January 17th & 18th, 2024

26th Annual Needham Growth Conference

LOTTE New York Palace

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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, our ability to build and deliver products to customers, 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.

Global Footprint 918 vs. 951 a Year Ago

~82% of employees are engineers and ~69% of the engineers are focused on software/algorithms

260	77	225	341	5	5	5
United States	**Europe**	**China**	**Taiwan**	**Hong Kong**	**Korea**	**Japan**

US ODMs
- Jabil
- Flextronics

India ODM
- VVDN

HQ
Santa Clara, CA

Oculii
Dayton, Ohio
- Acquired 2021
- Radar algorithms

VisLab
Parma, Italy
- Acquired 2015
- AD software stack

Founded and incorporated in Cayman Islands in 2004

Taiwan ODMs
- Chicony
- Sercomm
- Vivotek
- LiteOn
- WNC
- Dynacolor
- Topview

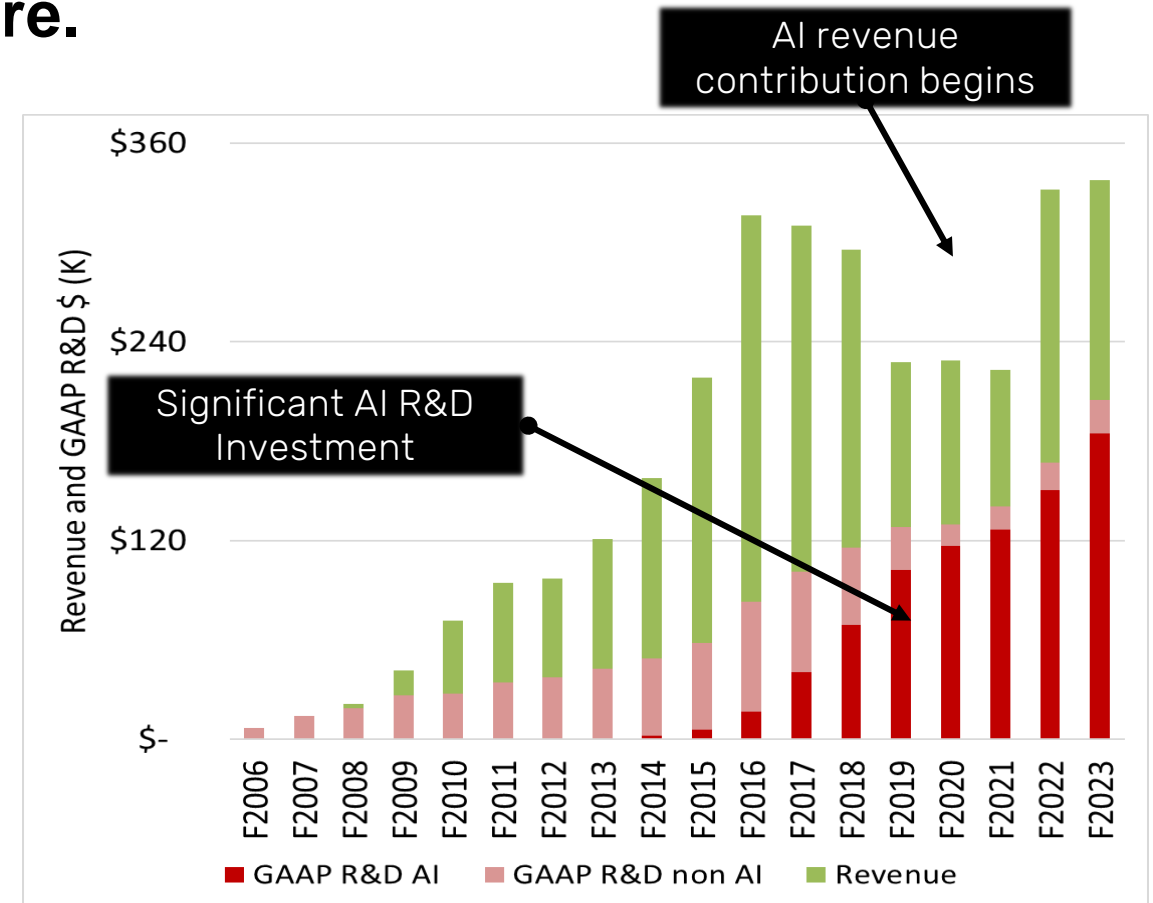**China ODMs**
- Goertek
- Huaqin
- Kenxen

Manufacturing
- Samsung Semiconductor

3

Ambarella is an Edge Artificial Intelligence Company
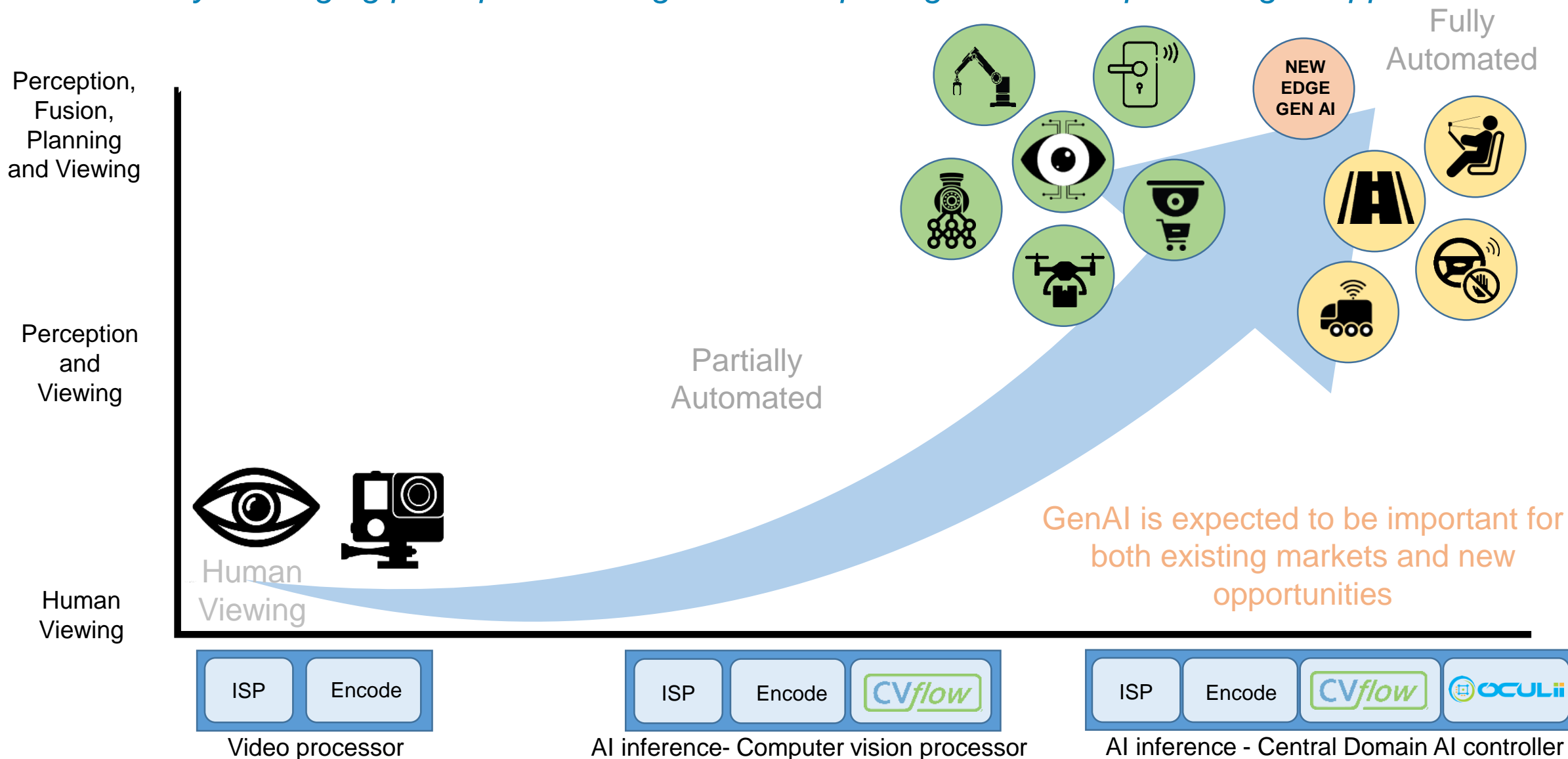*Introducing advanced hardware and software technology*

- **Since our founding in 2004, we have been focused on digital video applications, always with the premise that video is a unique type of data requiring an optimized chip architecture.**

- **First 12 years**. Initially targeted human viewing applications with low-power and high-resolution video processing SoCs for the consumer and security camera markets.

- **The last 6+ years.** Intensive R&D investment led to the development of a deep neural network AI inference processor initially targeting IoT endpoints. When combined with the existing video processor, the integrated computer vision ("CV") system-on-a-chip ("SoC") enables machines to perceive their environment and make intelligent decisions, facilitating higher levels of automation in multiple industries.

- **We are expanding our processing beachhead** beyond video perception and into new markets with the introduction of CV3 and the acquisition of Vislab and Oculii.
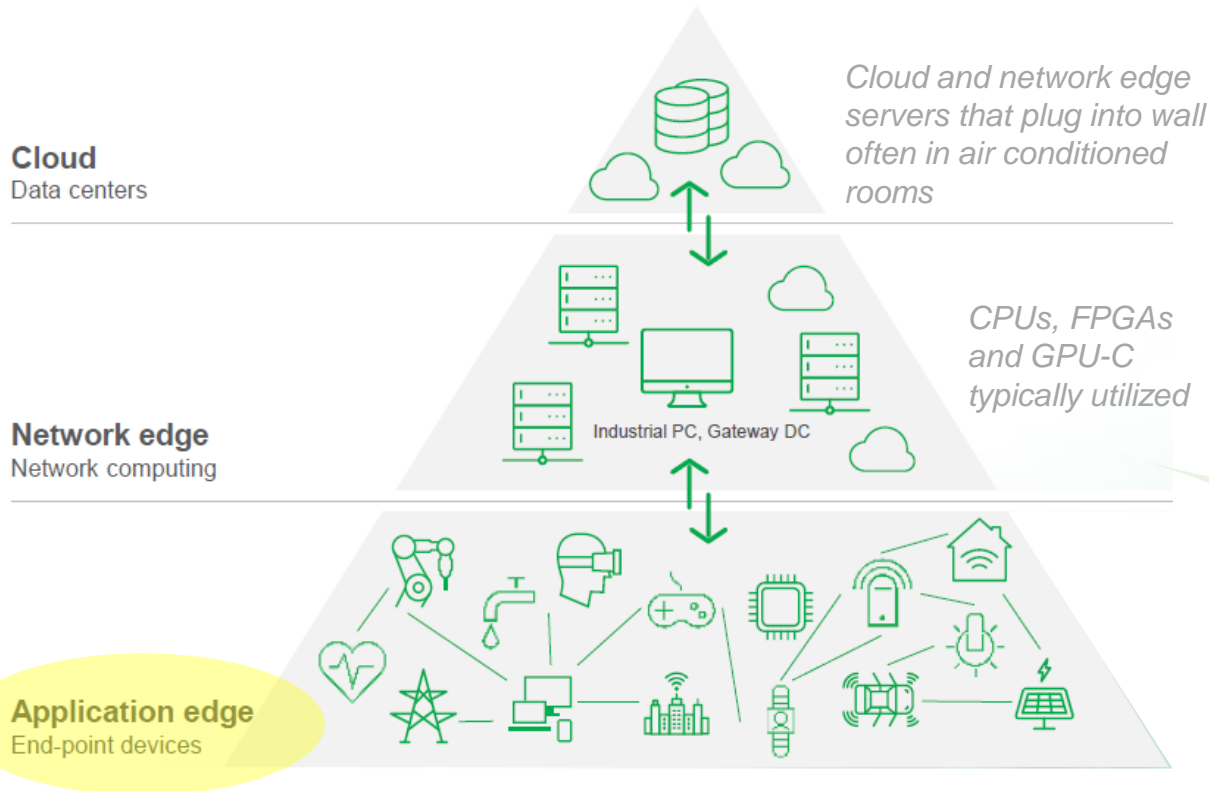

AI revenue contribution begins

Significant AI R&D Investment

Revenue and GAAP R&D $ (K)

$360 · $240 · $120 · $-

F2006 F2007 F2008 F2009 F2010 F2011 F2012 F2013 F2014 F2015 F2016 F2017 F2018 F2019 F2020 F2021 F2022 F2023

■ GAAP R&D AI   ■ GAAP R&D non AI   ■ Revenue

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CVflow a New Foundation for Growth

Successfully leveraging perception heritage into multiple high value deep learning AI applications

Fully Automated

NEW EDGE GEN AI

Partially Automated

Perception, Fusion, Planning and Viewing

Perception and Viewing

Human Viewing

Human Viewing

GenAI is expected to be important for both existing markets and new opportunities

ISP	Encode

Video processor

ISP	Encode	CVflow

AI inference- Computer vision processor

ISP	Encode	CVflow	OCULii

AI inference - Central Domain AI controller

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Deep Learning Inference AI Products Already Established

AI expected to be up to 60% F2024 revenue versus ~45% in F2023

Cloud
Data centers

Network edge
Network computing

Application edge
End-point devices

Cloud and network edge servers that plug into wall often in air conditioned rooms

CPUs, FPGAs and GPU-C typically utilized

Industrial PC, Gateway DC

Deep Learning Inference AI Examples

Endpoints - IoT
AI Surveillance Camera
Access control & Smart Locks
Body worn
Building automation
Mobile robotics (aerial and terrestrial)
Edge automation
Factory robotics (fixed)
Home robotics (e.g. vacuum)
Sensing cameras

Endpoints - Vehicle
ADAS L0, L1, L2
L2+
L4 and L5
Telematics/Fleets

Edge Hardware
GenAI/Large language models (LLMs)

Ambarella inference AI technology and products have been successfully established at the foundation of the "network hierarchy" where low power, highly efficient processing, low latency, and privacy/security are critical

Q3 F2024 earnings call: "Some of our existing customers are evaluating how they will implement GenAI and LLMs at the edge of their network. With our successful LLM demo and additional analysis we have concluded the powerful and highly efficient AI inference processor embedded in our CV3 SoCs is well suited for these edge markets."
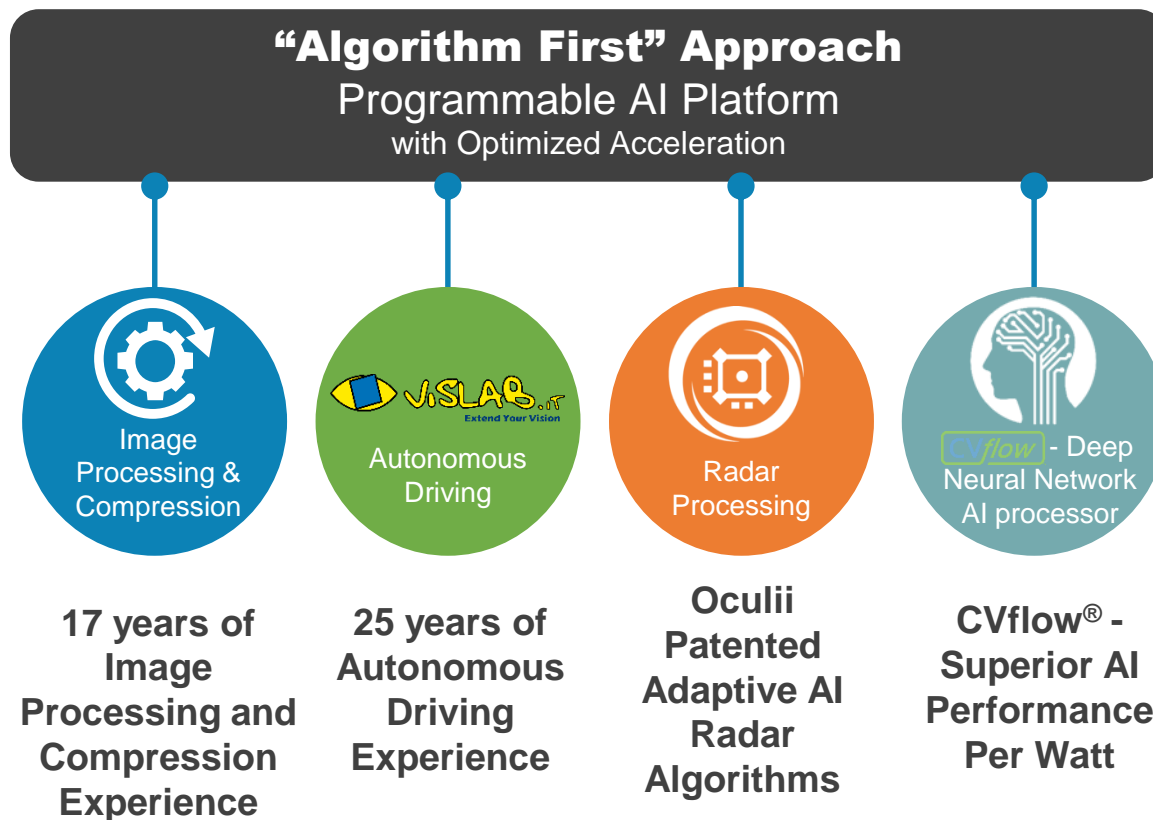
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Ambarella's "Algorithm First" Approach

Our technology and products are differentiated by our approach, domain expertise and people

Superior Perception — — — — — — *leveraged into* — — — — — — AI-based Computer Vision & Radar Processing

"Algorithm First" Approach
Programmable AI Platform
with Optimized Acceleration

Image Processing & Compression

Autonomous Driving

Radar Processing

CVflow - Deep Neural Network AI processor

17 years of Image Processing and Compression Experience

25 years of Autonomous Driving Experience

Oculii Patented Adaptive AI Radar Algorithms

CVflow® - Superior AI Performance Per Watt

We win due to our efficiency as measured by performance-per-Watt.

Scalable Deep Learning AI Inference Processor Portfolio
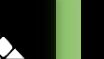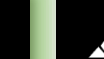
Superior AI performance per Watt

	CV28	CV25	CV22	CV22FS	CV2	CV2FS	CV5/52	CV72	CV3-AD635 (NEW)	CV3-AD655 (NEW)	CV3-AD685	N1
Availability	Announced November 2020	Announced January 2019	Announced January 2018	Announced January 2020	Announced March 2018	Announced January 2020	Announced Jan./June 2021	Announced March 2023	Announced January 2024	Announced January 2024	Announced January 2023	Announced January 2022*
	Production February 2021	Production July 2019	Production December 2018	Production April 2021	Production August 2019	Production April 2021	Production 2022	Sampling	Samples Q1 2024	Samples Q1 2024	Sampling Dec 2023	Sampling June 2022*
	Samsung low power 10nm process							Samsung low power 5nm process				
Mkt	IoT and Auto ADAS			Auto ADAS	IoT and Auto	Auto	IoT and Auto	IoT and Auto ADAS	Auto Mainstream L2+	Auto L2++ (Advanced L2+)	Auto L3, L4, robotics	GenAI; Edge AI
Processing / Sensor	Up to 3 cameras		Up to 2 cameras	Up to 3 cameras	Up to 6 cameras and stereo support	Up to 3 cameras and stereo support	Up to 14 cameras	Up to 10 sensors	Up to 8 sensors	Up to 12 sensors	Up to 24 sensors	Up to 20 sensors
AI Inference	CVflow® Deep Neural Network AI Inference Processor (software tools port from TensorFlow, Caffe, ONNX, etc.)											
	¼ of CV22 AI	½ of CV22 AI	Baseline (CVflow DNN AI)		4x CV22 AI	2x CV22 AI	3.5x CV22 AI	~4x CV22 AI	~13x CV22 AI	~27x CV22 AI	~80x CV22 AI	~160x CV22 AI

The N1 Cooper Development platform announcement + availability is January 2024, however the N1 SoC (also known as CV3-AD High) was announced in January 2022 and sampled in June 2022

Large and Growing Markets

Serviceable market ("SAM") revenue CAGR in the high teens

- **F2023 revenue was ~26% Auto and ~74% IoT**

- **F2028 revenue SAM estimate ~70% Auto and ~30% IoT**

- **We are focused on IoT end point applications** where a majority of the decision making originates from data collected from high bandwidth sensors (cameras and 4D imaging radar)

- **We address the megatrends of security, safety, and automation**

- **Key driver is to enable electronic systems to perceive the world and make intelligent decisions**; human viewing business expected to decline as a proportion of revenue

- CV has triggered **new product cycles** in existing IoT markets and opened **entirely new opportunities** in the auto and IoT markets

- *SAM estimates do not include opportunities for autonomous driving software IP nor large language models ("LLMs")*

Source: Ambarella, ABI, Gartner, IHS, Strategy Analytics, TSR

Evidence of Success
Targeting AI Inference to be up to 60% of total F2024 revenue

- **>325 unique AI customers***

- **>230 unique AI customer products have reached production***

- **AI SoC portfolio, software tools, and platforms are stable, mature and under continuous improvement**

- **~17 million AI SoCs have shipped****

cumulative, as of January 31, 2023
**cumulative, as of July 31, 2023*
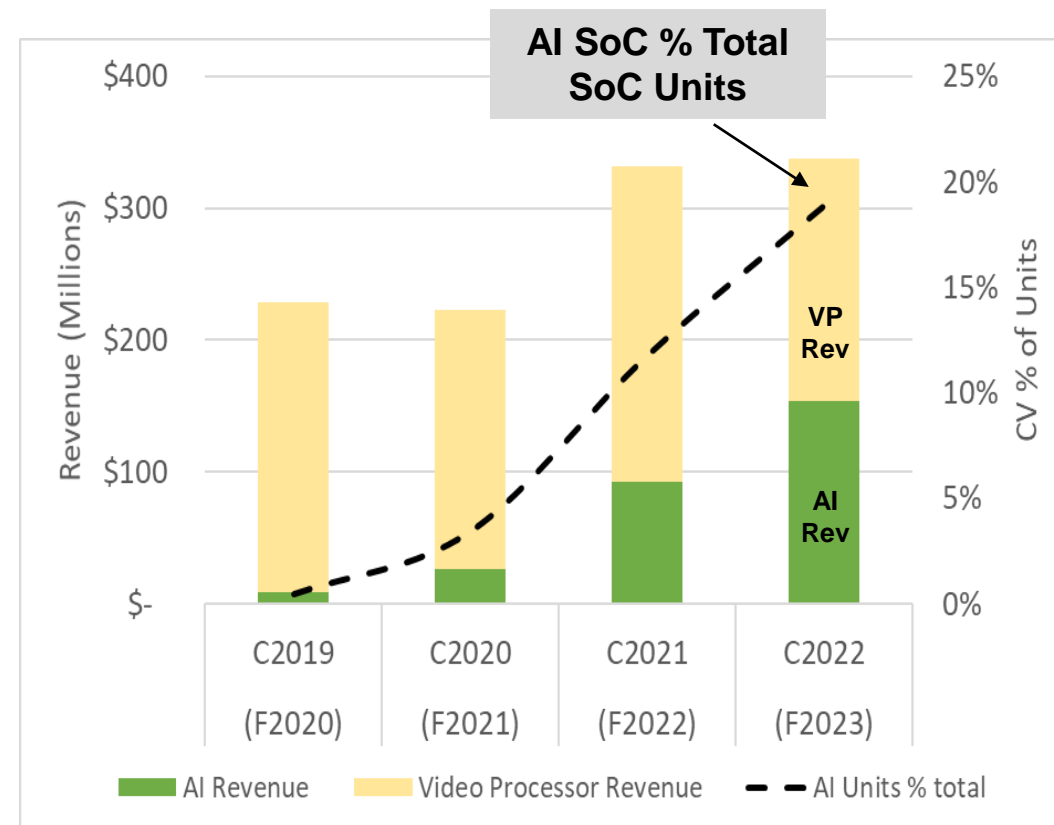
Using January ending fiscal year as proxy for calender year (fiscal year -1)

AI is becoming pervasive, we are embedding AI inference processors in all our new products and there is strong and growing evidence of market acceptance.

Modeling the Automotive Opportunity

~26% of F2023 revenue from automotive (excludes AD SW stack IP and radar perception SW IP)

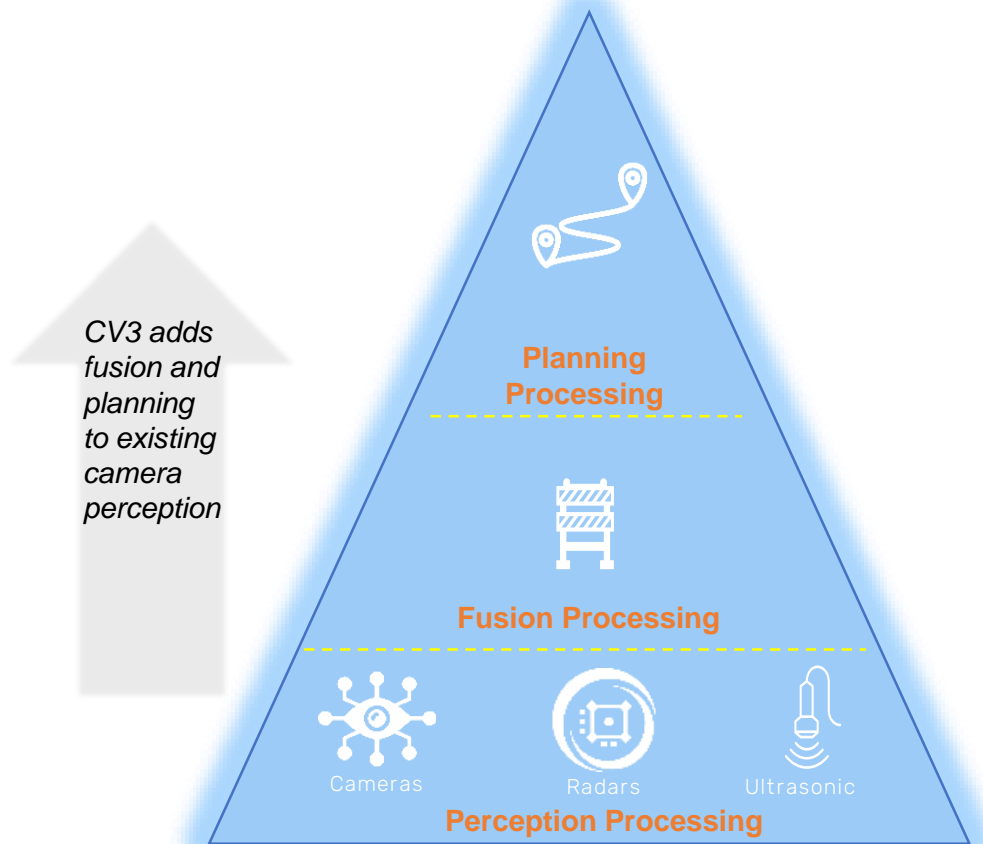| Ambarella Automotive Opportunity	Viewing and ADAS			Autonomous Driving	
	Visualization (dataloggers, drive recorders, ADAS combinations)	**Forward-Facing ADAS ("Front ADAS")**	**Other ADAS** (emirror, in cabin (DMS, OMS), access/personalization)	**L2+**	**L4**
C2022 AMBA SAM* **C2027 AMBA SAM***	~$260M ~$400M	~$1.7B ~$1.3B	~$200M ~$500M	~$300M ~$2.5B	~$50M ~$900M
C2022 global penetration into new vehicle production	10% - 15% (pre-install)	65% - 70%	Emirror 2% - 3% In Cabin 5%- 10% Access/Personalization ~1%	~2%	<0.1%
Ambarella F2023 Revenue	**Existing market** Increasingly T1/OEM driven (versus aftermarket)	**Incremental market** Marketshare commenced F2022	**Incremental market** increasing activity	**Incremental market** High activity	**Incremental market** First award
Products (Examples)	A12, H22 / CV25, CV5	CV22FS, CV2FS, CV72, CV3	A12, H22 / CV28, CV22/2FS, CV5	CV2FS, CV72, CV3	CV22FS, CV2FS, CV3
Target Customers	Retail (aftermarket) / Tier 1s (pre-install)	Tier 1s	Tier 1s	OEMs / Tier 1s	OEMs / Tier 1s

ASP

*SAM estimates exclude autonomous driving software stack IP and radar perception software IP

Source: TSR, Strategy Analytics, Ambarella

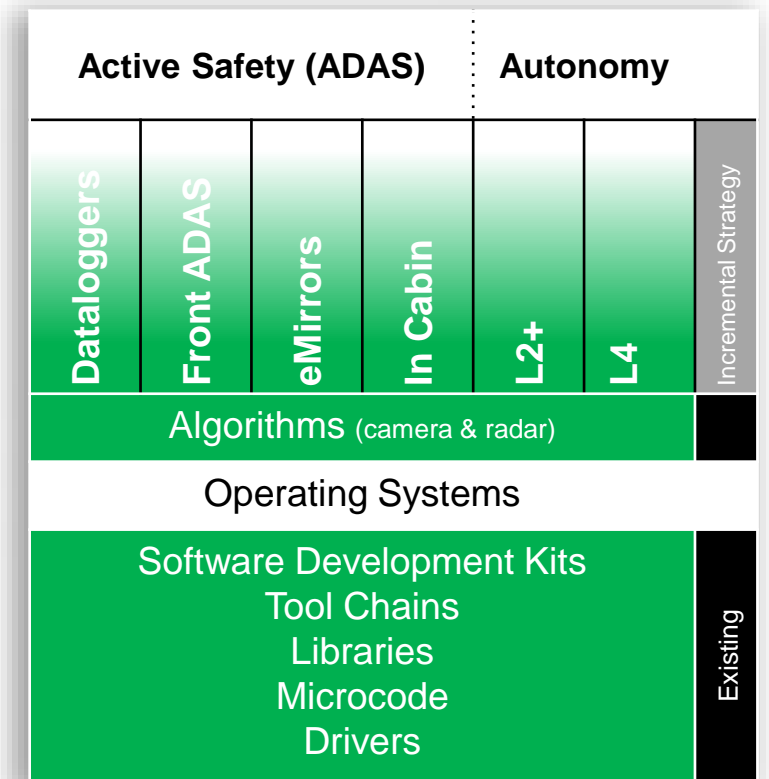# Auto: Capture More Value with CV3 Platform

SoC Strategy
Horizontal and vertical processor consolidation

CV3 adds fusion and planning to existing camera perception

Planning Processing

Fusion Processing

Cameras   Radars   Ultrasonic

Perception Processing

Oculii adds radar perception to existing camera perception

Software Strategy
Module portfolio expanding "up-the-stack"

SW strategy adds value on top of the growing SoC value

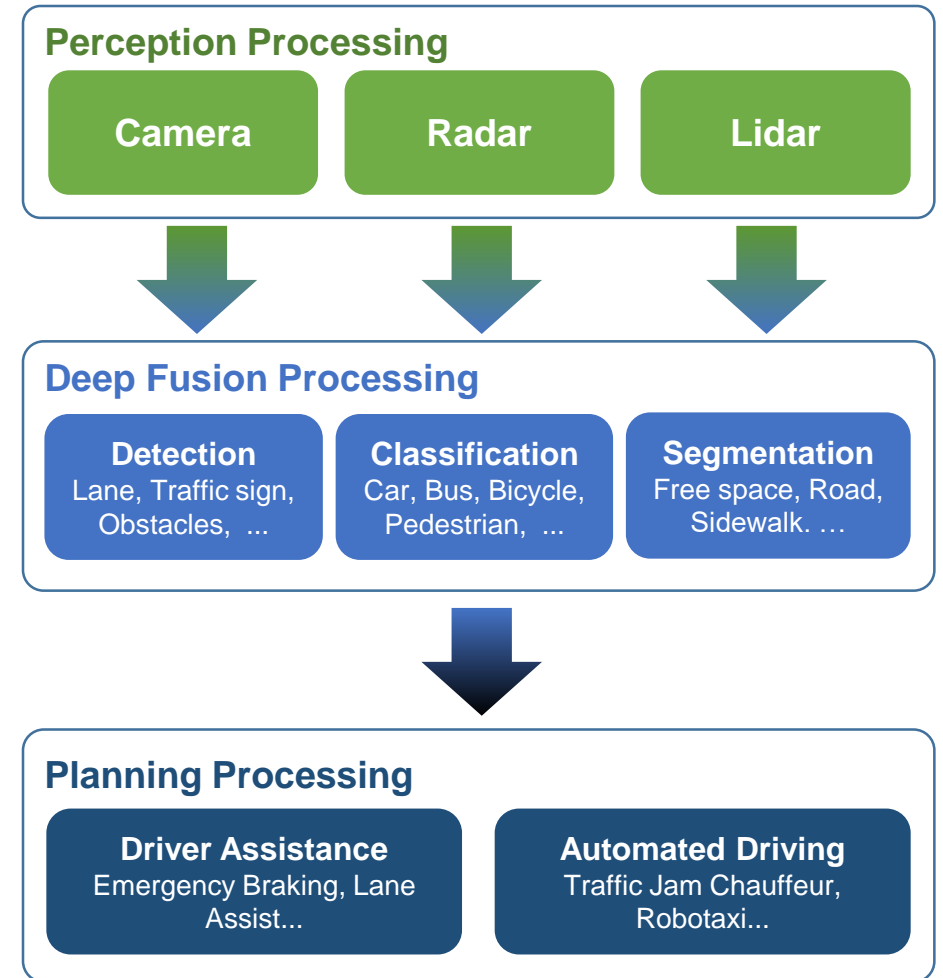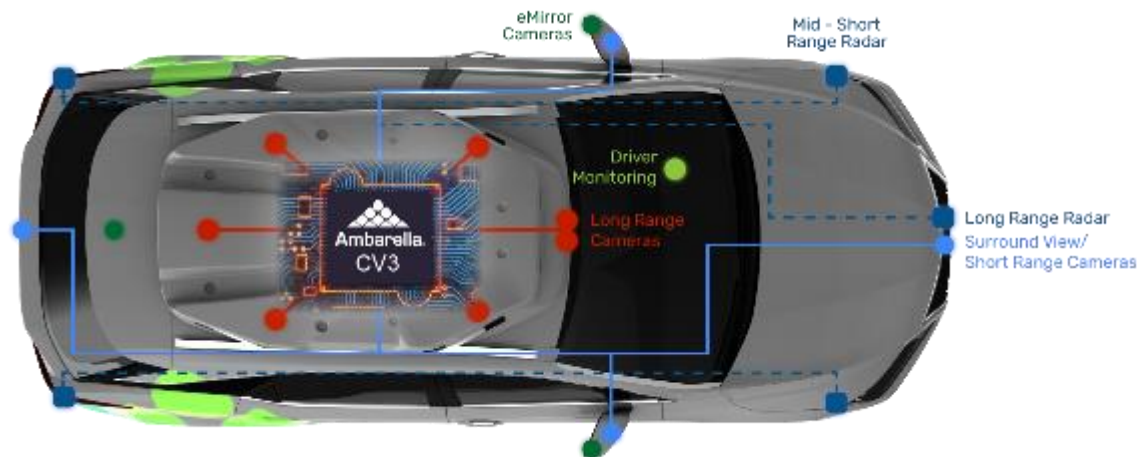| Active Safety (ADAS)				Autonomy		
Dataloggers	Front ADAS	eMirrors	In Cabin	L2+	L4	Incremental Strategy
Algorithms (camera & radar)						
Operating Systems						
Software Development Kits Tool Chains Libraries Microcode Drivers						Existing

Existing

New SW modules higher in the stack

CV3 Platform – CV3 SoC Family

Single-Chip Processing for L2+ to L4 AVs

- **Scalable** family for ADAS, and L2+ to L4 AVs
  - Covers edge, zonal and central domain architectures
  - Multi-sensor perception, fusion and path planning
- Based on analysis of hundreds of algorithms
  - open-source, internal and customer
- **3-4x CVflow® Power and DRAM efficiency** over CV2
- Improved security with **hardware security module**
- **5nm** process technology

Perception Processing

Camera	Radar	Lidar

Deep Fusion Processing

Detection	Classification	Segmentation
Lane, Traffic sign, Obstacles, ...	Car, Bus, Bicycle, Pedestrian, ...	Free space, Road, Sidewalk. ...

Planning Processing

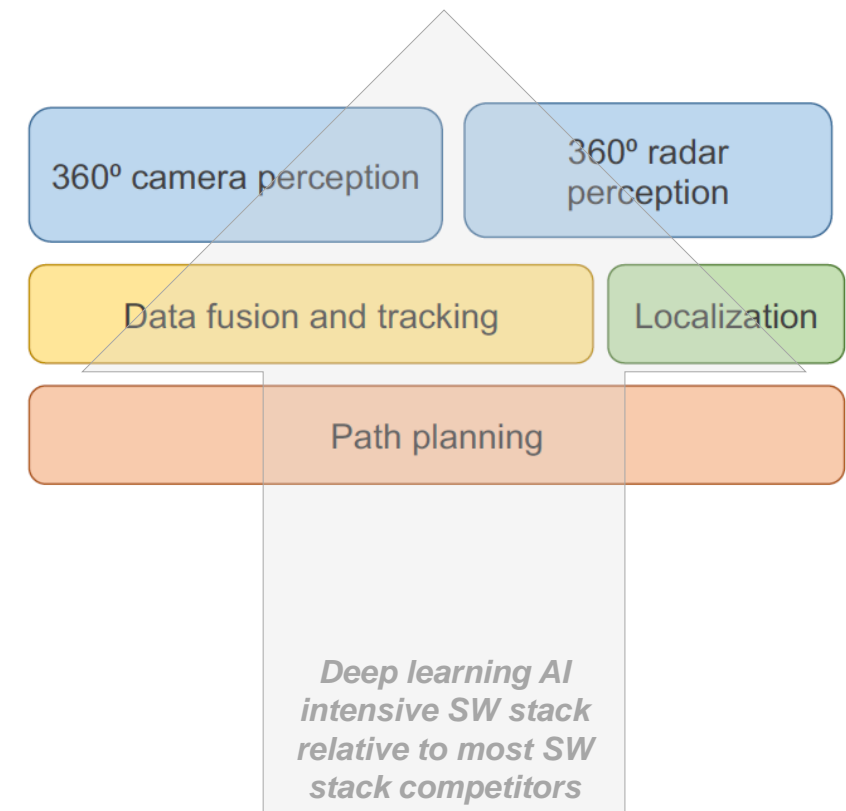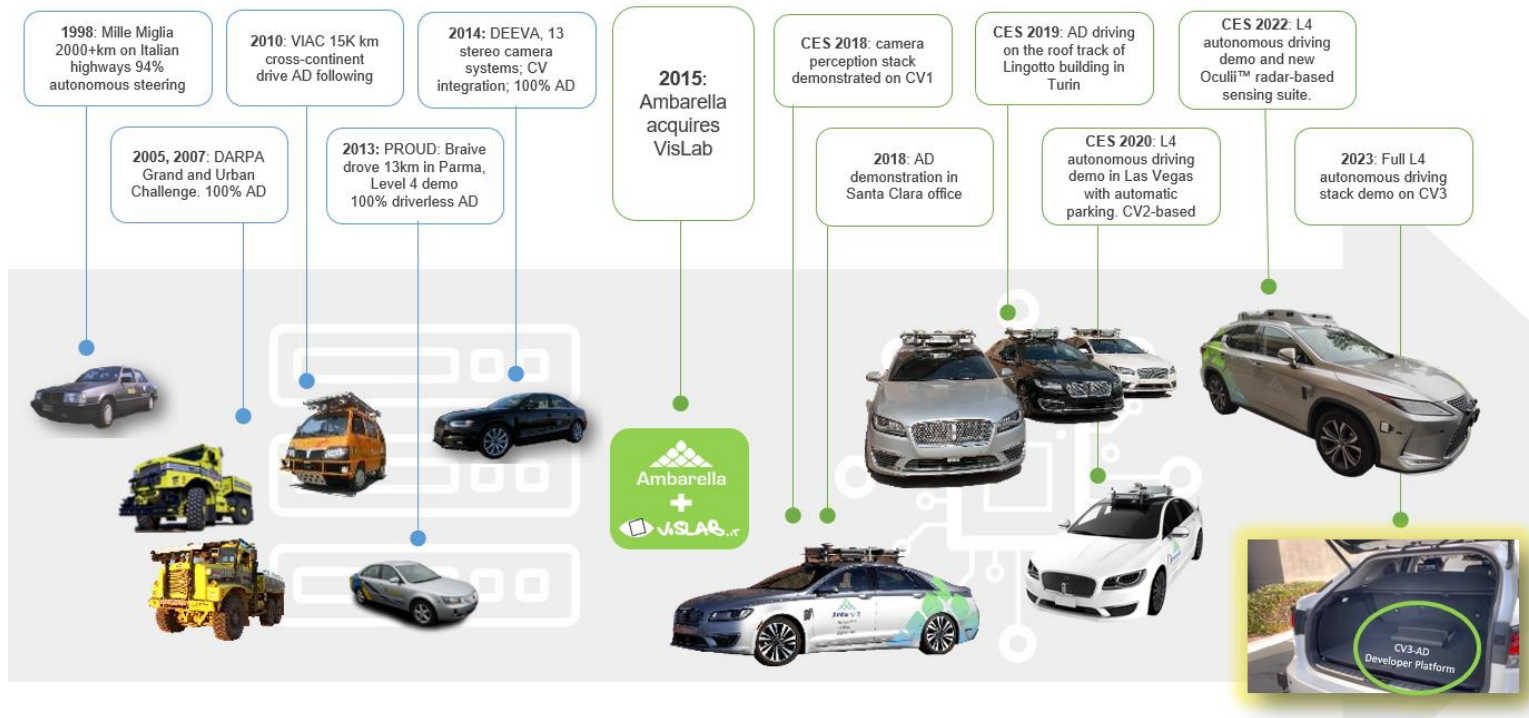| Driver Assistance	Automated Driving
Emergency Braking, Lane Assist...	Traffic Jam Chauffeur, Robotaxi...

CV3 Platform – Autonomous Driving Software IP

Ambarella Unveils Full Software Stack for Autonomous and Semi-Autonomous Driving, Optimized for its CV3-AD Central AI Domain Controller Family

Dec 12, 2023   Santa Clara, CA
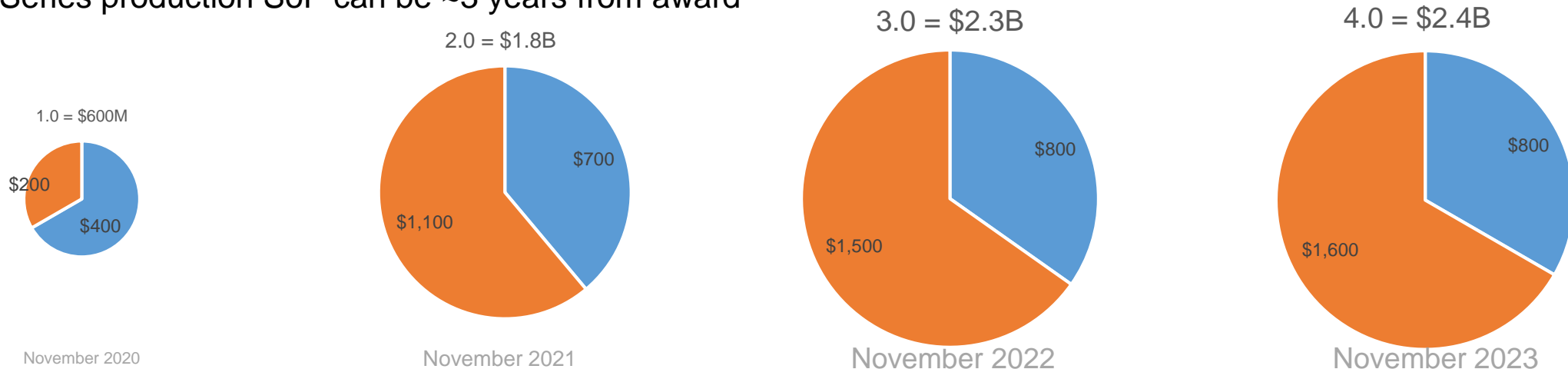
Ambarella's Full AD Software Stack Optimized for CV3 SoCs

Ambarella's Autonomous Driving ("AD") Software Stack History

1998: Mille Miglia 2000+km on Italian highways 94% autonomous steering

2005, 2007: DARPA Grand and Urban Challenge. 100% AD

2010: VIAC 15K km cross-continent drive AD following

2013: PROUD: Braive drove 13km in Parma, Level 4 demo 100% driverless AD

2014: DEEVA, 13 stereo camera systems; CV integration; 100% AD

2015: Ambarella acquires VisLab

CES 2018: camera perception stack demonstrated on CV1

2018: AD demonstration in Santa Clara office

CES 2019: AD driving on the roof track of Lingotto building in Turin

CES 2020: L4 autonomous driving demo in Las Vegas with automatic parking. CV2-based

CES 2022: L4 autonomous driving demo and new Oculii™ radar-based sensing suite.

2023: Full L4 autonomous driving stack demo on CV3

CV3-AD Developer Platform

360º camera perception

360º radar perception

Data fusion and tracking

Localization

Path planning

Deep learning AI intensive SW stack relative to most SW stack competitors

6-Year Automotive Revenue Funnel 4.0 ~$2.4B

Consistent methodology: <u>Won</u> = notified of award with 1 discount factor <u>Pipeline</u> = in the bidding process with 2 discount factors (1) confidence in customers revenue forecast for a project and (2) probability of winning a project

- **With our auto business expected to generate ~$80 million in revenue in F2024/C2023, the six-year $2.4 billion funnel is an indication of the strong revenue growth we anticipate from the auto market**
  - >90% funnel is AI and a large portion of the AI is CV3

- **Significant revisions between funnel 4.0 and funnel 3.0**
  - There were a significant number of revisions to the prior funnel including changes in OEM/T1 forecasts and project delays, projects won or lost and the addition of new projects

- **Distribution of funnel revenue is exponential in shape**
  - Assumptions for auto funnel ASP to rise with time
  - Rising adoption of new technologies in vehicles produced
  - Series production SoP can be ~3 years from award

1.0 = $600M
$200
$400

November 2020

2.0 = $1.8B
$700
$1,100

November 2021

3.0 = $2.3B
$800
$1,500

November 2022

4.0 = $2.4B
$800
$1,600

November 2023

IoT (non-Auto) Market

~74% F2023 revenue; mostly security/viewing - new AI sensing applications emerging

- **Security market transformation**
  - The security camera market is the largest AIoT market today (Gartner)
  - AI enabled cameras enable video analytics plus human viewing
  - Customer software on our CVflow AI SoCs enables new data driven camera applications and new business models for our customers
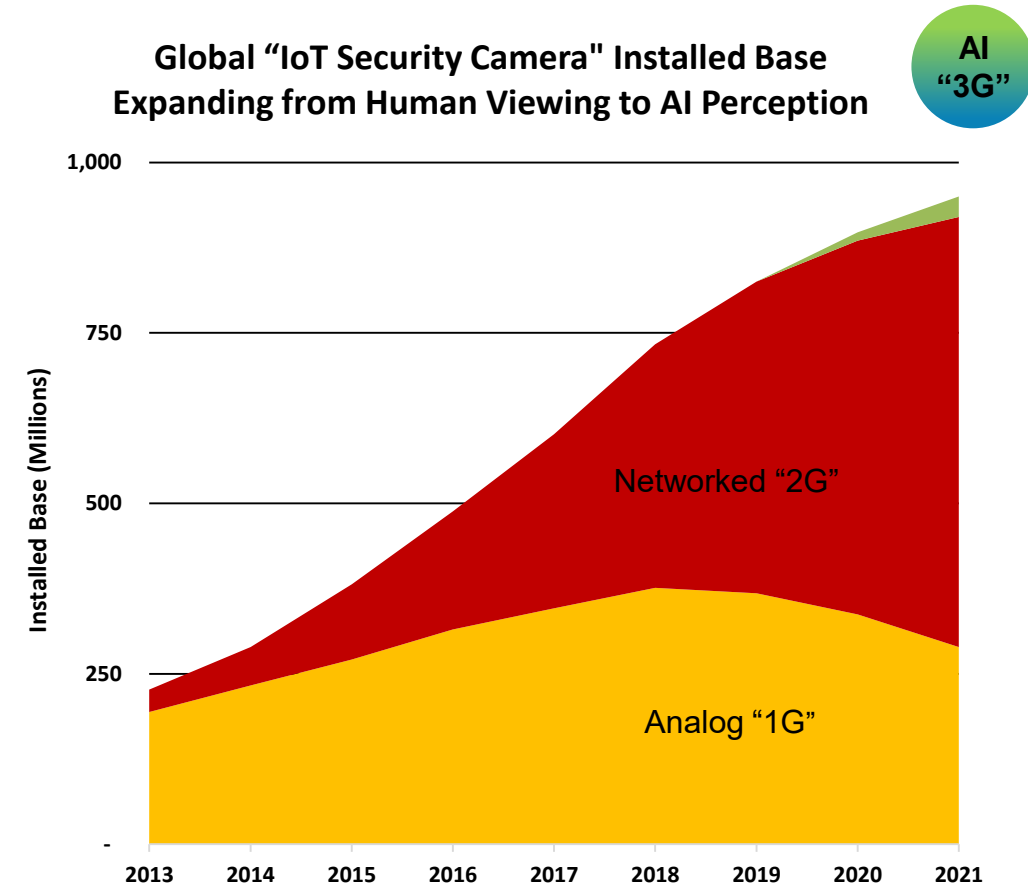
- **~1 billion "security camera" installed base C2022**
  - Installed base today is almost all human viewing ("2G") primarily deployed for security applications; ~75% enterprise/public
  - The human viewing installed base is expected to continue to grow while the installed base for AI-based perception is just beginning
  - Installed base replacement rate estimated between 4 to 6 years

- **Security camera unit shipments >200 million in C2022**
  - "3G" CV SoCs command a ~2x ASP versus a similar 2G video processor
  - "1G" analog camera market shrinking – we do not serve this market
  - Ambarella security SAM focusing on higher value market segments
  - Includes Enterprise/Public (majority of installed base) and smart home

- **"Other IoT" ~15% of IoT revenue; emerging and legacy**
  - Today a majority is wearables, AR/VR, aerial drones, and action cameras
  - Also new AI sensing markets such as access control, sensing cameras, fixed robotics and mobile robots for the enterprise and home

Global "IoT Security Camera" Installed Base Expanding from Human Viewing to AI Perception

AI "3G"

Installed Base (Millions)

Networked "2G"

Analog "1G"

1,000
750
500
250
-

2013 2014 2015 2016 2017 2018 2019 2020 2021

Ambarella's Global IoT Footprint

Enabling most major enterprise, smart city and smart home IoT camera companies

IoT – Enterprise/Public

Security – Retail – Transit Systems - ITS - Smart Parking - Schools

IoT – Smart Home

Security – Access Control - Automation - Delivery Services

AI Leads to Emerging IoT Opportunities

Moving beyond traditional "human viewing security" to include camera and radar perception processing, sensor fusion processing (of many sensing modalities), as well as central domain controller processing

Robotics platform announced at CES 2020 – mobile and fixed robotics

- Robotic software development kit ("SDK") is a unified software infrastructure targeting home and enterprise 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.

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, home and public applications including panels, smart locks and payment terminals
- Low cost single-camera fusion of multiple sensors for optimal accuracy

Sensing and counting cameras

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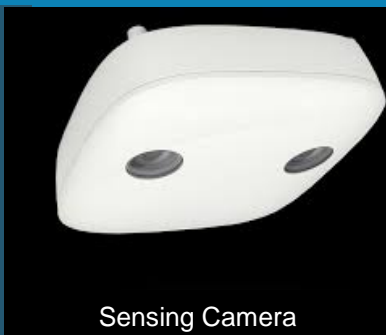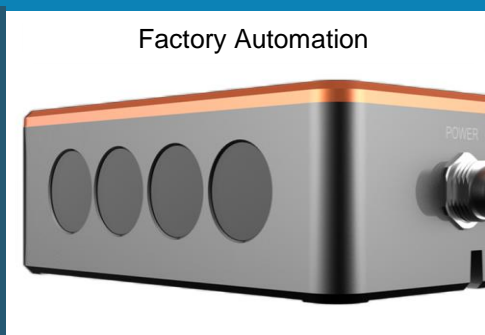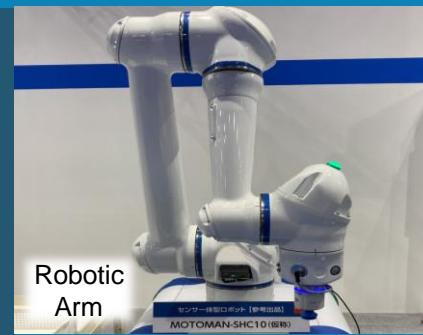

Warehouse Automation

Robotic Vacuum

Access Control

Sensing Camera

Factory Automation

Robotic Arm

Mobile Robotic Platform

Retail Store

Images represent potential customers and their applications

Ambarella CES2024

Strong customer turnout for AI inference products and technology demos

- **~35 AI inference processor demos**

- **Introduced N1 for gen AI at edge up to 34B parameter models** introduced Cooper Development Platform; demo of multi-modal LLM LLaVA, LLaMA v2, Code Co Pilot demos; Quanta partner

- **Introduced two new CV3-AD Central Domain Controller SoCs targeting high volume L2+ passenger vehicle applications** creates broad CV3 platform scalability (up to 18x CV72 to CV3-AD685) enabling OEMs to re-use/port SW stack across their vehicle portfolio from L2 to L4; samples Q1 2024

- **EVA L4 demo vehicle update** Full SW stack 100% owned by Ambarella; primarily AI deep learning module based; does not use HD maps (only SD); integrates Oculii radar perception algos; raw radar data (5 sensors) centrally processed on CV3

Q4 (January) F2024 Outlook and Q3 (October) F2024 Recap
Q4 fiscal 2024 outlook and Q3 fiscal 2024 results provided November 30, 2023

Q4 F2024 (January, 2024) Outlook
- Our Q4 revenue guidance is $50.0 million to $53.0 million (consensus estimate was ~$50.3 million on November 29th)
- Sequential revenue growth could continue into our Q1 F2025 (April 2024) in the low to mid-single digit percentage range (consensus $54.0M)
- Q4 non-GAAP gross margin estimated to be 62.0% to 63.0% (consensus 63.3%) with non-GAAP operating expense $45.0 to $48.0 million (consensus $48.1M)

Q3 F2024 (October, 2023) Results
- Revenue of $50.6 million was 1% higher than the mid-point of our guidance range of $50.0 million plus or minus 3% (consensus estimate ~$50.0 million)
- Non-GAAP gross margin was 62.6% versus the consensus estimate of 63.0% and non-GAAP operating expense was $44.1 million (consensus $47.4M)
- Non-GAAP loss per share was $0.28 versus the consensus estimate for a loss per share of $0.39

Despite the challenges we continue to make 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*:
    - customers' are continuing to reduce their levels of inventory
    - potential export regulations on advanced technologies
    - market share shifts between our customers
    - the evolution of new markets and rates of adoption of new technologies
    - customers seeing some pockets of end-market demand weakness
    - supply chain issues such as long leadtimes, shortages of materials, components, electricity and manufacturing capacity, and adverse weather conditions
    - changes to tariffs and/or the Entity List
    - 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

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.

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    VP, Corporate Development