

The background of the slide is a photograph of a semiconductor fabrication plant (fab). The image shows a long, brightly lit aisle with rows of complex machinery on both sides. The machinery is metallic and has various cables and components. The floor is made of metal grates. The lighting is a mix of white and blue, creating a clean, industrial atmosphere. The Intel Foundry logo is overlaid on the top left of the image.

intel
foundry

AI Inspired.
Systems Accelerated.

Kevin O'Buckley

Senior Vice President, Intel Foundry



The AI Era is Changing the Landscape of Technology



Perfect Storm Reshaping the Semiconductor Industry

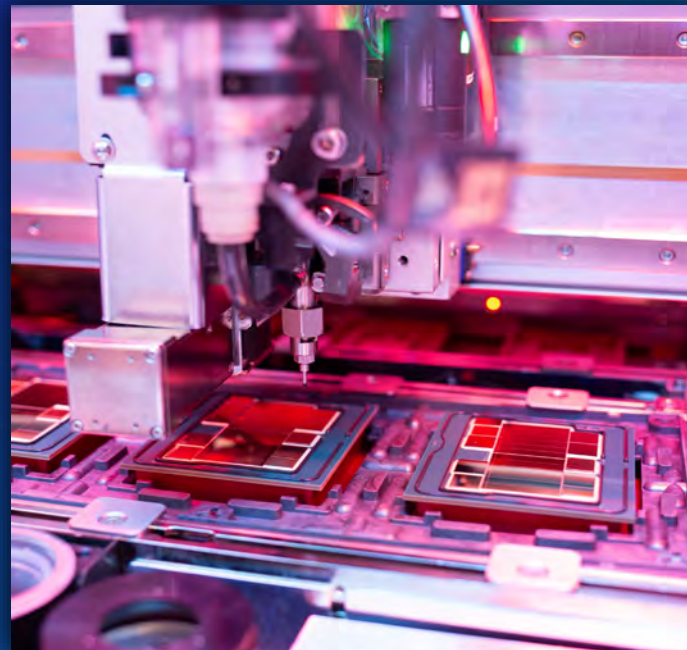
Rising Costs



~\$30B

Leading Edge VF

Exponential Growth



1.7x

YoY AI Chips
Volume Growth

Supply Chain Challenges



6.3 TWh

Annual Power Consumption
of AI Server Chips

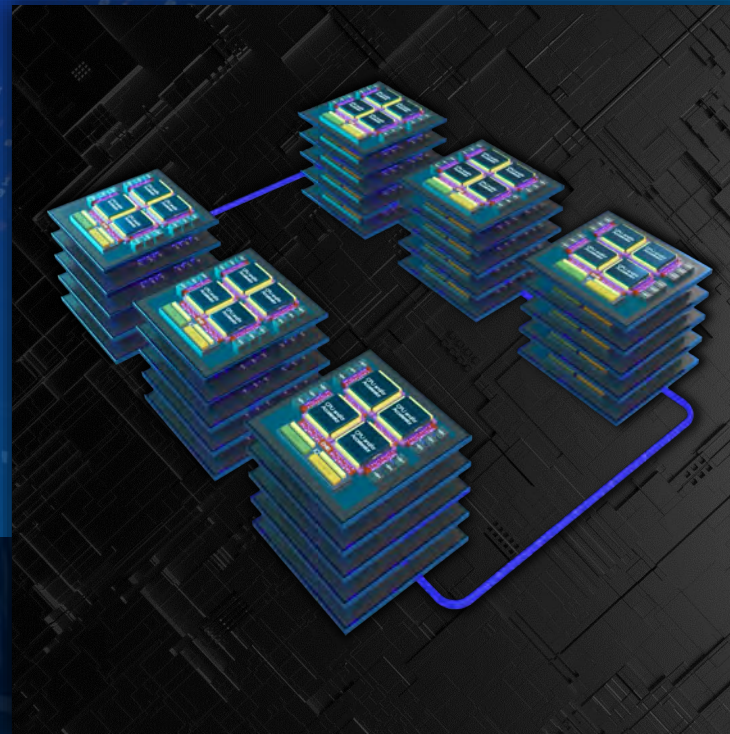
Structural Shifts In Customer Needs

AI / HPC
Has Surpassed
Mobile Revenue



Source: Gartner

Systems of Chips
Chiplets Surpass
Monolithic by 2028



Source: Gartner

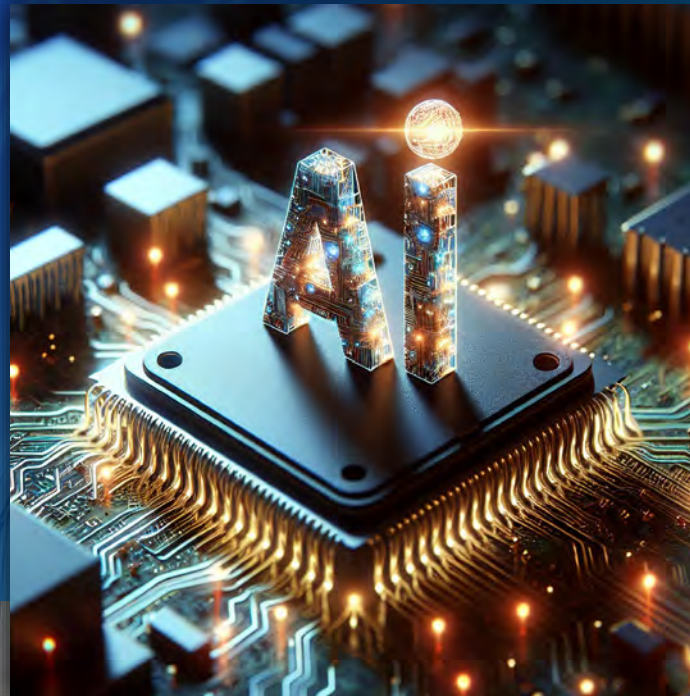
Vertical Integration
 $\leq 5\text{nm}$ Wafer TAM:
4% in 2024 to 12% in 2030



Source: IHS, SemiAnalysis

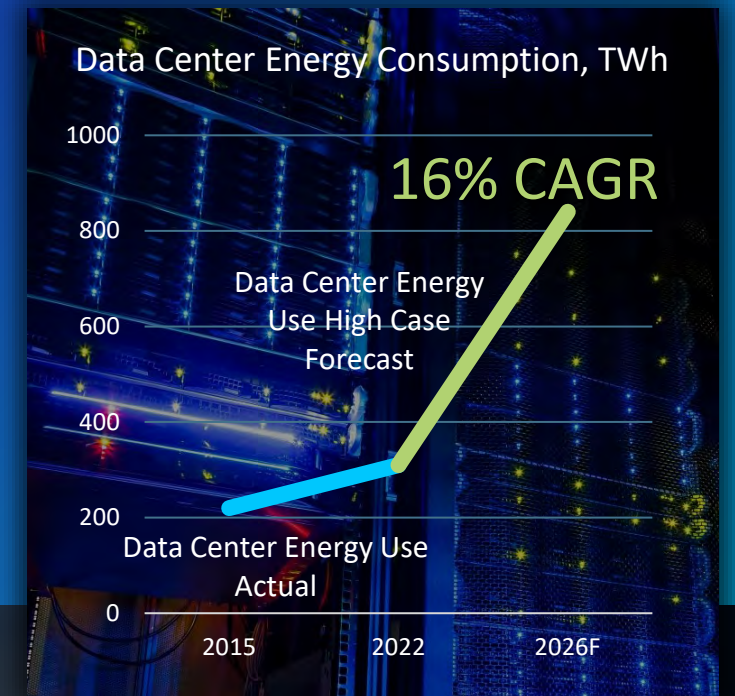
Challenge: Power Growing Unsustainably

AI Chips Consume
More Power Than
61% of Countries



Systems Consume
3x Power of UK

Data Center Energy Consumption, TWh

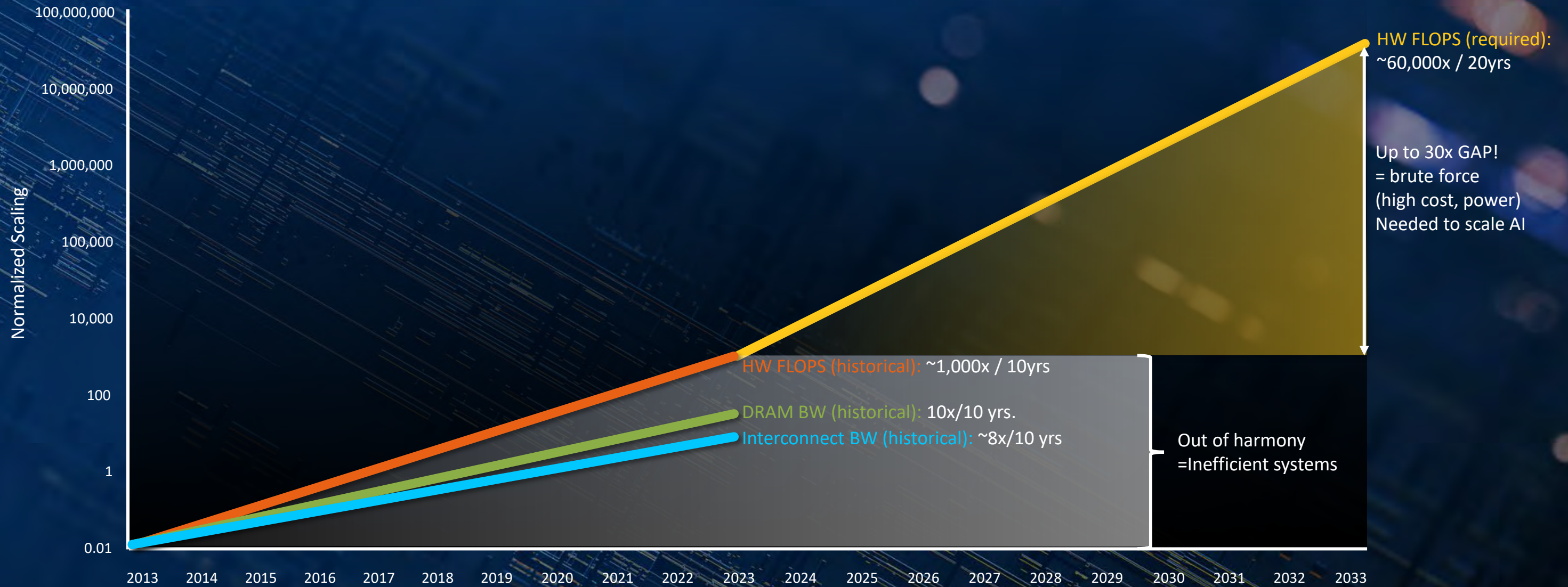


Challenge: Mismatch in Scaling

Scaling of Peak Hardware FLOPS and Memory/Interconnect Bandwidth



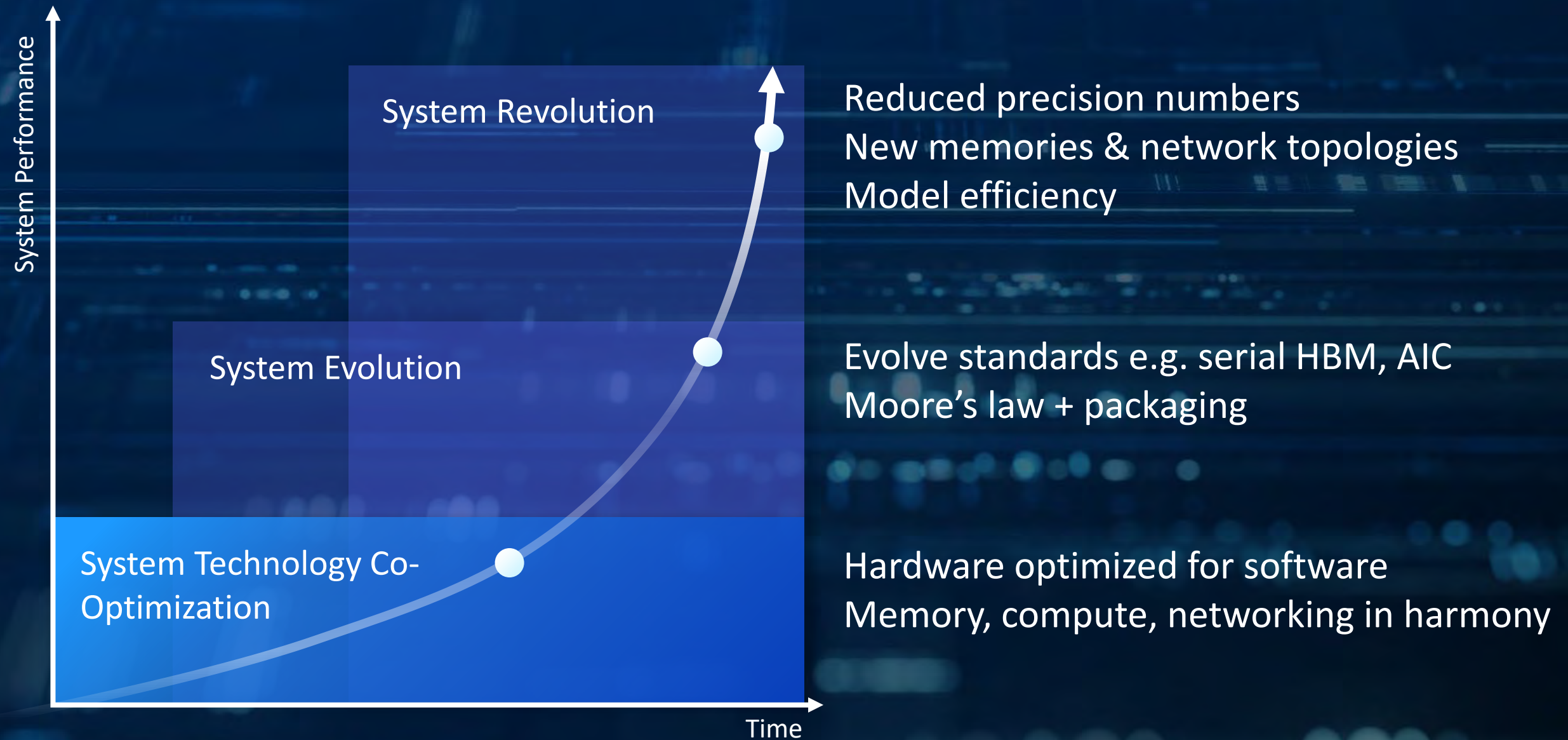
Challenge: Mismatch In Scaling

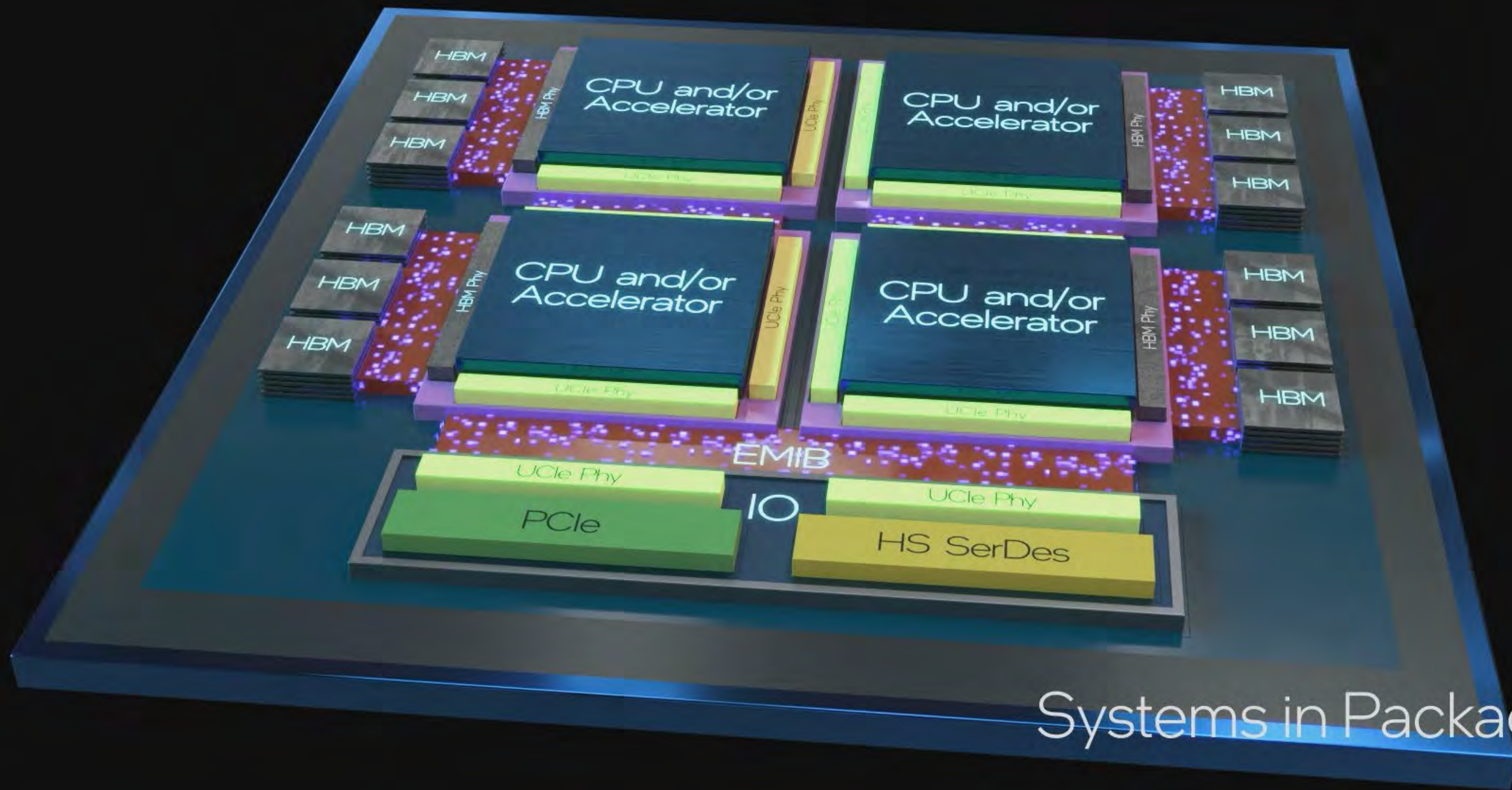




The Path Forward

Systematic Path to Exponential Improvement

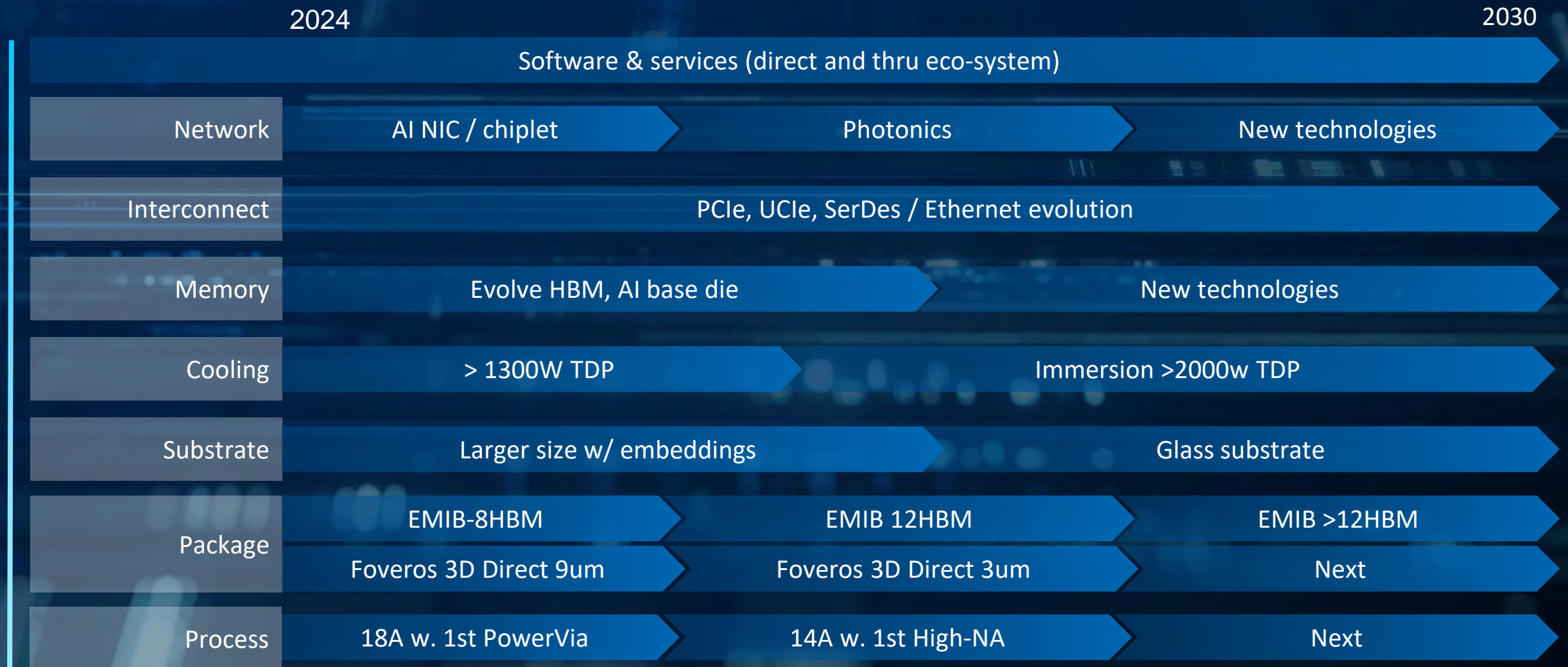




Systems in Package

Must Optimize From Factory Network Through Software

Systems Solutions



Sustainable Systems Innovations for AI's Next Frontier

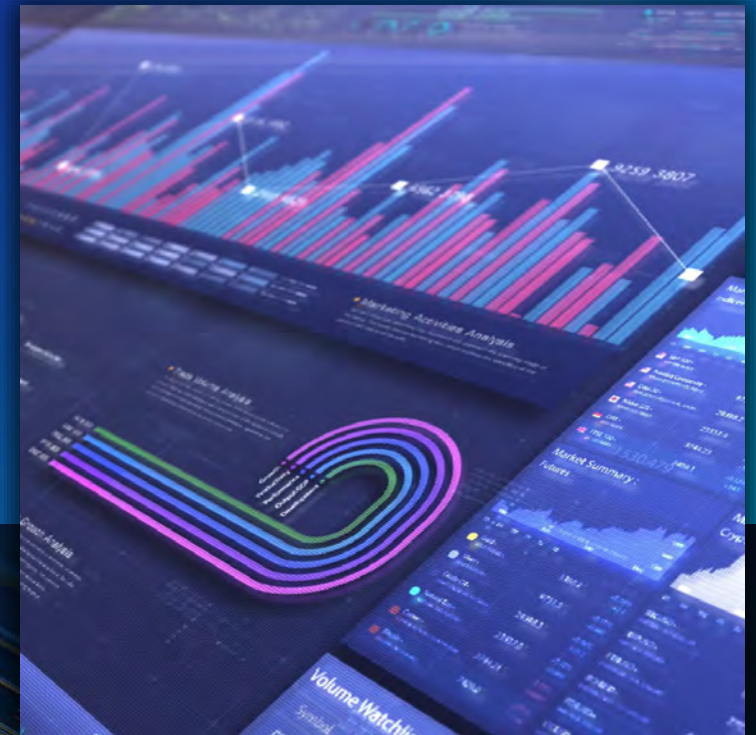
Turning a Corner



Truly Differentiated



Results



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We were made for this

