



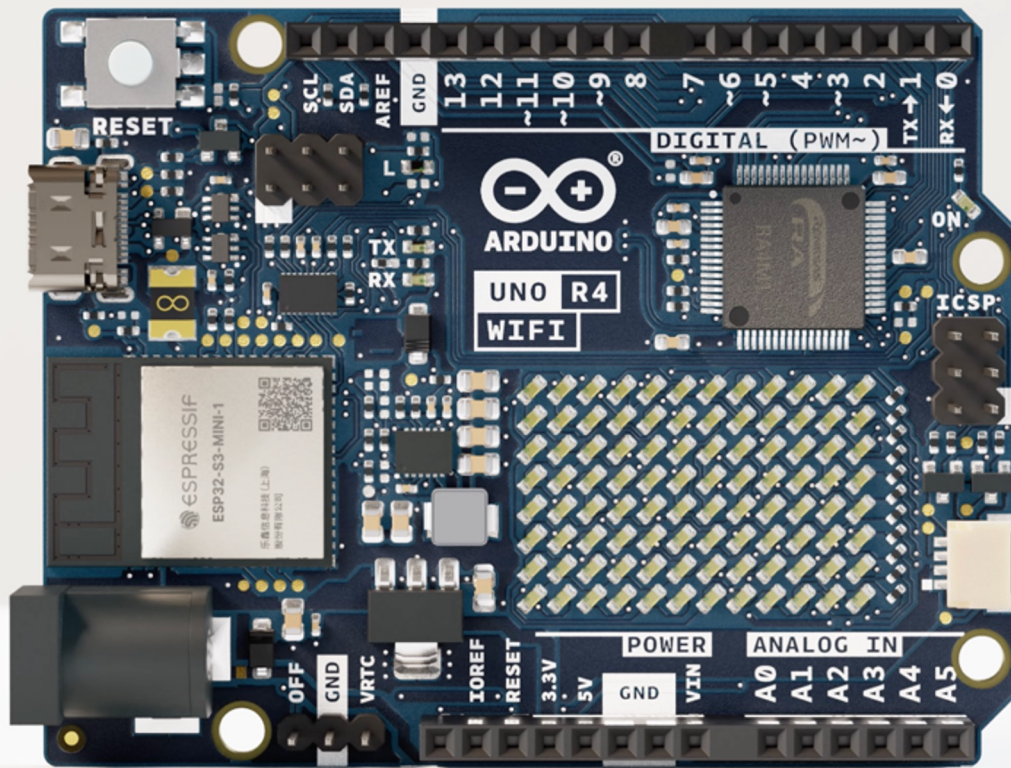
# Adoption as Moat

## Lessons from 20 Years of Building Arduino

**Fabio Violante** — VP & GM, Arduino (Qualcomm)  
GSA Entrepreneurship Conference — Imec, Leuven  
April 29, 2026

Where all started:  
**Interaction Design Institute**  
Ivrea, Italy (2001)





# Mission

**Empower anyone to innovate**  
by making complex technologies  
simple to use



The moat that matters most is the one you can't buy.

### **Replicate a BOM?**

Anyone with capital and a supply chain can copy a bill of materials. It is commodity work.

### **Engineer a chip (or reverse engineer)?**

With enough resources and time, any silicon can be built or deconstructed. That's table stakes.

### **Replicate 30M developers?**

Not in a year. Not with capital. Adoption compounds only in time — and it is invisible on a diligence checklist.

This is what Arduino built: not a product. A twenty-year compounding process.

20 YEARS. ONE DEVELOPER AT A TIME.

## What We Actually Built

**30M+**

### Arduino IDE Users

Active developers worldwide building daily on the platform.

**1.1M+**

### Forum Members

Daily community engagement with questions, answers, and projects.

**8,754**

### Community Libraries

1,218 new libraries added in 2025 alone.

**40%+**

### Industrial Prototyping

Arduino leads as the preferred platform in surveyed companies.

**3M+**

### LinkedIn Skills

Engineers listing "Arduino" as a professional skill.

**83M**

### Google Results

Search results for "Arduino Project" show its discovery footprint.

# What I Inherited in 2017

## What We Had

- 8-bit boards were bestsellers, but aging
- One 32-bit product with untapped potential: MKR1000
- No cloud, IDE 2, or Pro product line
- Community grew organically; product line was frozen

## What We've Built Since

- Dozens of advanced devices: Portenta, Nicla, Opta, Nano Matter, Nano ESP32, UNO R4, UNO Q
- Core platforms: Arduino Cloud, IDE 2.0, CLI, App Lab, Bricks
- Zephyr RTOS migration with 74 upstream patches in 2025
- 1,218 new community libraries published in 2025

The gap between those lists is eight years of deliberate capability-building. It reflects R&D, partnerships, and product discipline.



## LESSON 1

# R&D Is the Engine

### **Community Without R&D Is Decorative**

In 2017, we had the world's most valuable developer base and an R&D org that couldn't match it. The first two years were about closing that gap.

### **Iteration Velocity Is Competitive Position**

We underestimated the Shenzhen advantage — not for cost, but for time between idea and shippable prototype. In hardware, iteration speed is competitive position.

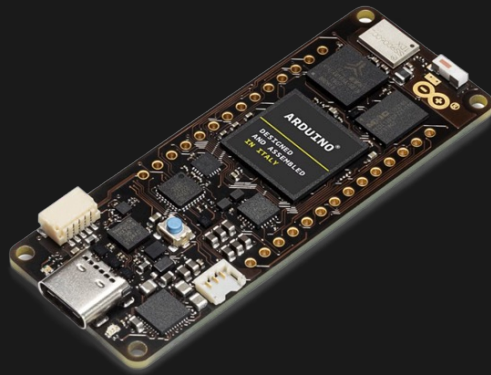
## LESSON 2

# Product Management Is the Impossible Job

"It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them. The PM's job is to imagine what customers will need before they know it themselves.

## Portenta H7 — We Heard the Words

Customers asked for a ruggedized Arduino. We delivered maximum hardware freedom. Technically excellent — but the wrong answer. They needed abstraction, not hardware-layer flexibility.



## Opta — We Imagined the Need

Opta was the correction. Certified, plug-and-play industrial control. Freedom moved to software. Today it is the core Pro line.



## LESSON 3

# The Hardest Build Wasn't a Product. It Was a Company.

Arduino was not born as a business. It was born as a movement — by people who cared about openness and design before they cared about cash flow. That is precisely why the moat exists.

### Two Populations, Both Right

Founders were right to protect the community. Investors were right to expect the business to behave like one. Holding that tension is the CEO's actual job.

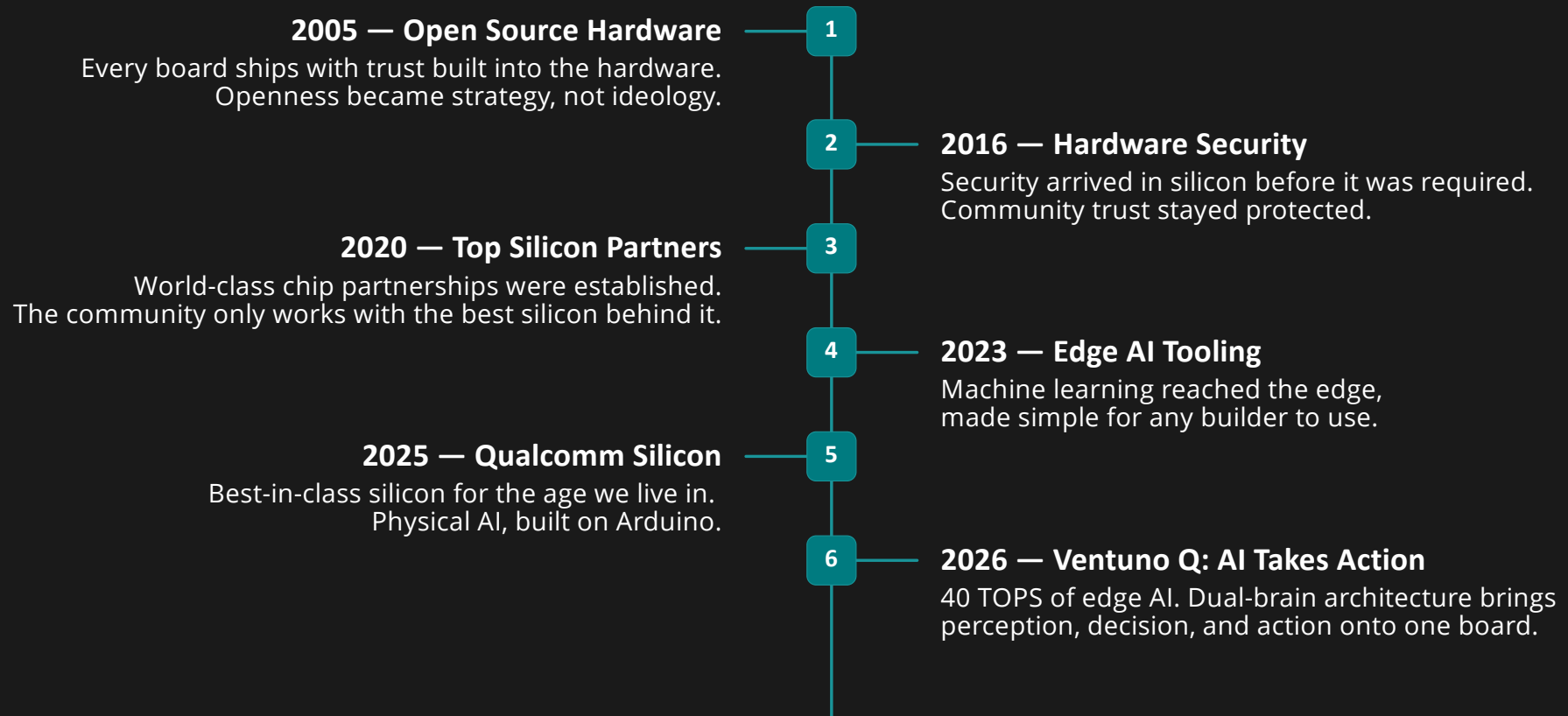
### Build Beside, Never On Top

Build commercial capability next to the original culture — never on top of it. The day the community stops trusting you, the moat drains.

For eight years, the question I most often heard from investors was: 'How do you monetize thirty million users?' I will come back to that question.

# Always the Best

The moat was never one decision. It was a pattern repeated over 20 years, as each milestone met the community with the best technology available



# The Community Grew Up



## 2008 — Blink an LED

Read an ultrasound sensor. Make something move. It was immediate, physical, and magical.



## 2018 — IoT. Computer Vision. Industrial Control.

The kid who asked for Wi-Fi now asked for a vision pipeline. A decade later, the same community was building real systems.



## 2026 — Multimodal AI. Robotics. Physical AI.

They don't ask us how anymore. They ask what they can build. The 14-year-old builder is now a senior engineer pushing the frontier.



# "How do you monetize thirty million users?"

You don't monetize a community. You earn the right to give them the best.

The monetization follows — it is not the point. 'The best' in 2026 means edge AI silicon. The community is building physical AI. Qualcomm is at the top of that list.

DEMOCRATIZING THE BEST

# What "Always the Best" Looks Like Today

## The Community Is Building Physical AI

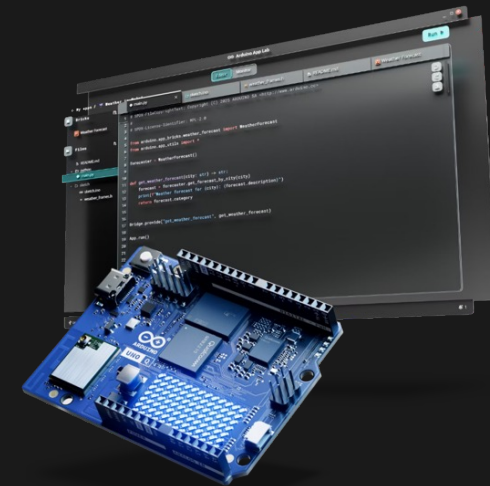
This is not a pivot. It is the next step in a 21-year pattern: the community that began with blinking LEDs is now building AI-driven physical systems, and they need the best silicon in the world to do it..

## UNO Q — The Thesis Made Silicon

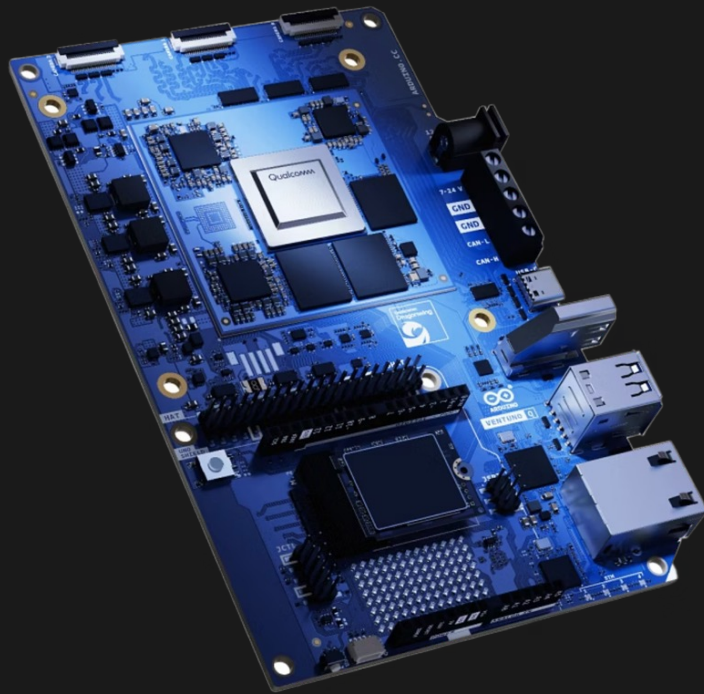
Qualcomm Dragonwing QRB2210 paired with an STM32U585 MCU. A dual-brain architecture runs the same Arduino tooling the community already knows. Debian Linux UNO Q proved the architecture.

## Arduino App Lab (Developing in the AI era)

Arduino App Lab is where a teenager and a Fortune 500 engineer use almost the same tools to do different things — a unified environment that turns sketches, Python, Linux, and AI models into one continuous canvas for building the physical world.



# Arduino VENTUNO Q



VENTUNO Q — 21 YEARS IN THE MAKING

## Where AI Takes Action

Ventuno — twenty-one in Italian. The board that closes the loop: from perception to decision to action, on a single platform.

### The Architecture

- Qualcomm Dragonwing™ IQ-8275 40 TOPS NPU, 8-core CPU
- STM32H5F5 MCU deterministic sub-millisecond actuation
- 16 GB LPDDR5 · 64 GB eMMC · Wi-Fi 6 · 2.5 GbE · CAN-FD
- Runs local LLMs, vision, speech, gesture — entirely offline

**One Board. Full Loop.** Sense. Reason. Act. No cloud dependency. No multi-device complexity.

**The Same Platform, 21 Years On**  
The developer who blinked an LED in 2008 is now building physical AI. Ventuno Q meets them where they are.



Ships Q2 2026

RECAP

## Three Lessons, by Seat in the Room



### Founders

**Build the moat that compounds in the dark.** Ship the tools a year before the revenue. The enterprise customers who justify the tooling will find you have already built what they need — and will choose you.



### VCs

**Underwrite developer density alongside IP.** Ask how hard this ecosystem is to replicate in five years. If your thesis rests on a patent that will be designed around before the next fund cycle, you have priced the wrong thing.



### All of Us

**Prototypes impress. Platforms endure.** The companies that survive the next decade will be the ones that spent the previous decade building distribution their competitors could not buy.



# The hardest thing to replicate isn't what you invented.

It's who trusts you enough to build on top of it.

Arduino was born as a teaching platform. Twenty years later, the students grew up. They are engineers, founders, and researchers building the physical AI layer of the next decade. They still start their projects on Arduino — because the platform kept being the best available tool for what they needed to build next. That is the entire story.

**Thank you.**





# Fabio Violante

## Current Role

VP & GM, Arduino  
(Qualcomm)  
Leads the Arduino  
business unit at  
Qualcomm.

## Prior Role

CEO, Arduino (2017–2025)  
Led Arduino through its  
biggest product and  
commercial expansion.

## Contact

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