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Cowen's 49th Annual TMT Conference

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Forward-Looking Statements

This presentation contains forward-looking statements that are subject to many risks and uncertainties. All statements made in this presentation other than statements of historical facts are forward-looking statements, including, without limitation, statements regarding Ambarella's strategy, future operations, financial targets, future revenues, projected costs, prospects, plans and objectives for future operations, future product introductions, future rate of our revenue growth, the size of markets addressed by the company's solutions and the growth rate of those markets, technology trends, our ability to address market and customer demands and to timely develop new or enhanced solutions to meet those demands, our ability to achieve design wins, and our ability to retain and expand our customer and partner relationships.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential," or the negative of those terms, and similar expressions and comparable terminology intended to identify forward-looking statements. We have based forward-looking statements largely on our estimates of our financial results and our current expectations and projections about future events, markets and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long-term business operations and objectives, and financial needs as of the date of this presentation. Although these forward-looking statements are based upon information available at the time the statements are made and reflect management's good faith beliefs, forward-looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to differ materially from anticipated future results. Important factors that could cause actual results to differ materially from expectations are disclosed in Ambarella's annual reports on Form 10-K and quarterly reports and Form 10-Q filed with the Securities and Exchange Commission (the "SEC"), particularly in the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." You should not place undue reliance on forward-looking statements, which speak only as of the date on which they are made. We do not undertake to update or revise any forward-looking statements after they are made, whether as a result of new information, future events, or otherwise, except as required by applicable law. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this presentation may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

Before you invest, you should read the annual and quarterly reports and other documents Ambarella has filed with the SEC for more complete information about the company and its ordinary shares. Additional information will also be set forth in Ambarella's future quarterly and annual reports and other filings made with the SEC from time to time. You may access these documents for free by visiting EDGAR on the SEC web site at www.sec.gov.

Ambarella Overview

Ambarella is an artificial intelligence (“AI”) vision silicon company

- Ambarella developed over a 4 year period an AI processor architecture specifically optimized for video edge-endpoint applications. The integration of this deep neural network AI processor with the company’s state-of-the-art video processor yields a highly optimized computer vision (“CV”) system-on-a-chip (“SoC”).
- Cumulative investment into CV technology >\$500 million with total cumulative R&D investment >\$1 billion.
- CV revenue 10%+ of FY2021 revenue and estimated to be at least 25% of FY2022 revenue. Three “waves” of CV revenue anticipated; professional security cameras (CY2020), smart home security cameras (CY2021) and automotive camera systems (CY2022-23).

Founded 2004, IPO (NASDAQ: AMBA) 2012

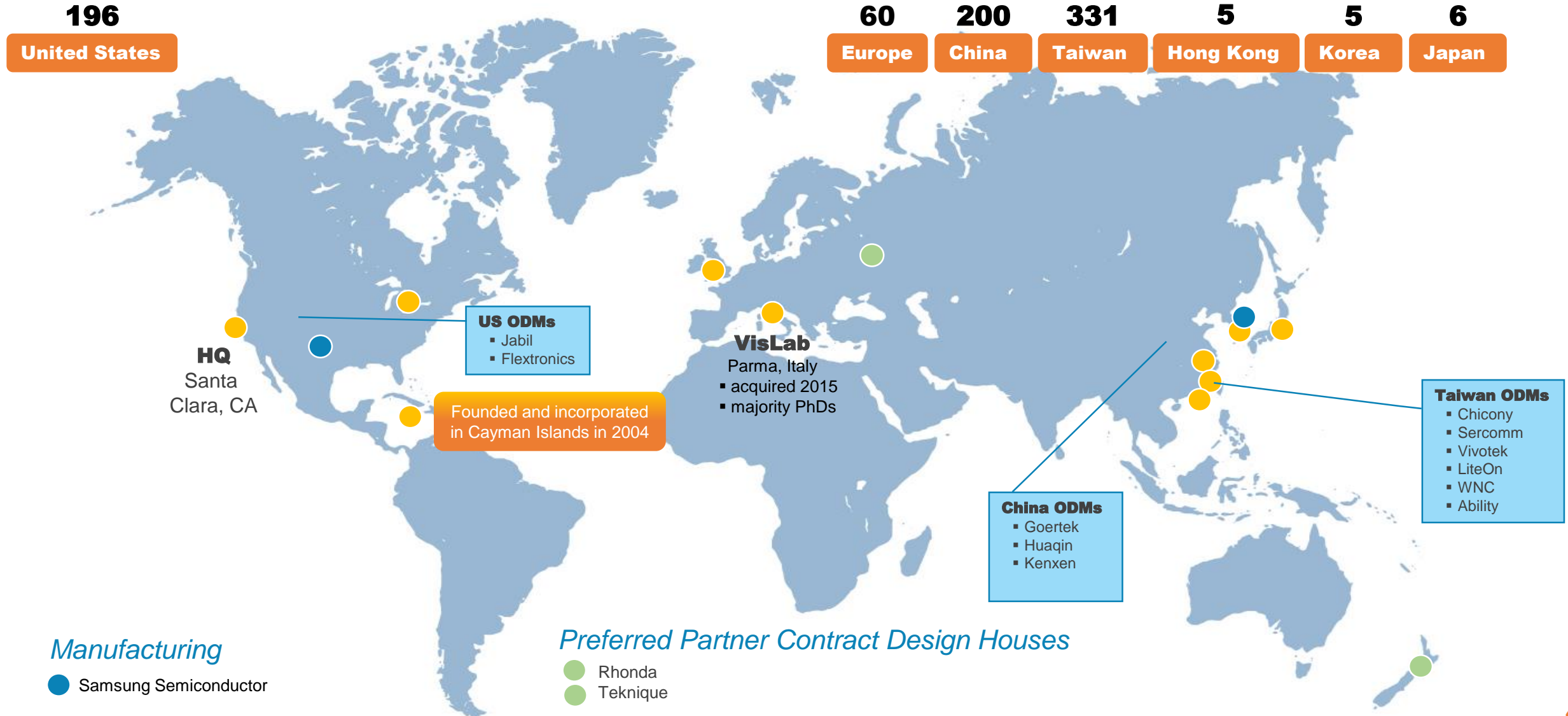
- Focused on video applications, always with the premise that video is a special type of data requiring an optimized chip architecture.
- Initially targeted human viewing applications with low-power and high-resolution SoCs for the consumer and security camera markets.
- New CV SoCs enable machines to visually perceive and make decisions, enabling higher levels of automation in multiple industries.

Strong and liquid balance sheet

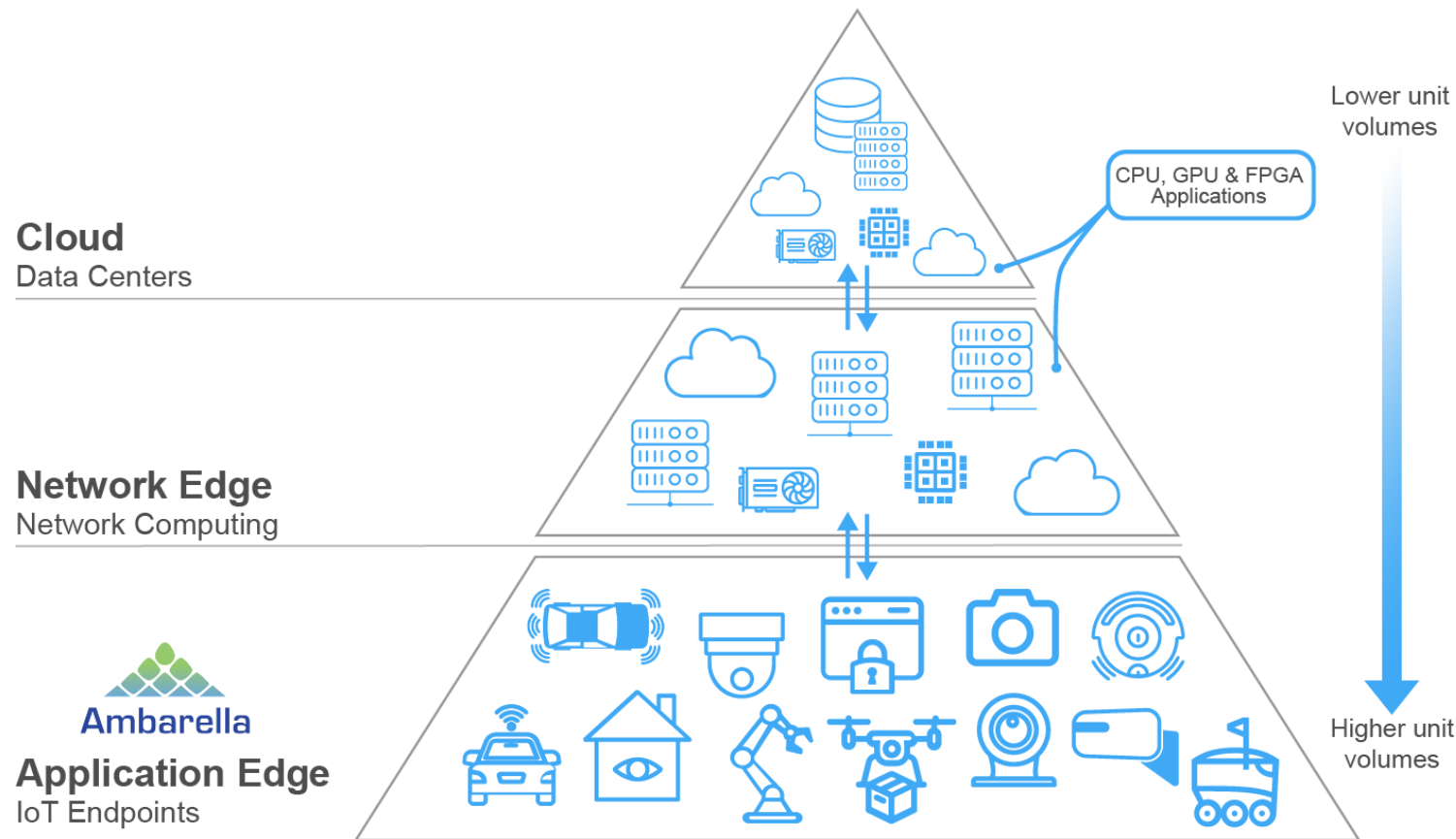
- \$435 million cash and marketable securities and no debt exiting Q1 FY2022 (April 30, 2021).
- Returned \$176 million to shareholders via stock repurchases.

Global Footprint – 803 *Employees*

>81% of employees are engineers and ~69% of the engineers are focused on software/algorithms



Ambarella Addresses the Edge Endpoints of the IoT Market



- The IoT endpoint market, the foundation of the pyramid, **requires a fundamentally different SoC architecture** versus the server-based network edge and datacenter layers
- Ambarella is focused on IoT endpoints where low power, highly efficient processing, low latency and improved privacy and security are critical
- IoT endpoint market is a high volume and diverse market

Ambarella's Computer Vision System-on-a-Chip

Differentiated with a critical mass of state-of-the-art video processing know-how as well as the company's "algorithm first" approach

Leverages 16+
years of Video
and Image
Processing
Experience

Programmable Computer Vision SoC Platform

with Optimized Coprocessor Acceleration

(customer or 3rd party AI application software layer)



Video
Compression



Image
Processing



CVflow Deep Neural Network
AI processor

NEW

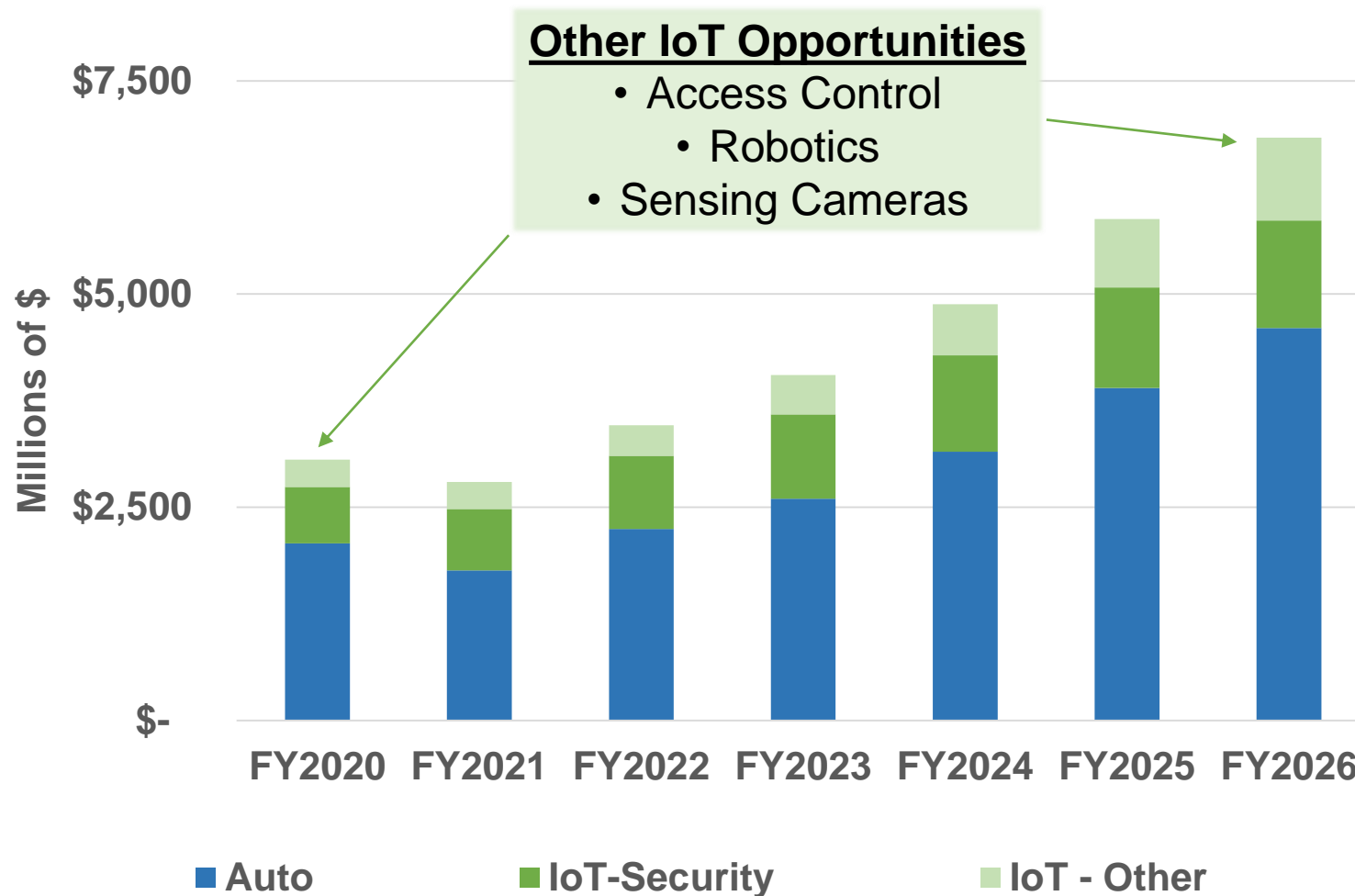
Proprietary CVflow
architecture
introduced in
FY2019 after 3
years in R&D

AI in the Camera - Superior Performance per Watt and Performance per Dollar

**additional cameras can be supported using external SERDES*

***video processing trade-offs available between frames-per-second, resolution, and the number of cameras supported*

Large and Growing SAM – Led by Automotive



- **Automotive** the largest SAM opportunity (15%-20% revenue in FY21)
- **IoT-Security** with the highest Ambarella market share (~60% revenue FY21)
- **IoT-Other** offers the highest CAGR

VisLab: 25+ Years of CV Technology Development Focused on Autonomous Driving Applications

- Acquired in 2015, spun-out from the University of Parma (Italy) in 2009
- Recognized globally for computer vision software expertise applied to autonomous vehicle applications
- Set worldwide milestones for autonomous driving, participating in multiple DARPA challenges
- Consistent track record of innovation



1993-1994
Fully manual



Prometheus ADAS
demo on closed track



Mille Miglia 2000+km
on Italian highways
94% autonomous
steering



TerraMax 2004-2007
Fully autonomous



DARPA Grand 132
miles off-road 100%
AV, driverless

DARPA Urban driving
100% AV, driveless

VIAC 15km cross-
continent drive
100% AV following



Porter 2009-now
4 fully autonomous
electric vehicles

PROUD 13km
in Parma,
100% AV



BRAiVE 2008-now
Fully autonomous



DEEVA 2014
Fully Autonomous
with 13 stereo
camera systems



DEEVA CV
integration 100%
AV



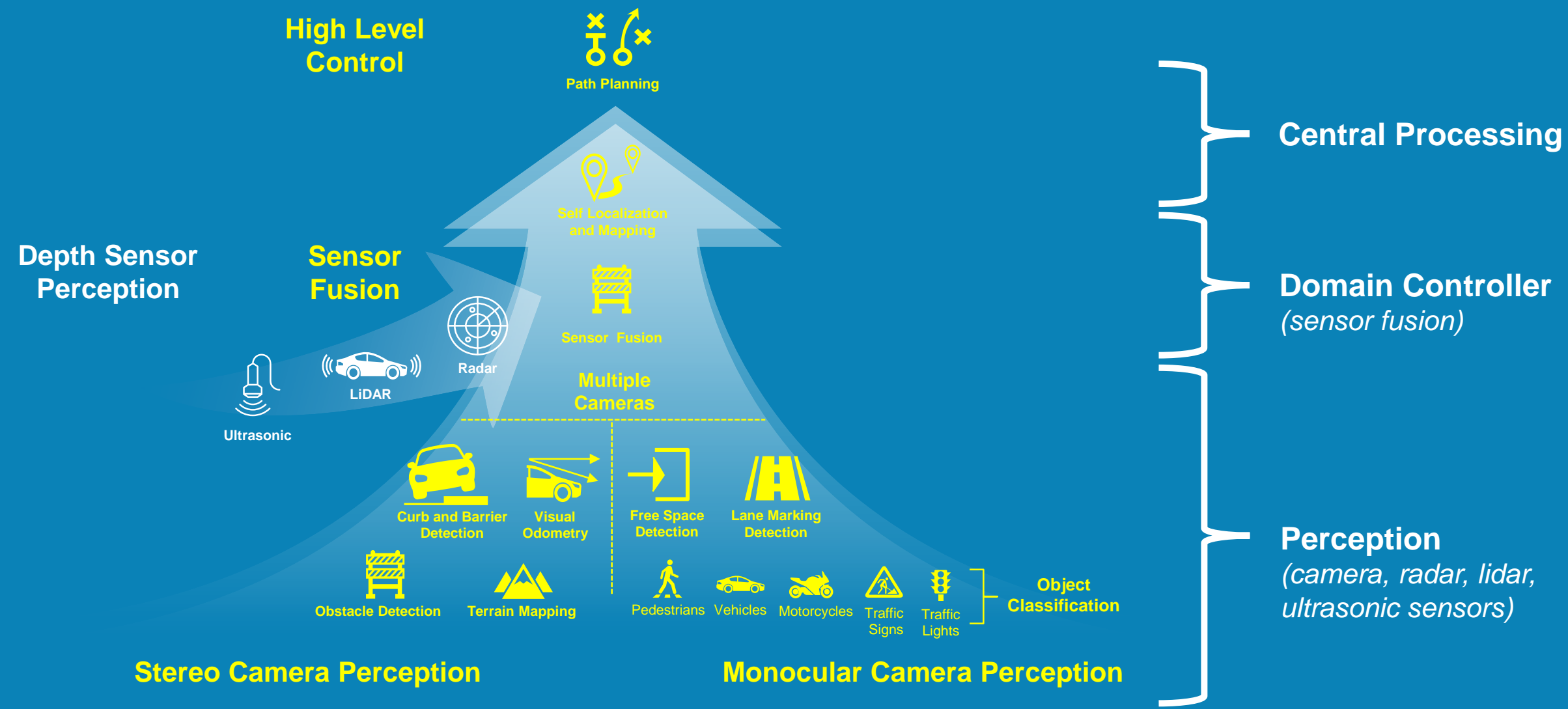
VW Tiguan 2017 4K sensors



EVA
Embedded Vehicle
Autonomy



Layers of Processing in an L2+ to L4 Autonomy Stack



Automotive Camera System Target Markets

15%-20% fiscal 2021 total revenue

Ambarella	Recorders /Dataloggers		Forward-Facing ADAS	eMirrors		In-Cabin		L2+	L4/L5 Part-time + Full-time Autonomous
	Enable Tier 1s to differentiate with combo products on 1 SoC								
CY2019 SAM CY2025 SAM	~\$250M \$400M to \$500M		>\$1B >\$2B					~\$100M >2B	~\$25M ~\$200M
New Vehicle Penetration 2019	<10%		45% to 50%	~1.0%		~1.0%		<1.0%	<0.1%
Ambarella F2021 Revenue	Majority of auto revenue		New	New		New		New	New
Products (Examples)	A12 H22	CV25, CV5	CV22 CV22FS CV2 CV2FS	A12 H22	CV22/FS CV2/FS CV5	CV22 CV22FS CV2 CV2FS		CV2FS	CV22 CV22FS CV2 CV2FS
Target Customers	Retail (aftermarket)	Tier 1s (pre-install)	Tier 1s	Tier 1s		Tier 1s		OEMs	OEMs
Applications & Examples	Human Viewing (e.g. event reconciliation, scoring, insurance)	Human Viewing + Computer Vision (e.g.L0 - warnings for collision or lane departure)	Computer Vision (e.g. emergency braking, lane keep assist, etc.) L0-L3 ADAS	Human Viewing (e.g. fuel efficiency, improved field-of-view, etc.)	Human Viewing + Computer Vision (e.g. blind spot detection) L0-L4 ADAS	Human Viewing (e.g. driver scoring, event reconciliation, training, insurance)	Human Viewing + Computer Vision (e.g. distracted/drowsy driver, seat belts, airbags, etc., L0-L5)	Human Viewing + Computer Vision (more frequent autonomy leveraging HD maps and more sophisticated SW, SoCs and HW systems)	Human Viewing + Computer Vision (most or all camera systems running on an SoC)

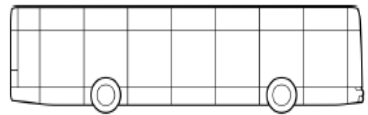
Arrival Selects Ambarella Cvflow SoCs for L2+ Environmental Perception Module in Buses + Vans



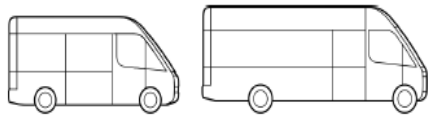
🕒 June 1, 2021

Multiple Ambarella SoCs in L2+ AI Vision System

- Exterior cameras including front facing camera(s)
- Chosen for neural network processing performance, stereovision support, excellent image quality, extremely low power, and functional safety (ASIL B) capabilities



BUS - Q4



VAN & LARGE VAN - Q3



SMALL VEHICLE PLATFORM - Q3

Arrival (UK)

- March 25th NASDAQ IPO \$11.5B market cap, >\$600M cash
- Production expected to begin Q4 2021 with 4 vehicles in market by CY2023. \$1.2B orders
- UPS key customer, Hyundai strategic partner; both investors



Great Wall Motors introduces new WEY Mocha SUV featuring Ambarella-based AI vision system



🕒 Apr 20, 2021 📍 Santa Clara, CA

CV25AQ-based AI vision system:

- Multi-channel **in-cabin sensing** and **driver monitoring**
- Integrated **H.264 video recording (DVR functionality)**
- Reliable visual processing under **complex lighting conditions**

Great Wall Motors WEY Mocha:

- One of the **largest OEMs** in China.
- WEY Mocha is the **flagship SUV** of the new driving platform
- Launched during **Auto Shanghai 2021**



Motional Selects Ambarella CVflow® AI Vision Processors for its Driverless Vehicles

🕒 Mar 2, 2021 📍 Santa Clara, CA

Part of central processing module:

- Responsible for camera processing (incl. front camera)
- The **CVflow AI engine** will enable Motional AI algorithms
- Advanced **image processing** will allow the vehicles to operate in challenging lighting conditions
- SoC's **H.264 encoding** enable the efficient logging of video data

Motional:

- AD joint venture between **Hyundai** and **Aptiv**
- Among the first to put
- Announced the largest deployment of Robo-Taxi with **Lyft**



Ambarella's Global Automotive Footprint

OEM, Tier 1's, and Tier 2's

Computer Vision

(AI Processor "CVflow" integrated with Video Processor)



Mercedes-Benz
Vans. Born to run.



AUTOCRUIS



MotorEye



MINIEYE

Longhorn
Automotive



Human Viewing

(Video Processor only)

DENSO TEN

Longhorn
Automotive



TOYOTA



Mercedes-Benz



INV'O

JVC



HONDA

ROADEFEND
径卫视觉

GENTEX

Automotive Revenue Funnel

Won + Pipeline = Automotive Revenue Funnel

Pre-pipeline – not in the funnel

Potentially indicative of future pipeline activity

Customers who purchase engineering lots, evaluation hardware, software development kits and/or development boards for automotive applications

Pipeline – in the bidding process ~35%

Majority CV SoCs for ADAS/AD as well as video processors for human viewing

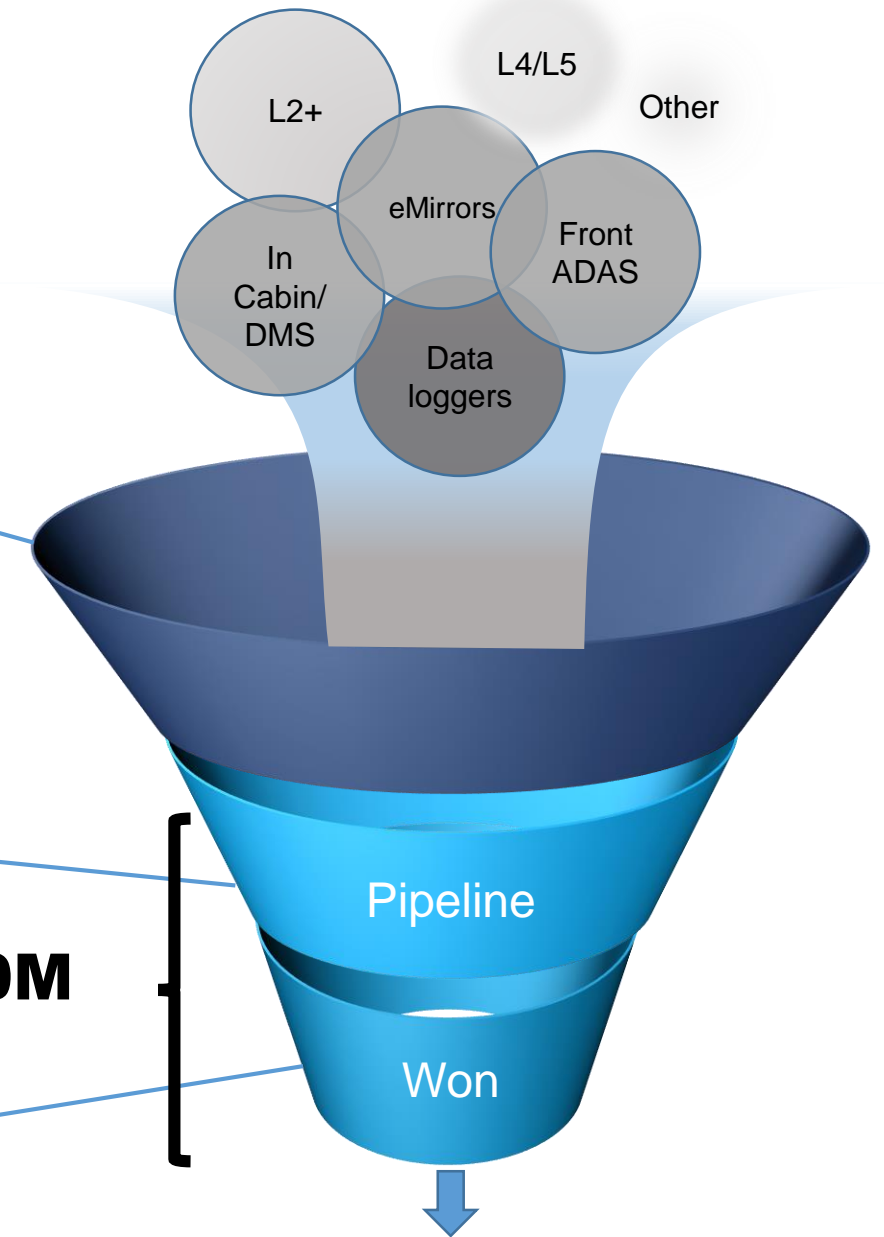
2 discount factors: (1) probability of winning design and (2) confidence in customers' revenue forecast

Won – notified we have won design ~65%

Majority CV SoCs as well as video processors for human viewing

1 discount factor: confidence in customers' revenue forecast

~\$600M



**Automotive Revenue Funnel
Estimated Lifetime Revenue**

Automotive revenue funnel data provided on November 23, 2020 as of October 31, 2020

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“Security Camera” Market

~60% fiscal 2021 total revenue

■ “Security camera” market transformation

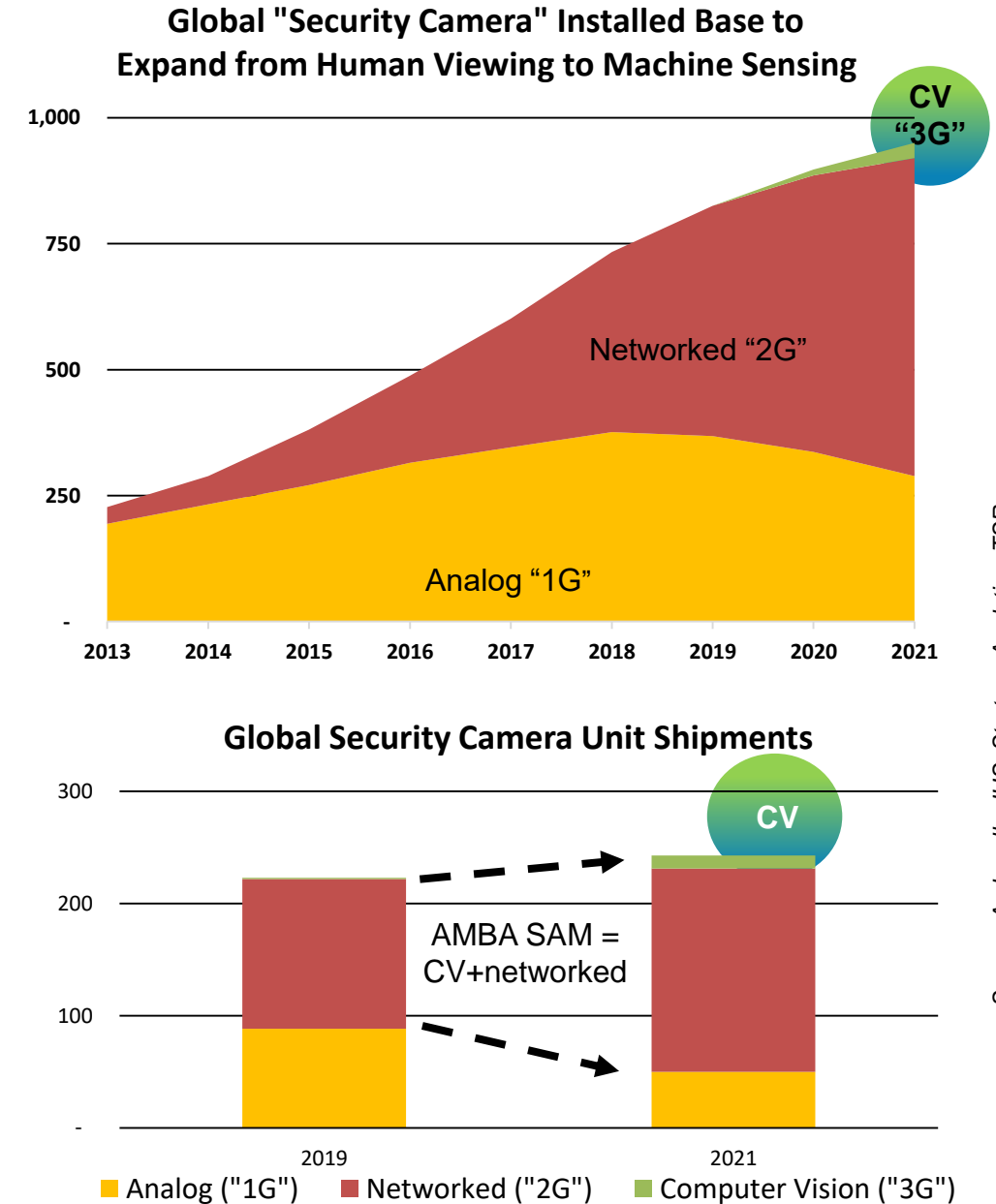
- A CV enabled camera collects and processes data for a machine’s perception and simultaneously generates an image for human viewing
- Addressable market expands from humans to include machines
- Customer software on our CV SoCs enables new data driven camera applications and new business models for our customers
- Machines can take advantage of video innovations that human eyes can’t

■ ~900M “security camera” installed base C2020

- Installed base today is almost all human viewing (“2G” video processors) primarily deployed for security applications
- The human viewing installed base is expected to continue to grow while the installed base for machine perception is just beginning
- Replacement rate estimated between 4 to 6 years

■ Annual Unit Shipments ~260 million in C2020

- ~75% professional (enterprise and smart city) and ~25% smart home
- “3G” CV SoCs command a ~2x ASP versus a similar 2G video processor
- “1G” analog camera market expected to continue to shrink



Ambarella's Global Security Camera Footprint

Enabling Most Major Enterprise, Smart City and Smart Home Camera Companies

Professional Security

Enterprise — Retail — Smart Cities — ITS — Smart Parking



Home Security


Home Security — Smart Home Automation — Delivery Services



Competitive Landscape is Fragmented

Ambarella's visual AI processing expertise scales across multiple markets



 Ambarella	Security Cameras		Automotive Cameras					
	Professional	Home	Recorders	Forward-Facing ADAS	eMirror	In-Cabin	L2+	PT/FT Autonomous
Ambarella	✓	✓	✓	✓	✓	✓	✓	✓
HiSilicon (Huawei)	✓	✓ China only	✓ Aftermarket					
Mobileye (Intel)				✓ (SW from Mobileye+SoC from STM="black box")			✓ DNN begins with EyeQ5	✓
Movidius (Intel)	✓							
Nvidia	(Server based architectures)						✓	✓ central AI processing
NXP						✓		
Qualcomm	✓	✓	✓	✓ Reselling T1 Veoneer's IP		✓		
Renesas				✓	✓	✓	✓	✓
SigmaStar	✓	✓						
Texas Instruments				✓	✓	✓	✓	✓
Xilinx				✓	✓	✓	✓	✓
(IP Cores) Cadence, CEVA, etc.	✓	✓		✓ Incomplete solution				✓
(Others)	AMLogic, Fullhan, Ingenic, Novatek, Socionext, Will (Custom ASICs)		AIT, Novatek, iCatch	Horizon Robotics (Socionext), (Custom ASICs)			(Custom ASICs)	(Custom ASICs)

Emerging Opportunities

Includes home, enterprise and public driven investments

ID/Authentication for access control and smart lock applications

- Use of biometric technology (e.g. face ID) to identify and authenticate individuals for access control in enterprise, smart home and public applications including access control panels, smart locks and payment terminals
- Low cost single-camera fusion of multiple sensors for optimal accuracy

Robotics platform announced at CES 2020

- Robotic software development kit (“SDK”) is a unified software infrastructure targeting home, factory and enterprise-class robotics for assistance, automation, cleaning, delivery, surveillance, warehouse, etc.
- SDK provides access and acceleration for common robotic functions including stereo, object detection, key points tracking, occupancy grid, visual odometry.

Sensing and counting cameras

- Analyze capacity, monitor elderly, customer patterns, foot traffic, line counting, social distancing, property management, and HVAC control for energy efficiency while maintaining privacy and not recording



Q1 F2022 (April 2021) Earnings Call Recap

12+ Customer Engagements Announced Including 11 Incorporating Ambarella's CV SoCs



5 Automotive Customers/Partners
OEMs and T1s
5 CV



5 Security Camera Customers
4 Enterprise/Public, 1 Home
5 CV



2 Other Customer
2 Wearables
1 CV

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Q1 FY2022 (April 2021) Review and Q2 Outlook

(Q1 FY2022 results and Q2 FY2022 outlook provided June 1, 2021)

▪ **Q2 FY2022 (July, 2021) Outlook**

- Our Q2 revenue guidance is in the range of \$74.0 million to \$77.0 million versus the May 31st sell-side consensus estimate ~\$68.7 million
- On a sequential basis, we anticipate Auto and Security revenue will increase around 10%, with Other revenue estimated to be down ~20%
- We estimate Q1 non-GAAP gross margin between 61.0% to 62.0% with non-GAAP operating expense in the \$36.0 to \$37.5 million range

▪ **Q1 F2022 (April, 2021) Results**

- Revenue of \$70.1 million was above the high-end of our guidance range of \$67.0 million to \$70.0 million and the May 31st consensus estimate ~\$68.7 million. Auto increased ~40% sequentially with Security up more than 20% sequentially and Other was down more than 25% sequentially.
- Non-GAAP gross margin was 62.9% versus the consensus estimate of 60.6%
- Non-GAAP EPS were \$0.23 versus the consensus estimate of \$0.17

▪ **Despite the turbulent environment, we are making solid progress in our multi-year transformation**

- AI computer vision is becoming pervasive, we are embedding it in all our new products and we have growing evidence of market acceptance
- We see a wide variety of risks outstanding, including pandemic, geopolitical and supply chain factors. These risks include*:
 - risks associated with the COVID-19 pandemic
 - potential export regulations on advanced technologies
 - the risk customers in China continue to take actions to reduce their dependence on components they believe could be subject to new export controls, including the creation of dual China/non-China supply chains
 - changes to tariffs and/or the Entity List
 - market share shifts between our customers
 - supply chain issues such as expanding leadtimes, shortages of materials and manufacturing capacity, and adverse weather conditions
- Our largest competitor in the security camera SoC market, HiSilicon, a unit of Huawei, is facing headwinds of their own

**Potential risk factors that could affect our financial results are more fully described in the documents that we file with the SEC, including annual reports on Form 10-K and quarterly reports on Form 10-Q.*

AI FOR SECURITY & BEYOND



RETAIL INSIGHTS



TRAFFIC ANALYSIS



ACCESS CONTROL



SMART BUILDINGS

JUNE 22-24 VIRTUAL EVENT

Contact Louis Gerhardy,
Corporate Development, to
reserve a virtual presentation:
lgerhardy@ambarella.com.

With Ambarella's advanced AI vision processors,
security cameras can do even more.

Join us for an invitation-only look at our latest solutions
for professional video security, home security, access control,
and occupancy sensing.





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