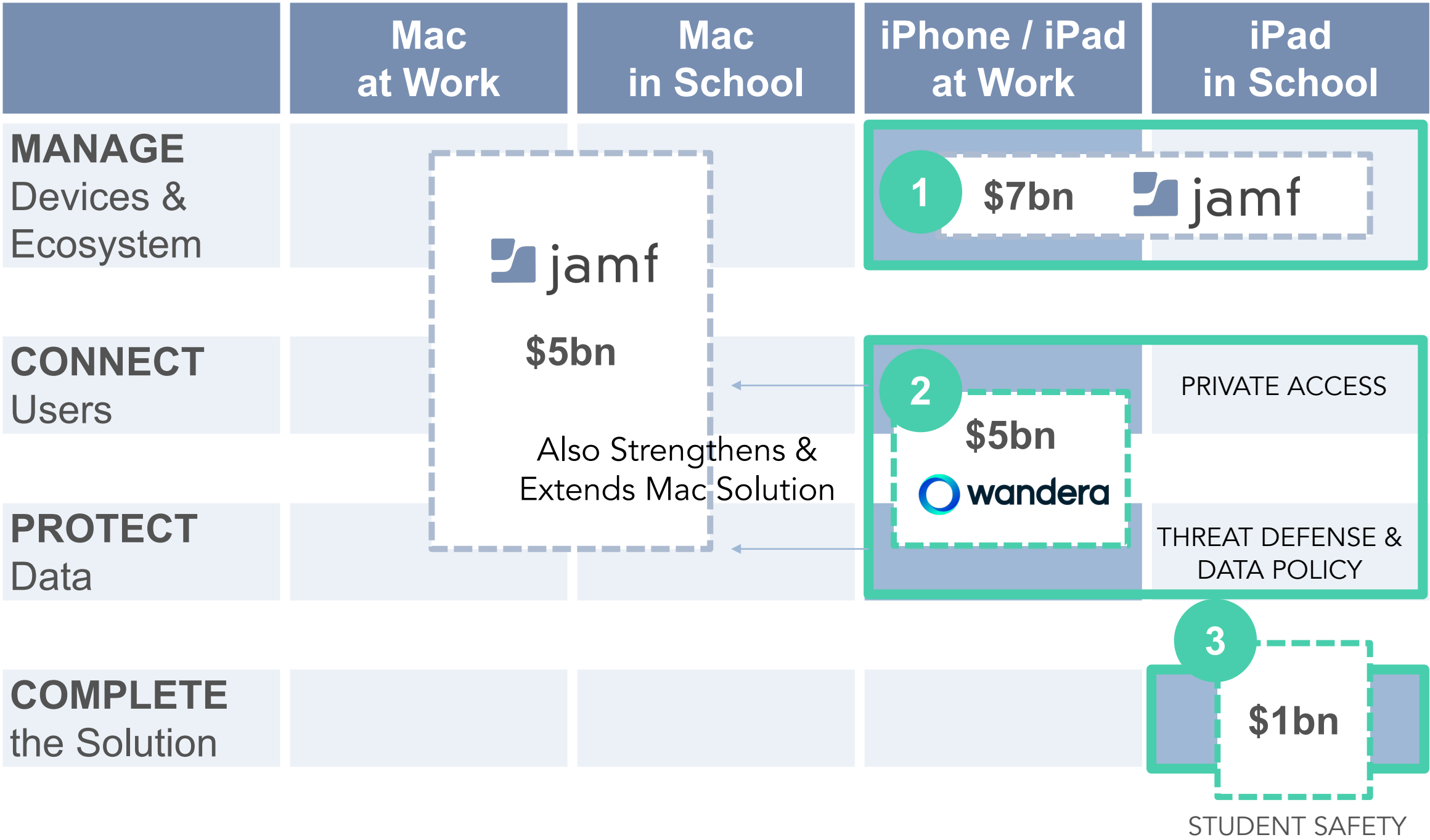
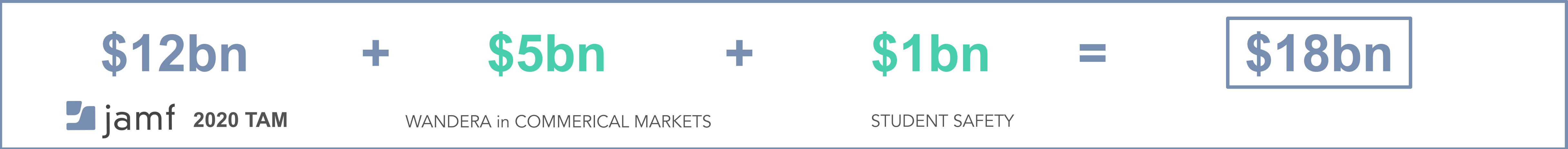
Large, Growing Market Opportunity

Reflects market opportunity prior to the Wandera acquisition



¹ Sourced from Frost & Sullivan.

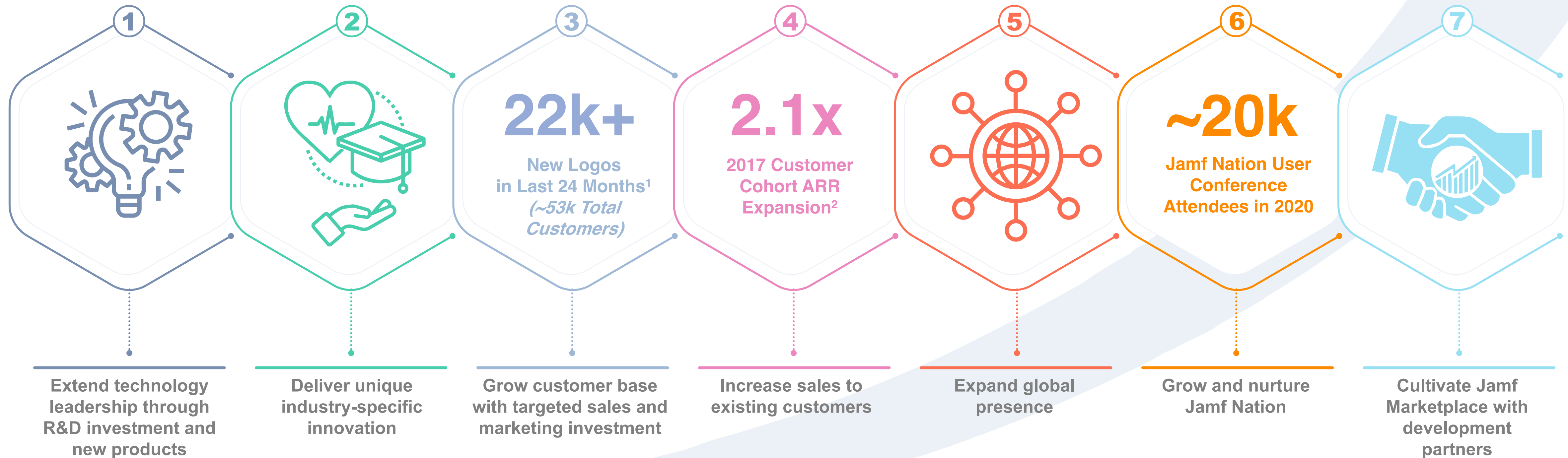
Wandera Acquisition Expands Total Addressable Market by \$6B



Strengthen and Expand TAM

1. Strengthen Commercial iOS device management competitiveness (existing \$7bn TAM)
2. Grow TAM by \$5bn through iOS expansion to Security & Access management
3. Grow Education TAM by \$1bn through offering student protection solution

Multiple Drivers of Future Growth



¹ Represents the period from 7/1/2019 to 6/30/2021. Excludes new logos acquired via acquisitions.

² Represents the ARR expansion from the 2017 cohort over the period from 12/31/2017 to 12/31/2020. The 2017 cohort is defined as the customers who first purchased Jamf subscription software between 1/1/2017 and 12/31/2017.

Jamf Management Team



Dean Hager

*CEO
(6 yrs.)*

KrollOntrack.
LAWSON™
IBM



John Strosahl

*Chief Operating Officer
(5 yrs.)*

ebay IBM
Digital River



Jason Wudi

*Chief Technology Officer
(15 yrs.)*

University of Wisconsin
Eau Claire



Dave Alampi

*Chief Marketing Officer
(6 yrs.)*

KrollOntrack. infor
Digital River



Jill Putman

*CFO
(7 yrs.)*

KrollOntrack. KPMG
secure computing



Jeff Lendino

*Chief Legal Officer
(3 yrs.)*

vimeo
KrollOntrack.



Sam Johnson

*Chief Customer Officer /
Chief of Staff
(13 yrs.)*

Campbell Mithun University of Wisconsin
Eau Claire

Financial Highlights: Second Quarter 2021



Strong growth at substantial revenue scale



Highly recurring business model



Strong land-and-expand opportunity



Profitable, with further operating leverage

Q2 2021 Financial Snapshot

**Strong & High
Growth
Revenue
Profile**

39%
*Revenue
Growth¹*

38%
*ARR
Growth¹*

94%
*Subscription
Revenue*

**Expanding
Profitability¹**

26%
*TTM uFCF
Margin^{2,3}*

9%
*Non-GAAP
Op Inc Margin²*

81%
*Non-GAAP
Gross Margin²*

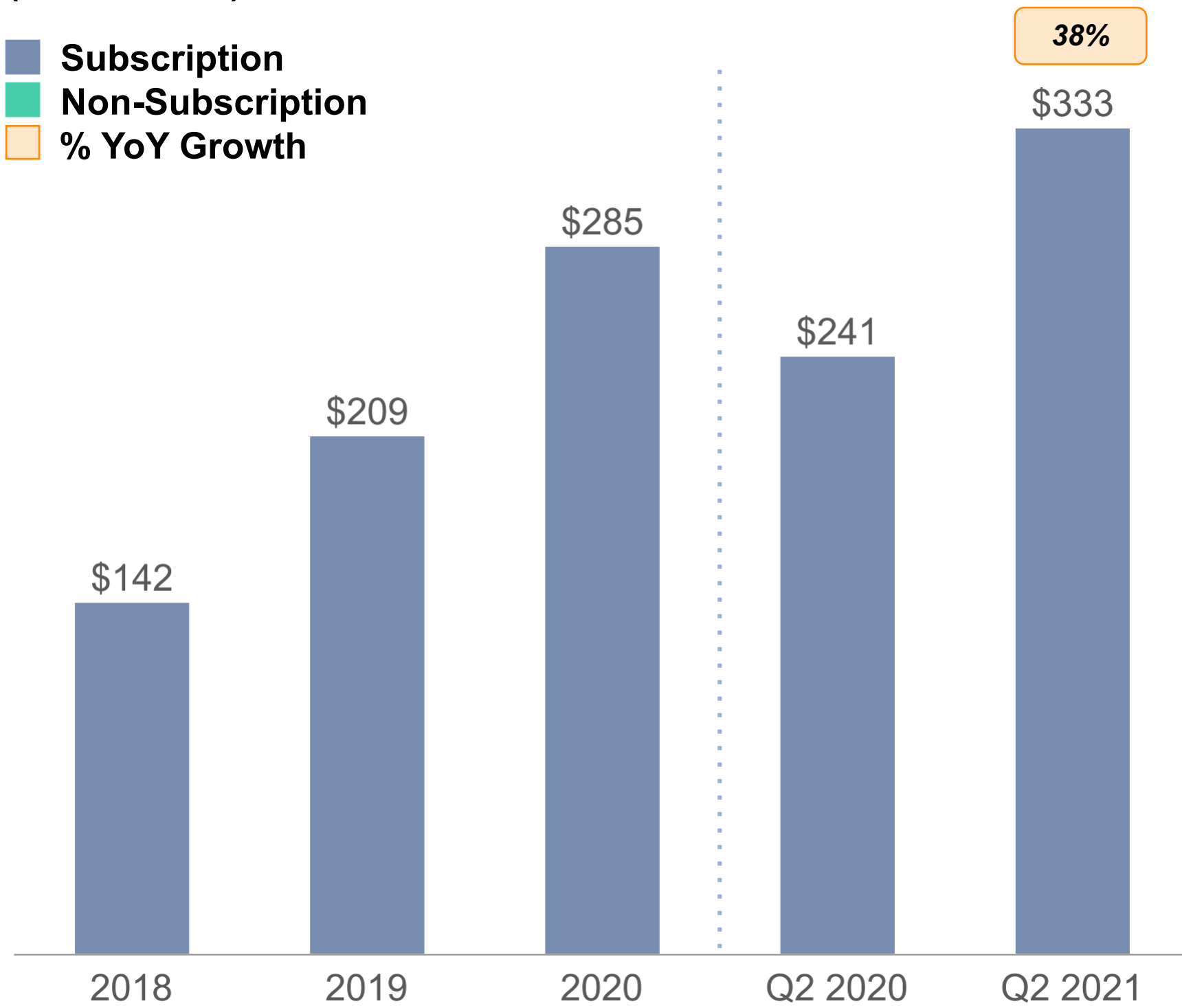
¹ Comparison of growth is to Q2 2020. ²Represents calculations based on Non-GAAP metrics. See appendix for reconciliation of GAAP to Non-GAAP measures. ³ TTM as of June 30, 2021.

Strong Growth Momentum

ARR

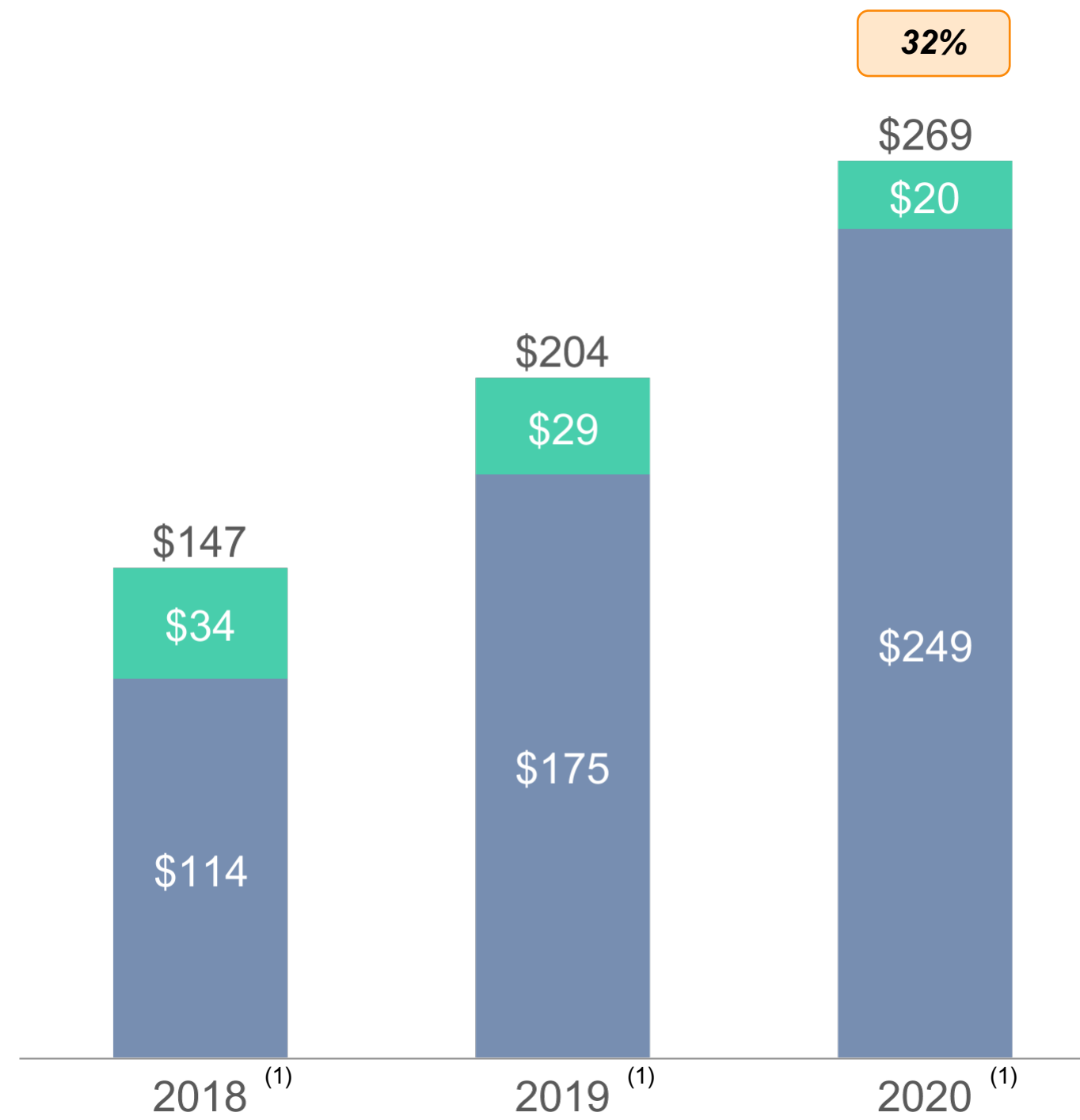
(\$ in millions)

- Subscription
- Non-Subscription
- % YoY Growth



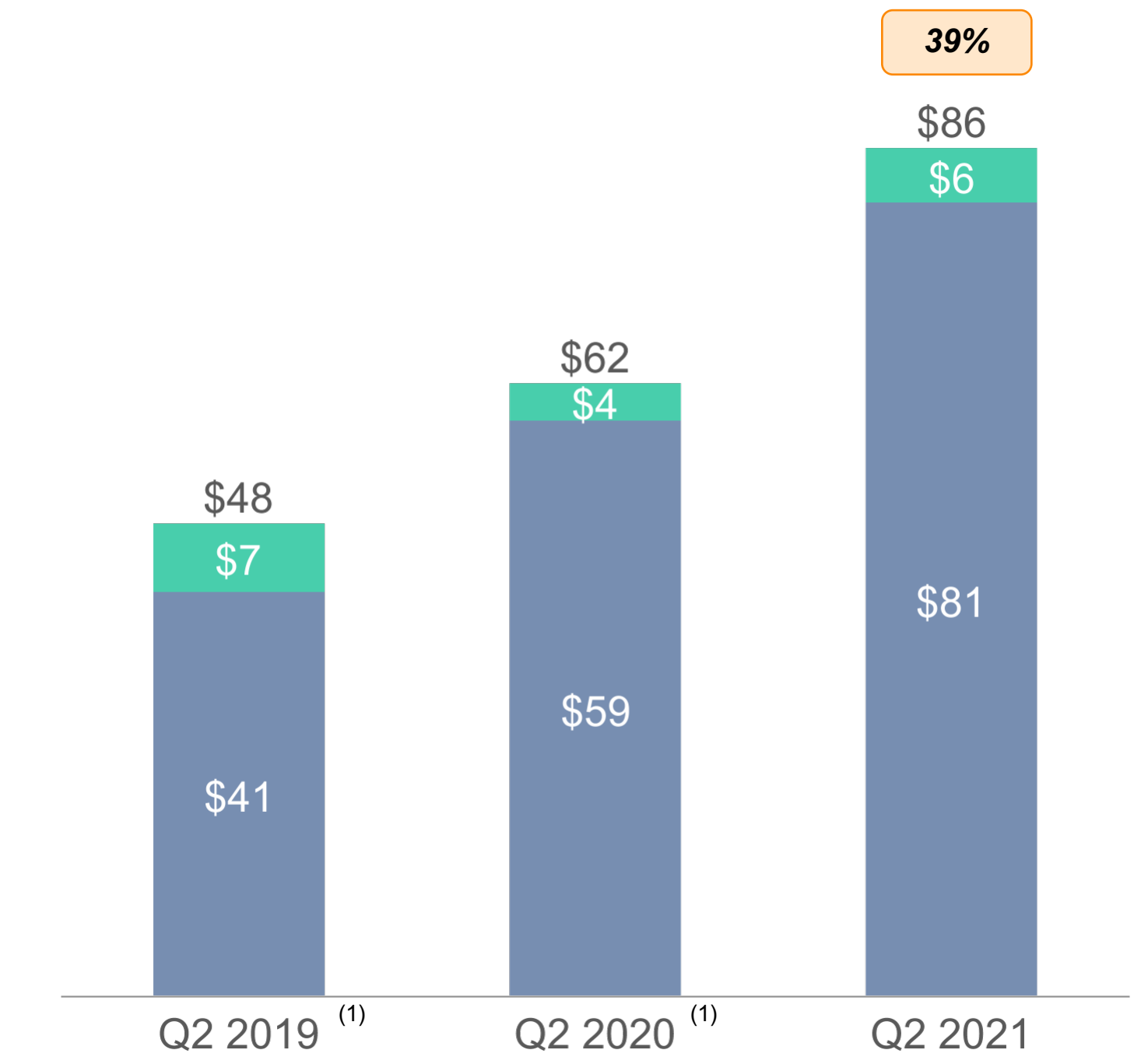
Annual Revenue

(\$ in millions)



Revenue – Q2

(\$ in millions)

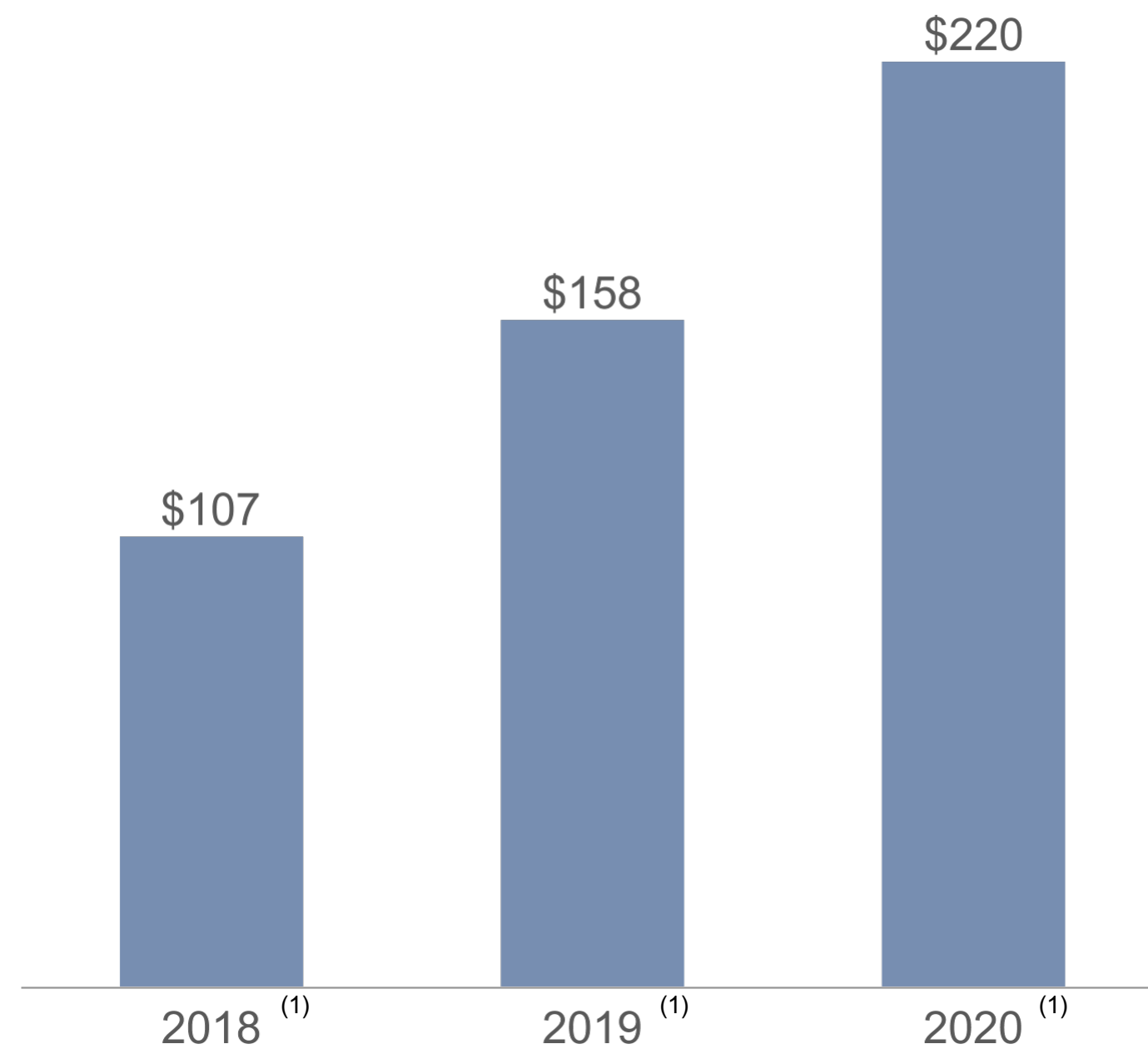


⁽¹⁾ Certain prior period amounts have been revised to correct immaterial errors.

Strong Gross Margins

Non-GAAP Gross Margin – FY

(\$ in millions)

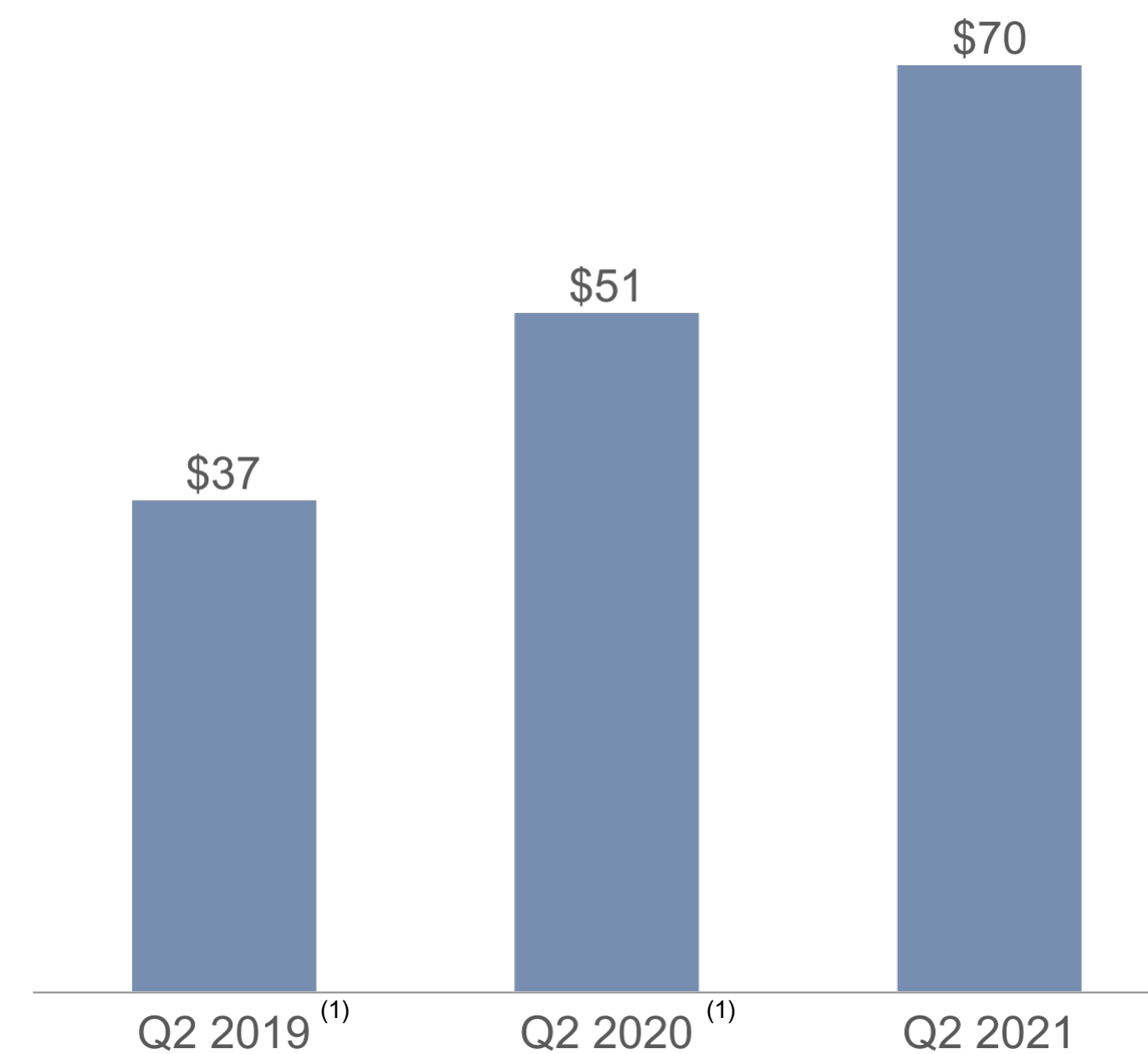


% of Total Revenue

73%	78%	82%
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Non-GAAP Gross Margin – Q2

(\$ in millions)



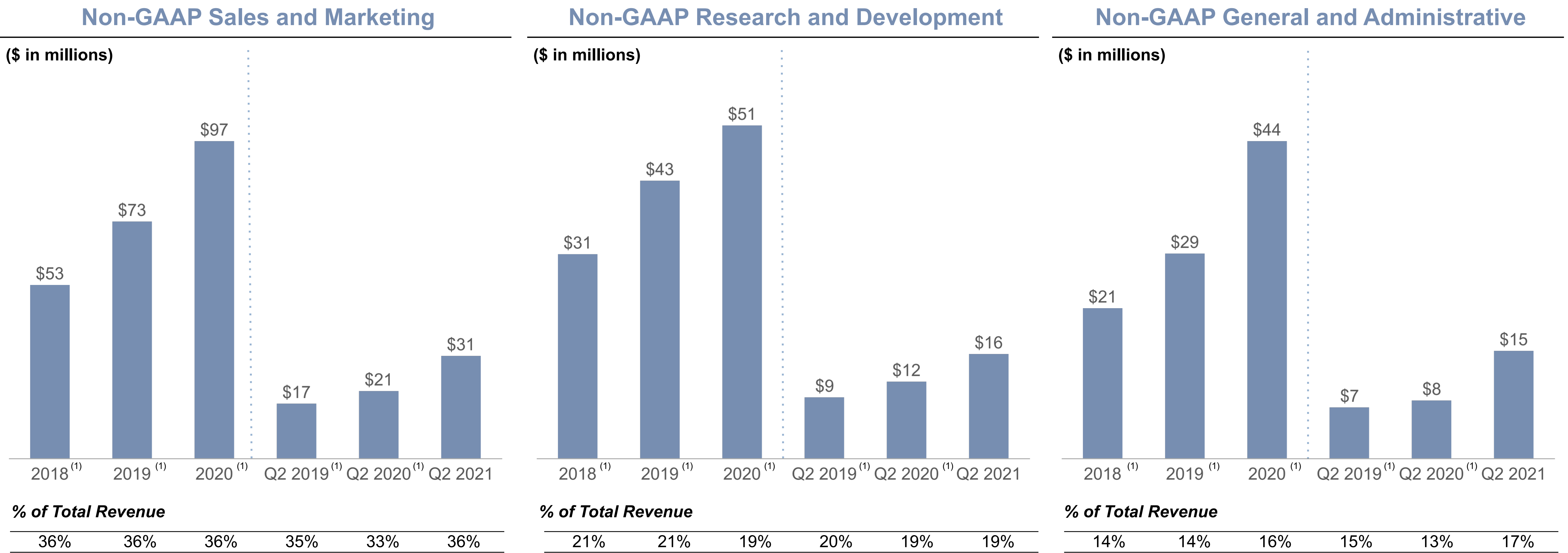
% of Total Revenue

77%	82%	81%
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Note: Gross margin is presented on a Non-GAAP basis (excluded stock-based compensation and amortization). See appendix for reconciliation of GAAP to Non-GAAP measures.

⁽¹⁾ Certain prior period amounts have been revised to correct immaterial errors.

Leveraging Efficient Cost Structure



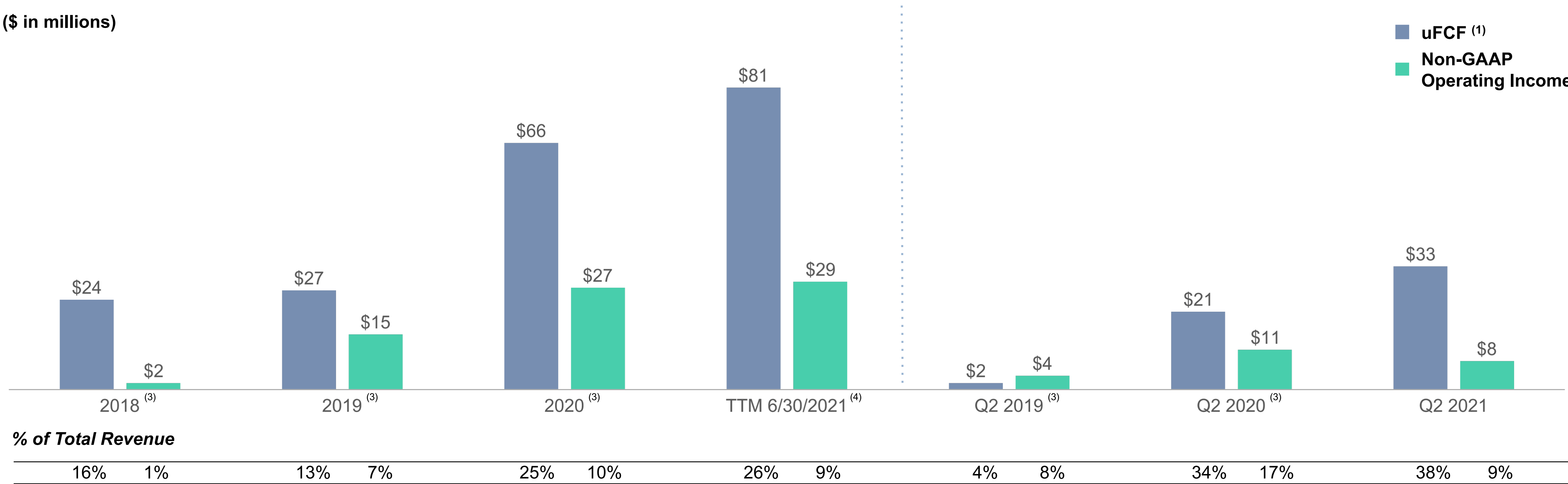
Note: Sales and Marketing, Research and Development and General and Administrative expenses are presented on a Non-GAAP basis (excludes amortization, stock-based compensation, acquisition-related expense, acquisition-related earnout, costs associated with our secondary offerings, payroll taxes related to stock-based compensation and legal reserve expense). See appendix for reconciliation of GAAP to Non-GAAP measures.

⁽¹⁾ Certain prior period amounts have been revised to correct an immaterial error related to certain commissions that were incorrectly capitalized. The commissions, as well as the associated payroll taxes and retirement plan contributions, were not incremental to the acquisition of customer contracts and should have been expensed as incurred. In addition, certain prior period amounts have been revised to correct other immaterial errors.

Expanding Profitability

Unlevered Free Cash Flow and Non-GAAP Operating Income

(\$ in millions)



⁽¹⁾ uFCF is a Non-GAAP metric and is adjusted for interest payments, acquisition-related payments and purchases of equipment and leasehold improvements. See appendix for reconciliation of GAAP to Non-GAAP measures.

⁽²⁾ Non-GAAP Operating Income is a Non-GAAP metric and is adjusted for amortization, stock-based compensation, acquisition-related expense, acquisition-related earnout, costs associated with our secondary offerings, payroll taxes related to stock-based compensation and legal reserve expense. See appendix for reconciliation of GAAP to Non-GAAP measures.

⁽³⁾ Certain prior period amounts have been revised to correct an immaterial error related to certain commissions that were incorrectly capitalized. The commissions, as well as the associated payroll taxes and retirement plan contributions, were not incremental to the acquisition of customer contracts and should have been expensed as incurred. In addition, certain prior period amounts have been revised to correct other immaterial errors.

⁽⁴⁾ Includes the three months ended September 30, 2020, December 31, 2020 and March 31, 2021, which have been revised to correct the immaterial errors described above.

Long Term Target Model



	FY2018 ¹	FY2019 ¹	FY2020 ¹	Long Term Target
Non-GAAP Gross Margin	73%	78%	82%	81 – 82%
Non-GAAP S&M	36%	36%	36%	33 – 35%
Non-GAAP R&D	21%	21%	19%	18 – 20%
Non-GAAP G&A	14%	14%	16%	9 – 10%
Non-GAAP Operating Margin	1%	7%	10%	20%+

¹ See appendix for reconciliation of GAAP to Non-GAAP measures.

Investment Highlights



The Standard in Apple Enterprise Management



Exceptional Corporate Culture with Talented Management Team



Differentiated Apple-focused Technology



Large and Growing Addressable Market



Loyal, Blue Chip Customer Base



Powerful Subscription Model



Strong and Predictable Financial Profile



Strong Combination of Consistent High Growth and Cash Flow Generation



The Standard for Apple
in the Enterprise

Appendix



Select Definitions

Dollar-Based Net Retention Rate

Measures our ability to increase revenue across our existing customer base through expanded use of our software solutions, offset by customers whose subscription contracts with us are not renewed or renew at a lower amount

Annual Recurring Revenue

Represents the annualized value of all subscription and support and maintenance contracts as of the end of the period

Recurring Revenue

Represents revenue from SaaS and on-premise subscriptions and support and maintenance contracts

Non-GAAP Gross Profit

Gross profit adjusted for stock-based compensation and amortization expense

Non-GAAP Expenses and Operating Income

Expenses / Operating Income (Loss) adjusted for amortization, stock-based compensation, acquisition-related expense, acquisition-related earnout, costs associated with our secondary offerings and payroll taxes related to stock-based compensation

Unlevered Free Cash Flow

Represents net cash provided by (used in) operating activities, less cash paid for purchases equipment and leasehold improvements, plus cash paid for interest and cash paid for acquisition-related expense

Unlevered Free Cash Flow

Unlevered Free Cash Flow Build

(\$ in millions)	FY2018	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	TTM 6/30/21	Q2 2019	Q2 2020	Q2 2021
Net cash provided by (used in) operating activities	\$9	\$12	\$53	\$81	\$(2)	\$17	\$34
Cash paid for interest	\$18	\$21	\$13	\$3	\$5	\$5	\$0
Cash paid for acquisition-related expenses	\$0	\$1	\$5	\$5	\$0	\$0	\$1
Cash paid for purchases of equipment and leasehold improvements	\$(3)	\$(7)	\$(4)	\$(8)	\$(2)	\$(0)	\$(2)
uFCF	\$24	\$27	\$66	\$81	\$2	\$21	\$33
<i>Margin %</i>	<i>16%</i>	<i>13%</i>	<i>25%</i>	<i>26%</i>	<i>4%</i>	<i>34%</i>	<i>38%</i>

⁽¹⁾ Certain prior period amounts have been revised to correct immaterial errors.

GAAP to Non-GAAP Gross Profit Reconciliation

Non-GAAP Gross Profit

(\$ in millions)	FY2018 ⁽¹⁾	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	Q2 2019 ⁽¹⁾	Q2 2020 ⁽¹⁾	Q2 2021
Gross profit	\$98	\$148	\$208	\$35	\$49	\$67
Amortization expense	\$9	\$10	\$11	\$3	\$3	\$3
Stock-based compensation	\$0	\$0	\$1	\$0	\$0	\$0
Non-GAAP Gross Profit	\$107	\$158	\$220	\$37	\$51	\$70
Margin %	73%	78%	82%	77%	82%	81%

⁽¹⁾ Certain prior period amounts have been revised to correct an immaterial error related to certain commissions that were incorrectly capitalized. The commissions, as well as the associated payroll taxes and retirement plan contributions, were not incremental to the acquisition of customer contracts and should have been expensed as incurred. In addition, certain prior period amounts have been revised to correct other immaterial errors.

GAAP to Non-GAAP Operating Income Reconciliation

Non-GAAP Operating Income

(\$ in millions)	FY2018 ⁽¹⁾	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	TTM 6/30/21 ⁽²⁾	Q2 2019 ⁽¹⁾	Q2 2020 ⁽¹⁾	Q2 2021
Operating income (loss)	\$(31)	\$(22)	\$(17)	\$(34)	\$(5)	\$4	\$(16)
Amortization expense	\$30	\$33	\$33	\$34	\$8	\$8	\$8
Stock-based compensation	\$2	\$2	\$7	\$12	\$1	\$1	\$4
Acquisition-related expense	\$0	\$1	\$5	\$4	\$0	\$2	\$2
Acquisition-related earnout	\$0	\$0	\$(1)	\$7	\$0	\$(4)	\$4
Offering costs	\$0	\$0	\$1	\$1	\$0	\$0	\$1
Payroll taxes related to stock-based compensation	\$0	\$0	\$0	\$1	\$0	\$0	\$0
Legal reserve	\$0	\$0	\$0	\$4	\$0	\$0	\$4
Non-GAAP operating income	\$2	\$15	\$27	\$29	\$4	\$11	\$8
Margin %	1%	7%	10%	9%	8%	17%	9%

⁽¹⁾ Certain prior period amounts have been revised to correct an immaterial error related to certain commissions that were incorrectly capitalized. The commissions, as well as the associated payroll taxes and retirement plan contributions, were not incremental to the acquisition of customer contracts and should have been expensed as incurred. In addition, certain prior period amounts have been revised to correct other immaterial errors.

⁽²⁾ Includes the three months ended September 30, 2020, December 31, 2020 and March 31, 2021, which have been revised to correct the immaterial errors described above.

GAAP to Non-GAAP Expense Reconciliation

Sales and Marketing

(\$ in millions)	FY2018 ⁽¹⁾	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	Q2 2019 ⁽¹⁾	Q2 2020 ⁽¹⁾	Q2 2021
GAAP Sales and Marketing	\$54	\$73	\$99	\$17	\$21	\$33
Stock-based compensation	\$(1)	\$(0)	\$(2)	\$(0)	\$(0)	\$(1)
Payroll taxes related to stock-based compensation	\$0	\$0	\$0	\$0	\$0	\$(0)
Non-GAAP Sales and Marketing	\$53	\$73	\$97	\$17	\$21	\$31
<i>Margin %</i>	36%	36%	36%	35%	33%	36%

Research and Development

(\$ in millions)	FY2018 ⁽¹⁾	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	Q2 2019 ⁽¹⁾	Q2 2020 ⁽¹⁾	Q2 2021
GAAP Research and Development	\$32	\$43	\$53	\$10	\$12	\$17
Stock-based compensation	\$(0)	\$(0)	\$(2)	\$(0)	\$(0)	\$(1)
Acquisition-related expense	\$0	\$0	\$0	\$0	\$0	\$(0)
Payroll taxes related to stock-based compensation	\$0	\$0	\$0	\$0	\$0	\$(0)
Non-GAAP Research and Development	\$31	\$43	\$51	\$9	\$12	\$16
<i>Margin %</i>	21%	21%	19%	20%	19%	19%

General and Administrative

(\$ in millions)	FY2018 ⁽¹⁾	FY2019 ⁽¹⁾	FY2020 ⁽¹⁾	Q2 2019 ⁽¹⁾	Q2 2020 ⁽¹⁾	Q2 2021
GAAP General and Administrative	\$22	\$32	\$52	\$7	\$7	\$28
Stock-based compensation	\$(1)	\$(1)	\$(3)	\$(0)	\$(0)	\$(1)
Acquisition-related expense	\$(0)	\$(1)	\$(5)	\$0	\$(2)	\$(2)
Acquisition-related earnout	\$0	\$(0)	\$1	\$0	\$4	\$(4)
Offering costs	\$0	\$0	\$(1)	\$0	\$0	\$(1)
Payroll taxes related to stock-based compensation	\$0	\$0	\$0	\$0	\$0	\$(0)
Legal reserve	\$0	\$0	\$0	\$0	\$0	\$(4)
Non-GAAP General and Administrative	\$21	\$29	\$44	\$7	\$8	\$15
<i>Margin %</i>	14%	14%	16%	15%	13%	17%

⁽¹⁾ Certain prior period amounts have been revised to correct an immaterial error related to certain commissions that were incorrectly capitalized. The commissions, as well as the associated payroll taxes and retirement plan contributions, were not incremental to the acquisition of customer contracts and should have been expensed as incurred. In addition, certain prior period amounts have been revised to correct other immaterial errors.