



From the MixCache.com library

SAMPLE COPY

US-China Tech Cold War

MixCache.com

SAMPLE COPY

Table of Contents

- **Introduction**
- **Chapter 1** Mapping the Battlefield: The Geoeconomics of the US-China Tech Rivalry
- **Chapter 2** Decoupling, De-Risking, and Selective Engagement: Choosing the Right Posture
- **Chapter 3** Export Controls Unpacked: EAR, ITAR, Entity Lists, and Licensing Pathways
- **Chapter 4** Dual-Use Frontiers: Semiconductors, AI, Quantum, and Advanced Communications
- **Chapter 5** The Semiconductor Squeeze: Chips, Equipment, EDA, and Foundry Access
- **Chapter 6** Data, Cloud, and Sovereignty: Regulatory Regimes Shaping Digital Infrastructure
- **Chapter 7** Critical Inputs: Rare Earths, Batteries, Optics, and Advanced Materials
- **Chapter 8** Supply-Chain Reengineering: Mapping, Metrics, and Redesign Templates
- **Chapter 9** Friendshoring and Nearshoring: Building Resilient, Compliant Footprints
- **Chapter 10** China Strategy 2.0: Localize, Ring-Fence, Partner, or Exit
- **Chapter 11** Go-to-Market Under Controls: Product Segmentation, SKUs, and Pricing
- **Chapter 12** Partnerships, JVs, and Licensing: Structures for Access and Compliance
- **Chapter 13** Capital Flows and Screens: Outbound Restrictions, CFIUS, and Investment Diligence
- **Chapter 14** Financing the Pivot: Cost of Resilience, Insurance, and Capital Markets
- **Chapter 15** Governance and Risk: Board Oversight, Accountability, and Decision Rights
- **Chapter 16** Cybersecurity and IP Protection: Operating at the Edge of Two Systems
- **Chapter 17** Talent, Culture, and Org Design: Dual Operating Models that Work
- **Chapter 18** Scenario Planning Toolkit: Frameworks, Triggers, and 2030 Futures
- **Chapter 19** War-Gaming and Red Teaming: Stress-Testing Strategies and Assumptions
- **Chapter 20** Sector Playbooks: AI, Cloud, Automotive, Healthcare, and Industrial Tech
- **Chapter 21** Continuous Compliance: Monitoring, Audits, and Controls Automation
- **Chapter 22** Measuring Resilience: KPIs, Dashboards, and Early-Warning Signals
- **Chapter 23** Case Studies I: Western Firms that Diversified Markets and Suppliers
- **Chapter 24** Case Studies II: Asian and Global Champions Navigating Both Systems
- **Chapter 25** Action Plans: 90-Day, 12-Month, and 3-Year Roadmaps

Introduction

This book is for executives, strategists, and investors operating in a world where technology has become the fulcrum of statecraft. The US-China relationship now shapes not only geopolitics but the structure, cost, and velocity of innovation. Export controls, data localization, and dual-use restrictions have turned supply chains into policy battlegrounds, while boards are being asked to trade off growth, resilience, and compliance in real time. Our aim is to replace noise with navigable signal: a practical field guide to making decisions amid superpower rivalry.

We begin by clarifying terms that are often used interchangeably but imply very different operating choices—decoupling, de-risking, and selective engagement. These postures carry distinct implications for capital allocation, product roadmaps, and organizational design. Rather than advocate a single ideology, we provide a decision architecture to help you match posture to business model, technology stack, and regulatory exposure. The core question is not “Should we stay or leave?” but “Where do we place optionality, control, and compliance so that we can continue to innovate and grow under multiple futures?”

Because technology controls now move as fast as the products they govern, static checklists quickly expire. Instead, we emphasize adaptive tools. You will find scenario planning frameworks that pair leading indicators with concrete triggers, enabling management teams to pre-commit actions before a crisis forces them. War-gaming exercises help surface hidden assumptions and interdependencies across engineering, sales, finance, and legal. Throughout, we translate policy into operating consequences—how a new licensing rule alters your SKU strategy, or how a component restriction cascades through your BOM and supplier tiers.

Supply-chain reengineering is at the heart of this book. We provide mapping methods, risk heat-maps, and redesign templates to help you segment products, facilities, data, and talent into ring-fenced configurations. Friendshoring and nearshoring are treated as design choices, not slogans: we quantify trade-offs in cost, lead time, regulatory exposure, and resilience. For investors, we outline how these redesigns flow into valuation—through working capital, capex profiles, gross margin structures, and insurance costs—so you can underwrite resilience without overpaying for it.

Case studies ground the analysis. We examine firms that successfully diversified markets and suppliers while sustaining innovation velocity—how they sequenced exits or partnerships, re-skilled teams, negotiated JV terms, and replatformed data. We include contrasting examples where similar moves failed, highlighting early-warning signals leadership missed and the governance gaps that allowed risks to compound.

The intent is not to celebrate heroics but to codify repeatable patterns.

Compliance is reframed here as an operating system rather than a periodic audit. You will learn how to embed controls into product architecture, sales motions, and vendor onboarding; how to automate monitoring; and how to align incentives so that resilience is rewarded, not treated as overhead. We also address board oversight: how to structure decision rights, scenario triggers, and reporting so directors can discharge fiduciary duties without paralyzing the business.

Finally, we recognize the human dimension. Strategy fails when culture cannot carry it. Building dual operating models requires clarity of mission, transparent communication with employees and stakeholders, and investment in talent pipelines that can thrive across jurisdictions. The organizations that win will be those that turn constraints into design principles, treating geopolitics as another engineering parameter rather than an existential threat.

Read this book sequentially or dip into the chapters most relevant to your current decisions. Use the toolkits to run workshops, the playbooks to design pilots, and the metrics to track progress. In a contest defined by speed, complexity, and uncertainty, the advantage goes to companies that institutionalize learning. Our goal is to help you build that capability—so you can operate, invest, and innovate between superpower tech rivalries with confidence.

CHAPTER ONE: Mapping the Battlefield: The Geoeconomics of the US-China Tech Rivalry

The United States and China have moved from a period of cautious engagement to a sustained contest over the foundations of technological power. This shift is not merely a diplomatic spat; it reflects a reconfiguration of how states view innovation, production, and diffusion as levers of national strength. Economists describe this phenomenon as geoeconomics—the use of economic instruments to pursue strategic objectives, and the reciprocal influence of those objectives on market behavior. In the tech domain, geoeconomics manifests through export controls, investment screening, standards setting, and state-directed industrial policy, all of which reshape the incentives facing firms that operate across the Pacific. Understanding the logic behind these moves is essential for any strategist trying to anticipate where the next constraint will appear and where opportunity may still exist.

The roots of the current rivalry trace back to the early 2000s, when China's accession to the World Trade Organization opened its manufacturing base to foreign technology transfer. Western firms eagerly set up joint ventures, gaining access to a vast labor pool while sharing know-how that later fueled domestic Chinese champions. Over the next decade, Beijing articulated a series of five-year plans that prioritized moving up the value chain, most notably the 2015 Made in China 2025 initiative, which identified ten strategic sectors including semiconductors, telecommunications equipment, and new-energy vehicles. The United States initially welcomed China's rise as a market for its exports, but concerns grew as Chinese firms began to dominate global telecom equipment markets and to invest heavily in artificial intelligence research.

A turning point arrived in 2018 when the U.S. administration launched a Section 301 investigation into China's technology transfer practices, alleging forced joint-venture requirements, intellectual property theft, and state-subsidized acquisitions. The investigation culminated in tariffs on hundreds of billions of dollars of Chinese goods and the first major wave of entity-list designations targeting firms such as ZTE and Huawei. These actions signaled that Washington was prepared to wield trade policy not just to redress imbalances but to curb the advancement of specific Chinese technological capabilities deemed threatening to U.S. military and economic security.

China's response was swift and multifaceted. While publicly criticizing the U.S. moves as protectionist, Beijing accelerated domestic subsidies for chip design tools, expanded funding for quantum communication labs, and doubled down on the dual-circulation strategy that emphasized internal demand while still seeking selective integration with global supply chains. The Chinese government also began to compile

its own “unreliable entity list,” signaling a readiness to retaliate against foreign firms perceived as complying with U.S. restrictions. This tit-for-tat dynamic created a feedback loop where each sanction prompted a countermeasure, gradually increasing the complexity of operating in either market.

The semiconductor arena became the most visible flashpoint. The United States controls a disproportionate share of the design software, fabrication equipment, and intellectual property that underpin modern chipmaking. By tightening the Export Administration Regulations (EAR) and invoking the Foreign Direct Product Rule (FDPR), Washington extended its reach to foreign-made items that incorporate U.S. technology, effectively choking off Huawei’s access to advanced silicon and later constraining SMIC’s ability to procure cutting-edge lithography tools. In reaction, China launched a national semiconductor fund exceeding \$150 billion, tasked with building domestic fabs, nurturing local EDA vendors, and attracting overseas talent through generous compensation packages. The results have been mixed: while Chinese firms have made strides in mature-node production and packaging, they remain lagging in the most advanced logic nodes where extreme ultraviolet lithography remains a U.S.-allied monopoly.

Beyond chips, the rivalry spans artificial intelligence, quantum computing, and advanced communications. In AI, the United States maintains an edge in foundational research, cloud infrastructure, and talent pipelines, yet China leads in the volume of AI-related patents and the deployment of facial-recognition systems at scale. Export controls targeting high-performance computing chips and certain AI accelerators have sought to limit China’s ability to train large models, prompting Chinese firms to stockpile older generation GPUs and to develop alternative architectures based on domestically produced ASICs. Quantum research, still nascent, has seen both governments allocate billions to national laboratories, with each side viewing breakthroughs in cryptography or sensing as potential strategic advantages that could upset existing balances of power.

Telecommunications equipment offers another illustrative case. Huawei’s rise to global leadership in 5G infrastructure alarmed U.S. policymakers who feared that control over network hardware could enable espionage or sabotage. The ensuing bans on Huawei equipment in several allied countries, coupled with the Clean Network initiative, forced many carriers to reconfigure their supply chains, turning to vendors such as Ericsson, Nokia, and Samsung. China responded by promoting its own 5G standards in international bodies and by offering financing packages to emerging markets keen to avoid dependence on Western suppliers. The result is a bifurcated ecosystem where some regions operate largely with Chinese gear while others adhere to a Western-centric stack, creating parallel tracks that increase costs for multinational operators seeking global uniformity.

Data governance and cloud services represent a less visible but equally consequential

front. The United States has long advocated for a model of free data flows anchored in principles of privacy and intellectual property protection, whereas China has enacted cybersecurity and data-security laws that mandate localization of certain categories of information and subject foreign cloud providers to security assessments. These rules affect everything from where a multinational can store customer analytics to how it must encrypt data in transit. Firms that once relied on a single global cloud architecture now face the prospect of maintaining separate environments—one compliant with U.S.-oriented regulations and another tuned to Chinese legal requirements—adding complexity to product development and increasing operational overhead.

The geoeconomic contest also extends to critical inputs such as rare earth elements, specialty gases, and advanced materials. China dominates the processing of rare earths, a fact that gives it leverage over industries ranging from electric vehicles to defense systems. In response, the United States and its allies have sought to revive domestic mining, invest in recycling technologies, and diversify sources through partnerships with Australia, Canada, and African nations. Similarly, efforts to secure supplies of neon gas—crucial for excimer lasers used in semiconductor lithography—have prompted joint ventures between U.S. equipment makers and European gas producers, illustrating how the rivalry drives real-world supply-chain reengineering that would have been unthinkable a decade ago.

These developments are reshaping the calculus of multinational corporations. Where once a firm could adopt a “global-first” approach—designing a product once and selling it everywhere—today’s reality often demands a modular architecture that permits regional variants. A semiconductor company might produce a high-performance chip for markets outside China while offering a stripped-down version that complies with local entity-list restrictions for Chinese customers. An AI software provider could maintain two model-training pipelines: one powered by unrestricted GPUs for global clients and another using approved hardware for domestic Chinese partners. Such segmentation raises questions about economies of scale, intellectual property protection, and the risk of inadvertent technology bleed-through, all of which require careful governance.

Investors, too, are adjusting their lenses. Traditional valuation models that focused solely on revenue growth and margin expansion now need to factor in geopolitical risk premiums, the cost of maintaining duplicate supply chains, and the potential for sudden shifts in access rights. Scenario analysis has become a core component of due diligence, with firms assigning probabilities to outcomes ranging from a managed détente to a full-scale tech bifurcation. Those that can quantify the financial impact of, say, a new export-control rule on a specific product line are better positioned to allocate capital toward resilience measures such as friendshoring, inventory buffers, or alternative sourcing without over-insuring against low-probability events.

Understanding the battlefield also means recognizing the role of third-party actors. Nations such as Japan, South Korea, Taiwan, and the European Union have become critical swing states in the tech rivalry, possessing capabilities that both superpowers seek to leverage or deny. Taiwan's dominance in advanced wafer fabrication gives it outsized strategic importance, prompting both Washington and Beijing to deepen ties while simultaneously hedging against potential coercion. European efforts to achieve "strategic autonomy" in semiconductors and quantum technologies reflect a desire to reduce dependence on either bloc, yet they also create opportunities for firms that can position themselves as trusted intermediaries.

The tempo of change in this domain is exceptionally rapid. Policy announcements can appear overnight, and technical standards can shift as new research breakthroughs emerge. Consequently, static compliance checklists quickly become obsolete; instead, organizations benefit from building capabilities that monitor leading indicators—such as changes to entity-list filings, shifts in semiconductor equipment lead times, or alterations in cross-border data-flow agreements—and translate those signals into pre-agreed operational responses. This proactive stance enables a firm to move from reactive crisis management to a posture of controlled optionality, where decisions about where to invest, where to partner, and where to exit are grounded in a clear map of the geoeconomic terrain.

Mapping the battlefield, therefore, is not an academic exercise but a practical necessity. It requires tracing the evolution of policy levers, understanding the strategic objectives behind them, and recognizing how those objectives intersect with the technological strengths and vulnerabilities of each side. By laying out this foundation, the subsequent chapters can delve into specific tools—such as export-control navigation, supply-chain redesign, and scenario planning—while keeping the larger picture in view. The goal is to equip the reader with a nuanced appreciation of the forces at play, so that choices made in product development, capital allocation, and organizational design are informed not by speculation but by a clear-eyed assessment of where the rivalry stands today and where it is likely to head tomorrow.

This is a sample preview. Purchase the book to read the full content.

Visit MixCache.com to purchase the complete book.

SAMPLE COPY