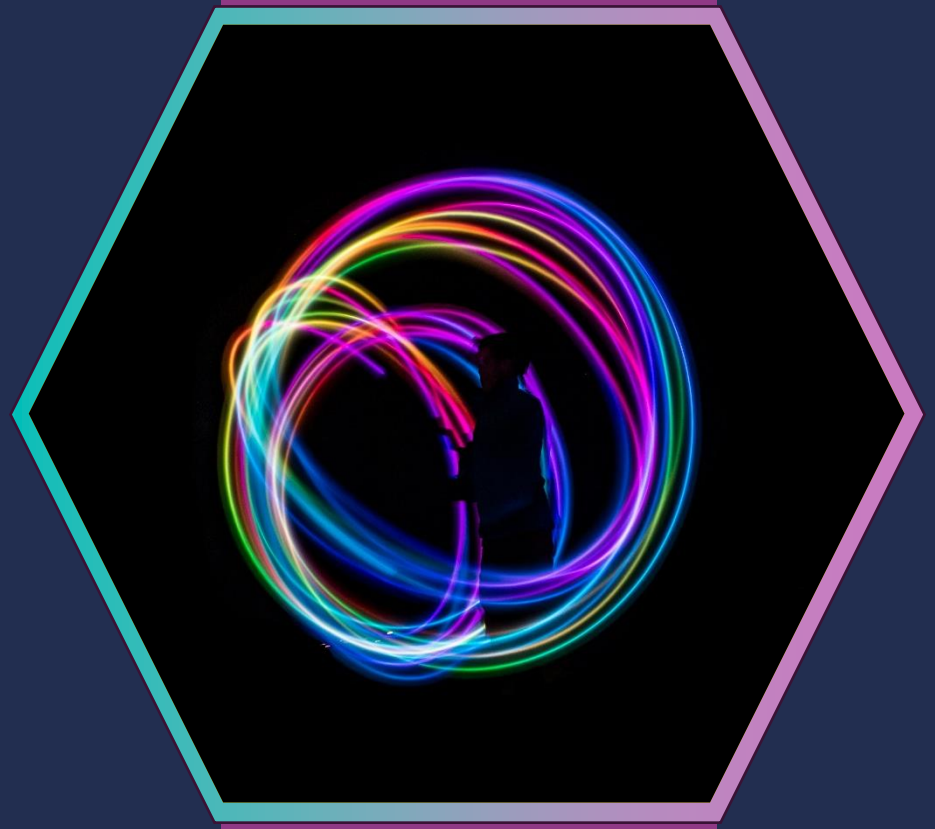
‘China Speed’: Accelerated Product Development the Chinese Way

What it means to you!



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With Dr. Robert G. Cooper
Creator of the Stage-Gate® System
ISBM Distinguished Research Fellow, Penn State University, USA
Professor Emeritus, McMaster University, Canada

China Speed

The super fast pace that many Chinese companies move from idea to market

Now a real structural advantage in many sectors

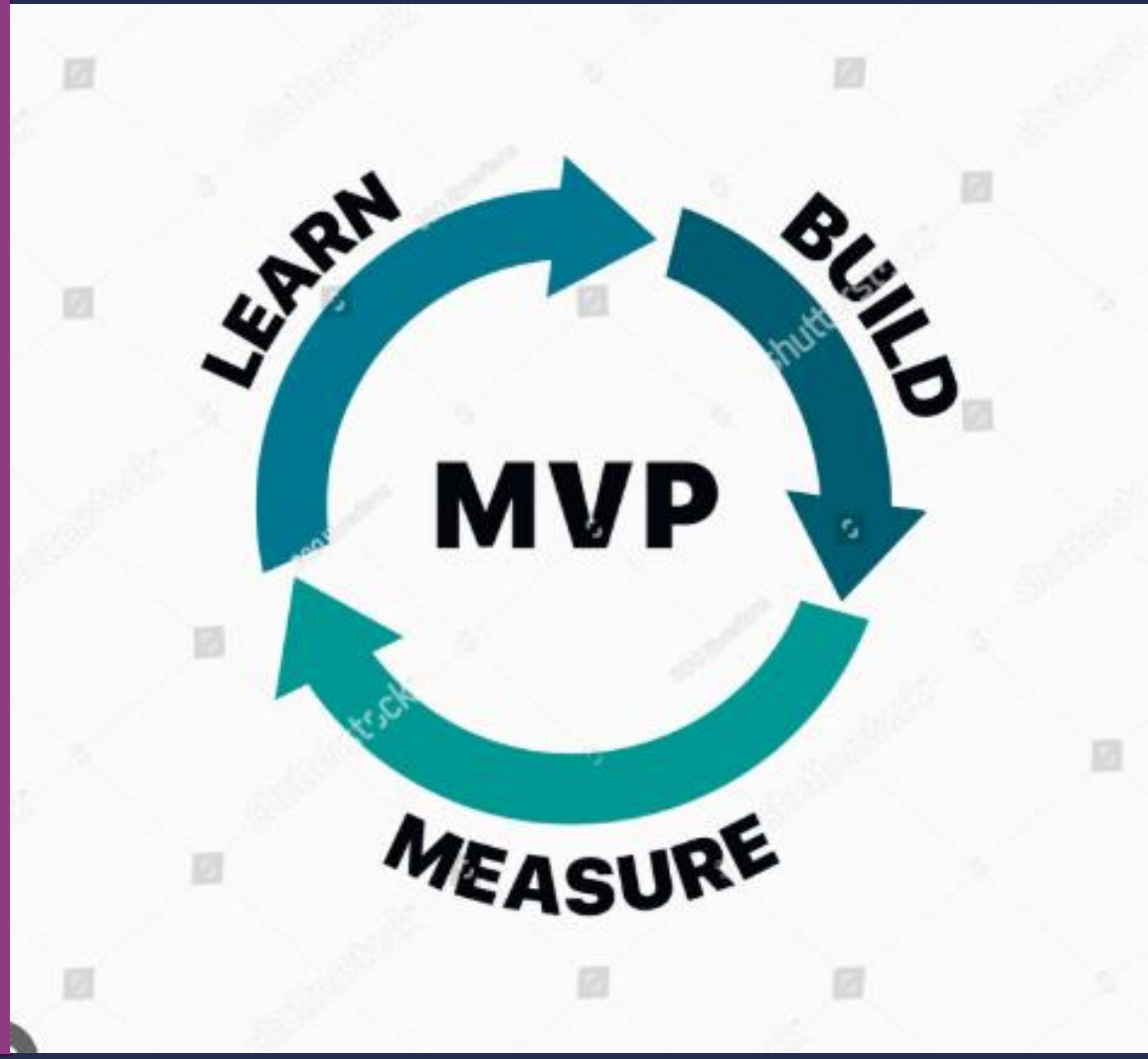
Chinese auto firms go from concept to market in 18–24 months

- vs. ≈5 years for many US/EU/Japanese programs

Also in consumer electronics, EVs, & AI

I. Core Design Practices

- **Shortened upfront strategy & analysis:**
  - Shifts learning into the development & launch phases rather than front-loaded analysis
  - Strategy & concept work are compressed
  - Fewer long exploratory cycles
  - No early locking of target segments, price points, & feature sets
- **Platform and architecture reuse:**
  - Modular product platforms (e.g., EV skateboard architectures, common electronics & software stacks)
  - Allow many derivatives spun off quickly with limited new engineering.
  - Dramatically reduces design time & validation effort
- **Minimum viable product (MVP) mindset:**
  - Emphasize good-enough configurations – satisfy core needs for large segments
  - Avoid niche variants & frequent engineering changes
  - Enhancements come later via fast follow-on releases or software updates



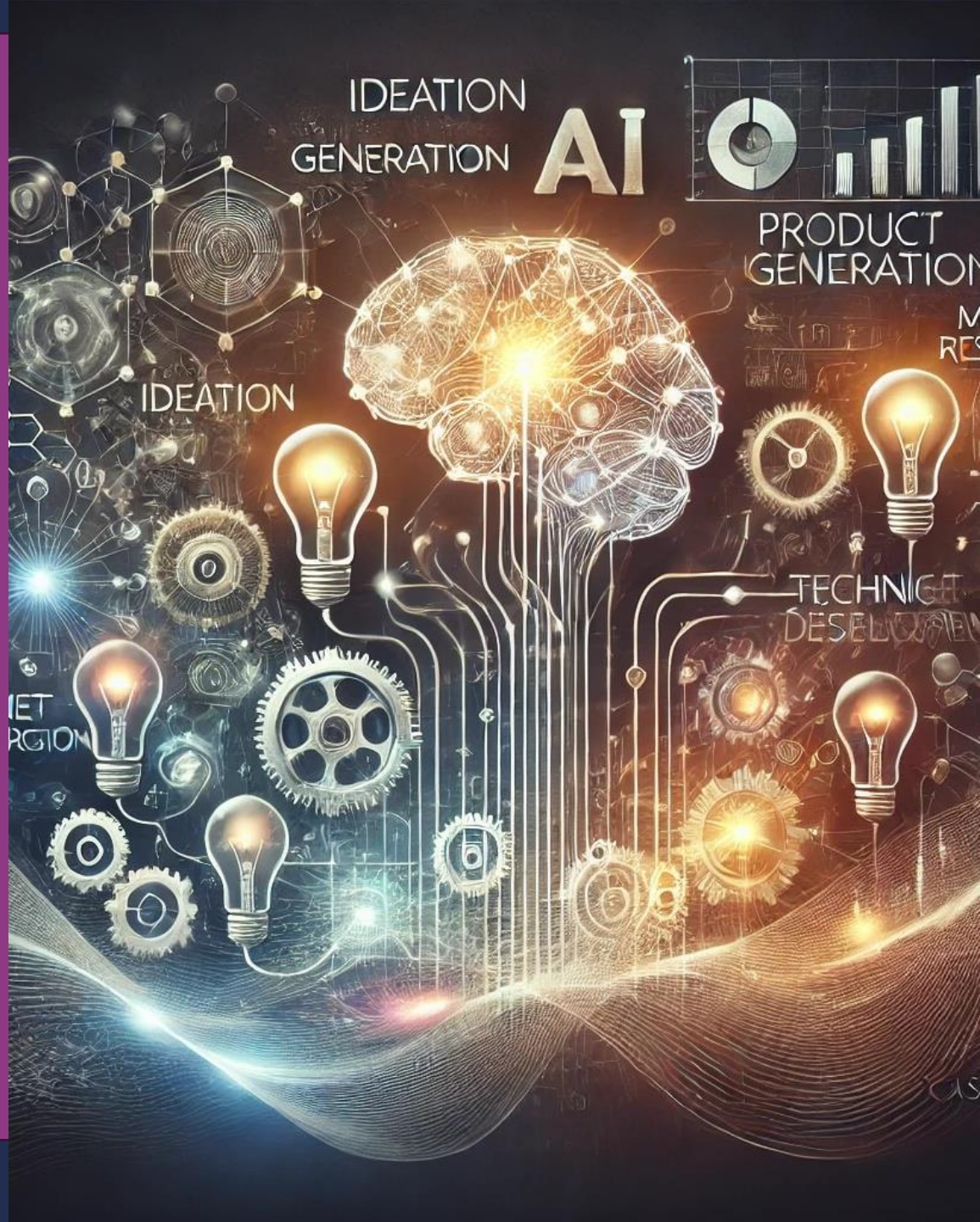
II. Process & Org. Enablers

- **Parallel, overlapping stages:**
  - Concept, engineering, industrialization & marketing prep proceed in parallel
  - Rapid iterations & interim builds (build-and-test)
  - Increases rework risk but cuts calendar time
- **Lean, hierarchical decision-making:**
  - R&D & procurement operate in lean structures
  - Clear end-to-end accountability
  - Reduces cross-functional debate & escalation delays
  - Leaders accept higher decision risk
- **Tight OEM-supplier integration:**
  - Fewer but key suppliers → system partners
  - Take responsibility for whole subsystems
  - Co-develop on shared roadmaps
  - Removes many interface negotiations
  - Accelerates both design & changes

III. AI & Digital Acceleration

- **AI-driven consumer insight & concept development:**
  - AI hubs in China (e.g., Unilever Shanghai) mine social, livestream, & e-commerce data
  - Find micro-trends & auto-generate concepts in hours instead of months
  - Teams co-design with consumers using AR/VR & instant feedback loops

- **Simulation, digital twins, and rapid prototyping:**
  - High-performance computing plus modelling software
    - allow virtual experimentation with formulations, structures, & manufacturability
    - before physical builds
  - Auto companies like NIO Zeekr, and BYD are 30% faster in vehicle development:
  - Instead of spending years building physical prototypes

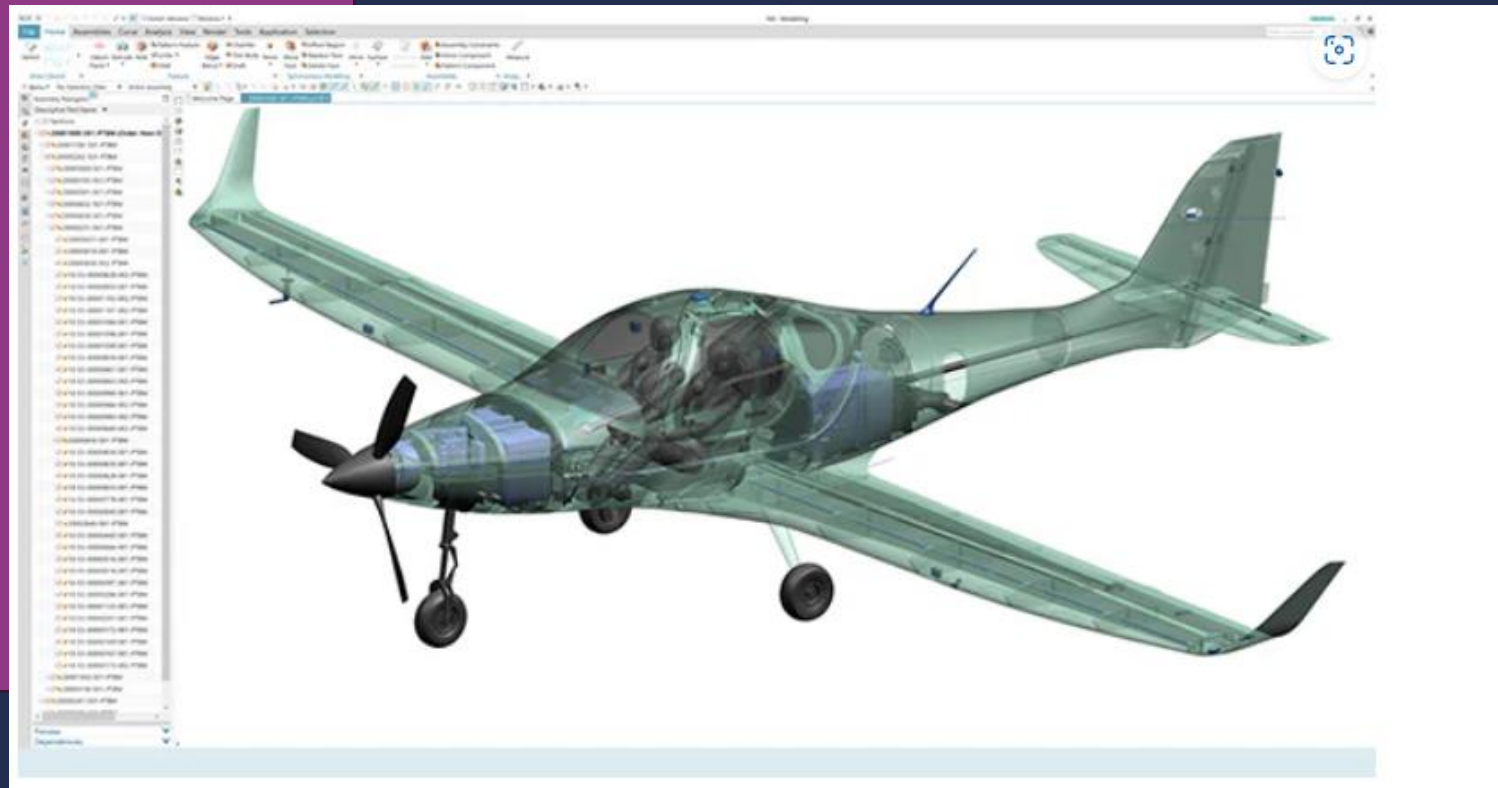


III cont'd. AI & Digital Acceleration

- Many Chinese companies now rely almost entirely on digital simulations & virtual twins.
- Factory-floor data integrated with AI creates closed loops between design & manufacturing to stabilize ramp-up quickly

- **Software-led product evolution:**
  - New features & updates are pushed out online – automotive (OS) & software
  - Decouples part of innovation from hardware refresh cycles
  - Enables frequent, post-launch enhancements without full redesign

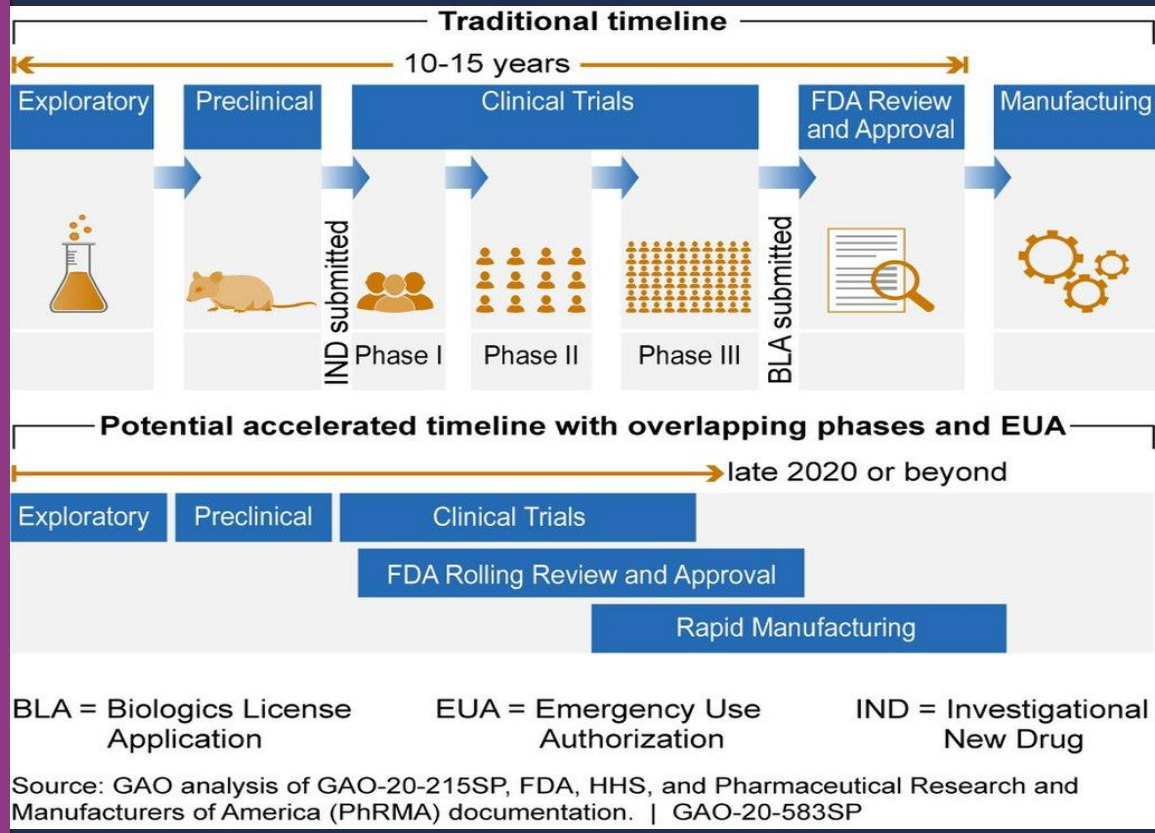
Bye Aerospace designs new EV aircraft using Siemens' digital twin technology



IV. National Innovation System & Regulatory Support

- **State-backed lab-to-market pathways**
  - Reforms to agencies (e.g., National Medical Products Administration) →priority reviews & faster approval
  - State-owned enterprises act as early testbeds
    - Absorb early risk & create reference customers
- **Market formation & creating demand**
  - Government uses subsidies, public procurement, & regulations (e.g., for NEVs) to quickly create volume markets
  - Encourages firms to invest aggressively in rapid development & deployment
- **Technology diffusion & local innovation**
  - Policy – moved from importing technology to…
    - Aggressively adapt, improve, & localize tech
    - Shorter learning cycles
    - Build capabilities to innovate atop global platforms

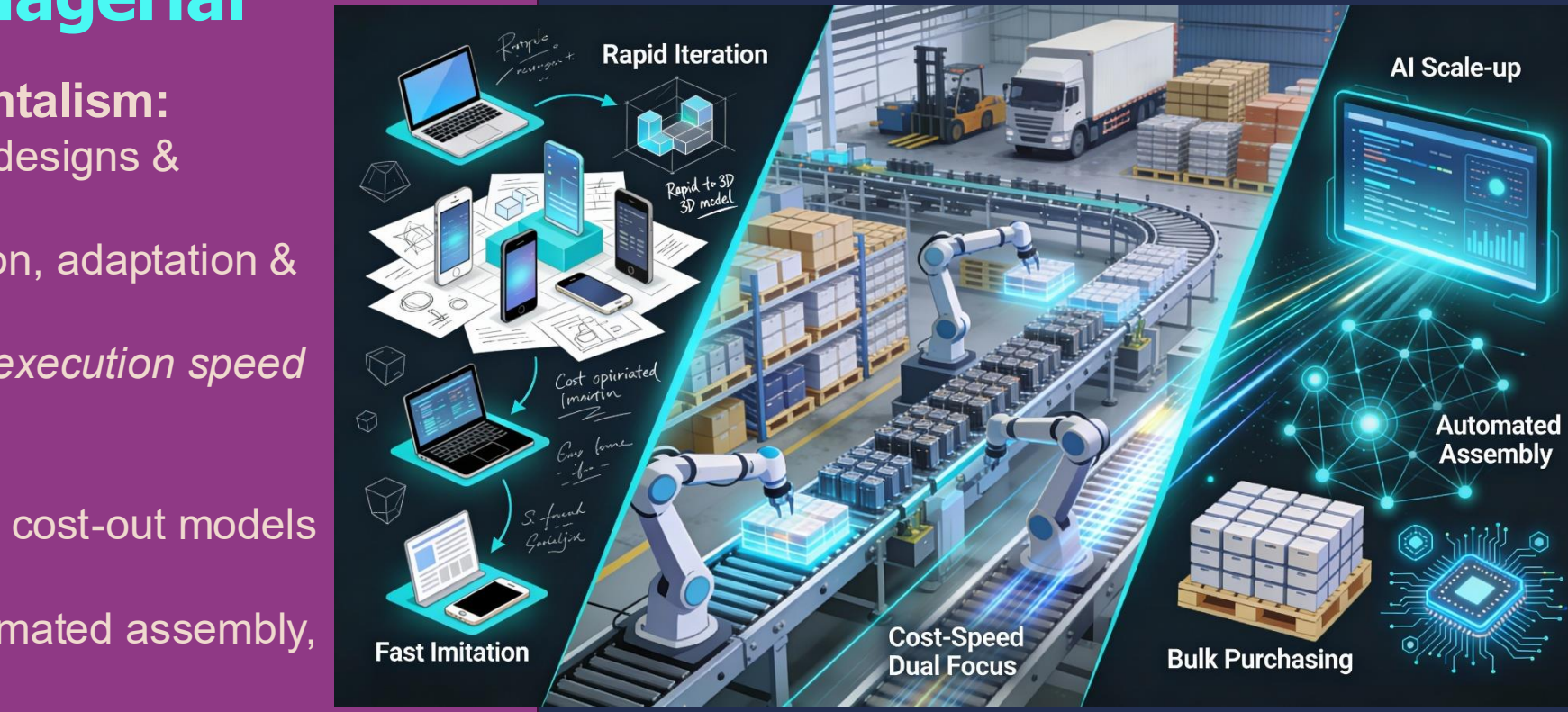
A US Example



Source: GAO analysis of GAO-20-215SP, FDA, HHS, and Pharmaceutical Research and Manufacturers of America (PhRMA) documentation. | GAO-20-583SP

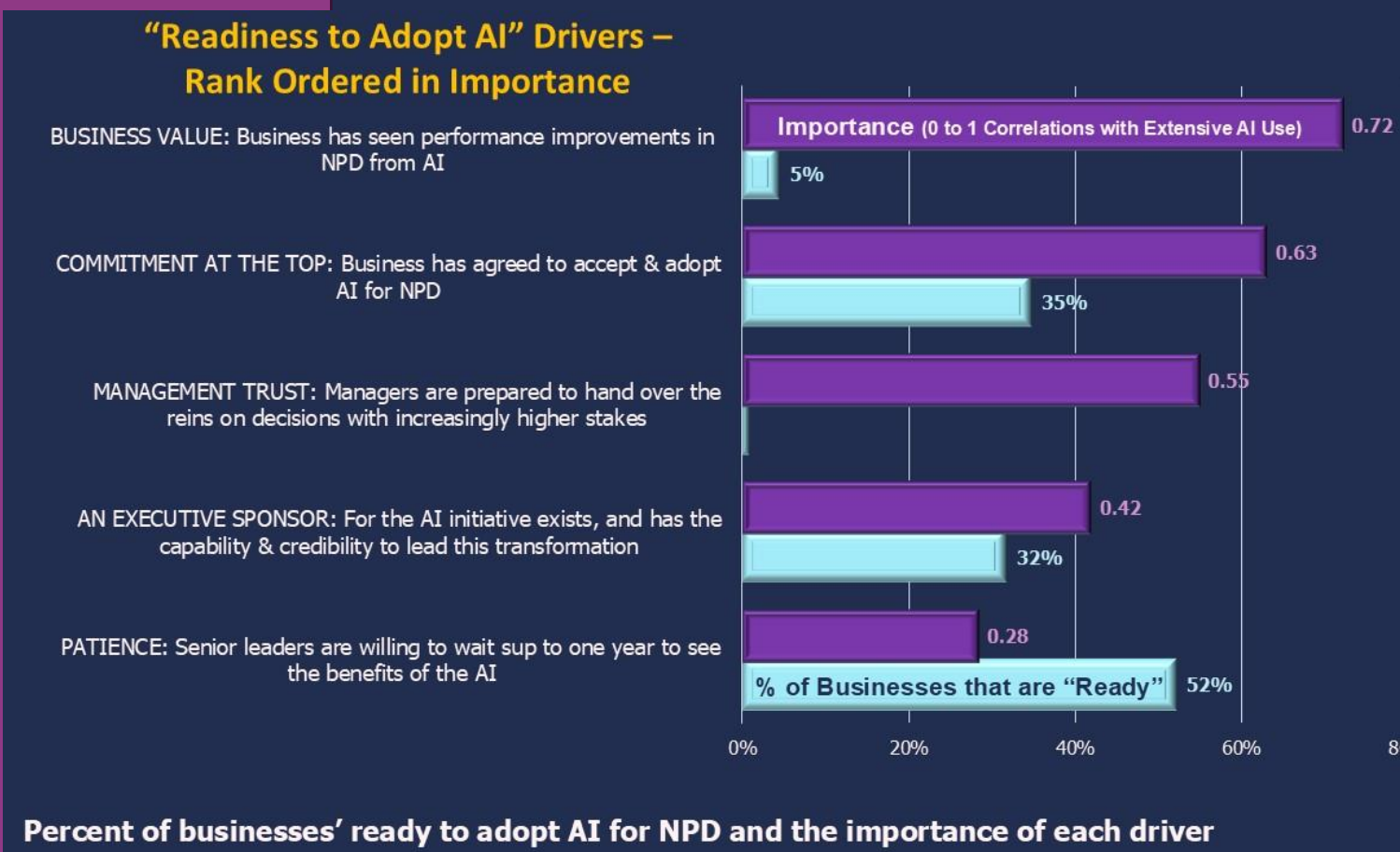
V. Cultural & Managerial

- **Fast imitation & incrementalism:**
  - Iterate quickly on existing designs & competitor products
  - Use rapid cycles of imitation, adaptation & improvement
  - Emphasis on *commercial execution speed* more than novelty
- **Cost–speed dual focus:**
  - Product teams work under cost-out models AND speed targets
  - Use bulk purchasing, automated assembly, & logistics optimization
- **Talent and AI scale-up:**
  - Chinese firms ramping AI investment
  - Most large firms expect their AI development to go faster than initially planned
  - Reinforcing speed advantages in both white/blue- collar workflows

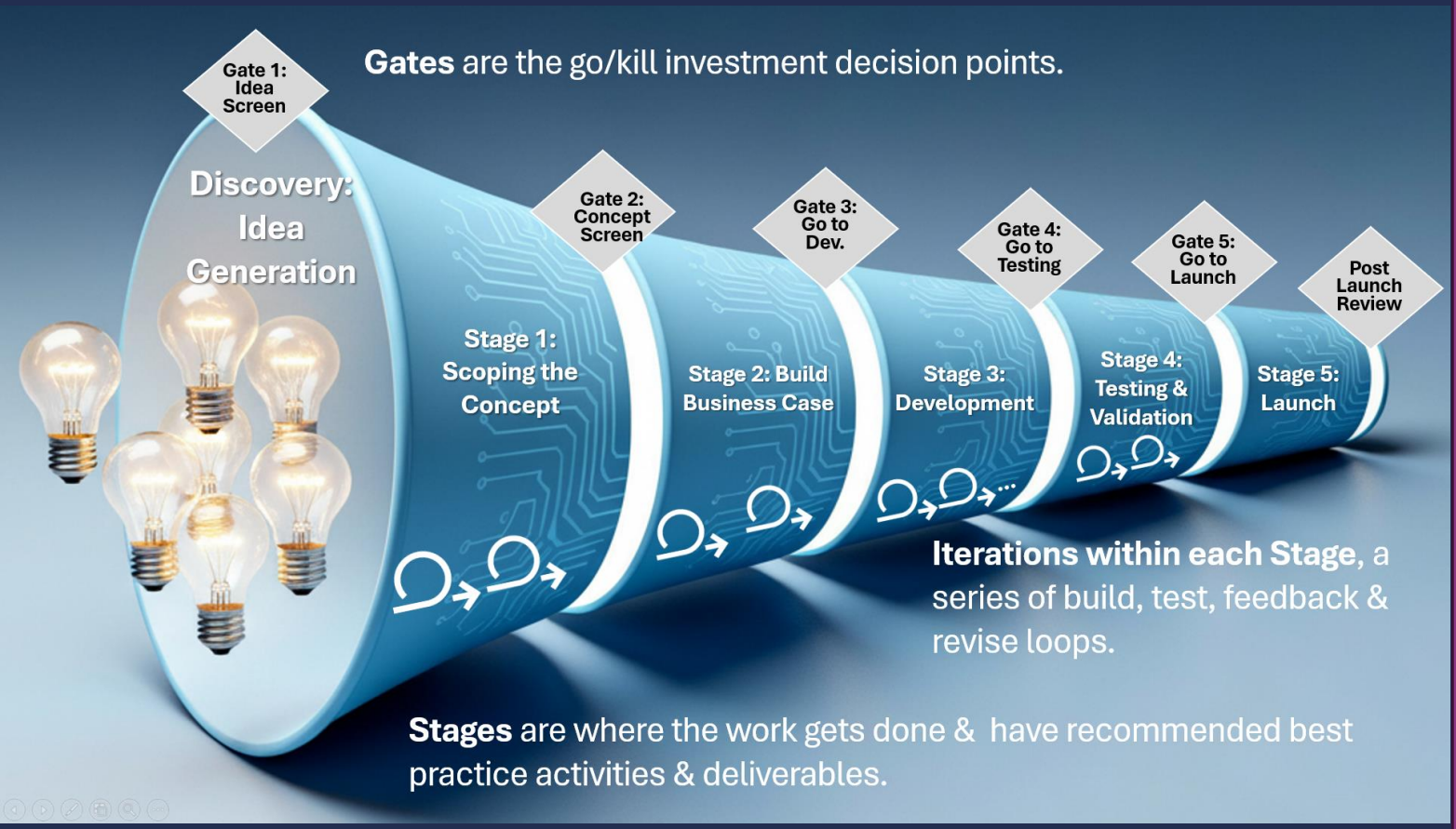


Familiar?

- **Many of these methods sound familiar**
  - Parallel processing,
  - Rapid build-and-test iterations
  - Agile-Stage-Gate
  - AI-powered NPD
- **Most were developed in the West**
  - Part of 5th Gen Stage-Gate – 2017.
- **Chinese firms have embraced these methods more aggressively**
  - E.G. As of 2024, only about 18% of US firms had adopted AI for any application in NPD
  - About half the Chinese adoption rate

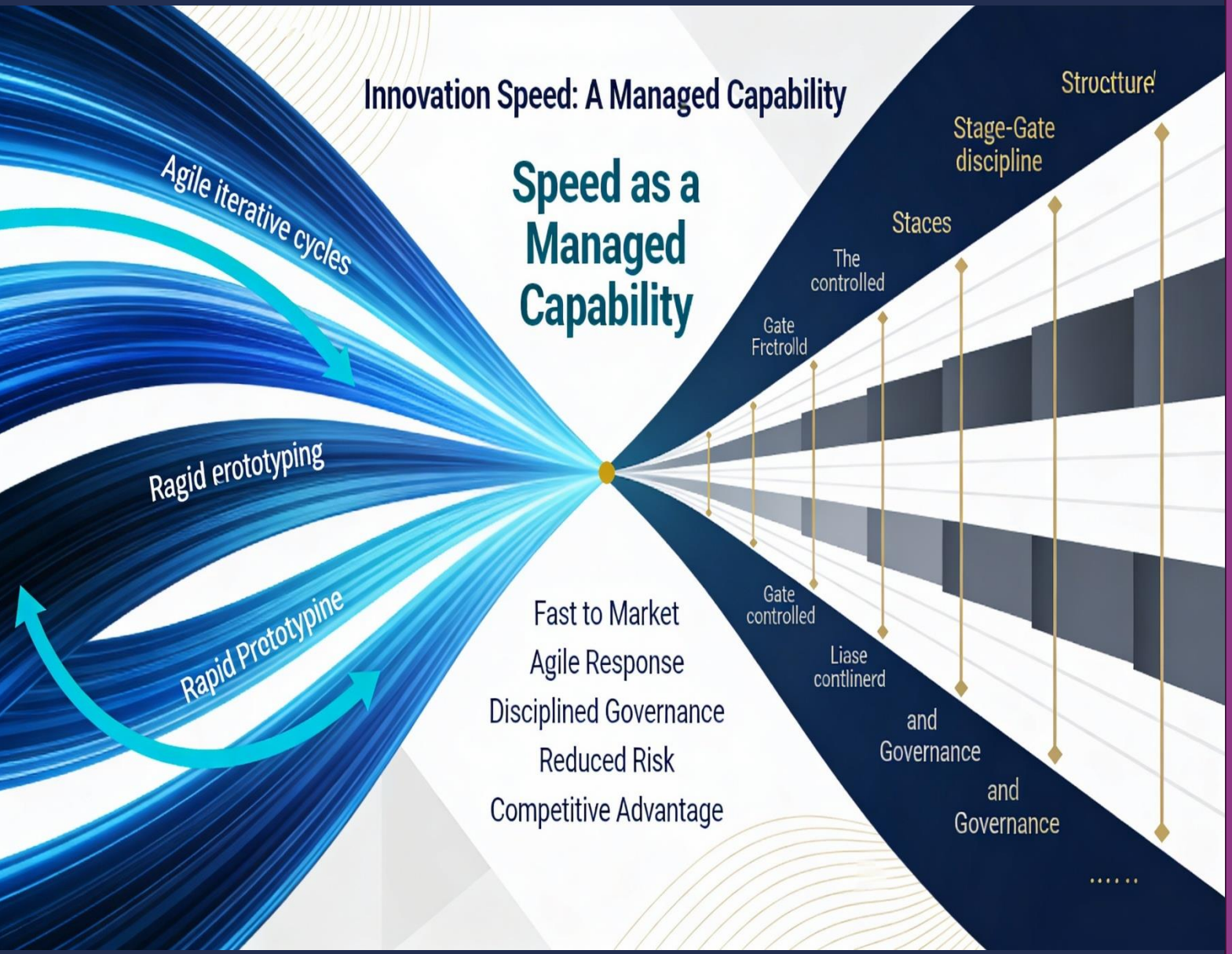


Percent of businesses' ready to adopt AI for NPD and the importance of each driver



What this means!

- **Accelerating NPD is no longer optional:**
  - By combining disciplined portfolio & Stage-Gate thinking
    - with newer, AI-enabled & China-speed practices
    - platform reuse, parallel experimentation, & data-driven decision making
  - Can compress time-to-market without sacrificing quality or increasing risk
- **Modern Stage-Gate provides the needed governance**
  - Investment decision points (gates with teeth) & risk management
  - With variable-length, experimentation-driven iterations inside stages



Management leadership is needed

- **Leadership to view speed as a managed capability**
  - to fuse modern Stage-Gate discipline
  - with rapid, China-style iteration
- **Enabling the firm to move fast, but…**
  - on strategy and
  - with acceptable risk
- **Businesses that treat speed as an innovation capability will**
  - out-innovate slower rivals
  - turn rapid learning into a durable competitive advantage

Dr. Robert G. Cooper

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- He is a thought leader in the field of New-Product Development and creator of the widely deployed Stage-Gate® system. He has published 12 books and more than 170 articles on the management of new products.. Cooper holds Bachelors and Masters degrees in Engineering, and a PhD in Business and an MBA. robertcooper@cogeco.ca