

# The 3.2% Problem

A user's view of the HPC-AI convergence

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# About us

## Ducera Partners

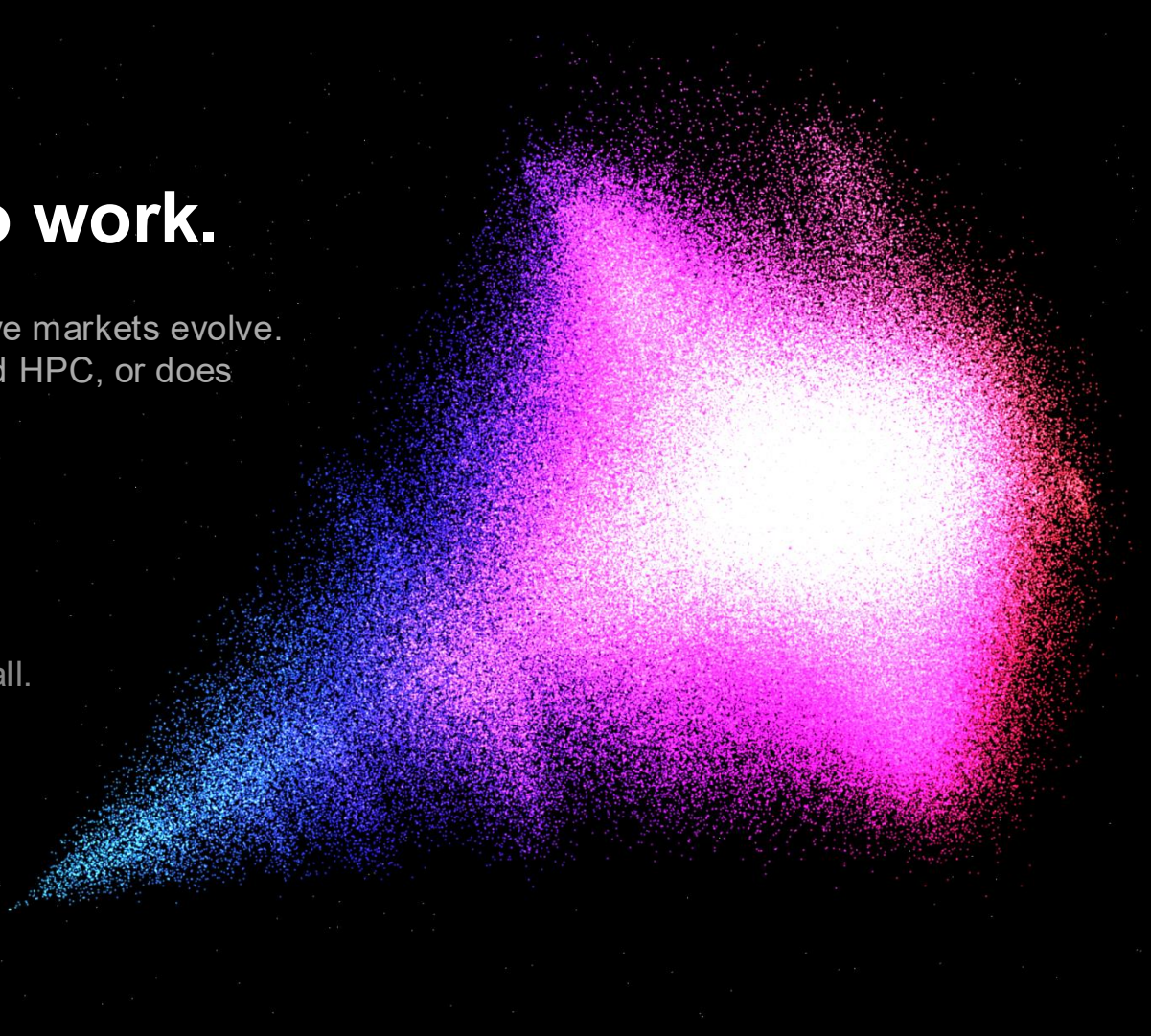
- Founded 10 years ago with \$0.00 in transactions
- Leverage compute to disrupt traditional investment banking and venture capital
- More than \$900 billion in transactions to date, averaging \$100 billion per year

# I need this infrastructure to work.

My team simulates how competitive markets evolve.  
We started by asking: does AI lead HPC, or does  
HPC lead AI?

**Turns out, that was the  
wrong question.**

Both architectures hit the same wall.



# Our meta-analysis of HPC-AI convergence value chains

**994**

technologies

**7**

Overlapping value chains

**103**

Value chain segments

**515**

Sub-segments

Each technology classified into one of four categories:

**32**

technology barriers only

**658**

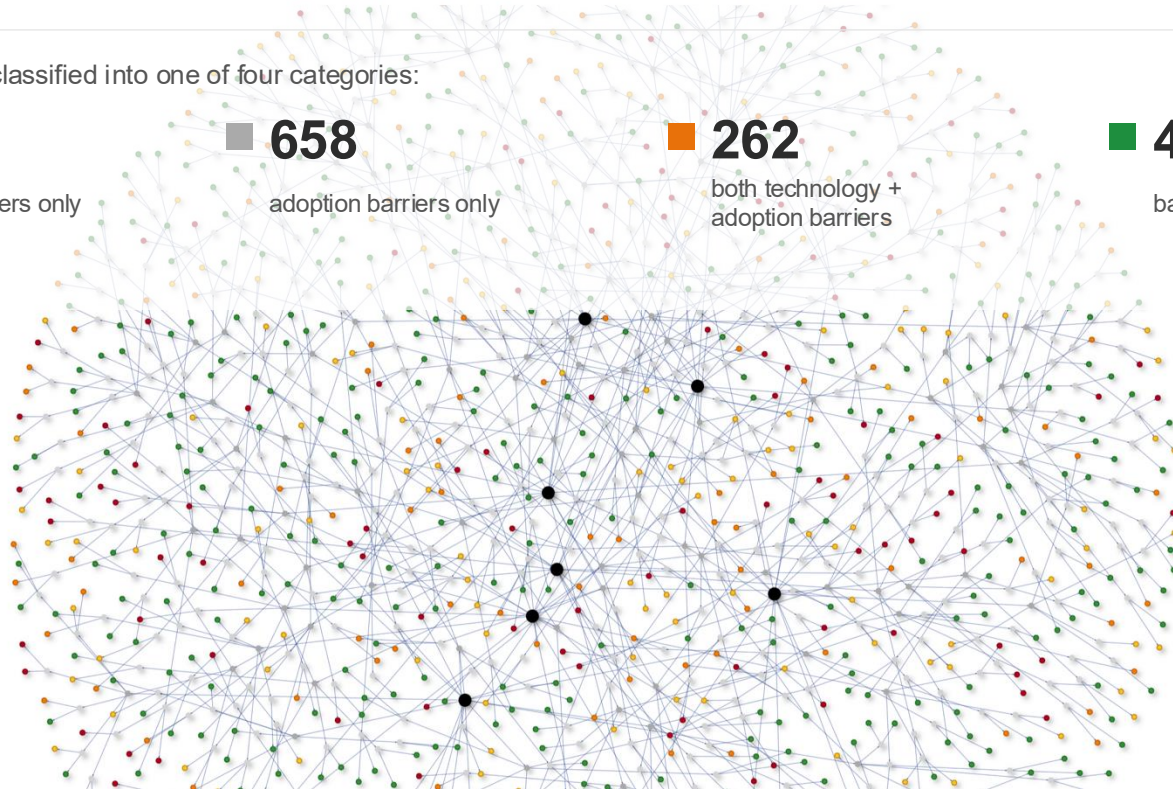
adoption barriers only

**262**

both technology +  
adoption barriers

**42**

barrier-free



# We found some things that weren't surprising (at first)

## We started with technology supply and demand



■ Severe (14%)

■ Bottleneck (15%)

■ Equilibrium (18%)

■ Excess Capacity (52%)

29.6% constrained • 93% highly concentrated • 56% persist 3-5 years

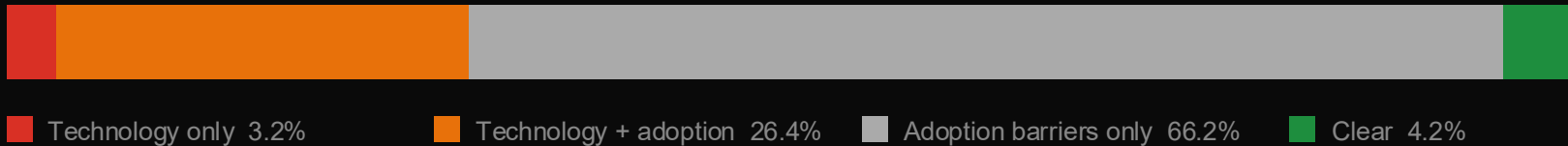
### Recurring bottlenecks

CUDA ecosystem	7/7
HBM memory	6/7
InfiniBand	6/7
ROCm / HIP	6/7
CoWoS packaging	5/7

*Then we added non-technology barriers (other barriers to adoption)*

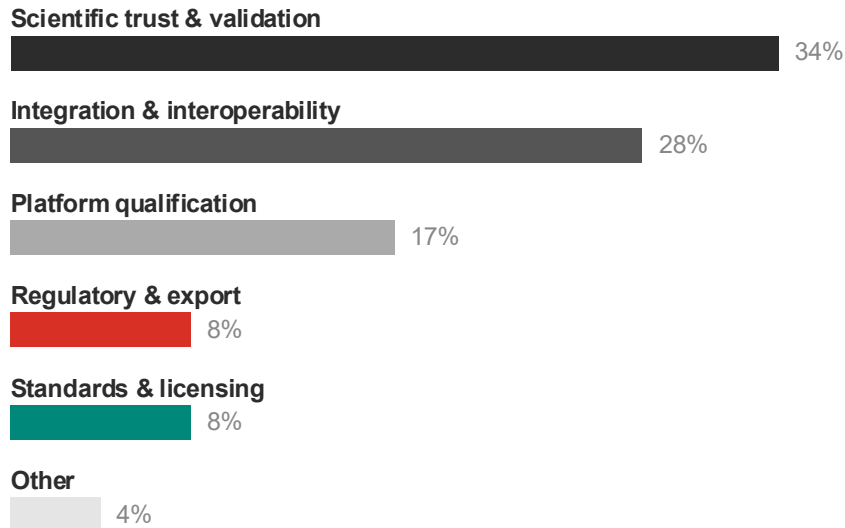
# 3.2%

of the bottlenecks are technology-only problems.



The rest involve trust, qualification, integration or licensing.  
These are barriers that persist even when the hardware ships.

# The real barrier is trust.



*"Can we trust the answers?"*

## Trust can take a long, long time

ASME started its verification and validation standards committee in 2001.

The first terminology standard was published in 2022.

## 21 years to agree on what the words mean.

The committee for AI/ML validation hasn't published yet.

*97% of adoption-barrier-only technologies resolve within a year. So, what doesn't?*



# We share a problem.

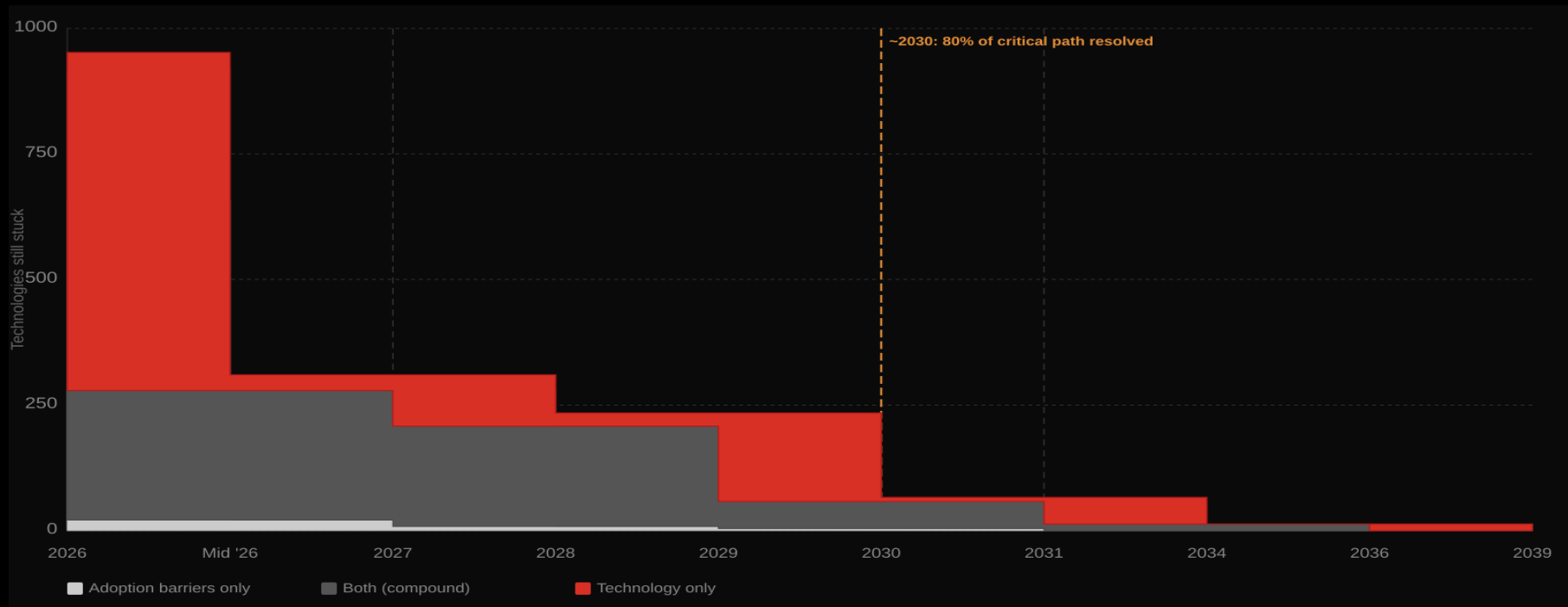
Our models don't just have to convince a board.

They have to be right.

They inform investment decisions that play out in real markets, with real money, over real time. If the model is wrong, we lose money. Market reality is the harshest validator there is.

# The multi-bottleneck timeline

Estimated resolution timeline for 994 technologies, by bottleneck constraint type



By 2027

**682 clear**

97% adoption-barrier-only

~2030

**80% of critical path**

49 of 59 resolved

The last 10

**All compound**

Some may never resolve.

# What we need from the HPC community

## 01 Trust

Help us prove the answers are right. Build validation frameworks that work across domains, not just physics. The faster ASME VVUQ 70 ships, the faster I can build.

## 02 Access

Make this infrastructure available to users like me. Not just national labs. Not just big tech. Commercial users with real problems and real budgets.

## 03 Independence

Give us a stack we can own, reproduce and audit. If we can't reproduce results, we won't accept them. No single vendor should hold my pipeline hostage.

*We're not asking for faster hardware. We're asking for infrastructure we can trust, reach and own.*

You built the fastest machines in history.

We're ready to use them.

**The only question left is whether  
we can prove they give the right answers.**

# Thank You

**My email: [thomas@gsventures.com](mailto:thomas@gsventures.com)**

**I like to collaborate, if we both can learn something in the process**