



SYNOPSYS®

How AI and Semiconductors Will Drive Innovation and Productivity

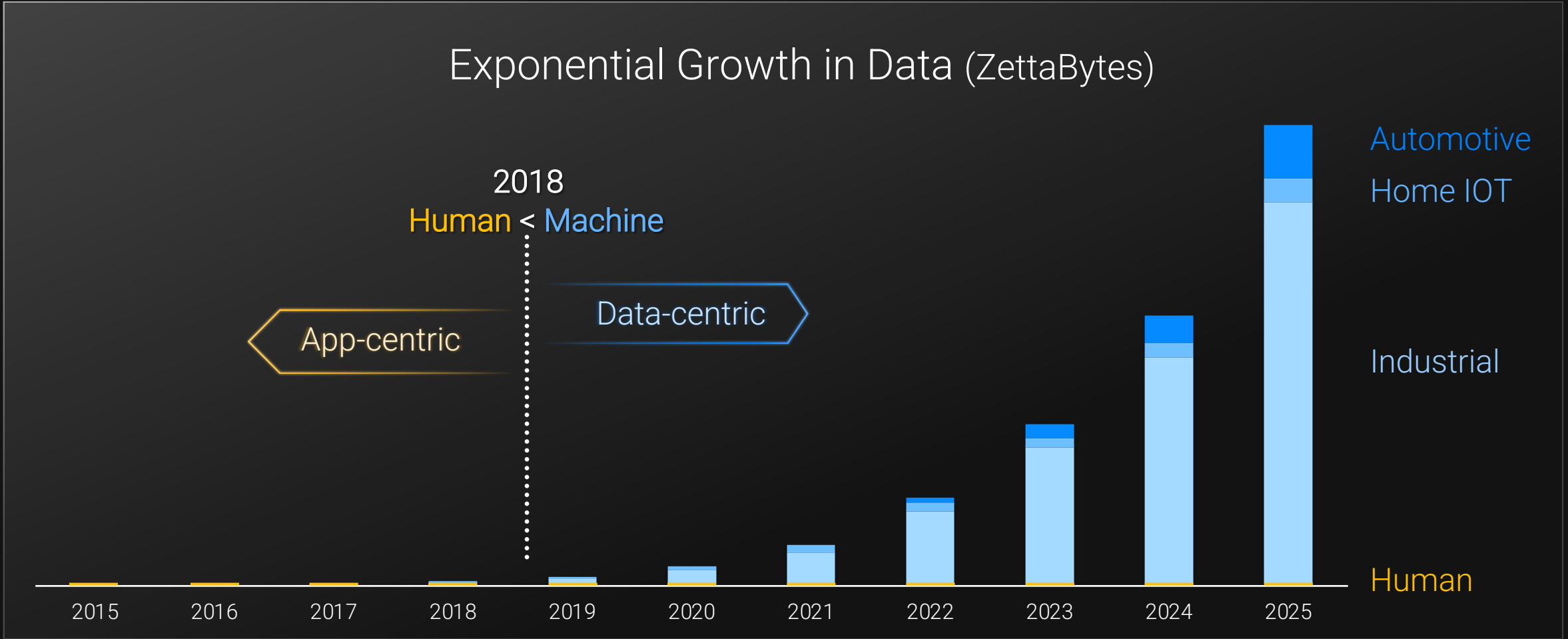
SIA Panel

Stelios Diamantidis, Distinguished Architect
Center for Generative AI
22 June 2023



Techonomic 'Pull': Era of Smart Everything

Exponential Growth in Data (ZettaBytes)

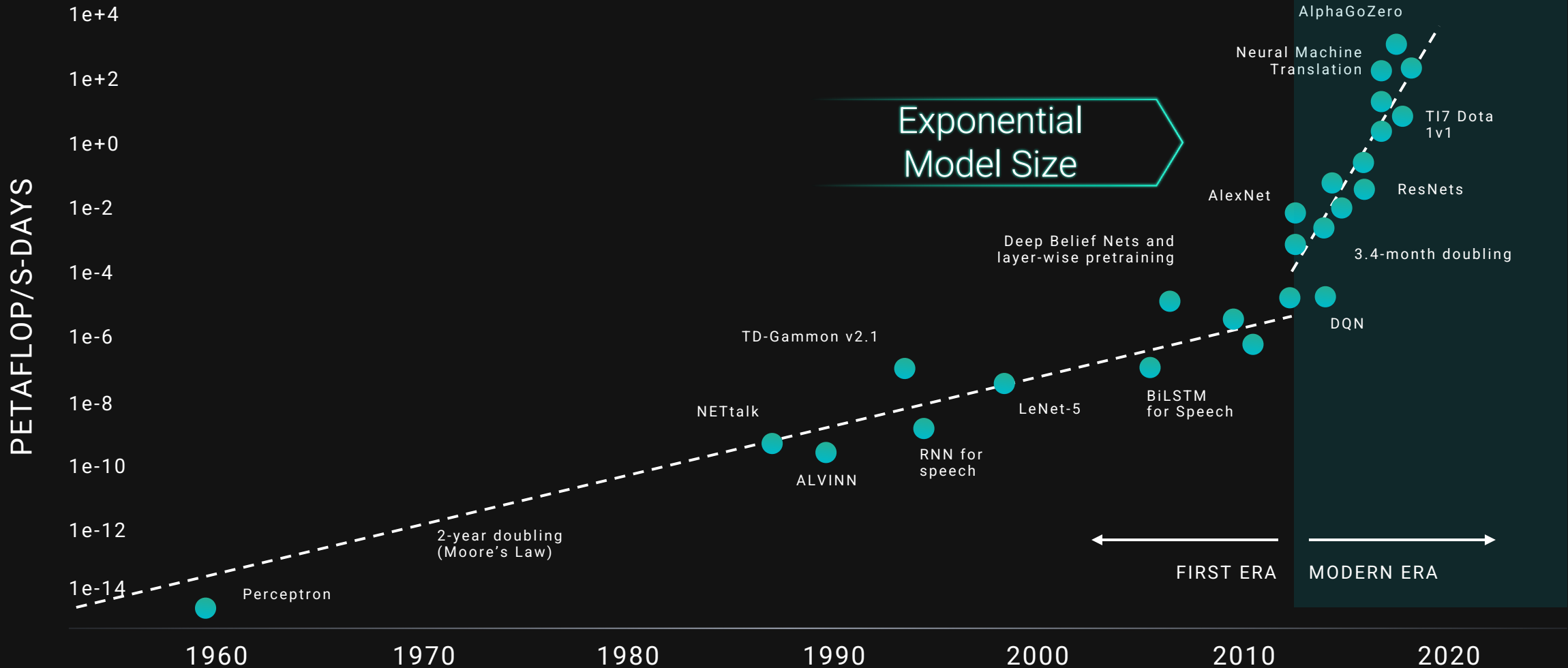


Courtesy: Applied Materials



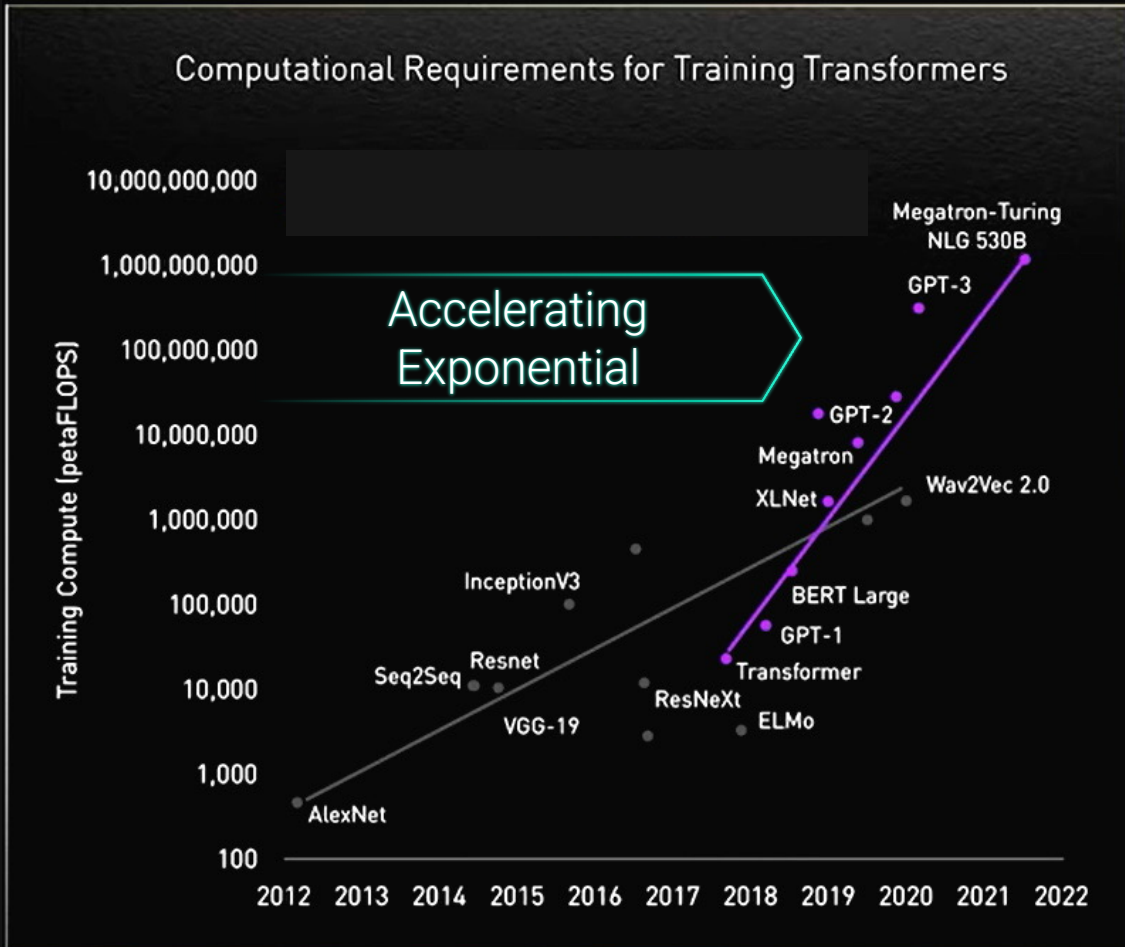
Models Outpacing Moore's Law

AI Training Compute CAGR 2012-2021: 694%





Generative AI Further Pushing Limits of Compute



All Models Excluding Transformers:

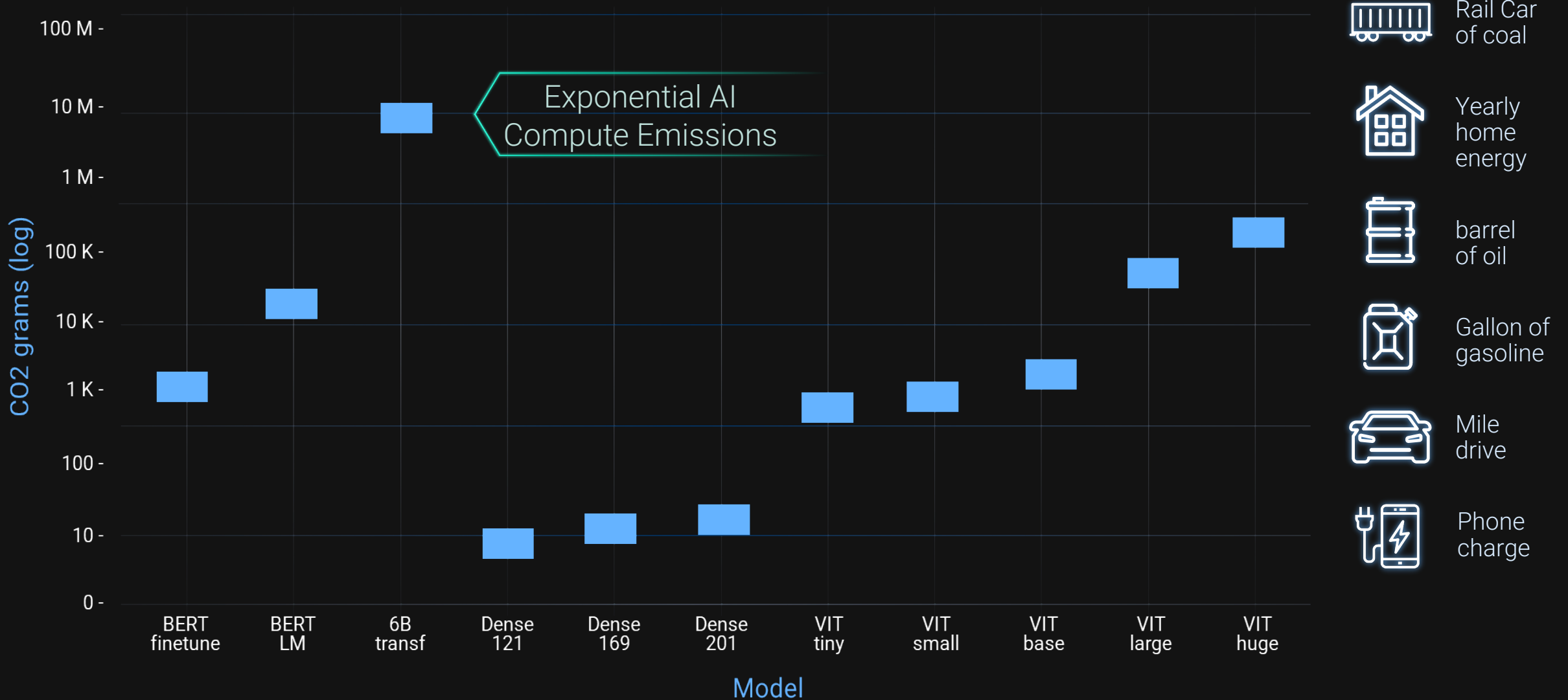
8X / 2 years

Transformer AI Models:

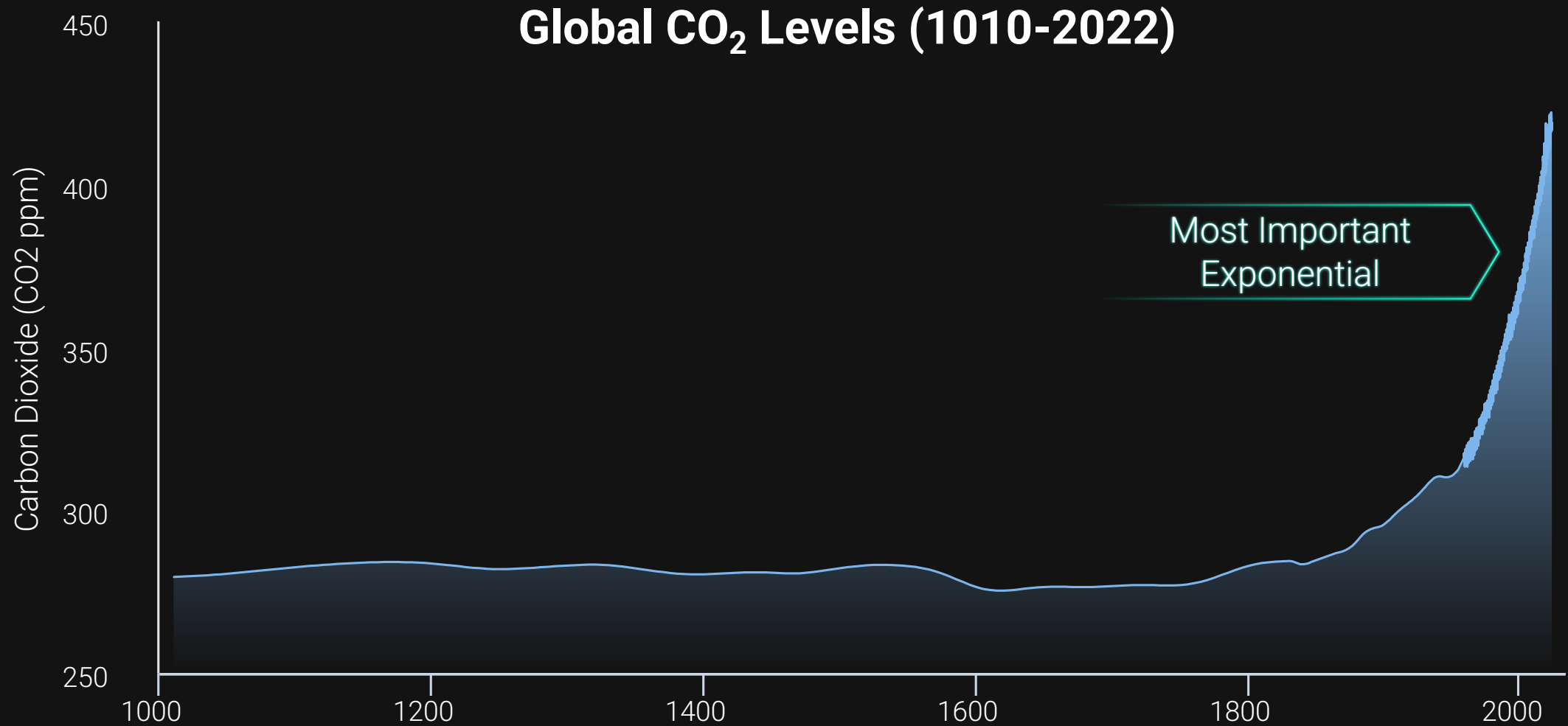
275X / 2 years

101
010

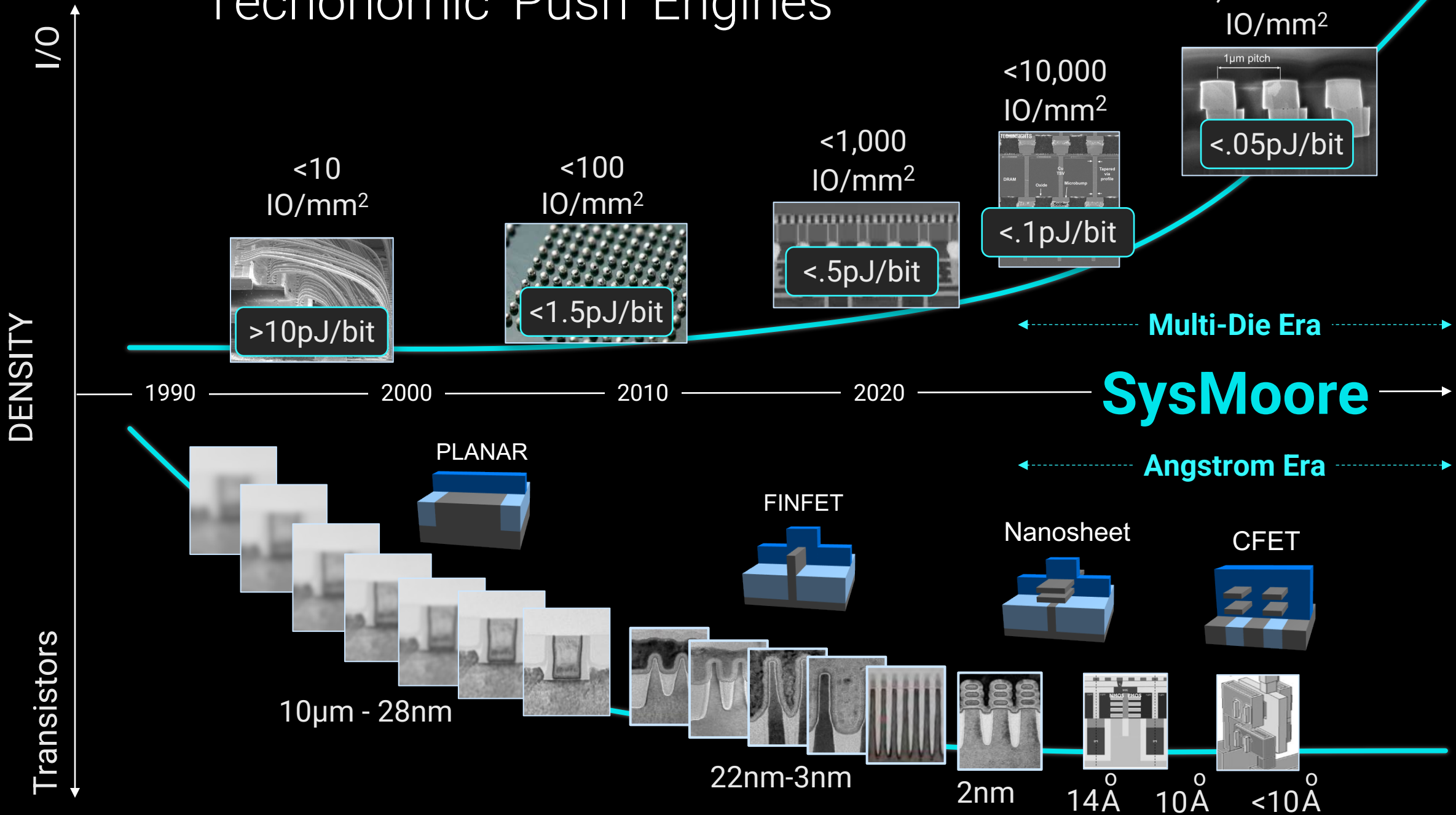
Exponential Growth in Energy Requirements



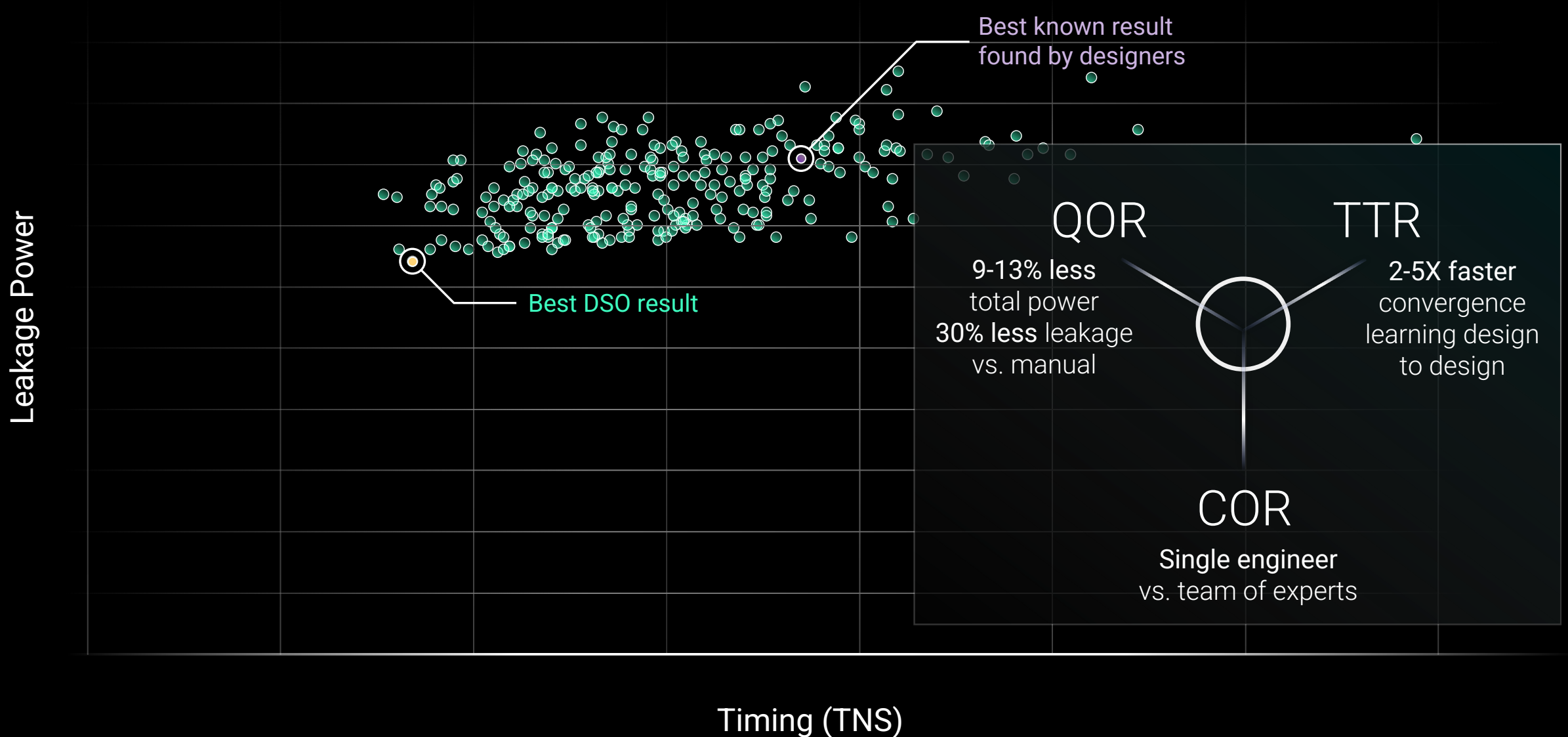
Mandating New Innovations



Techonomic 'Push' Engines



DSO.ai AI-Grade Productivity



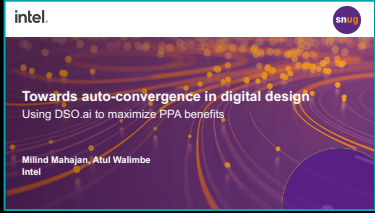
Synopsys' AI Journey

2020



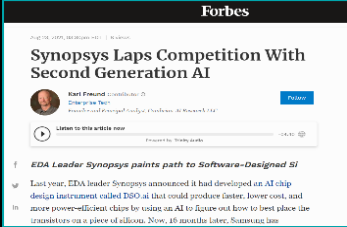
Synopsys introduces **DSO.ai**, world's first AI application for chip design

2021



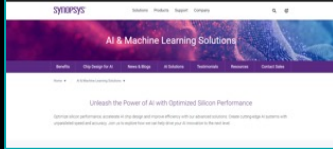
World productivity record: **10 blocks** by a single engineer

2022

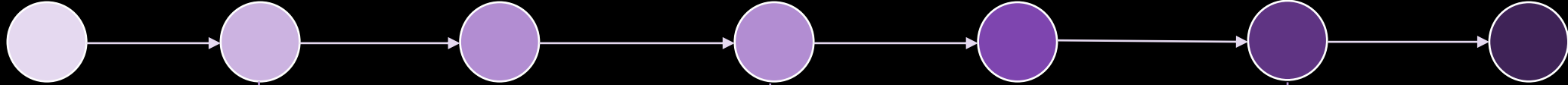


Record adoption: **9 of Semi Top-10**
100% Better Results

2023



SYNOPSIS[®].ai
Industry's first AI driven EDA suite
Design, test, verification, manufacturing



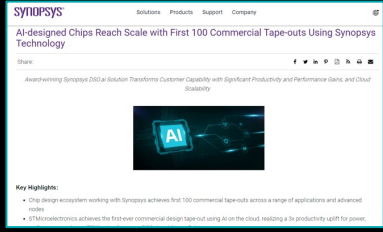
DSO.ai named **Innovative Product of the Year** by EETimes



Wired: World's first AI-designed chip

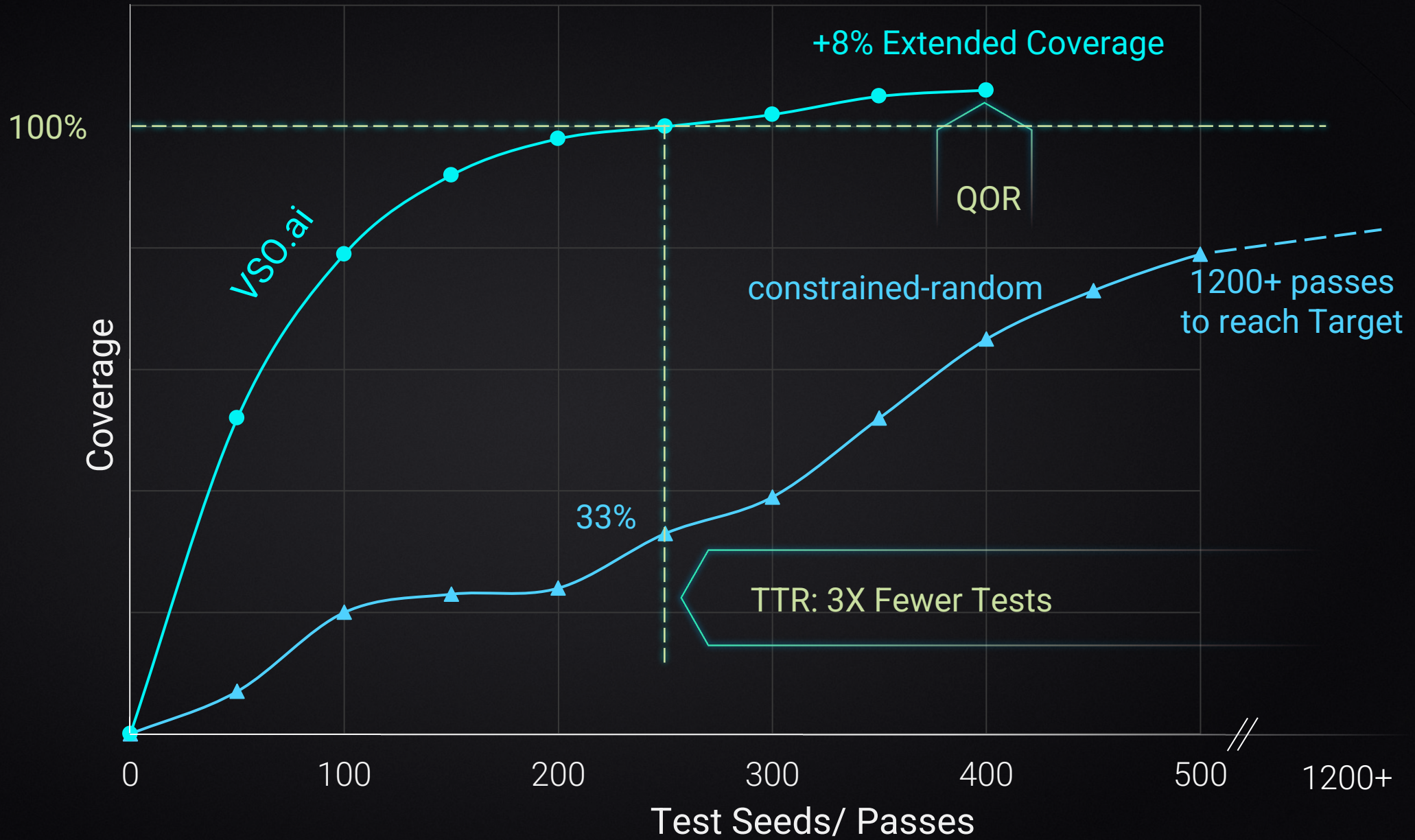
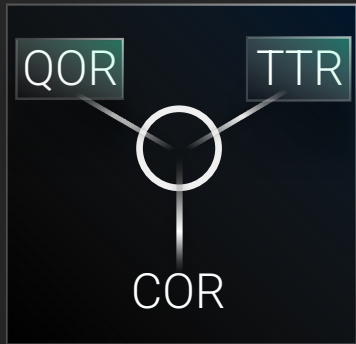


200+ Commercial Tape-outs with DSO.ai



VSO.ai

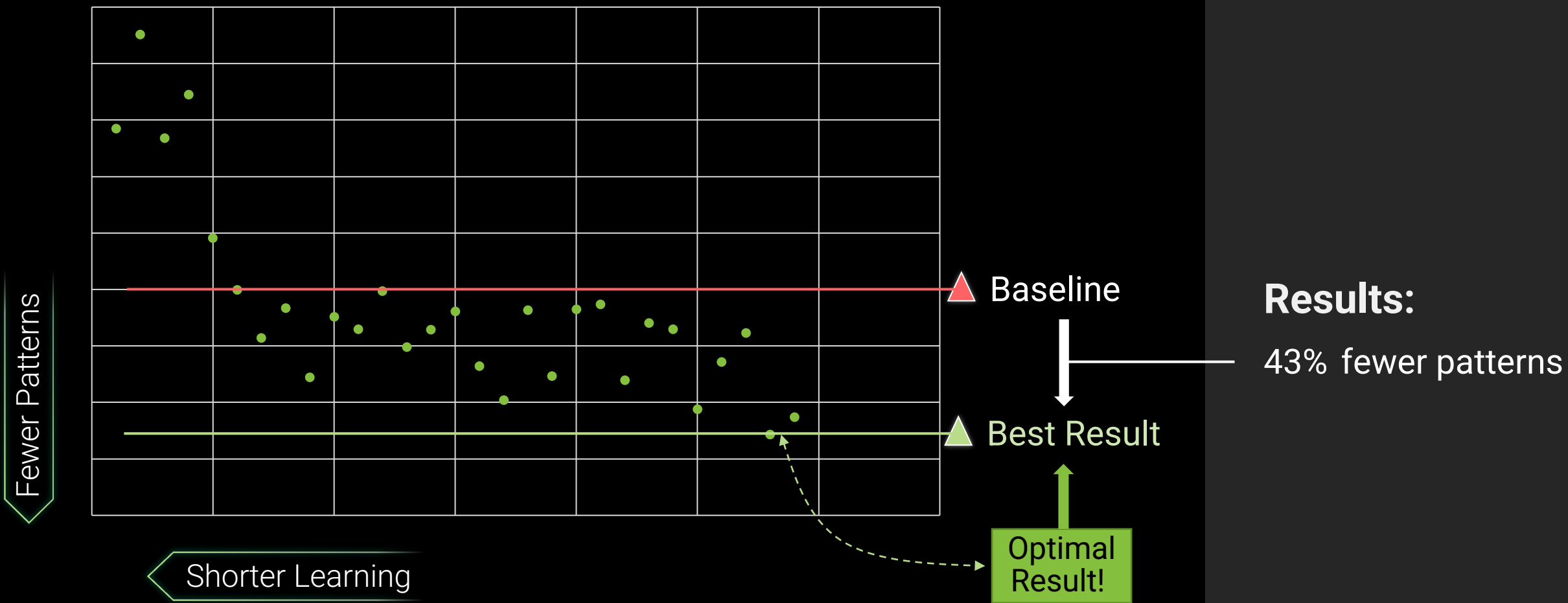
Verification
Space
Optimization



TSO.ai: Test Space Optimization

High Volume Design

ATPG Test Pattern Reduction



Thank You